Grantham, Mayo, Van Otterloo & Co.
First Quarter 1999 Review by Jeremy Grantham

Extreme Market Narrowness …… Followed by Rapid Rotation Into Cheap Stocks and Asset Classes

The performance of the markets in the first quarter was very much "business as usual," that is, a continuation of the trend favoring a highly concentrated group of large-cap names and increasingly speculative behavior in Internet stocks. Just five stocks were responsible for more than 50% of the return of the S&P 500 and, with the exception of a small group, nearly every stock in the index declined. In other markets, Japan, Latin America and Southeast Asia rebounded strongly during the quarter while bonds declined in the U.S. and abroad (for unhedged investors). What has occurred subsequent to the end of the quarter has, however, been the most significant turn of events in quite some time: a tremendous turn in favor of cheap stocks and cheap asset classes starting in mid-April.

I believe the magnitude and rapidity of this turn could have occurred only from a point of unprecedented market narrowness (see the accompanying attachments which illustrate the lack of breadth in the U.S. and international equity markets). In the course of just one week, from April 12 to April 19, the S&P 500 declined by 5.1% while the Dow Industrial Average, with its heavier composition of industrial companies, rose by about 1%. Technology and other growth stocks fell as investors rotated into attractively valued cyclical companies. The decline in the S&P was accompanied by a sharp rebound in small stocks, REITs and emerging, all of which moved up as the S&P 500 declined. In the course of one week, small-cap value stocks outperformed the S&P 500 by 10.4%, REITs outperformed by 14.0%, emerging equities by 11.7% and emerging debt by 8.4%! In this period we regained significant ground relative to the benchmark in many of our products as well as for asset allocation accounts. Value and smaller stocks rallied in the EAFE markets, accompanied by rallies in Asia, Canada and Australia, all of which benefited the performance of the International Core Fund.

While it is not yet clear that the recent events are "the turn" we've been waiting for (technology has rebounded significantly following the April 19th decline in technology and Internet stocks), it is an important reminder of how viciously markets can turn. This move was rapid and allowed almost no time to reallocate to the cheap sectors. Once again, we urge clients to maintain a longer-term focus in making allocation decisions so that you may reap the rewards of dramatic shifts like the one that has just occurred.

I'll leave you with one thought, which is illustrated in the accompanying chart on the U.S. Historically, following periods of extreme narrowness, breadth has rebounded rapidly and sharply as was the case in 1973, 1980 and 1990. In each case, cheap price-to-book stocks were the main beneficiary of the rebound and they rallied handsomely over one and five years in each of those time periods. Once a point is reached where so few companies can outperform the index, historically a change to a much broader, value-led market has been imminent.

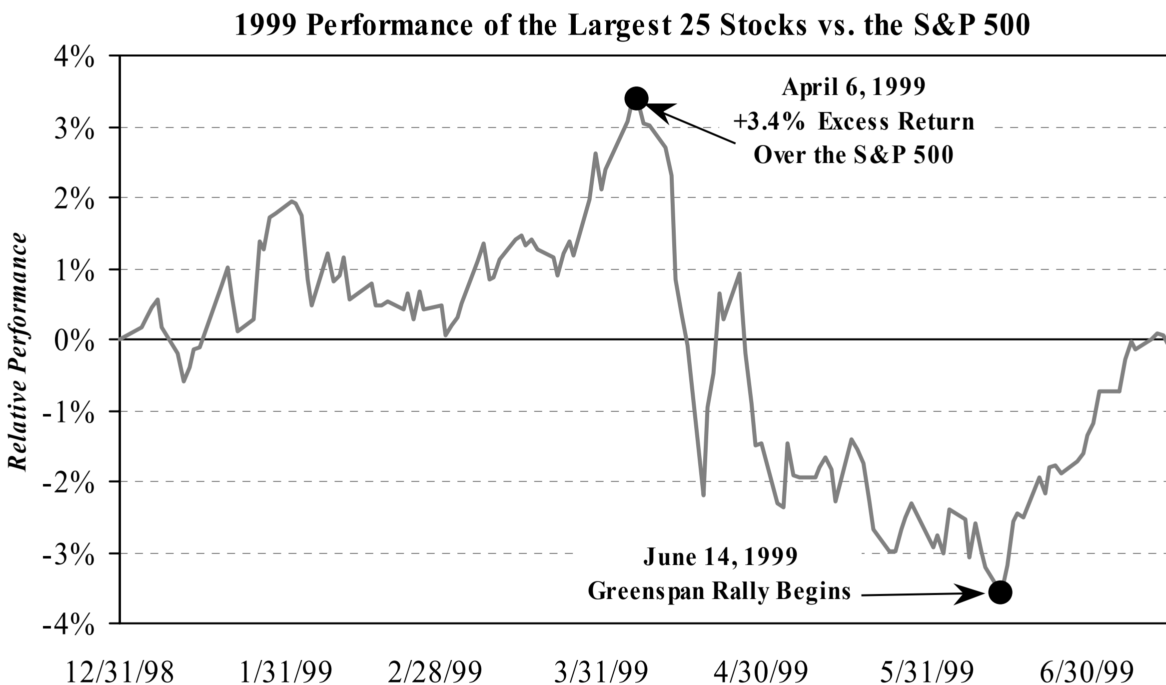
Grantham, Mayo, Van Otterloo & Co. LLC
Second Quarter 1999 Quantitative Review
Jeremy Grantham

Return to Value Investing: Is it for Real?

The second quarter brought substantially better results for beleaguered value investors, who for the previous five quarters watched with growing dismay as their growth counterparts enjoyed an ongoing bull market. Beginning April 12th, however, there was a dramatic shift in the market, as the Nifty Fifty stocks lost their luster and out-of-favor asset classes finally began to shine. Most GMO quantitative and asset allocation portfolios, which currently emphasize value and small stocks, performed very well on both an absolute basis and relative to their benchmarks during the quarter.

As we noted in our letter of May 22nd, the U.S. equity market in the first quarter had become so narrow, with only a handful of stocks outperforming the market, that a rebound to a broader-based market was almost certain. As we predicted, value stocks (defined by price-to-book value, price-to-earnings and dividend yield) rebounded sharply. Other unpopular asset classes, including REITs and small stocks, also posted sizable gains. Bonds were the sole exception, with modestly negative returns for most domestic bond indices.

The initial rebound by value stocks in April was so dramatic that one or more (hopefully) temporary reversions to "Nifty Fifty" market conditions should have been expected. In fact, some of the recent gains of previously out-of-favor asset classes were surrendered during the final weeks of the quarter and in early July. At the same time, the largest twenty-five stocks rallied sharply in mid June as investors anticipated that the Federal Reserve would not raise interest rates by more than one-quarter of a percentage point, as shown on the graph below.



Data through July 16, 1999.

Alan Greenspan, who more than 4,000 points ago on the Dow Jones Industrial Average warned us all of "irrational exuberance" in the U.S. equity market, became in effect the market's biggest cheerleader. While the ¼ point tightening in interest rates was widely expected, the comment that there was no need for a continued bias toward tightening encouraged investors to throw caution to the wind and load up on overpriced blue chips. This reaction by investors was, in our view, completely predictable, and it is surprising that Mr. Greenspan was unconcerned about this consequence. It may be that he has lingering worries about the world economy, including Argentina and perhaps Asia. Although he was applauded last summer for loosening monetary policy in order to avert a global financial crisis, one might question today whether he is sacrificing the U.S. economy by promoting further inflation of an overheated stock market.

Abroad, a parallel scenario to the U.S. market unfolded during the quarter. Previously out-of-favor asset classes rallied, including value and small stocks, as well as most emerging equity markets. Emerging market debt continued the recovery begun in the first quarter. Particularly heartening in the second quarter were the returns from emerging market equities, especially in the Far East. We had argued that these markets were extraordinarily cheap, even allowing for significant dilution of assets from bankruptcies and new stock issuance. As it turns out, we were too pessimistic with respect to the extent of dilution of equity in Asia. Dilution has been minimal, and economic recovery is proceeding at a rapid pace. Six months ago, projections generally called for economic contraction in many developing Asian nations. Now several of these economies are expecting to report significant economic growth, including South Korea, where industrial production was recently up more than 20% year-over-year! According to the Economist, Thailand is forecast to have 2.2% economic growth this year, instead of a contraction of 0.4%, and Indonesia's economy is now expected to contract 1.2% instead of 4.0%.

Despite the impressive returns demonstrated by Asian markets in the quarter, (Indonesia +120%, China +70%), our view is that these markets still have a long way to rally, although the gains unfortunately will not be smooth. Price/earnings ratios have rebounded off the bottom, but earnings have only begun to show signs of recovery. When earnings do improve, stocks will be rewarded with higher prices and expanding price/earnings multiples. Emerging markets will eventually recover their share of the global economic pie, and emerging equities will be rewarded with reasonable multiples on earnings.

Many clients have expressed concern that secondaries will underperform blue chips in a bear market. It is true that generally secondaries fare poorly in sharp market downturns. However, small stocks can more than make up lost ground in subsequent periods. For example, small stocks led the market down in 1973 in the early stages of the bear market. After initially underperforming by 15%, they recovered their relative losses, and from September 1974 until 1982 they outperformed large-cap stocks by 150%! The stage is clearly set for a similarly dramatic recovery in the valuation level of small-cap stocks today.

In the current market environment, which favors large-cap stocks, we believe it is important to NOT invest in S&P 500 index products (see next page). Not all asset classes are expensive. Global blue chips are the most overpriced asset class in the world, but other asset classes are priced more reasonably. Bonds are fairly valued, and small-cap stocks and value stocks are cheap compared to large-cap stocks. REITs, timber and inflation indexed bonds are cheap on both a relative and absolute basis.

The recovery to "value" is often a saw-toothed, two steps forward one step back process. Whether or not we are at the early stages of a long-term turn in the leadership of the market, our conviction remains firm that there will be an eventual, multi-year reversion to value investing. We encourage our clients to stay the course and reap the benefits that will come over the next decade from overweighting cheap asset classes.

The Case Against S&P 500 Indexing

- From a tactical perspective, now is a poor time to index to the S&P 500. Since indexing necessarily emphasizes stocks with the largest market capitalizations, index-based strategies are exposed to the high current valuation level of large-cap stocks.

- Most active money managers have performed exceptionally poorly relative to the S&P 500 in recent years because they are typically underweight in large-cap stocks.

- However, as we noted in our "The Case Against S&P 500 Indexing" letter dated April 12, 1999, active managers have a high probability of outperforming the S&P 500 when small-cap stocks rebound. This was demonstrated during the second quarter when, in a significant departure from the recent past, 68% of all active managers outperformed the S&P 500.

- It is unclear at this stage whether or not the second quarter was the beginning of a longer-term trend for better performance for small-cap stocks and for active managers. What is apparent, though, is that despite their partial recovery in the second quarter, small stocks are still extraordinarily cheap relative to large-cap stocks. An eventual period of recovery for small-cap stocks, and outperfomance by active managers, is highly likely.

- While indexing certainly eliminates <u>benchmark</u> risk, it does not address <u>absolute</u> risk. The S&P 500 is now trading at record levels. In comparison, small stocks are trading close to fair value. Despite the higher level of risk historically associated with small-caps, a diversified portfolio that includes smaller, cheaper stocks may provide shareholders with less absolute risk than the S&P 500 over the course of the next decade.

August 4, 1999

Grantham, Mayo, Van Otterloo & Co. LLC
Fourth Quarter 1999 Review by Jeremy Grantham

Outlook for the U.S. Economy and U.S. Stock Market

The evidence is overwhelming that developed markets, especially the U.S. market, are more overpriced than at any previous time in the last seventy years due to the massive overpricing of technology and especially dot-com stocks. Our reasons for bearishness with respect to the U.S. market previously relied exclusively on the high valuation levels of stocks, and you are well familiar with our bear case on stock prices. (For those unfamiliar with our arguments, we expect to produce a complete treatise on the case for the bear market in the upcoming months.) We now believe that massive overpricing of the stock market will also eventually result in a weakening of the U.S. economy. We discuss below what should eventually occur fundamentally in the economy in a badly overpriced equity market and what has already occurred.

First, as is well known by now, half of all U.S. individuals own stock, up from 20% in the 1960's bull market. The recent bull market has made them feel much richer than they ever expected to be. Second, under a blizzard of bull market propaganda they believe that the abnormally high returns of recent years (more than 20% annually for the past five years) will continue into the future. Individual investors believe they will continue to accumulate wealth rapidly and they therefore do not need to save. This mindset has led to a drop in the savings rate from 8% to 2% since the early 1990's (Exhibit 1). The decline of 6% in the savings rate represents a drop of nearly ½% per year, and has occurred despite the rapid growth of the age group with the highest savings, the baby boomers.

Third, at the margin individuals have been heavy and steady net sellers of stocks to institutions for the last 40 years. Even adjusting for current net buying of mutual funds, they have recently, contrary to conventional wisdom, been heavier than typical net sellers of equities to fuel their higher spending levels. (An extreme but interesting point: Bill Gates recently sold $17 billion of Microsoft's stock which he donated to his own foundation.)

Fourth, a rise in consumption spending as a percent of GDP by ½% a year has created economic growth from which corporations have benefited. American corporations have reported a steady series of pleasant surprises in corporate revenue, which has in turn led to improved profit margins and high earnings growth. Not surprisingly, in response to both increased revenues and profits, corporations have ramped up their production capacity by increased capital spending (Exhibit 2). Relative to trend GDP, U.S. corporations are adding to capacity faster than ever before (Exhibit 3).

The economy's inherent arbitrage mechanism can still work: consumers save less and sell stock, and corporations invest more and eventually compete margins down. Capitalism is meant to work this way and the bubble in equity prices would end quickly except for a new factor. Companies should be selling stock into an overpriced market. Instead, driven by the logic of stock options, they are buying unprecedented amounts of their own stock - $200 billion

to $300 billion per year. Corporate share repurchases have been especially pronounced during the last three years, the bubble phase of this market cycle (Exhibit 4). Normally, corporations on a capital-spending spree that were also buying this much stock would quickly run out of funds (Exhibit 5). This time, however, they are increasing their debt leverage to fund buyback programs. At the macro level, the money to fund the increased debt should not be available, given the drop in the personal savings rate. Here again a highly abnormal and temporary factor is at work. The U.S. trade deficit has sucked in $350 billion of foreign capital over the last three years (Exhibit 6). The flow of foreign capital, almost 4% of GNP per year, is clearly unsustainable.

Several events could trigger a reduction in the trade deficit and share repurchases. Any shock to confidence in the dollar would weaken it, which would result in a reduction of both the trade deficit and foreign capital inflow. Second, stronger foreign economic growth rates, which have been notably weak relative to the U.S. over the past two years, would also serve to reduce the deficit.

Even assuming no impact from a reduced trade deficit, share repurchase programs at current levels are still in jeopardy. As the cost of debt rises, share buybacks become increasingly expensive. Last, eventually increases in capacity will result in lower corporate profitability and lower cash flow. Reduced cash flows would make it difficult for companies to continue spending on share repurchase programs.

To summarize, the wealth effect has been badly underestimated. When the market declines the virtuous cycle will become vicious. A lower stock market will reduce the feeling of being unexpectedly well off and consumers will spend less, which will lead to lower corporate profitability and in turn less capital spending. Alan Greenspan, the cheerleader on the way up, will do his best to put the brakes on the decline. Whether he can be successful in softening the decline, however, is not certain. There is little he can do to prevent the net drag on the economy of an increase in the savings rate from 2% back to 8% to 10%. Nor can he do much to soften the blow to the economy of much lower capital spending. Even assuming Greenspan gets it just right, economic growth, corporate profit margins and productivity, which have all been flattered by the wealth effect, will suffer. Economic growth in the U.S., which has a long-term trend of 2¾% per year, will decline from 3½% per year in recent years to 2% per year for at least a few years. The impact of this decline in economic growth will be substantial.

Review of 1999

In many respects, 1999 was a repeat of 1998. In the U.S., stocks rose more than 20%, growth beat value and technology stocks again soared more than 70%. However, the year was also different in many respects from 1998. Despite impressive gains, U.S. equities were not the best performing asset class in the world. That distinction goes to emerging equities, which rebounded 54% following a year in which many investors had: a) given them up for dead; or b) decided that emerging equities were no longer an asset class and could be buried in a global benchmark. The resurrection of emerging equities was a powerful demonstration of mean reverting action both by markets and by economies. As recently as mid 1998, investors despaired of a near-term recovery in economic growth in South East Asia, and Latin American markets were stuck in the shadow of the devaluation of the Brazilian real, but the economies in

both regions quickly staged impressive comebacks. Improvement in the economies was preceded by rising stock markets, which accurately predicted a revival of economic growth. Investors in our global asset allocation accounts benefited from our overweight in emerging equities, and the rebound was a reminder that mean reverting behavior in markets can be swift and can greatly exceed investor expectations. It was also a powerful example of the fact that the timing of mean reversion is exceptionally difficult to predict. (To cite a more recent example, during the first three weeks of January, electric utility stocks, the underdogs of the U.S. market, have risen 10% relative to the S&P 500.)

Our overweights in both emerging equities and emerging country debt added to performance in our global asset allocation accounts. However, other asset allocation positions did not pay off. Small-cap value stocks performed poorly in comparison with the technology-heavy small-cap growth sector of the market. REITs continued to defy all investment logic, and, despite yields that now exceed 8%, declined nearly 5% for the year. U.S. bonds performed poorly relative to stocks in the wake of interest rate increases. (Paradoxically, the highest p/e stocks that would normally be expected to suffer most in a rising interest rate environment managed to explode upward. Investors are either assuming that the growth rates of Internet companies are so high that the interest rate environment is irrelevant, or, more likely, they have been so swept away by the mania for these stocks that they have temporarily suspended the rules of finance.) The net effect was that asset allocation decisions lost money for the year, but were ahead of the April 12th low point. By the middle of January 2000, asset allocation accounts had regained another 2% in relative performance.

With respect to implementation within our quantitative funds, our emphasis on value stocks was detrimental to returns for the U.S. Core Fund but even more so in the International Core Fund. The emphasis on both value and small stocks was especially punishing to the performance of International Core in the last quarter. Both of these funds are positioned to capture strong returns relative to their respective benchmarks when small and value stocks revert to normal valuation levels relative to large-cap growth stocks.

Adding Value in the Long Run

Despite our bearishness about the outlook for the U.S. stock market and economy, we believe that there are opportunities in today's markets for reasonable absolute returns and excellent relative returns. We are bullish on the outlook for emerging equities, despite their strong returns in 1999. While last year represented a bounce off of exceptionally depressed levels, this year a sharp recovery in corporate earnings as well as a continued recovery in GDP growth and currencies will fuel stock market gains. We also remain positive on the outlook for REITs, with the belief that an 8½% dividend yield, combined with real increases in payout ratio, will eventually look compelling to investors once they realize the S&P 500 is not forever destined to return 20+% annually. Bonds, especially inflation-indexed bonds that currently offer a real return of 4.4%, are also a compelling alternative. For those with long time horizons, timber is an excellent investment. We continue to believe that small stocks outside the U.S. will provide better returns for investors on a relative basis, just as value stocks globally can provide better returns than growth stocks. Small value stocks, both in the U.S. and the rest of the world, are especially undervalued and have a real return potential of 5% annually. One caveat with

respect to small stocks, however, is that small growth stocks in the U.S. which have recently surged are unattractive at current levels.

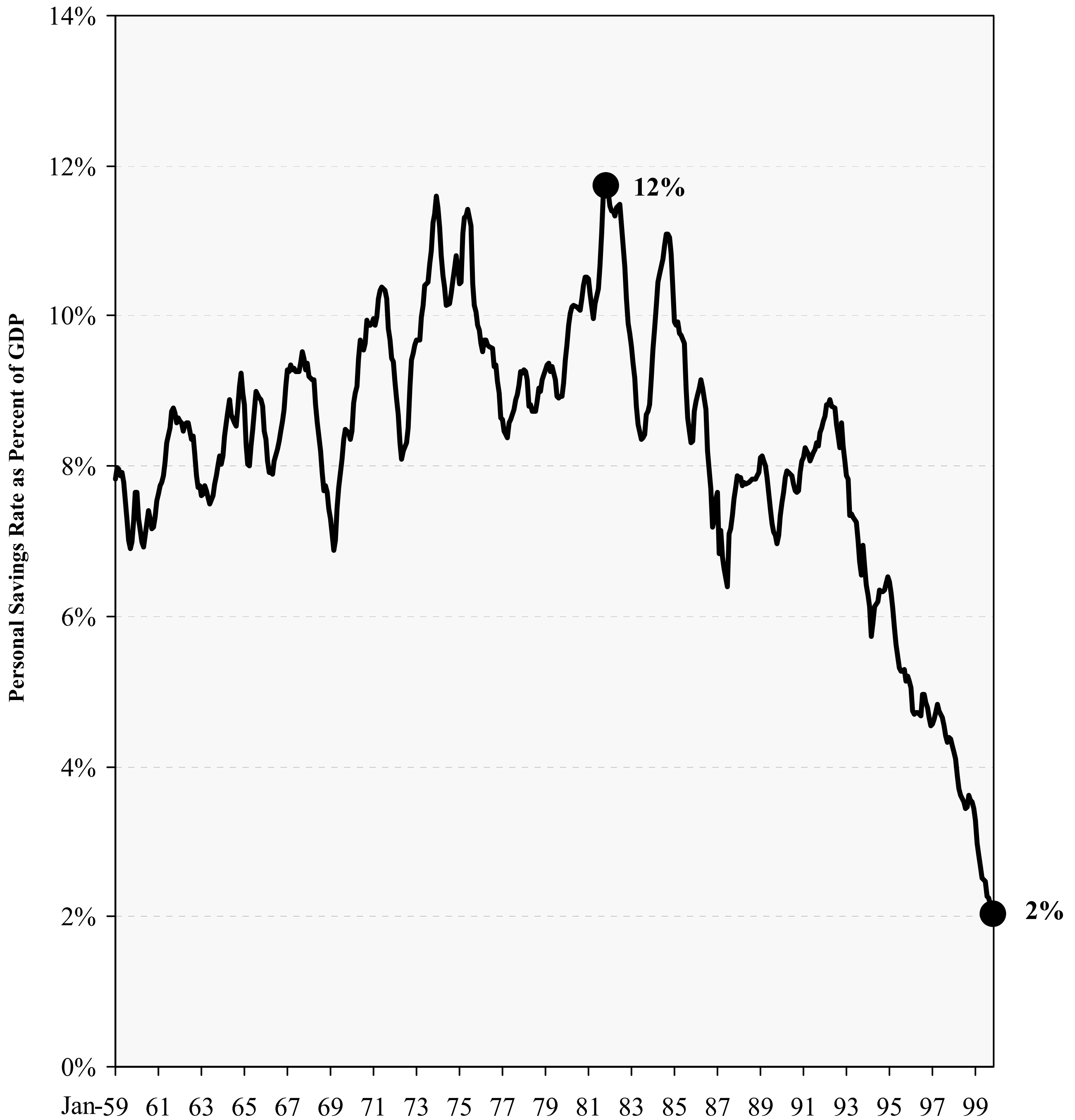
Emerging market equities last year provided a good example of how mean reverting markets can behave. The timing of reversion back to long-term norms is difficult to predict, and can be very rapid. Nevertheless, over the course of the next several years, we expect to see many more illustrations of asset classes reverting back to their long-term historic averages.

P.S.: New Eras Revisited

We have debated new era arguments many times before. (See "New Paradigm or Mean Reversion?" *Investment Policy*, September/October, 1999 by Jeremy Grantham and Jack Gray.) For those not yet persuaded by us, we include excerpts from the original text of Graham and Dodd's Security Analysis, written nearly seventy years ago. The argument they present, despite its age, is shockingly relevant for today's investors, who will learn that today's new era may not be so new after all.

Exhibit 1

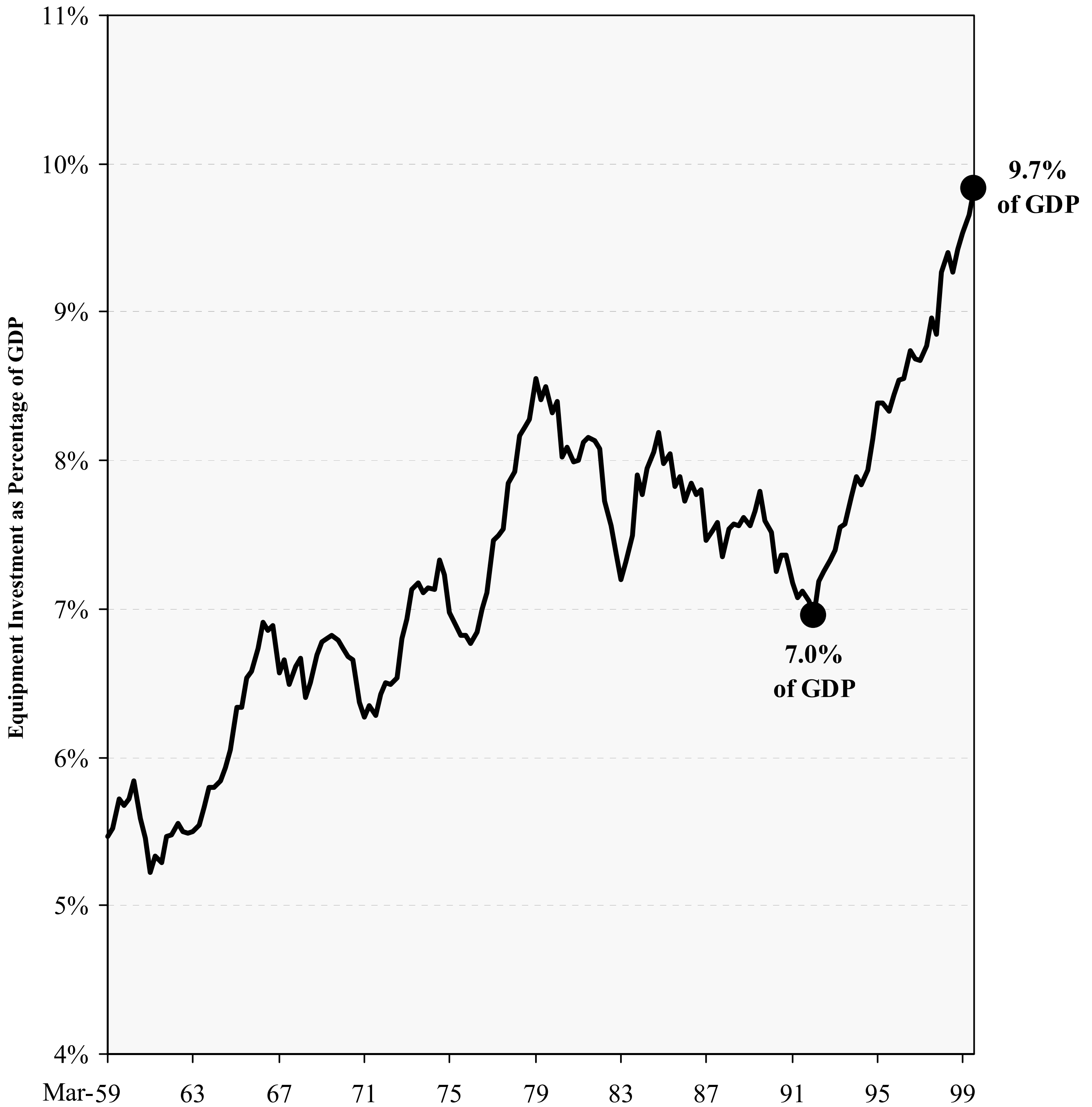
Personal Savings Rate



Data as of November 1999.

Exhibit 2

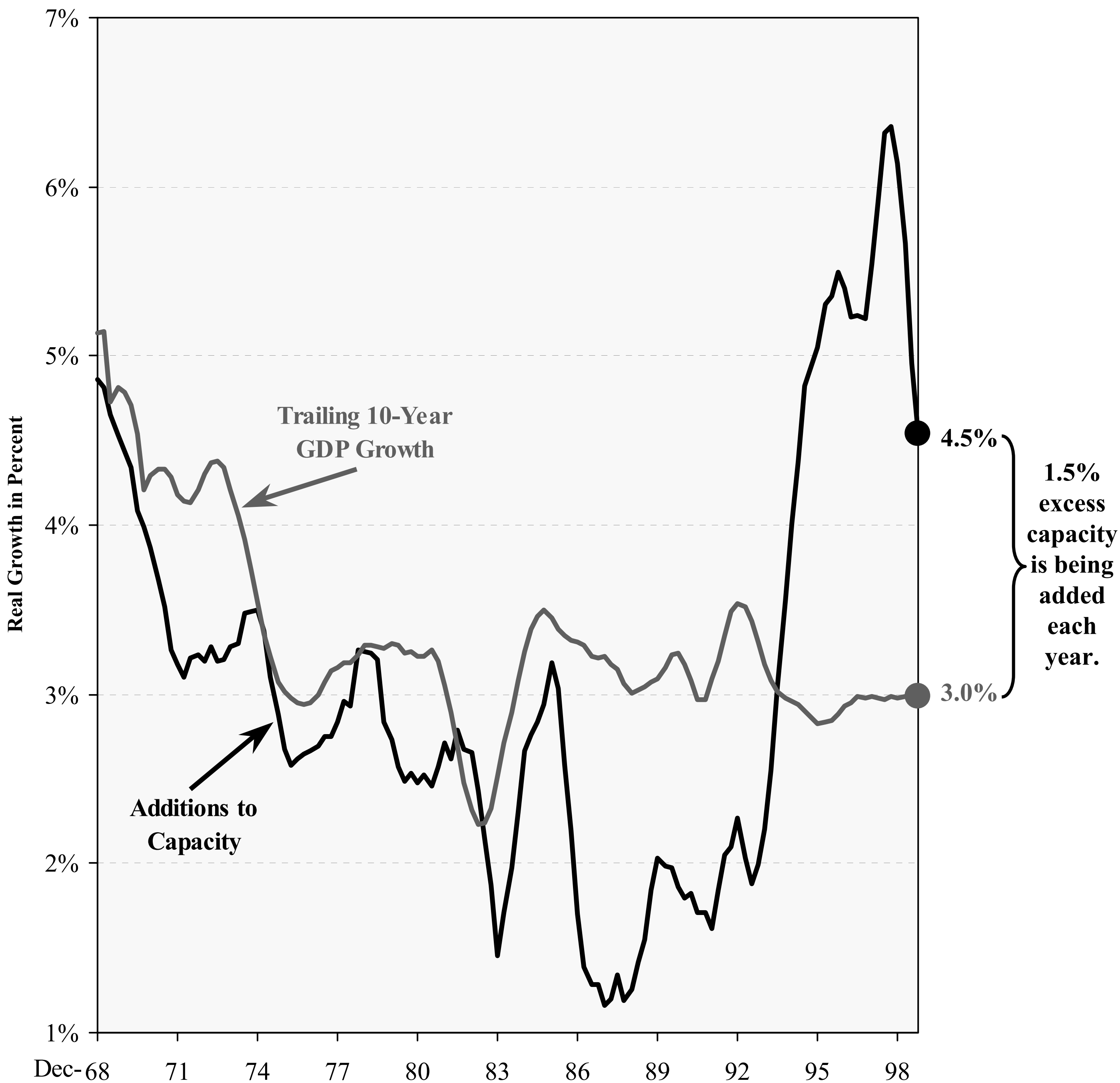
Investment in Corporate Equipment



Data as of September 1999.

Exhibit 3

Additions to Capacity vs. Trailing GDP Growth



Data as of September 1999.

Exhibit 4

Net Share Issuance/Buybacks by U.S. Corporations

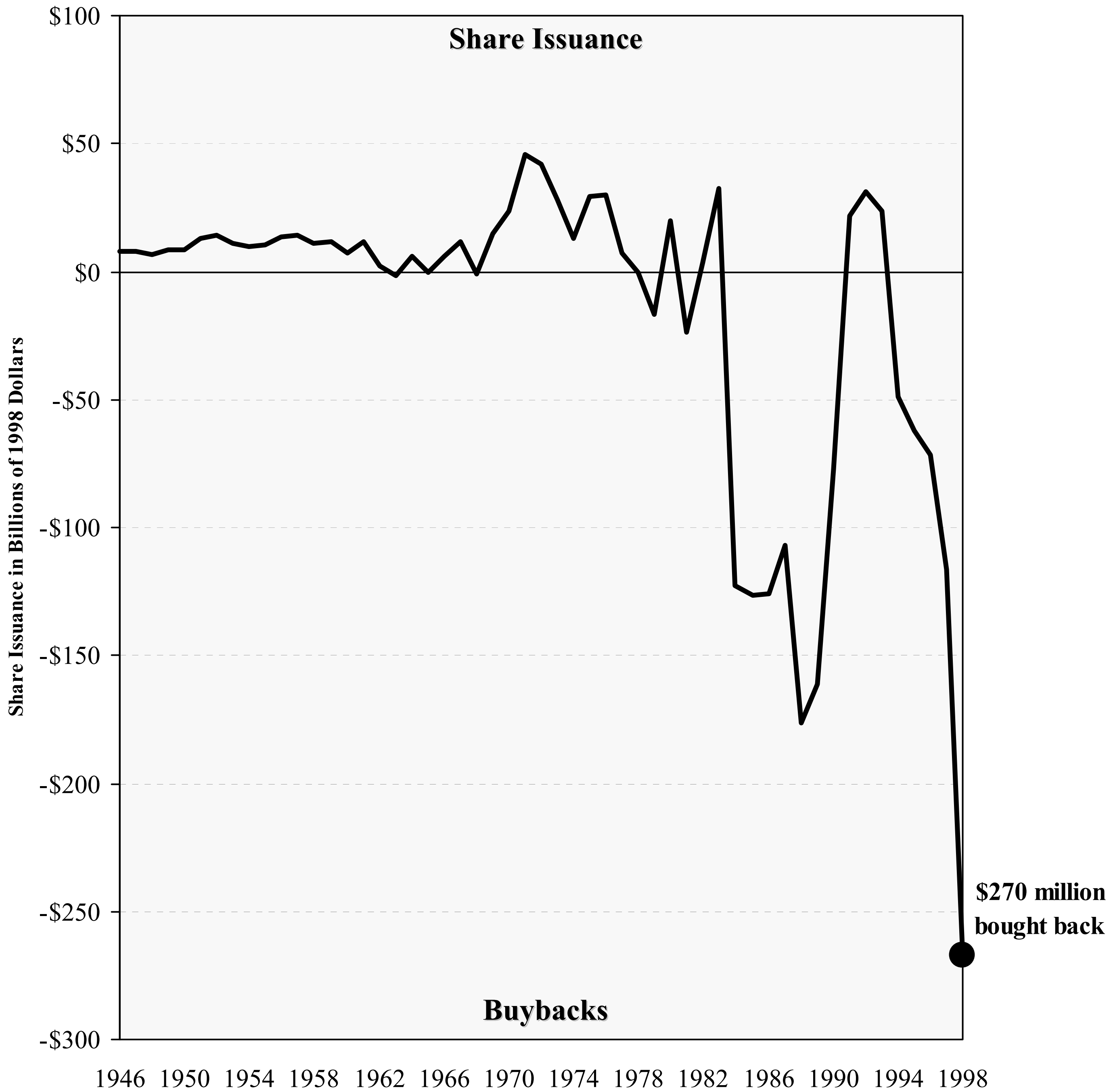
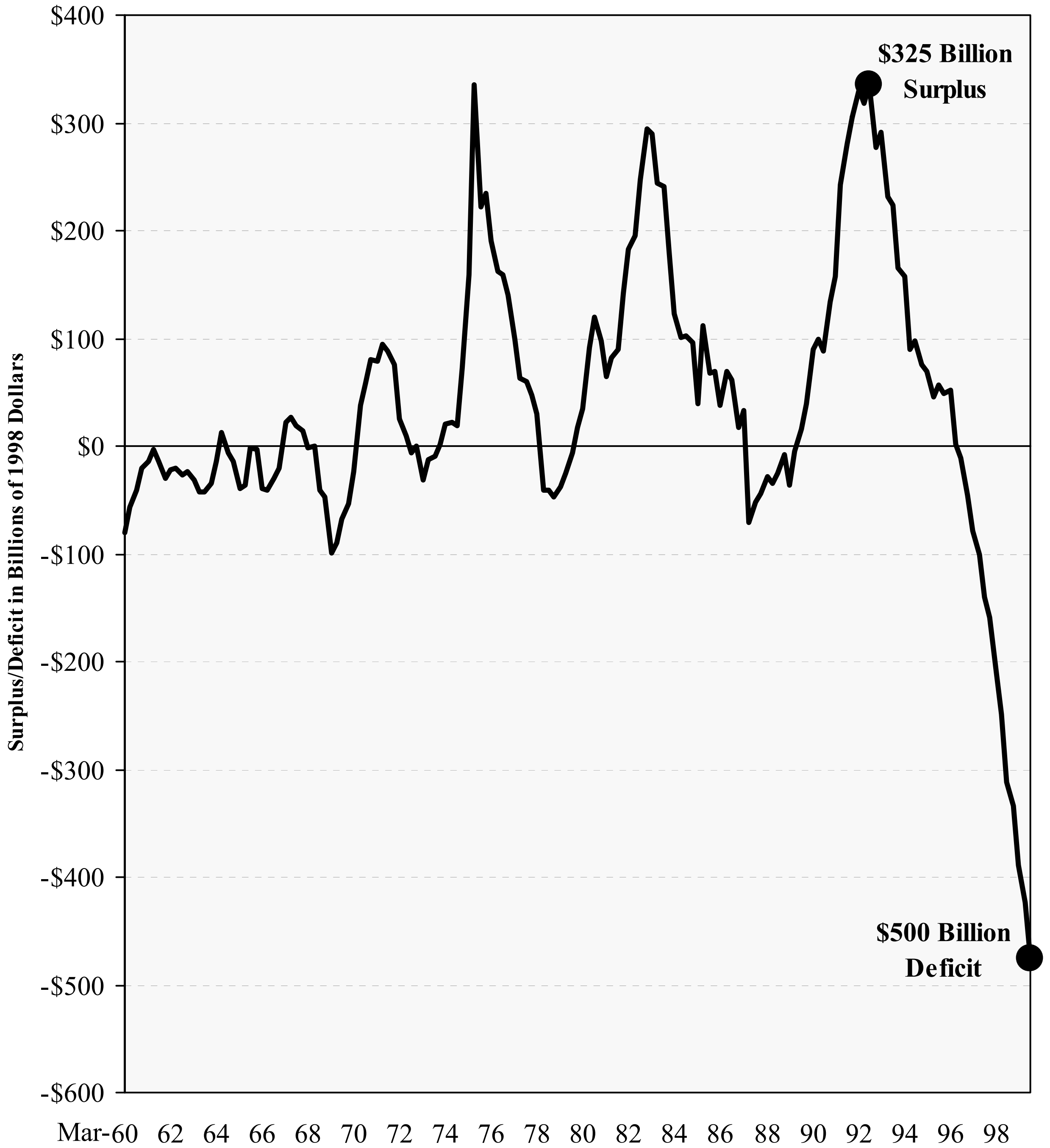


Exhibit 5

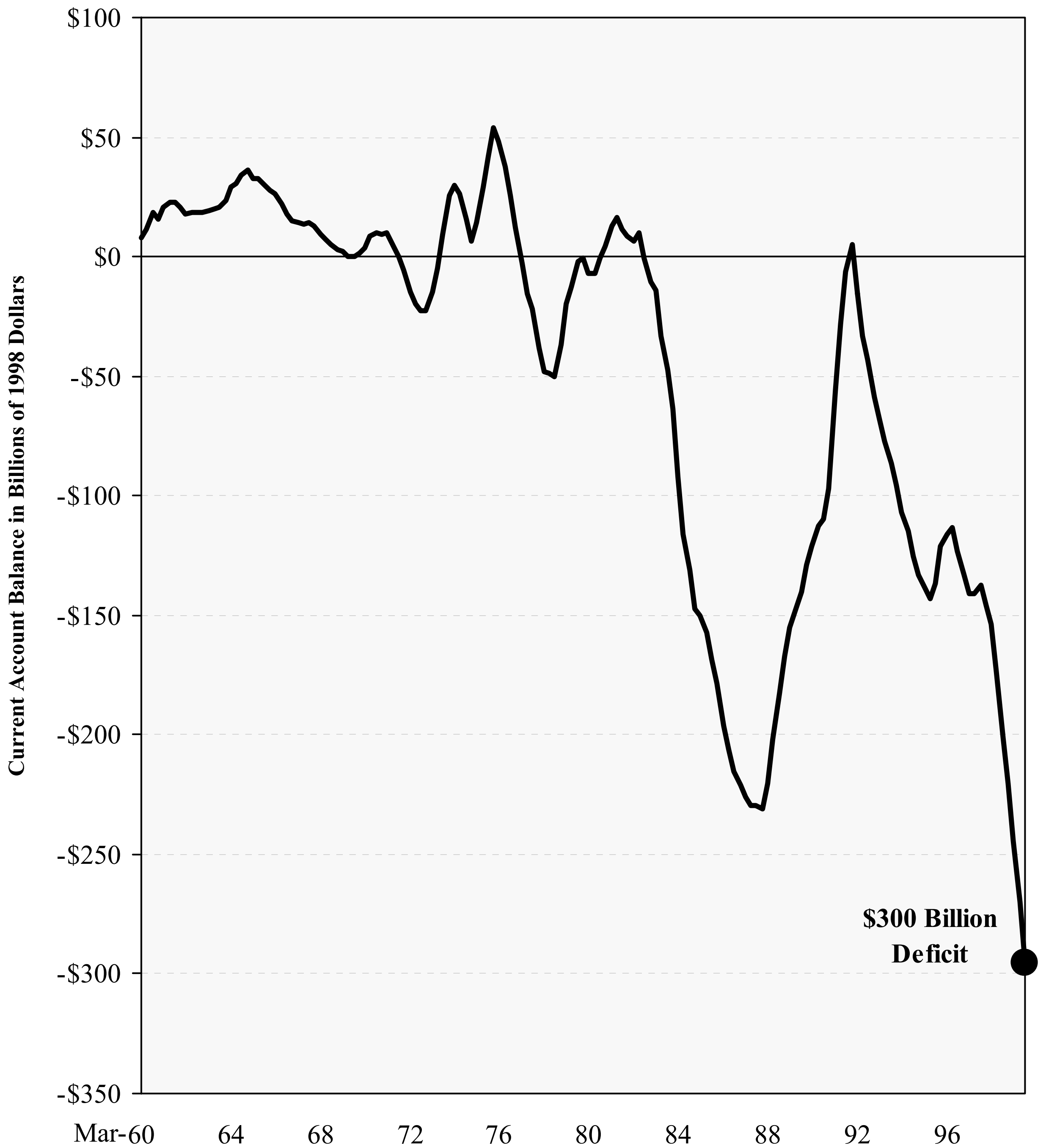
Corporate Sector Cash Flow Surplus/Deficit



Data as of September 1999.

Exhibit 6

Current Account Balance



Data as of September 1999.

The New Era Theory

During the postwar period, and particularly during the latter stage of the bull market culminating in 1929, the public acquired a completely different attitude towards the investment merits of common stocks. Two of the three elements [*assets and yield*] above stated lost nearly all of their significance and the third, the earnings record, took on an entirely novel complexion. The new theory or principle may be summed up in the sentence: "The value of a common stock depends entirely upon what it will earn in the future."

[GMO: this all sounds very reasonable and early 2000 state-of-the-art so far.]

From this dictum the following corollaries were drawn:

1. That the dividend rate should have slight bearing upon the value.

2. That since no relationship apparently existed between assets and earning power, the asset value was entirely devoid of importance.

3. That past earnings were significant only to the extent that they indicated what changes in the earnings were likely to take place in the future.

Past earnings and dividends could no longer be considered, in themselves, an index of future earnings and dividends. It may be said that by 1929 book value had practically disappeared as an element in determining the attractiveness of a security issue.

Attention Shifted to the Trend of Earnings. Thus the prewar (1914-18) approach to investment, based upon past records and tangible facts, became outworn and was discarded. Could anything be put in its place? A new conception was given central importance - that of *trend of earnings*. The past was important only insofar as it showed the direction in which the future could be expected to move. A continuous increase in profits proved that the company was on the upgrade and promised still better results in the future than had been accomplished to date. Conversely, if the earnings had declined, or even remained stationary during a prosperous period, the future must be thought unpromising and the issue was certainly to be avoided.

The Common-Stocks-as-Long-Term-Investments Doctrine. Along with this idea as to what constituted the basis for common stock selection, there emerged a companion theory that common stocks represented the most profitable and therefore the most desirable media for long-term investment. This gospel was based upon a certain amount of research, showing that diversified lists of common stocks had regularly increased in value over stated intervals of time for many years past. The figures indicated that such diversified common stock holdings yielded both a higher income return and a greater principal profit than purchases of standard bonds.

The combination of these two ideas supplied the "investment theory" upon which the 1927-1929 stock market proceeded. Amplifying the principle stated on page 307, the theory ran as follows:

1. "The value of a common stock depends on what it can earn in the future."

2. "Good common stocks will prove sound and profitable investments."

3. "Good common stocks are those which have shown a rising trend of earnings."

[*GMO: #3 is the spirit of the markets of 1929 and today.*]

These statements sound innocent and plausible. Yet they concealed two theoretical weaknesses which could and did result in untold mischief. The first of these defects was that they abolished the fundamental distinctions between investment and speculation. The second was that they ignored the *price* of a stock in determining whether it was a desirable purchase.

Stocks Regarded as Attractive Irrespective of Their Prices. The notion that the desirability of a common stock was entirely independent of its price seems incredibly absurd. Yet the new era theory led directly to this thesis. Instead of judging the market price by established standards of value, the new era based its standards of value upon the market price. Hence all upper limits disappeared, not only upon the price at which a stock *could* sell, but even upon the price at which it would *deserve* to sell.

An alluring corollary of this principle was that making money in the stock market was now the easiest thing in the world. It was only necessary to buy "good" stocks, regardless of price, and then to let nature take her upward course. The results of such a doctrine could not fail to be tragic. Countless people asked themselves, "Why work for a living when a fortune can be made in Wall Street without working?" The ensuing migration from business into the financial district resembled the famous gold rush to the Klondike, with the not unimportant difference that there really was gold in the Klondike.

The earliest American investment trusts [*mutual funds*] laid considerable emphasis upon certain time-tried principles of successful investment.

1. To buy in times of depression and low prices, and to sell out in times of prosperity and high prices.

2. To diversify holdings in many fields and probably in many countries.

3. To discover and acquire undervalued individual securities as the result of comprehensive and expert statistical investigations.

The rapidity and completeness with which these traditional principles disappeared from investment trust technique is one of the many marvels of the period. The idea of worldwide geographical distribution had never exerted a powerful appeal upon the provincially minded Americans and with things going so much better here than abroad this principle was dropped by common consent.

Analysis Abandoned by Investment Trusts. But most paradoxical was the early abandonment of research and analysis in guiding investment trust policies. Investment had now become so

beautifully simple that research was unnecessary and statistical data a mere encumbrance. The investment process consisted merely of finding prominent companies with a rising trend of earnings, and then buying their shares regardless of price. Hence the sound policy was to buy only what everyone else was buying - a select list of highly popular and exceedingly expensive issues, appropriately known as the "blue chips." The original idea of searching for the undervalued and neglected issues dropped completely out of sight.

The man in the street, having been urged to entrust his funds to the superior skill of investment experts - for substantial compensation - was soon reassuringly told that the trusts would be careful to buy nothing except what the man in the street was buying himself.

The Justification Offered. Irrationality could go no further; yet it is important to note that mass speculation can flourish only in an atmosphere of illogic and unreality.

A Sound Premise Used to Support an Unsound Conclusion. There was, however, a radical fallacy involved in the new era application of this historical fact. This should be apparent from even a superficial examination of the data contained in the small and rather sketchy volume from which the new era theory may be said to have sprung. The book is entitled Common Stocks as Long-Term Investments, by Edgar Lawrence Smith, published in 1924. Common stocks were shown to have a tendency to increase in value with the years.

The attractiveness of common stocks for the long pull thus lay essentially in the fact that they earned more than the bond-interest rate upon their cost. This would be true, typically, of a stock earning $10 and selling at $100. But as soon as the price was advanced to a much higher price in relation to earnings, this advantage disappeared, and with it disappeared the *entire theoretical basis for investment purchases of common stocks*. When investors paid $200 per share for a stock earning $10, they were buying an earning power no greater than the bond-interest rate, without the extra protection afforded by a prior claim. Hence in using the past performances of common stocks as the reason for paying prices 20 to 40 times their earnings, the new era exponents were starting with a sound premise and twisting it into a woefully unsound conclusion.

The accepted assumption that because earnings have moved in a certain direction for some years past they will continue to move in that direction, is fundamentally no different from the discarded assumption that because earnings averaged a certain amount in the past they will continue to average about that amount in the future. It may well be that the earnings trend offers a more dependable clue to the future than does the earnings average. But at best such an indication of future results is far from certain, and, more important still, there is no method of establishing a logical relationship between trend and price.[1] This means that the value placed upon a satisfactory trend must be wholly arbitrary, and hence speculative, and hence inevitably subject to exaggeration and later collapse.

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[1]The new era investment theory was conspicuously reticent on the mathematical side. The relationship between price and earnings, or price and trend of earnings, was anything that the market pleased to make it. If an attempt were to be made to give a mathematical expression to the underlying idea of valuation, it might be said that it was based on the derivative of the earnings, stated in terms of time.

Danger in Projecting Trends into the Future. There are several reasons why we cannot be sure that a trend of profits shown in the past will continue in the future. In the broad economic sense, there is the law of diminishing returns and of increasing competition, which must finally flatten out any sharply upward curve of growth [*in profits*]. There is also the flow and ebb of the business cycle, from which the particular danger arises that the earnings curve will look most impressive on the very eve of a serious setback.

One of the paradoxes of financial history is that at the very period when the increasing instability of individual companies had made the purchase of common stocks far more precarious than before, the gospel of common stocks as safe and satisfactory investments was preached to and avidly accepted by the American public.

The preceding is an abbreviated excerpt from Security Analysis, Benjamin Graham and David L. Dodd, 1940, McGraw-Hill, Chapter 27 - Theory of Common-Stock Investment, pp. 351-361.

Text appearing in [brackets] has been added by GMO.

Grantham, Mayo, Van Otterloo & Co. LLC
First Quarter 2000 Quantitative Review
Jeremy Grantham

Irrational Exuberance in the U.S. Equity Market

The Rise and Fall (and Rise and Fall and Rise and Fall . . .) of Puma Technology

Much to the surprise of at least a few, the world didn't come to an end with the beginning of the new millennium. In fact, the world looked very much like the same place it was in late 1999. In the first quarter, the U.S. equity market continued down the path it had been going. Technology stocks completely dominated all other sectors of the market, with euphoria spreading to smaller, more speculative issues and reaching levels probably never seen before. An old friend of mine, for example, had been fortunate 5 years ago in acquiring 140,000 shares of Puma Technology at 25¢ a share in a venture start-up. As it came public he gave the stock in trust to his seven children – a generous gift that was worth $200,000 in July, an improbable $6.2 million in early March this year at $41 per share (great generosity indeed!), and an even more improbable $102 per share in mid March. Today, 4 weeks later, it trades down 80% at $20¼ per share. In case one is tempted to believe that this reflects considered re-evaluation of great fundamental changes, consider the facts of terrible Tuesday, March 4th. In the last 3 hours the stock rallied with the rest of NASDAQ, in this case by almost 70%, to close down less than 1% for the day, having fallen over 40% in the morning on no news! At its peak worth $14 billion on $24 million in sales, the stock represents the epitome of the greatest speculative market in U.S. history. It is hard for serious people to believe that price can be so independent of underlying reality, but it was not hard for John Maynard Keynes. The most influential economist of the 20th century was a sophisticated and experienced investor, and he understood the nature of bubbles and psychology in investing. He wrote in his The General Theory of Employment, Interest and Money in 1936,

> "A valuation, which is established as the outcome of the mass psychology of a large number of ignorant individuals is liable to change violently as the result of a sudden fluctuation of opinion due to factors which really do not make much difference . . . since there will be no strong roots of conviction to hold it steady."

That is a perfect description of the NASDAQ and Puma in the last few months, and one of many proofs to me that Keynes was more than 65 years ahead of the academic world in understanding equities. Only the leading few now begin to approach him after the efficient market nonsense of the 1970s and 1980s still taught at MIT.

More than 60 years ago, Keynes used the (somewhat insulting) analogy of children's games, including Old Maid and Musical Chairs to describe investor behavior in the stock market. In Old Maid, the way to win is to pass along the Old Maid (or shares of Puma Technology) to the next player. You will hold it for a while even though you know it is inherently unattractive in the hopes that you can pass it off to someone else. Similarly, in Musical Chairs, you keep playing until the music stops and hope that you can scramble for a chair before someone else does.

Keynes is as critical of professional investors as he is of amateurs. Another of his analogies likens the behavior of professional investors to participants in a beauty contest in which the goal is not to choose the 6 out of 100 faces that you find the most attractive, but to find the 6 out of 100 that most closely match to what the general public finds most attractive. “We devote our intelligence to anticipating what average opinion expects the average opinion to be.”

The example of Puma, and many others like it, is the by-product of a spectacular beauty contest. No fundamental explanation can account for the changing stock price of Puma. The price fluctuations are solely attributable to the infection of casino mentality in the stock market. Keynes was remarkably prescient in his ability to describe the U.S. equity market some 60 years later. Relevant excerpts from his book, The General Theory of Employment, Interest and Money, are attached.

In the first quarter, success went to investors who best understood the beauty contest mentality of the market. With the abandonment of fundamental principles on which valuations reside, the market became a two-tier market the likes of which we have never seen before. On most measures, the valuation spread between growth and value stocks was in March at least as wide as it was in the early 1970s – on some measures, it has reached the highest levels recorded.

The Premature Death of the Value Manager

There were victims to the atmosphere of irrational exuberance. As technology stocks continued their dizzying ascent, the pressure on value managers intensified. The first quarter was brutal for investors who paid attention to things like company fundamentals, price earnings ratios, book value, dividend yields, indeed, any of the basic yardsticks that have been used historically to provide a measure of value. All an investor needed to invest profitably in the first quarter was optimism.

The first part of 2000 has been remarkable in that some of the country’s – no, the world’s – most prominent value investors threw in the towel. This illustrious group included George Vanderheiden (Fidelity), Gary Brinson (Brinson/UBS), Tony Dye (Philips and Drew) and, most recently, Julian Robertson (Tiger) who, having been significantly underweight in technology stocks finally closed his remaining hedge funds. Value managers are fast becoming a rare species.

We are fortunate in that our independence as an investment firm allows us to speak candidly about our views of the market, and to invest in strategies that we believe will best lead to profitable long-term investing for our clients. While in the short term, we may lose the beauty contest, our ability to resist the pressure to conform will ultimately accrue to the benefit of our clients.

Notable Bulls and Bears

For obvious reasons, I have spent considerable time in the last 4 years reviewing the works of the best students of the stock market. Benjamin Graham understood value investing better than any other, as excerpts from Security Analysis that we last included in our year-end letter indicated. John Maynard Keynes, on the other hand, understood momentum or beauty contest investing perfectly. Interestingly both of these men got to the heart of value and momentum, the essence of the market, in 1936.

For a more recent appraisal of current market conditions, a new book by Yale professor Robert J. Shiller entitled Irrational Exuberance provides an exceptional dissertation on the psychological impact in the U.S. equity market. Shiller provides a compelling case to reach the conclusion that the market is both extremely inefficient and significantly overvalued.

Also firmly ensconced in the bear camp is Franco Modigliani, the Nobel Prize winner. In 1982, Modigliani had the foresight to recognize that the market trading at eight times earnings was ridiculously cheap because the market was inefficient and exaggerated the importance of high inflation on stocks, which were real assets and should not in his opinion have been severely reduced in value. Visiting a Boston quantitative group last month, Modigliani made it clear that low inflation, for the same reason, should not have inflated the market's p/e to 32x, and that at this price it constitutes a 'major bubble'. Modigliani, based purely on trained economic thought, has managed to make two brave contrarian calls.

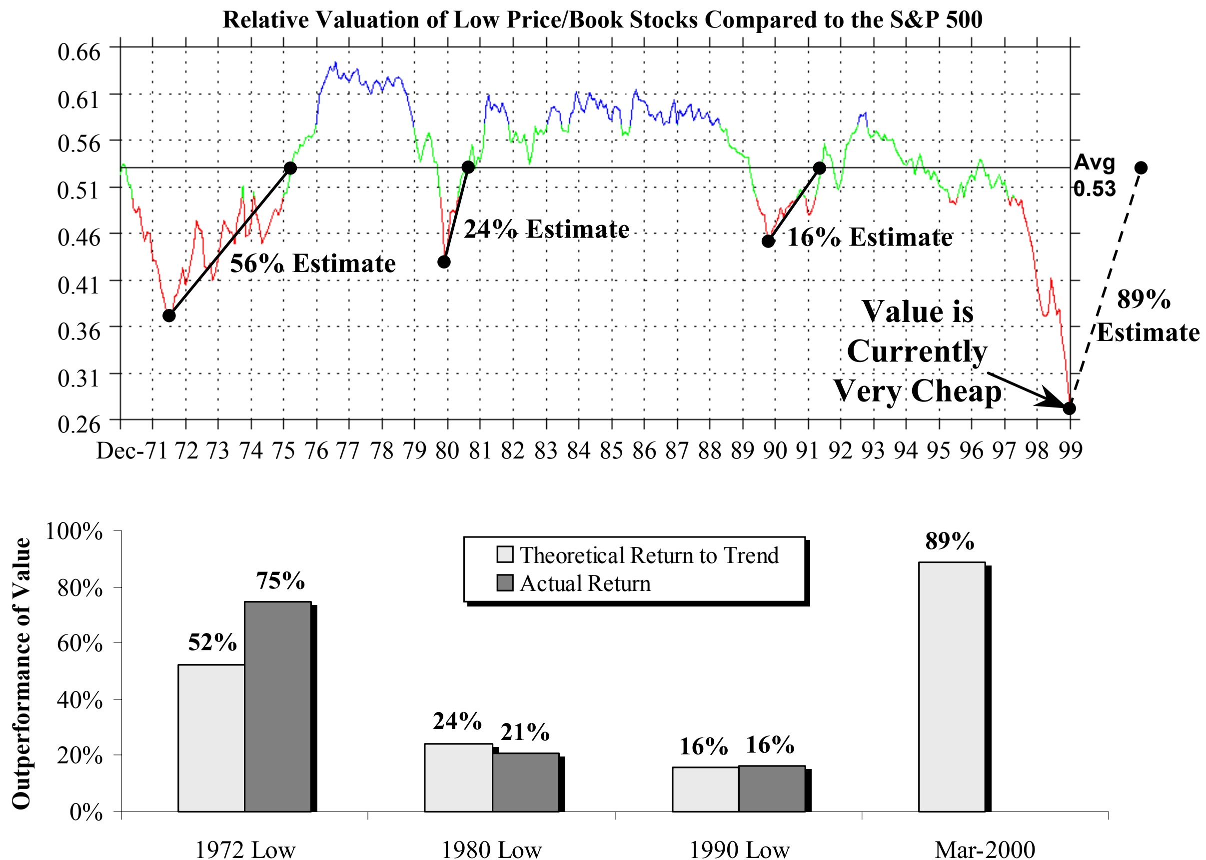
Last, Andrew Smithers has recently published a book Valuing Wall Street: Protecting Wealth in Turbulent Markets, which is a merciless and complete grinding of the bull market case. His view, based on Tobin's Q, is that equity prices will fall a lot. He also wrote an amusing and relevant short piece in the *London Evening Standard*, which is attached.

Heavyweight academic bulls are more difficult to find. Among them are hosts of "stockbroker economists", as Smithers calls them, whose views have to be suspect. Robert Merton, another Nobel Prize winner, is perhaps the heaviest artillery for the bulls. He is a leading proponent of efficient markets and the argument that however high or low the market, it is the best, wonderful working of the smartest, best informed minds – a view at long last steadily losing credibility. And even his credibility must be discounted by his involvement in Long Term Capital. It is a strange irony that the belief that markets are efficient led to the ultimate collapse of his firm.

Outlook

The ground certainly feels like it is beginning to shake. The NASDAQ as of this writing is off by a third. Industrial stocks, especially value stocks, are also off, but by much less. It is impossible, in our view, to predict whether we are at the beginning of a long-term recovery to value, but at least we see how air has rapidly deflated from the Internet bubble. If history is a guide, then we would expect to see a long-term relative return to value of more than 80%! The following chart shows theoretical and actual returns to value stocks in the U.S. when they were cheap by historic measures. The theoretical return incorporates both the expected return from a reversion to average price-to-book and a return of 3% per year as an imbedded component to investing in value stocks.

U.S. Value Opportunities



In each of the cases shown on the chart, value stocks returned to fair value, providing an actual return close to or significantly better than the theoretical return. Most importantly, value stocks in each of these instances actually overshot fair value, providing an even greater relative return.

While we have had "false starts" to a value rally before, there is a difference this time. Alan Greenspan, who previously championed the expansion of the stock market bubble by keeping money loose and by taking no actions adverse to the market, like increasing margin requirements, has been much more proactive recently in trying to deflate the bubble. Five interest rate increases, with more to come, may finally put the brakes on the run-away market.

We believe as fervently as ever that this recent market turmoil has not created a long-term buying opportunity for equity investors. The timing remains uncertain, but there is no doubt about the ultimate outcome. The savings rate, currently less than 1%, must eventually increase. Higher interest rates will eventually lead to a lower trade deficit and higher savings rate. A less benign economic environment will surely envelop us, although we hope and expect it to be merely subaverage rather than disastrous. It is not too late to rebalance portfolios in favor of value stocks, small stocks, REITs, bonds, emerging equities, and, where portfolio liquidity constraints allow, timber. Market neutral long-short strategies are also a compelling alternative. Our long-term outlook remains intact.

April 24, 2000

Grantham, Mayo, Van Otterloo & Co. LLC
Third Quarter 2000 Quantitative Review
Jeremy Grantham

Cracks in the Façade?

We have complained of the wind blowing in our faces for most quarters over the past four years. As you well know, our value style of investing has endured tough times. But in the third quarter of 2000, the wind was finally at our backs. Value beat growth, small beat large, bonds beat stocks, technology and telecoms fell around the world and global markets slowly declined. A very slow decline appears to be the optimal environment for our investment approaches to add value. Explosive sentiment-driven markets leave us in the dust. Since we experienced an unprecedented number of rapid market increases over the last four years, several of our investment strategies underperformed for many quarters. Historically, typical markets, characterized by intermittent gains and losses, play to GMO's strengths. The third quarter and early October confirm this point. Since its low in February relative to EAFE, International Core has appreciated 3.4% compared to a decline of –8.1% for EAFE. U.S. Core has appreciated 5.0% since the beginning of the year, compared to a decline of –1.4% for the S&P 500. Last, our Global Balanced Allocation Fund is up 5.0% since the beginning of the year, compared to a –0.4% return for its benchmark. Our investment strategies have continued to add value relative to their benchmarks thus far in the October market declines.

World Market Returns

By recent historic standards, the third quarter was disappointing for investors worldwide. The U.S. market rallied strongly in August, but then gave back most of those gains in September to finish the quarter with a return of –1.0%. Outside the U.S., returns for dollar denominated investors were poor as the moribund Euro continued its descent. EAFE declined 8.1%, most of which was attributable to foreign currency weakness. Emerging equities fared even worse, as the IFC Investable declined 13.0%. Fixed income returns were generally better, as investors seemed to perceive that interest rate increases have come to an end. Emerging country debt rose 5.0%.

Within the U.S., technology stocks dropped sharply in September. In mid September, Intel reported that third quarter results would be disappointing because of weak European sales. Investors reacted by lopping 20% off the stock price. At the end of the quarter, Apple confessed that sales were disappointing in September, although not in July or August. This announcement caused a 52% decline in the price of the stock! As of this writing, disappointing sales/earnings by technology stocks have continued in the fourth quarter. Dell announced that fourth quarter earnings would be light due (again) to weakening sales in Europe and lower corporate spending, and Motorola also projected weaker earnings due to lower European sales and slowing growth of mobile phone sales.

In contrast to technology stocks, financial stocks fared well as investors apparently became convinced that interest rate increases were over, at least for the time being. Not surprisingly, given the rise in the price of oil, oil stocks rose. Investors must have viewed electric utilities as a safe haven from the roller coaster ride of technology, and the sector rose 35% in the quarter. Real Estate Investment Trusts (REITs) also benefited from the same investor sentiment, and added to their year to date gains by rising an additional 8%. Value stocks outperformed growth stocks across all market cap sectors, by 13% within large cap stocks and by 11% across small cap stocks.

Outside the U.S., the 8% decline of the Euro relative to the dollar ensured that returns to U.S. investors from their European investments were poor. On the positive side of the scorecard, the strong dollar has meant that foreigners are more likely to keep their money in the U.S. Conversely, companies with a large percentage of non-U.S. sales including pharmaceuticals, consumer non-durables and technology especially are beginning to report the negative impact of a strong dollar on corporate profits.

Performance of GMO Products

In contrast to the rest of the world in which investor queasiness prevailed during the quarter, within the four walls of 40 Rowes Wharf a highly cautious state of optimism prevailed. Performance of our products was very good in relative terms, and in some cases even in absolute terms. We note as well that our U.S. Active and International Active divisions, which combine fundamental research with quantitative disciplines, also performed extremely well during the quarter. The results that our products generated demonstrated that we don't need a major market correction to perform well. We primarily need the market **not** to go straight up. Combining value and momentum, which works well under most circumstances, simply cannot keep pace with a market that goes straight up.

The U.S. quantitative equity products each outperformed their respective benchmarks. Our strategy of combining value and momentum disciplines in varying proportions in order to find the "sweet spot" (optimal mix) in each asset class is working well. U.S. Core added 5.7% relative to the S&P 500, the Intrinsic Value Fund outperformed its benchmark by 2.0% and the Growth Fund added 5.0% over the Russell 1000 Growth benchmark. The small cap funds also outperformed their respective benchmarks.

The international quantitative products also did well. International Core, buffeted in previous quarters by its large underweight in overpriced technology, media and telecom (TMT) stocks, performed well, posting a return of –4.7%, compared to –8.1% for EAFE. The Currency Hedged International Core Fund fared better, appreciating 0.9%. Our view is that value and small stocks outside the U.S. are still significantly undervalued so that the International Core Fund has much further to go in terms of relative returns.

Asset allocation also added value in the quarter. All investment decisions paid off with the notable exception of emerging market equities. Small cap value stocks performed well. The rally in REITs continued, and the year to date total return of the asset class is now +22.2%. Bets in favor of fixed income assets also added value, particularly with respect to emerging country

debt. The Emerging Country Debt Fund rose 8.1% in the quarter. The one failure in asset allocation was our preference for emerging market equities. While implementation in the Fund was good (2% ahead of the benchmark), returns were poor in absolute terms. Emerging equities look extraordinarily cheap to us at ten times forward price earnings ratios and with double the GDP growth of the developed world, even after assuming some reduction of growth caused by higher oil prices.

GMO's independence has afforded us the opportunity to take unpopular positions (i.e., our skepticism toward the continuation of the bull market) and has also allowed us to stick to our guns. A host of other value managers have thrown in the towel by merging or remained silent about the clear overvaluation of the U.S. equity market. We have, across the board, resisted the temptation to change our views or cut back our bets. This has been extraordinarily painful for our clients and us, but now is beginning to pay off. We believe we are at the early stages of a long-term market correction in favor of fundamental value.

We haven't broken out the champagne or declared victory – not by a long shot. We still have a long way to go before some of our positions completely recover, which will happen as value reverts to normal. In the meantime, our research to find new ways to add value and discover better timing mechanisms continues.

Outlook

It will come as no surprise that we continue to believe the U.S. market is still substantially overvalued. We have discussed before the possibility of the virtuous cycle becoming a vicious cycle. As expectations get higher and higher, eventually there are fewer and fewer companies that can successfully jump over the hurdle of investor expectations. Company confessions of mere peccadilloes (e.g., Dell's announcement that the fourth quarter would be 1% to 2% light on earnings) led to an immediate 10% drop in the share price. Announcements that in more normal market conditions might be greeted with a 10% to 15% shaving of share price instead now lead to wholesale dumping of the stocks. The exceptionally high level of price earnings multiples at which stocks are trading magnifies the impact of disappointing results.

Investors are clearly becoming more discriminating. In the past, it was immensely profitable to ignore accounting shenanigans. Companies grossly overstated earnings through share repurchases, paying employees with stock options and using accounting practices that inflate earnings for acquirers (e.g., Cisco). Accounting gimmickry, a hallmark of the bull market, is one of its greatest vulnerabilities. Investors are beginning to take notice of quality of earnings and sales growth instead of myopically focusing on earnings per share.

As the bull market starts to unwind, the stage is being set for a reversal of the wealth effect. Until now, investors have felt no compunction to save because of substantial stock market gains. As is well known by now, the savings rate has fallen to a modestly negative number. However, the negative savings rate is likely to turn positive. At some point investors will look at their brokerage statements and realize that they have not made any absolute money this year. This may come as something of a shock to investors who have been lulled into complacency by 20%+ annual returns. (It is unlikely that after a 20-year bull market people have correctly understood

the risks of equity investing. After all, many investment professionals today have never seen a bear market before.)

The U.S. economy, which has benefited so handsomely from the wealth effect, could begin to experience a reverse wealth effect. Consumers would not have to tighten their belts by very much for the wealth effect to dissipate. Lower demand from consumers may cause corporations to cut back on capital spending, which has in recent years been extraordinarily high. Lower profits and weakening stock prices may also cause corporations to rethink massive share repurchase plans, another strong leg of support for the bull market. Last, an eventual weakening of the dollar has the potential to further unravel the bull market. When the currently weak Euro begins to strengthen, the earnings of U.S. multi-nationals will be bolstered. But at the same time, foreigners will very likely pull money out of their U.S. investments. As of now, their dollar denominated investments still look healthy because of the currency impact, but this preference will probably not continue if the dollar weakens.

The rise in oil prices is also worrisome. While a repeat of the oil crises in the 1970s is unlikely since the U.S. economy is less dependent on oil than it was thirty years ago, higher oil prices could cause consumers at the margin to spend less than they otherwise would have.

Finally, if history is any guide, the first year of a new administration is often a poor one for the U.S. market. Generally, a new administration's first year is a time for house cleaning. Because the next election is four years away, the public is likely to forget by that time any pain that they absorbed early in the term.

Of course it is impossible to predict with any certainty exactly when and how the bull market will unravel. Our sense is that the first cracks have appeared. Often, though, markets do not go either straight up or straight down, and it may take several years of a continued up/down market producing little net gain for investors to come to the conclusion that the bull market is over. We hope that the decline will be gradual, partly because GMO's value added normally occurs in a relatively flat market, compared to steep declines where investors panic in a rush for safety and in general the long-term relationship between fundamentals and pricing becomes unpredictable. It is our belief that there is nothing in history to suggest that the market cannot go sideways; it would certainly be better for all of us than a sharp decline. We have our fingers crossed.

Grantham, Mayo, Van Otterloo & Co. LLC
Fourth Quarter 2000 Quantitative Review
Jeremy Grantham & Ben Inker

2001: An Odyssey in Uncharted Waters

We are first and foremost professional investors. We consider ourselves to be only amateur economists, and for that reason, we generally keep quiet about economics. Once in a very great while, however, we feel compelled to address the economy at length. On these occasions, it may be an advantage to be an amateur. Professional economists at turning points seem to suffer from exceptional inertia. This is probably due to career risk. Like stock analysts, they produce forecasts that cluster close together. This makes it hard for them to change. Their current consensus estimates for GDP for 2001 are reported to have drifted down to 3%. GDP forecasts are notoriously difficult. The forecast should therefore best be reflected by a broad range. Do professional economists really believe that +5% is just as likely as +1%? It seems hard to believe.

The problems today are well known. Energy price increases act as a tax on consumers. Personal and corporate debt levels are high. The capital spending cycle, heavily concentrated in technology, has begun to decline from a record high. Equipment spending reached 12% of GDP for the first time. Until recently, interest rates globally had risen steadily for 18 months. It takes about a year for the impact of higher rates to be felt. The dollar is overpriced and owes some of its strength to the attractiveness of U.S. equity markets. Most impressively, private sector savings have fallen from a normal, healthy 6% to an extraordinary –8%. This has been due to a combination of rapid falls in savings by individuals and corporations. The personal savings rate reached an all-time low this fall of –0.8% of disposable income, while corporate net cash flow hit an all-time low of –7% of GDP.

The reasons for the twin dissavings are inextricably tied up in the stock market bubble that inflated in the last half of the 1990s. The bubble was made possible by the decisions of companies to increase investment and stock buy-backs simultaneously, which had the effect of boosting corporate profits and restricting the supply of stock at the same time. Investors, seeing capital gains beyond their expectations, responded by switching their savings from bank accounts to the stock market, driving up demand for stocks and pushing the market up further.

The outcome for individuals was increasing wealth in their stock portfolios and a steady decrease in their savings rate. Falling savings equate to increasing consumption, and the continually better-than-expected corporate sales associated with consumption led to higher profit margins, higher stock prices and the appearance of an economy that could grow without bound. In truth, it was an economy that was literally mortgaging its future.

This leaves us, today, in a situation in which there are several dangerous potentially self-reinforcing mechanisms that could come into play. Together they make forecasting particularly difficult. This means that a single point estimate is a potential snare and delusion. Badly overpriced markets are best viewed as accidents waiting to happen. You don't know when someone will drop a lit cigarette in the extremely dry grass, but sooner or later it will happen. When stock prices fall, individuals will feel less wealthy. They have saved cumulatively about 20% less of 1 year's income than they would have done in less euphoric times. Thus, even at a normal 8% savings rate they may still justifiably feel behind schedule. As individuals save more and consumption falls, corporations will be badly surprised. Profits will fall, which will put pressure on stock prices and make investors feel less wealthy. There has never been anything like this wealth effect before. The breadth of stock ownership is now 50% up from under 20% 30 years ago. The capitalization of the market hit 1.9x GDP, up from the previous peak of 1.2x and a normal 1x. Economists therefore have little insight into what the wealth effect can be. When a development is brand new, we are all amateurs. We believe that the wealth effect occurs on a log scale. If you expect and count on 6% real growth in your savings and you get it, you spend nothing. You have merely gotten what you needed. If you get 9% for a few years, you spend a very small fraction of the extra 3%. If however you get 20% a year for 5 years, you might reasonably well be tempted to spend a large fraction of the last few gloriously unexpected points. It is a pure windfall gain. There has been no precedent for the length and strength of this bull market and therefore no historical experience at estimating its wealth effect. Any estimate based on a tamer history would be likely to be badly underestimated. A wealth effect like the one we suggest might cause a completely new environment in which negative savings such as we have had would be the norm for the duration. Much of the apparent permanent increase in growth might be owed to this effect. The bad news is that the effect is not only temporary; it is reversible.

Compounding this is the potential for similar feedback on the corporate side. Much of the capital spending which has also been a boon to profits has been debt financed. As this debt becomes harder to come by, it forces companies to cut back on their investment plans which, in turn, hurts profits for other companies that they purchased from. This leads to an overall weakening of the corporate sector, which decreases their creditworthiness and reduces their ability to gain financing still further. The only way to maintain spending would be to raise additional money in the equity markets, which would have a depressive effect on stock prices. Additionally, if the spending drops, profits will fall, presumably also having a depressive effect on stock prices.

The other potential negative feedback loop is the dollar. The abnormal growth in the U.S. economy has required great investments. Much of the savings for this investment boom would normally come from individuals. In this cycle, uniquely, despite substantial above average income gains, their savings fell. This created a shortfall. Corporations also spent more than their unexpectedly high profits for both capital spending and share repurchases. The net shortfall was met by importing foreign savings. The current account deficit is currently running at more than a $400 billion annual rate. Foreign investors came because the U.S. seemed a good place to put money for three reasons.

First, the stock market was the best in the world. Second, profit margins, driven partly by higher personal consumption, were also the best in the world. Last, the dollar was the strongest currency in the world. This flood of money pushed the dollar up, as it must, to create an equal and offsetting $400 billion trade deficit. If margins fall or if the stock market falls, foreigners will be less inclined to invest in the U.S., which will put downward pressure on the dollar. A falling dollar will make investments in the U.S. seem less attractive, causing less capital to be invested in the U.S., putting pressure on the dollar, etc.

The circularity of these different processes must cause concern. They also introduce instability and a black hole for forecasters. The stock market is a key to these vicious cycles.

As we said last year, Greenspan can spread out the pain carefully, Japanese fashion, or he can let the pain occur rapidly. The savings rate can return to a normal 8% (or 10% for a few years to catch up) in 2 years or it can take 10 years. The capital spending boom can come down fast and over-correct or come down more slowly at the cost of creating more overcapacity that will take even longer to absorb.

But savings must go back and capital spending must come down. We would add – based on history – stock values must also come down. This combination <u>may</u> feed on itself. We should beware of normally slowly changing economic forecasts. They are much more likely than normal to be optimistic. Disappointing GDP growth will of course produce even more disappointing earnings, putting pressure on the market and hence on the dollar, etc., etc. It is an unpleasant possibility. We need rate decreases and some injections of optimism, for example from a tax decrease. Such help may prevent or lower the odds of a downward spiral.

At last, asset classes behaved more rationally in 2000 than they have in a few years. Across the board, cheaper asset classes, as designated by our 10-year forecast, outperformed expensive asset classes with the exception of emerging market equities. Our 10-year forecast is made on the assumption of a steady regression to trend line value at the end of 10 years for all asset classes. In 2000 the average regression rate was happily, for our relative performance, considerably faster. Our REIT Fund, the standout, was up 29% against a decline of 9% for the S&P 500. Fixed income components were in the range of +12% to +22% and GMO Small Cap U.S. Value Fund was +19%. Every fund implementation won except one, and every asset class won except one. The one asset class failure, emerging equity, declined almost 32% (GMO Fund -28%) despite rising earnings. The faintly comforting result is that the p/e on this year's estimate declined to 9.2 times earnings (6.4 times on GMO's portfolio).

On the value front, 2000 was far and away the most volatile year, with many days registering over 2% deviations between Russell 1000 Value & Growth. Almost all of this volatility was, and continues to be, driven by the technology component of the growth index. A record 5.2% deviation day in December was beaten in the first week of January 2001 by a 6.2% deviation on the third trading day! Value however put together a

powerful global rally in 2000 despite its ups and downs. Small cap value stocks in the U.S. recorded their strongest ever nine months relative to small growth stocks. From March until the end of the year, small value stocks beat small growth stocks by 70%! EAFE value stocks swung more than 35% against growth from March until the end of the year, and U.S. large cap value stocks beat growth stocks by nearly 30% for the year! This was a remarkable display in terms of breadth and speed, but still it left about two-thirds of the move to fair value for the future. These large value moves can take up to 7 or 8 years. This move is unlikely to be less than 3 years. However, some considerable interruptions in favor of growth would be normal.

Unfortunately, 2001 is unlikely to be as strong a value year as 2000, although we expect it to be positive. The easy pickings for value lay in merely avoiding technology and Europe telecom. By December 31 the NASDAQ, U.S. technology sector and European telecom sector had all given back 100% of the spectacular and unprecedented gains of the September 1999 to March 2000 period. Indeed all three were back to early 1999 levels and not remarkably out of line with the values of the rest of the market. For further progress for value the broader list of high p/e stocks must decline. For that to happen the market level must come down. After 5 years of spectacular earnings, strong GDP, an exciting technology surge and remarkable bull market brainwashing by the media it would be unreasonable to expect the towel to be thrown in quickly. Most of the damage this year is likely to come from lower earnings, and large value stocks have in general exceptionally high and vulnerable profit margins. They will likely also be hurt, but probably less than growth stocks. 2001 is likely to become more of a war of attrition on the value versus growth front.

On the fund side, we are maintaining our value exposure and making no material changes. On the asset allocation front, we are making only marginal changes. We are slightly reducing our dollar exposure through shifts in our bond funds, rebalancing into emerging equity to maintain our bets and moving 1% into small international stocks out of U.S. bonds, which have had a considerable rally.

We are in very interesting times, in several unique ways. We look forward to seeing how some of these new features of the U.S. economy and equity market play out. We expect to continue to offer relative protection to our clients' money, as we have successfully done in 2000. As always, thank you for your continued support of GMO.

January 2001

Grantham, Mayo, Van Otterloo & Co. LLC
First Quarter 2001 Quantitative Review
Jeremy Grantham

Bulls and Bears Compare Wounds

Our letter last quarter suggested that economists were suffering from the usual inertia at a turning point in the economy and no one wanted to be first to break ranks with the consensus. It was too much career risk. So the consensus in January was for a GNP growth of 3.0% for this year and almost 4% next year. We suggested 1% growth (within a range of –1% to 3%) better reflected the real beliefs hidden behind the inertia, a disconnect which anyone in the stock market business can relate to.

Last week the forecast for GNP offered by the experts in *The Economist's* review had fallen from the earlier 3% to 1.4% and for next year from 4% to 3%. It has dropped at each survey and seems likely to drop further still.

Suffering from even greater inertia are corporate earnings estimates. They have edged down every week this year and now the fourth quarter of last year and the first and second quarters of this year will each show down earnings from the prior quarter. We are definitely in a profit margin squeeze, even if there is disagreement on the broad economy. The often cautious Levy Economics Institute estimates that margins on sales will decline from a record 8% to below 5½% before the end of next year, even lower than the 6% we assume in our 10-year asset class forecasts; the difference is that we assume the decline will happen gracefully over 10 years. The Levy estimate would be consistent with a major market decline.

In complete contrast, most investors and consumers are retaining their faith in elements of the "new era thinking". The Abby Cohens are still very bullish, and portfolio managers surveyed by Ed Hyman of ISI are, surprisingly, still far above their average level of optimism. Individual investors have not materially tried to reduce their equity holdings and most surprisingly, the personal savings rate actually dropped to a new low in the first quarter as consumers did their very best to keep consuming. The negative wealth effect was nowhere to be seen despite the market's loss of wealth being the second worst of the 20th Century in terms of percent of GNP. Yet the hard truth remains: personal savings must eventually recover from –1½% to +8% of GNP to maintain a healthy economy and viable balance sheets, and this move to increase the savings rate by 9½% will be a long sustained damper on economic growth.

The economy will probably recover some reasonable steam in the fourth quarter of 2001 or the first quarter of next year, and the low point may even be this quarter or next. The overhang, though, of excessive technology capacity and the savings shift will dampen and shorten the recovery and growth of profits may be quite a lot worse than the GNP growth. So although the stock market will undoubtedly anticipate economic recovery and have some sharp rallies, the air probably cannot be put back into the increasingly wrinkled balloon of market euphoria. The NASDAQ may rally up to 100% from its low, which would, for a second only perhaps, replace half of the wealth loss from the peak. Regaining up to half the losses of severe declines is compatible with history and compatible

with a bear market rally. The question is more likely to be how long the unraveling of margins and P/E ratios will take before the market low is reached. I believe the economy will have at least one, and probably two, recovery periods before the low point in the market is reached. There is simply too much faith, which will prevent a new, more realistic equilibrium being reached quickly. This is why the great bear markets, which exclusively follow the great bull markets and maximum faith, always seem to take their time. Meanwhile the market in the first quarter has been reacting steadily towards more rational pricing relationships and our forecasts and our performance look uncommonly good.

Last April the work that Ben Inker and I did on the fair value of the NASDAQ was quoted by *The Economist* and *Forbes*. The NASDAQ, we argued, needed to decline by 70% to reach fair value, and was unfortunately unlikely to stop at fair value. By early April this year it had declined by 67½%. The actual magnitude of the decline necessary for NASDAQ to reach fair value had been 75% and we had rounded that to 70% to be friendly. The actual NASDAQ fair value number from our work is 1250, with the interesting result that by the end of March 2001 both the NASDAQ and the technology group seemed slightly less overpriced than the rest of the U.S. market. This comes with the caveat that we are less secure about our earnings calculations for technology companies on two counts: the heavy use of stock options and the economic interdependence of technology companies. Combined, these factors may have caused us to overestimate technology earnings capacity.

GMO funds' performance, including asset allocation, was excellent, as it should have been given the speed of the value recovery or, better said, the speed of the decline in growth stocks. Had the calendar year ended on March 31, the first quarter would have qualified as our third best year since the firm's founding in 1977. The good news is that we did not let this enormous opportunity slip through our fingers. The bad news for the long run was that value was recovering so fast and powerfully that another quarter at that unprecedented rate would mean that the move was nearing completion. Historically value managers outperform more when the value recovery is slower and has setbacks. Both situations allow for some refreshening to rebalance the portfolio, selling value stocks that have done particularly well and buying laggards. By contrast, the value move from March 2000 to March 2001 tended to be monolithic – all non-technology stocks beat the market.

Valuations of large cap U.S. and developed international equities appeared at quarter's end to have moved 75% to 80% back to fair value, small stocks about 65% and small cap value globally 60% to 65%. This last group is not just relatively cheap, but close to absolute fair value in a world that is otherwise mostly very overpriced; our 10-year forecast for global small cap value is 6.7% real per year versus zero for the S&P 500. In monitoring asset allocation opportunities, we recognized the combination of this reasonable pricing of global small cap value, the chance to add 1% to 2% of additional alpha (value added) in small stocks, the opportunity to gain up to an additional 2% a year from a correction in the overpriced U.S. dollar, and the effect of a rally in bonds that has lowered their imputed return. In response, we initiated a substantial move (3% of our Global Balanced Allocation Fund) out of fixed income and into international small cap equities. This takes the equity bet to 10% underweight from a 15% allowable maximum (GMO was actually underweight 14% on Jan. 1). This allocation shift raises the absolute risk and the return of the Fund, but does slightly raise the 'efficient frontier', jargon for increasing the efficiency of the trade-off between

expected absolute return and expected absolute volatility. This move out of fixed income does perhaps initiate a new cycle, the first such move in the 13 years of our asset allocation experience.

On a more philosophical topic, GMO does appear, touch wood, to have weathered a tricky period. We lowered the real absolute return risk of all our clients' equity and balanced portfolios below the risk of the benchmark and delivered at least a modest excess return for 90% of our client assets. That is to say 90% of our funds are at new all-time highs in accumulated outperformance, and we have high hopes for the remaining 10% of funds that were closing fast in the first quarter. This would seem to be a desirable mix, and GMO has now over its history won 67% of nearly 150 product years, by delivering an average alpha of 2.6% per year after fees (see attached exhibit). Unfortunately over the 3 years of the technology stock surge, GMO lost for the first time in 23 years, considerable assets: to more aggressive growth oriented strategies; to indexing on the S&P 500; and to lower tracking error, or closet indexing. This compares with the situation in Japan 13 years ago. We refused to buy into the Japanese bubble, owning 0% overpriced Japanese stocks versus a benchmark with 50% to 65% in Japan, lost 30% to the benchmark in 3 years, and got it all back with profit in 2 years. We lost no business. This time in our foreign quantitative fund, we made a similar bet, basically refusing to buy into a telecom-technology bubble, underperforming EAFE by 25% over 3 years. This time we got it all back with interest in 12 months. A lot had changed in the intervening 10 years and the emphasis on benchmark tracking had increased. It is also true that, quite apart from avoiding technology, we made other mistakes, but the fact remains that had we owned Deutsche Telekom, a telephone utility in an increasingly competitive industry at over 100 times earnings, and more Vodafone, we would have lost very much less business. The same can be said for asset allocation where we were reluctant to put any more money into a badly overpriced S&P 500 than our clients' minimums would allow. Here too we had underperformed the balanced benchmark by a considerable margin by being conservative, although we delivered solid absolute returns, which were quite healthy by historical standards, and recovered all of the underperformance in just 12 months by rising slightly as the benchmark suffered a sustained decline. In this case too we would have lost far less business had we owned more overpriced blue chips and fewer cheap REITs and TIPs. It is also fair to say that despite our loss of assets, GMO continues to manage well in excess of $20 billion, a far larger asset base than we would have expected 10 years ago.

As I said 2 years ago at our client conference, the market gets increasingly inefficient as investors become more reluctant to bet against the benchmark, and the arbitrage mechanism weakens. As the opportunities to add value increase so does the personal risk, the career risk and the business risk, until finally there will be incredible opportunities to make money and reduce risk that no one will dare to take advantage of. We would like at least to be the last ones trying, but it was an expensive win for GMO and also difficult for clients who had to face the underperformance trials with their committees, usually containing 'new era' believers. The question I would leave you with is this: Has our industry adopted a set of techniques and standards that will guarantee that eventually no one will be able to avoid buying huge positions in Cisco and Vodafone because they are huge positions in the benchmark? That would be an unfortunate outcome.

All of us at GMO are sincerely grateful for the support you have shown us through what we believe has been the largest speculative bubble of the 20th Century, truly a difficult time for value investing, both for managers and clients.

WEEKEND INVESTOR

THE LONG VIEW BARRY RILEY

Markets behaving badly

A painful correction has been needed to sort out the distortions

Are the financial markets, and their participants, of sound mind? Over the years, perhaps naively, I have generally given them at least the benefit of the doubt, in aggregate. True, the stock market's boom-and-crash sequence of 1987 was hard to explain on any basis except that of mass hysteria; and now, after the strange events of the past two years or so, it may be time to conduct a post mortem examination on the corpse of rationality.

One of the fundamental concepts is market efficiency. This implies that prices accurately reflect information generally known and understood (although the quality of that knowledge may vary). There is also a more general economic hypothesis of rational expectations, that individuals anticipate the future in a coherent way. In the stock market this implies that values can be modelled statistically in terms of factors like expected earnings per share growth, interest rates and the equity-risk premium.

Set against these hypotheses, however, are the behavioural theories. These explore much less rational possibilities, such as that people will follow fashions and be influenced by peer group pressures. The explanation for financial manias may be psychological, or even chemical: indeed, recently an American doctor sent me a paper that seriously discussed the possibility that Wall Street's bubble reflected the ever-rising consumption of Prozac which, he said, fuelled over-optimism.

Setting the pill bottle aside, how can we interpret the markets' recent gyrations? After all, the Nasdaq – at its peak the world's biggest exchange – has crashed in value by two-thirds within 13 months. This week it was down 6 per cent on Tuesday, up 9 per cent on Thursday; yesterday it was tumbling again.

Cisco Systems, which for just a day or two during mad March last year was the world's most valuable company, worth $550bn, has since (at the recent low point) suffered a share-price collapse of 84 per cent. The drop at Deutsche Telekom has been 70 per cent. These are not speculative minnows but widely-owned giants subjected to high levels of reporting and analysis.

Clearly, confidence in rationality has been shaken although, as is usual in the aftermath of a big fall, the puzzling aspect is not why values have tumbled but why they ever got so high in the first place. From a selfish point of view the distortions have made it easier to predict the future: it is possible to forecast price trends in an inefficient market but in a completely efficient one you never have a better than 50 per cent chance of getting the up-or-down decision right. However, looking at the markets from an economic point of view, they have become distorted and maybe dangerous: capital has been allocated wrongly, with vast sums now being dissipated before our very eyes in ill-conceived internet projects and telecoms over-expansion.

There have been problems at three levels. The one that received the most publicity during the bubble was the enormous increase in stock market speculation during the late 1990s by private individuals; millions were lured into the more fashionable sectors of the equity markets, notably technology. Improved access to information and dealing facilities through the internet fuelled this expanded participation, often by so-called "day traders". Rational valuation took an extended holiday.

Second, professional investors have failed to provide a proper balance. Portfolio managers have been drawn towards *relative* performance, with the help of increasingly varied and complicated stock market indices, and risk-control models. Thus Vodafone, which accounted for 13 per cent of London's All-Share Index at one stage, was generally regarded as a low-risk holding relative to the index, whereas in *absolute* terms, it actually carried a high risk, though with a share price down "only" 51 per cent it has not turned out to be as risky as some (not yet, anyway). Fund managers who held out against the irrational fashions of 1999 and early 2000 faced a big risk of being washed away by the tide, although if they survived they will have performed very well recently.

Thirdly, the market's institutional structures have become unstable. Investment banks, and their executives became irresponsibly greedy, a trend that culminated in the wave of flotations of immature companies, often scarcely past the start-up stage. Stock exchanges, sometimes themselves new, competed aggressively for the quotations of these unproven and risky enterprises, degrading their own listing standards in the process. Quality was abandoned. Now we read that the Neuer Markt is having trouble persuading some of its listed companies to report their results within its three-month time limit. Accounting standards have become seriously distorted, in the US technology sector at any rate, by the huge handouts of stock options. Many of those options are presumably worthless, but that poses the problem that workforces no longer locked in will crumble away.

Amid all the hysteria the community of investment analysts, with some honourable exceptions, was focused on keeping the bubble inflated. In the technology sector, earnings forecasts were hoisted higher and higher. Just how crazily optimistic they had become is pointed out this week by a Goldman Sachs investment strategy report: consensus estimates of global technology earnings in 2001 have collapsed by one-third in just six months, and probably have farther to fall.

Again, as with portfolio managers, an important problem is that analysts are chasing *relative* accuracy: in this case, how far their forecasts diverge from consensus, rather than whether they turn out to be right or not in absolute terms. Only the ones who stray away from the herd feel vulnerable.

A nasty bear market has been needed to resolve these many distortions. And, of course, it has all happened before. Perhaps it is disappointing that better information and technology have not really helped capital markets to operate more reliably. Perversely, facts and analysis, however vast the quantity, can easily be brought to bear to justify wrong prices than to generate correct ones.

A full post mortem on rationality will have to wait until the dust has settled. My interim report is that human nature, often dominated by short-sightedness and greed, will always be the most important factor. The efficient market hypothesis must co-exist with behavioural theory.

WESTERN OBSERVATIONS

Eric T. Miller
1 415-836-7768
eric.miller.2@csfb.com

Late Winter Roundup – Wise Investors

We're nearing the one-year anniversary of the peak of the Wilshire 5000 Index, probably the best single measure of stock market wealth in the United States. Recently, the Index had fallen 22% below its peak, qualifying this correction for many observers as an official bear market. For those poor souls heavily exposed to the Nasdaq, they need no official definitions – they've been shocked beyond their worst nightmares. Forty-four percent of Nasdaq stocks declined 50% or more last year. In comparison with two prior bear markets, 1991 and 1987, this one is already old. The calculated time spans of the earlier two were four months and six months, respectively. But from the standpoint of longevity, the current one still falls shy of the 15-month average of the 10 bear markets recorded since the end of World War II. Yet a number of well-known, formerly bearish market analysts have recently relaxed their caution in varying degrees, declaring the bear market either as over or in its waning days. Their arguments have generally included the easing of monetary policy by the Fed, the improvement in market breadth, the probable tax cut, the puncturing of irrational exuberance, and the resulting more reasonable valuations of many equities. A number have taken heart because the markets' lead group for several years running – high technology – has been royally up-ended, while the widely despised or formerly ignored groups such as value, small and mid cap, and energy stocks have had notable price comebacks. There's even been some symmetry to the price movements, with the Russell 2000 Value Index outperforming the Russell 2000 Growth Index last year by the same number of percentage points that it underperformed in 1999. January encouraged many investors with a sprightly bounce, only to see spirits dashed in February, with a sharp decline.

So, where from here? We're not going to try to answer that question, but we thought we'd touch base with some veteran money managers whom we hold in high regard. We're dividing their observations over two or three commentaries. Our effort or expectation isn't to arrive at a consensus view but to find out how these managers have been faring and what they think now. The ones involved are from a group that we've done a series on over the past couple of years under the title of Wise Investors. Our arbitrary criteria in selecting them was that they've been investment professionals for 30 years or more, commanded the respect of their peers, were not prominent media talking heads or authors, and had established good records. Their investment styles vary, though the one broad designation that several came under is that of GARP (growth at a reasonable price). The typical equity fund manager today has 5.7 years at the helm, so these veterans that we're discussing have a number of campaign ribbons and battle scars. Most of all, they've been survivors.

The three we're including this week are Jeremy Grantham, co-founder and chief strategist at Grantham Mayo Van Otterloo & Company LLC in Boston; James Gipson, president of Pacific Financial Research in Beverly Hills; and Bob Torray, president of the Torray Corporation in Bethesda, Maryland. Their thinking and approach differ, but they do share some common beliefs and characteristics.

They are fiercely independent thinkers with unusual courage and patience. They stay with their investment positions much longer than most and pay close attention to valuations and therefore fundamentals. They voice no sympathy for modern portfolio theory and are contemptuous of the herd-like tendencies of most other professionals. None is shedding tears over 2000 because their own investment results were

good – in fact, in the case of Jim Gipson, exceptional – and they're glad to see some sanity returning to the investment world.

Winter Roundup

Uncharted Waters

Jeremy Grantham is an appropriate one to start with because he is so provocative and articulate – probably one of the most challenging investment thinkers of our time. Among his career credits are several home runs. He was one of the original proponents of indexation, identified the lunacy of the Nifty-Fifty era, proclaimed the beginning of the long run in small-cap stocks in the 1970s, the return to favor of big-cap growth stocks in the 1980s, and called the top in the Japanese Bubble.

His debits have been a tendency to be early, and he was quite early in calling for a violent end to the mania or bubble that he identified a few years ago. Overall, a major credit should go to him and his associates for building a strong multi-product organization that has continued to thrive through these volatile times.

The year 2000 was a good year for Jeremy and his firm. Of the 52 investment products offered to clients, 51 outperformed their benchmarks last year. He isn't among these now proclaiming the end of the correction. In his opinion, bubbles take longer to unwind than most people think. He's a strong believer in the principle of regression to the mean and expects the price-earnings multiple on the S&P 500 to slide to 17.5, against the long-term average of 14, sometime over the next few years. In the meantime, earnings growth will be well below current expectations because of profit margins declining from unsustainably high levels. The deadly combination indicates a total investment return that may be negative even from today's reduced stock price level. He and his associates have examined every major bubble in every asset class that they could find, including commodities and currencies, and every bubble gave back everything and more. Over the last two years, Jeremy has challenged hundreds of investment professionals to identify an exception and they haven't been able to do so. Bubbles don't reform quickly because those who get burned don't forget and a new bubble tends to require a new generation with no bad memories. (The "get me a kid" syndrome popularized in Adam Smith's Money Game [Random House].) The recent bubble expanded because three comfort factors drove PIE ratios higher: stable GNP, stable and low inflation, and high profit margins. All three comfort factors reached their highest levels since 1925, but in Jeremy's view, they're not sustainable and will regress to the mean. And the regression can be painful when it begins as this one did, from the valuation heights of "the most overpriced market in history."

Intertwined with bubbles is the tendency of value stocks to resist the subsequent decline while interest in assets, earnings, and yields rise as general confidence declines. As growth estimates erode, value stocks do better. He thinks that this past year has been far more than a dead-cat bounce in a growth era but the beginning of a multiyear outperformance most likely to be in the three- to five-year range. Not that the returns are going to be spectacular – just over 4% a year plus inflation – but they'll look wonderful compared with the returns from the recent new era favorites.

In December, at an AIMR conference in Boca Raton, Florida, Jeremy had an interesting debate with Jeremy Siegel, the finance professor from the Wharton School of the University of Pennsylvania. Siegel challenged the assumption that stocks were overpriced, using the argument of faster earnings growth, lower macroeconomic risk, improved government policies, lower tax rates, lower inflation, and lower transaction costs, which combined justify today's market P/E ratio of about 25, putting it equivalent to the long-term historical P/E ratio of 14. About the only thing that the two could agree on was the overpricing of the technology segment.

Early last May, Forbes staged a debate between Jeremy and Henry Blodget, the Merrill Lynch analyst. Blodget admitted that a brutal shakeout period had commenced and that probably 75% of Internet companies would disappear, but he justified owning Yahoo, AOL-Time Warner, and Amazon because they had the potential to go up 100% or 200% in a given period and a money manager has significant risk if he doesn't own them and is benchmarked to the S&P 500. If you had declared that we were in a market

bubble in 1996, 1997, and 1998, that would have led you to miss multibagger stocks. In his reply, Jeremy referred to the craziness of a benchmarking world, and that there's no rationale in terms of prudence or common sense to buy Yahoo and AOL (at least last May). He admitted that because the Internet is a destroyer of costs, it would prove a boon to consumers, but one of the costs being destroyed was profits. Jeremy predicted during that debate that from their highs, the Nasdaq would decline 70% sooner or later and the S&P 500 50%, but not necessarily in a straight line because great bear markets don't hurry. In January of this year, despite the sharp decline that had taken place, Jeremy remained wary because he said that we've been in an economy that's been mortgaging its future and "there are several dangerous potentially self-reinforcing mechanisms that could come into play." Forecasting is particularly difficult today, partly because we've never seen anything like the scale of the wealth effect before, and, obviously, individuals feel less wealthy. Furthermore, much of capital spending, which has been an economic driving force and boon to corporate profits, has been debt financed. In addition, the shortfall of savings from individuals and corporations has been compensated for by importing foreign savings, and any real weakness that might ensue in the dollar could be a problem.

What, then, did he see as the investment outlook for 2001? He expected another positive year for value stocks, though not as strong as last year. He projected 2001 to be a war of attrition on large growth stocks and technology and he continued to favor small value stocks, international value stocks, emerging equities, REITs, and timber. His favorite investment remains TIPS (Treasury Inflation Protection Securities). From a year ago, the asset allocation changes are minor.

Capital Preservation

Jim Gipson and his associates also enjoyed returning to the sunlight after a couple of years of being partly in the cold. However, Jim remained humble about a terrific year, writing that winning Morningstar's selection as the Fund Manager of the Year "probably has more to do with the issue of character (rational and patient or, less charitably, stubborn and clueless) than intelligence. There are times when intelligence and diligence are the significant factors for success but last year was not one of them." Then in his year-end letter to the shareholders of the Clipper Fund, he said in the same vein, "We are not as smart as we looked last year nor are we as dumb as we looked the year before. We are rational patient value investors watching this Age of Irrational Exuberance become less of both." So, there was very little horn-tooting after a year in which their portfolio rose 37.4% compared with a 9.1% decline in the S&P 500. Clipper had lagged the S&P in 1998 and 1999, but last year's results put them ahead on a 5-, 10-, and 15-year basis and, also, since inception. The compound return since inception nudged up to 17.5%.

In that annual letter to shareholders, Jim reiterated a key facet of their investment policy, which is their conviction that the most important part of making money is not losing it. In striving to prevent the permanent loss of capital, the Clipper Fund asserts that they have remained consistent in following three policies:

- Avoiding areas of obvious overvaluation, which may be intellectually easy but emotionally hard. It isn't easy for competitive people to watch others doing well by buying overpriced securities and then seeing those securities go even higher.
- Maintaining a margin of safety by buying stocks at a discount of at least 30% based on an estimate of the intrinsic value of an underlying business.
- Not being shy about holding cash. Cash reserves were high at the beginning of last year and were still high as the year ended, at 31% of assets.

Despite this cautious approach, the Clipper Fund had an outstanding year, not only because of being risk averse and having only a 2% position in technology but in owning some rewarding names in a concentrated portfolio that comprised only 32 stocks at year-end. The five largest positions were 36% of equities and they were as follows:

- Freddie Mac;
- Philip Morris;
- Fannie Mae;
- Equity Residential Property Trust; and
- Manpower.

In this portfolio, as well as Jeremy Grantham's, REITs were heavily overweighted – in the case of the Clipper Fund, 10.7% on December 31.

Has the market gone down enough to have virtually eliminated the risks? Not in Jim Gipson's opinion. On January 19, he wrote that the market as a whole was still valued at levels in excess of those found at past peaks. The areas that he normally favors have gone up and the sectors of the market that have gone down the most are certainly cheaper than before, but not cheap. No one really knows what is going to happen from here. We do know that a great deal of complacency still exists. The market could become irrationally depressed just as it had become irrationally exuberant a year ago. The savings rate had declined because of the wealth effect from soaring equity values, but studies have shown that the painful effect of losses is larger than the pleasurable effect that gains bring. The stock market has become such a much more significant factor in our lives that it no longer is a passive, but an active, force and we just have to see how consumers will react.

Own Good Companies

Bob Torray does not define his philosophy in managing The Torray Fund as a value approach. While he welcomes downturns in the market as a time of opportunity, he tends to keep the fund more or less fully invested in what he regards as good businesses, not distressed situations. Last year, the fund lost 3.4%, which was relatively much better than the S&P 500, and he views it as nothing more than an inevitable pause in a long-term advance. In his January 23 letter to shareholders, he noted that in the ten-year history of the Fund, it has compounded shareholder wealth at 18.5%, which has exceeded their objective of 15% annual appreciation. In pursuing this goal with a somewhat contrarian approach, the hunt isn't for broken-down asset situations but on buying good businesses when they're not at the top of the popularity charts and holding the companies as long as the fundamentals are intact. He shuns the performance race and therefore avoids hot stocks and currently faddish investment themes. He, too, had been appalled at the degree of "rampant speculation" the last few years and the extremely inflated levels of valuation accorded technology, biotechnology, telecom, and dot-com shares. Accordingly, the market's sell-off came as no surprise to him, but even after the tumble, many stocks remain extraordinary expensive by historical standards. He doesn't try to guess where and when the market bottom will be and urges investors "not to even think about it." Instead, you should be searching for solid companies to invest in because eventually the markets will resume their historical rise. It's possible that the markets could fall further or flatten for a while if the economy weakens, but the longer a consolidation, the greater a subsequent rise might be. In any event, he said that he and his associates are optimistic about the future. He does deplore the short time horizons that many investors have. As an example, he cited the turnover in their fund last year (not portfolio turnover), which mounted to about 28%. The comparable turnover among 4,000 stock mutual funds averaged 40%. Those same funds are turning over their portfolios at a rate of 100% a year, incurring what he thinks are wasteful trading costs and thereby inhibiting returns.

So, what are the "solid, good companies" that the Torray Fund owns? At year-end, the ten largest holdings were Hughes Electronics, J.P. Morgan, Illinois Tool, Abbott Laboratories, Tribune Company, Raytheon, Agilent Technologies, Gillette, General Dynamics, and Clear Channel Communications. These 10 represented a significant proportion of the total assets because, as usual, the portfolio remained concentrated, only 34 names. Not surprisingly, the participation in high technology was modest and there's been no ownership of dot.coms.

Within the next couple of weeks, we'll touch base with some other of our "Wise Investors" and relay their comments. The result won't be answers but hopefully additional stimulus to your thoughts.

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Grantham, Mayo, Van Otterloo & Co. LLC
Second Quarter 2001 Quantitative Review
Jeremy Grantham

Even More on Mean Reversion

If you review the long-term history of securities markets and conclude as I do that the great bear markets take their time, then we should expect many more periods like the second quarter before the low point in the market is eventually reached. The S&P 500 rallied 5.9% and growth stocks had a much sharper rally before closing up 3½% over value for the quarter. The NASDAQ staged a 40% rally from its dead low (down 68½% from the March 2000 peak) and gave a quick lesson in algebra: when a $100 stock drops to $31½, a 40% rally only takes it back to $44, still down 56%! With a very weak start and a weak end to the quarter, the 40% NASDAQ rally ended the quarter at a still very respectable +17%.

With the market rising, growth stocks winning in the U.S., and NASDAQ, tech and telecom rallying sharply, we might have expected a very poor quarter. Fortunately for us, other more subtle variables continued to revert to more normal values. International value outperformed growth by 3.7%, and in both the U.S. and international markets, small stocks continued to win handsomely over large (8% and 4%, respectively). Our dividend discount model in the U.S. and equivalent models overseas continued to work well relative to alternatives. GMO's use of momentum for a portion of U.S. portfolios also helped. REITs shone on the upside (5% ahead of the S&P), which is very unusual in a strong equity market, and emerging equity hung tough through the quarter's end (our fund was ahead of the S&P and far ahead of EAFE). The net result was that most of our funds continued to beat their benchmarks in the quarter, although U.S. Core could not overcome the strength of growth stocks and the market rally. Most remarkably, our very defensive global asset allocation fund offset the market's rally and won by a few basis points. The net result for the 12 months is attached (Exhibit 1), by far the best looking 1-year, 3-year and 5-year results for a long time, with no sign of material underperformance anywhere.

We have recently had such long and profound deviations from trend in many asset classes and sectors that several 10-year compounded returns were completely recast. Thus, 10-year Russell 1000 Growth was long thought by us, and historians, to show 1% less real return per year than the broad market, and Russell 1000 Value, correspondingly, a 1% per year higher return. From 1960 to 1995 for example, the long-term average returns were 9.7% for growth and 11.9% for value. Such was the power of the rally in growth stocks, though, in 1998, 1999 and early 2000, that by the top of the growth cycle in March 2000, the 10-year numbers were completely atypical. Russell 1000 Growth was an astonishing 5.6% a year compounded ahead of Value! 10 years is a long time, seen by most reasonable people as one or two investment cycles and therefore presumed to be more than a fair test of what happens in the long term. This takes us to the heart of the key problem the investment industry has always faced. Reasonable patience is 3 years, and while many deviations from trend start to revert to normal within 3 years, many do not, and the really important cycles are never contained within 3 years. 10 years seems so long, and yet, by 12 months later in March 2001, the 10-year value/growth relationship had dramatically shifted. By March 2001, 10-year Russell 1000 Value results were 2.5% a year

ahead of Growth! From 5.5% a year behind to 2.5% a year ahead for 10 years, all by moving a single year forward! (You may have to check it to believe it, but it's true.) This differential is now very close to the long-term pattern, which now, once again, appears to show 40 years of fairly continuous value outperformance.

Exhibit 2 shows the long-term ebb and flow of value versus growth since 1960, with the recent growth-tech bubble forming and breaking.

Exhibit 3 shows the value added by the top decile of our dividend discount model, used by us since the inception of GMO in 1977. The 1998-1999 dip in value shows up as clearly worse by far than anything in our prior 21 years or indeed in the previous 15 years of simulation. Yet, by June of this year, the relationship is back above trend, as if the decline for value investing had not occurred.

Exhibit 4 is part 2 of our "All Bubbles Break" exhibit, which covers sectors. The two sectors that have not yet reverted to trend, U.S. small and U.S. value, have made an excellent start.

We know one principal truth at GMO and that is that we live in a mean-reverting world in investing. We have shown previously that all bubbles that we have ever been able to locate eventually break (Exhibit 5). Bubbles are defined as 2 standard deviation events – the kind of moves that occur about every 40 years. I have asked over the last 4 years a stunning 2400 professionals (without allowing for possible double counting) if they can find an exception to this rule and not a single one has been forthcoming, even from rooms full of the bulls of 3 years ago. This is perhaps scarier than the fact that all 28 of the bubbles Ben Inker found returned to trend. There really appear to be no 'new eras' in the data.

Since March 2000, all distortions measured in important markets have been reverting to the mean, sometimes at world record speeds. REITs, value and small all greatly outperformed in the U.S. Small and value in developed international outperformed large and growth by unprecedented margins, and emerging equity outperformed the U.S. and developed international. Over 95% of all the client accounts we manage at GMO have reached a new all-time high in relative performance terms and the last 5% is close, primarily because of this burst of mean reversion. So, the world of investing in 2000 and 2001 is behaving in a way that is absolutely typical and hence largely predictable.

What was exceptional was the length and extent of the deviations in 1998, 1999 and early 2000. It was always clear that it was hard to predict the deviation and extent of deviations in markets driven by human psychology, and hard to predict the timing of the end of a cycle. It has become blindingly obvious that no one we know and certainly no one at GMO can do this accurately. Perhaps it is in the very nature of an uncertain world that the timing of such things is unknowable. If so, we have to live with the paradox that when we throw up the feathers in the storm, we know nothing about their flight path, how high they will go, or when or where they will land, but still we have complete confidence in one outcome: they will land eventually. Another thing we have to live with is that despite good historical data, and I believe a compelling case, we were only able to persuade a small minority of people (outside of our current client base of course) of the near certainty that mean reversion would work once again.

One of the contributing factors to this difficult task of persuading investors to accept that sometimes unwanted outcomes are likely is the power of group pressure. Another factor is that the investment world is ill informed on long-term cycles and is not too interested in history. Perhaps more important, investors are influenced in a bull market by a steady and increasing diet of misinformed advice, partly driven by the self interest of the advisors: bullishness is good for business in a bull market and a good bull story sells magazines, books and talk shows, however nonsensical the story may be. Perhaps in a bubble the more exaggerated the story, the better it sells. "Dow 36,000" would certainly suggest so. Yet, in a world where the moves are big enough to turn the 10-year numbers for growth into a bonanza over value, we can sympathize with those siding with this rather long period of misleading data that has turned out only 1 year later to be totally misleading for long-term purposes. Even some academics were writing a year ago of the modest or statistically negligible difference between growth and value stocks over the long term, an argument that would be impossible (or certainly improbable) to sustain today. What was missing from their work was valuation. Exhibit 6 shows the ebb and flow of a price-to-book portfolio. By definition, it always looks cheap on price-to-book but the point here is that sometimes it looks a lot cheaper than other times. On March 2000, value was by far at its cheapest relative valuation ever. If you had worked out then what gain value stocks would have delivered by reverting to their mean relationship – 80% or so relative, which we showed at each annual GMO Client Conference – you could adjust the 10-year data and see that value still had an important long-term edge and was merely unusually cheap for a temporary period. Now, the market has done most of this adjustment for us and it is certainly easier to believe in this process of ebbing and flowing.

So Where Are We Now?

Exhibit 7 shows four different ways of viewing the relationship of value and growth. Without getting into the details of why we weight some data more than others, we conclude that large U.S. value stocks still have left about a 20% points swing against growth to get to trend. The bad news for value managers is that it is about 80% of the way back to trend, the fastest value rally in history from March 31, 2000 to April 4, 2001. The good news is that the largest rallies always over correct and this is already the biggest ever.

Exhibit 8 shows U.S. small versus large. This is a similar story although it started in 1999 and has not recovered as much of the ground lost earlier. The small company universe has the additional advantage of an ordinary level of profitability, not suggesting much need for downward pressure to the mean. Large cap value, in comparison, has begun to come down from the highest levels of profitability ever recorded, which makes many of these stocks very vulnerable to absolute losses in market value.

International developed stocks are also in a similar situation. In aggregate, international developed equities are now considerably less overpriced than U.S. equities. Both international large and small cap value have recovered a lot, but considerably less than the U.S. and therefore the international value and small sectors have become much more interesting investments in terms of risk and return than their U.S. counterparts. In addition, international stocks have a large incremental advantage in currency. The dollar is now considerably overpriced and over 10 years it is likely foreign developed stocks will receive a bonus of 1% to 3% a year from currency appreciation. Of course for those who feel equity sectors and asset classes take too

much time reverting to mean, there is a particular problem. Our research shows that although currencies follow mean reverting tendencies, one can die of old age waiting for them to reach fair value. Because of this, currency is not reflected in our 10-year forecasts, but it is very nice when the probable currency move further enhances the investment tilt clients should have anyway, and that is certainly the case now.

One interesting feature of market psychology, revealed by the remarkable burst of regression to the mean of so many factors, is the complete acceptance of those events that have occurred and the complete denial of those where the main regression has yet to occur. In this way, we read last summer how obvious it was that the Internet was a bubble but that telecom and serious technology companies were a different matter. Then by this spring it was agreed that telecom and tech had clearly been a bubble and that growth stocks in general had been overdone, but that the market level, still at 25 times earnings, higher than any previous bull market level in history, was still fine, despite the market being a provably mean reverting series. From their lows against the S&P 500, the 50+ percentage points outperformance of REITs, the 50+ percentage points outperformance of small value, and the 20+ points outperformance of emerging equities have received little media attention yet. If these significant reversion events spread to the broad market, it will retreat to 17½ x more normal profit margins, a decline in total of over 40%. This is no more remarkable than what has already happened to value stocks relative to growth, but a market decline is almost universally not expected by plan sponsors. A market decline will presumably be seen in 2, 3, or 4 years as obvious in hindsight, as the past relative decline of Internet and telecom is today.

Market View

To update our market view: Our estimate for profit margins on sales is that they will trend down gently over 10 years from the all-time high of 8% return on sales as of 18 months ago to a moderately above average 6%. They have reached about 6.6% on sales this quarter and are expected by some, at the lower end of estimates, to fall below 6% early next year. We still expect a movement in the market level to a p/e of 17½ x to be reached in 10 years. Recently in Los Angeles, I asked 300 full-time professionals at the AIMR annual meeting how many agreed with 17½ x within 10 years and only one person out of 300 disagreed, taking the total to date to approximately 1000 'yes' votes and 7 'no' votes! These assumptions of 17½ p/e and 6% profit margins mathematically deliver a serious underperformance of sponsors' expectations for the market. These assumptions are agreed to by almost 100% of full-time professionals and 100% confirmed by historical behavior of both multiples and profit margins, both reliably mean reverting.

The Economy and a Market Head-Fake

The U.S. economy is behaving in a particularly slippery way, with leads and lags causing apparently incompatible data to be presented each week. When the consensus in January was for 3% real GNP growth, we suggested that 1% to ±2% was probably a safer bet, because inertia seemed to be holding estimates back. Now, the consensus is 1½% and that seems much more reasonable. The consensus also calls for an economic recovery soon, and with the tax cut, the string of interest rate reductions and strong expansion of money supply, some recovery seems likely. As it starts, it seems likely that there will be a substantial knee-jerk recovery in the broad

market, probably led by the safer stocks and large cyclicals, the latter seen as the obvious beneficiaries of an economic recovery. It would be surprising, based on recent behavior, if the market did not rally 10 to 20% on the first clear signs of broad economic recovery. Unfortunately, the recovery seems unlikely to be accompanied by materially rising earnings, or to be long and strong. There are too many lagging factors, which will hold margins and economic growth back over the next few years. First, although profit margins and profits are down badly, margins are still well above normal so there is no solid support for a longer-term recovery in margins, quite the reverse. Second, the wealth effect is still waiting to be revealed. Investors are substantially poorer than they were and their expectations are modestly lower, yet their spending rate has continued to rise and savings to fall. Third, the capital spending cycle focused on telecom and tech was hugely over trend and both sectors are now almost drowning in overcapacity. Lower rates will help parts of the economy, but they will surely not cause companies to build plants they don't need.

With the usual caveat that we are not professional economists, I believe the economy will shortly show signs of a recovery that will last a very disappointing 6 to 12 months before turning down again and will be accompanied by very disappointing earnings, perhaps flat to a little up. The market, however, seems likely to have a knee-jerk recovery, leaving us in the spring of 2002 or so with the market quite close to its old highs on earnings still 20% down from their peak, giving record p/e's in the mid to high 30s, which would leave the market enormously vulnerable to the first sign of renewed weakness. For the stock market this seems to me to be the bull case and would give everyone one last chance to reposition towards greater value and lower risk, which is easily done except for the usual enormous psychological pressure to stay with the pack. A lesser possibility, I believe, is for the economy to prove broadly disappointing, with GNP failing to recover and staying in the +1 to 2% range through next year with earnings continuing weak and the market making irregular new lows.

Our response to these possibilities is basically to hold all our bets. The nuances are that we will shift a little on the margin to international, especially international small cap value, and be more careful of U.S. large cap value. Some of these value companies are cyclicals, which have actually risen in price since the market highs in March 2000. They are now at peak p/e's on well above average profit margins that are falling! This does not seem a very attractive proposition. Meanwhile, technology does not seem particularly worse value than the broad market. Thus, our main bet by far in the U.S. is against the broad market, a strong second bet is pro REITs, which remain absolutely cheap at a 6.5% yield, and the third place bet is small cap value. Emerging looks scary as ever but very cheap, and our relative performance continues in both equity and debt to be exceptional, which reinforces our willingness to keep a big bet on them, although a rally might cause us to pull back a little. In the first two quarters we moved our over weighting of fixed income down to 10% in a typical account allowing a 15% maximum. The proceeds went into international and U.S. small cap value, which worked well enough. In total, the accounts will remain very defensive, strongly oriented to the better values and on average having lower volatility. These still seem good positions to take. If the current regression to more typical valuations continues, though, they will prove to be exceptional investments.

Exhibit 1:

GMO Investment Performance

Annualized Value Added, Net of Fees, Periods Ending June 30, 2001

GMO Product	Benchmark	Inception	1 Year	3 Years	5 Years	Since Inception
Domestic Equity						
U.S. Active	*S&P 500*	9/77	+32.5	+3.6	0.0	+2.8
U.S. Core Approach	*S&P 500*	12/82	+11.4	+3.5	+1.8	+1.4
Growth	*Russell 1000 Growth*	12/88	+5.0	+5.8	+3.0	+1.8
Intrinsic Value	*Russell 1000 Value*	8/99	+13.0			+7.1
Small Cap Value	*GMO Russell 2500 Value +*	12/91	+0.1	0.0	+0.1	+1.3
International Equity						
Int'l. Active	*MSCI EAFE*	5/81	+15.0	+6.1	+5.4	+4.4
Int'l. Intrinsic Value	*MSCI EAFE*	3/87	+18.7	+2.7	+2.3	+3.6
Int'l Small Companies	*Salomon Non-U.S EMI*	10/91	+19.7	+3.5	+4.2	+3.8
Foreign Small Companies	*Salomon Non-U.S EMI*	1/95	+15.8	+10.1	+8.2	+7.1
Emerging Markets	*IFC Investable*	12/93	+12.7	+7.6	+4.5	+5.3
Fixed Income						
Int'l. Bond	*J.P. Morgan Non-U.S. Gov't.*	12/93	+1.3	-0.8	+1.1	+2.3
Emerg. Country Debt	*J.P. Morgan EMBI Global*	4/94	+4.9	-0.1	+4.4	+5.8
Global Asset Allocation	*Global Balanced*	6/88	+15.7	+2.4	+0.4	+1.2

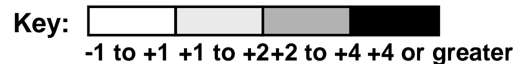
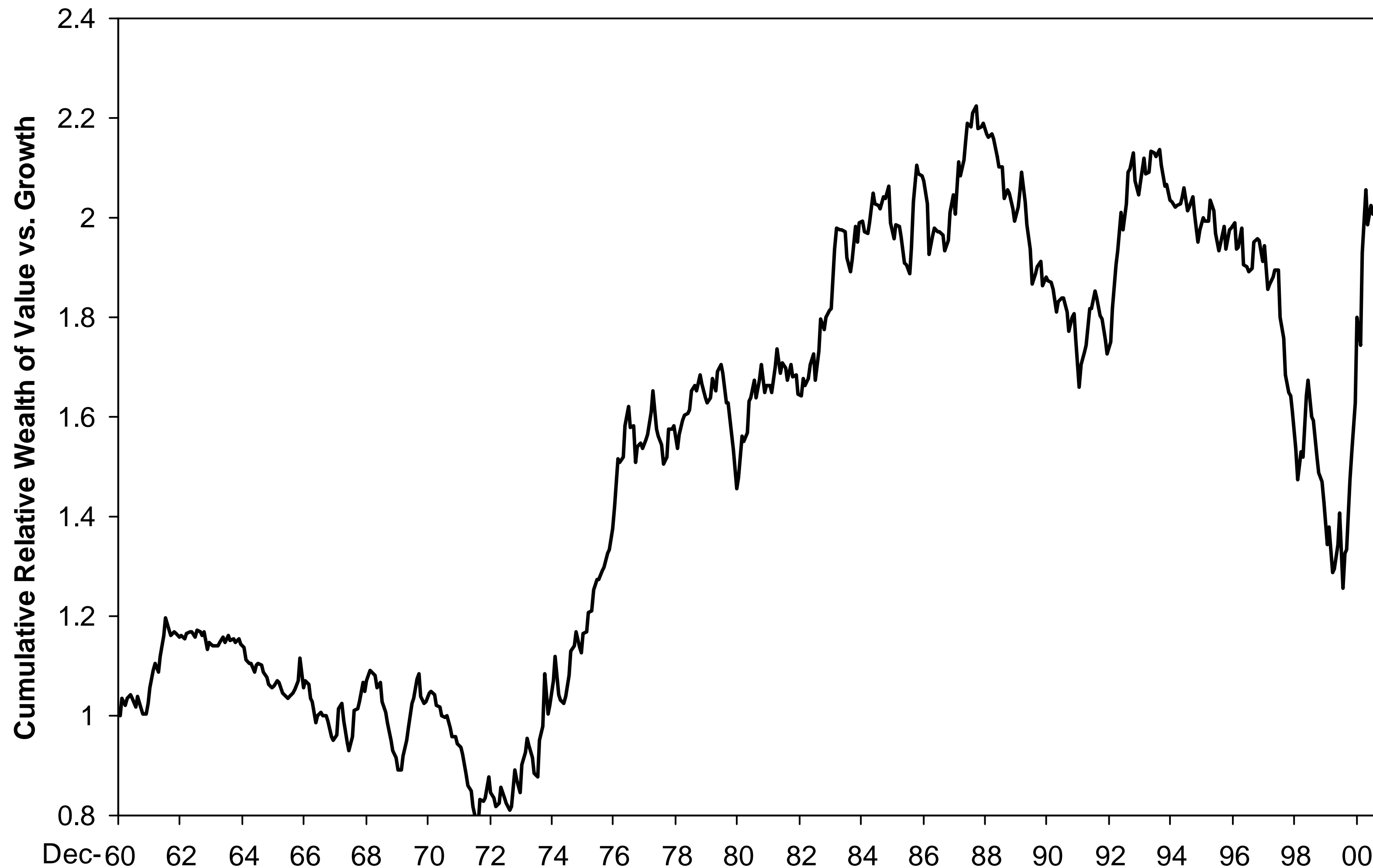


Exhibit 2:

Performance of Value vs. Growth



Value and Growth are 50% cheapest/most expensive in S&P 500 on Price/Book

Exhibit 3:

Value Added of Our Dividend Discount Model Against the S&P 500

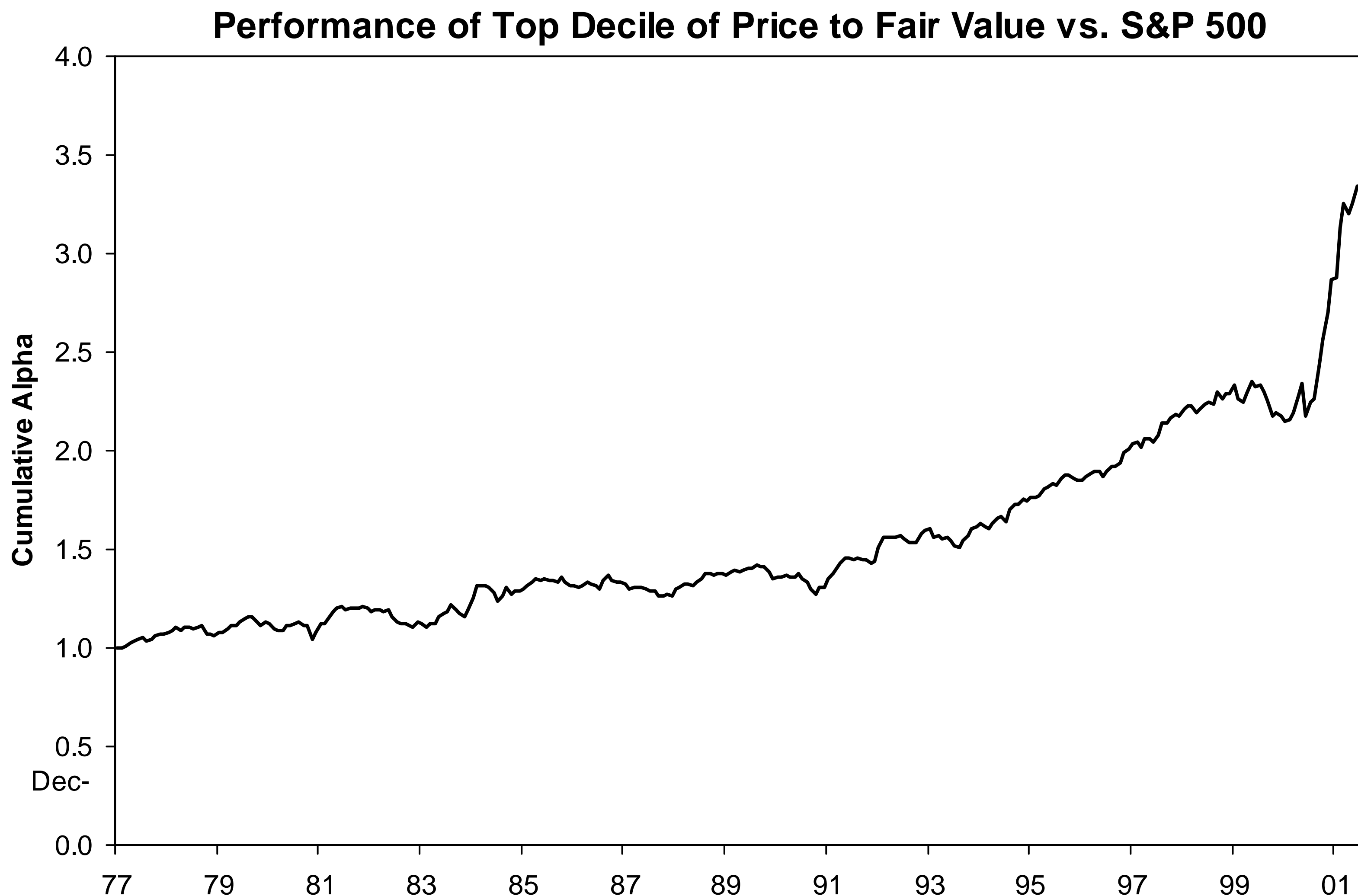
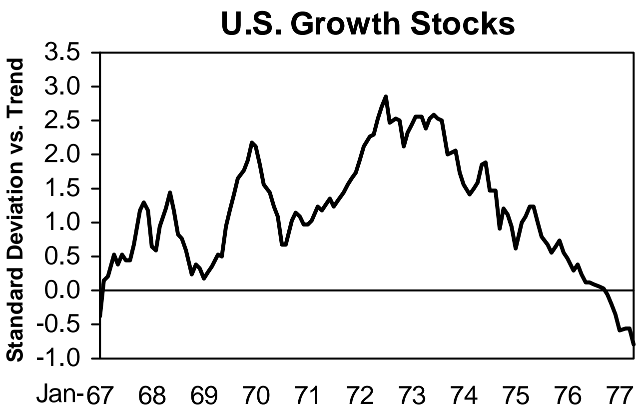
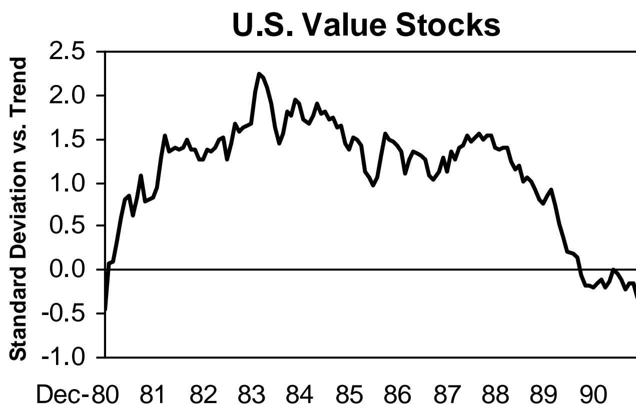
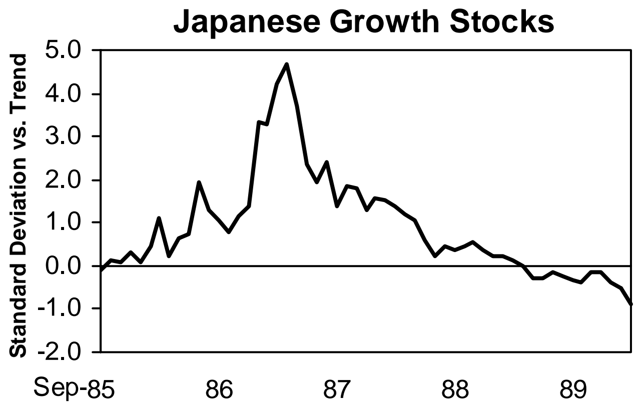


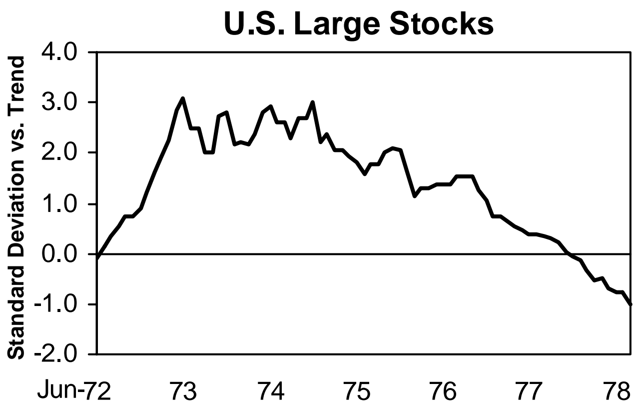
Exhibit 4:

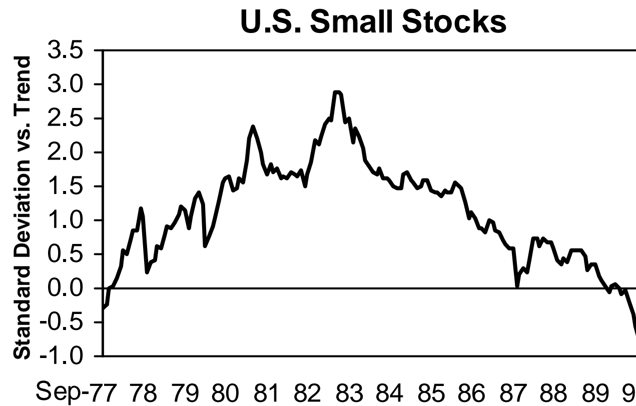
Every Sector Bubble Has Also Retreated 100% – or More

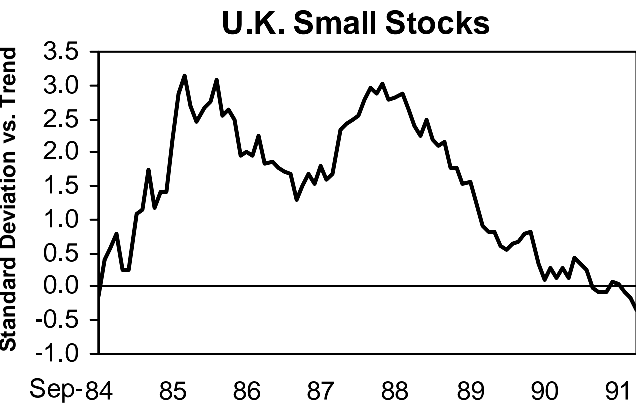


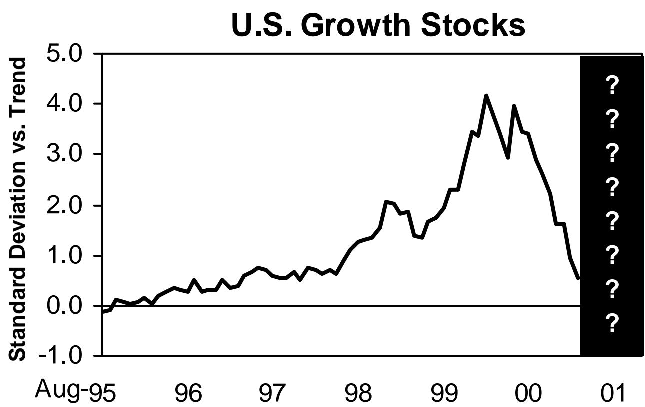












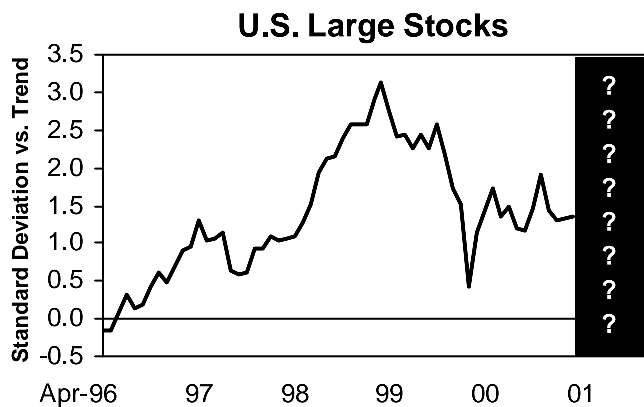
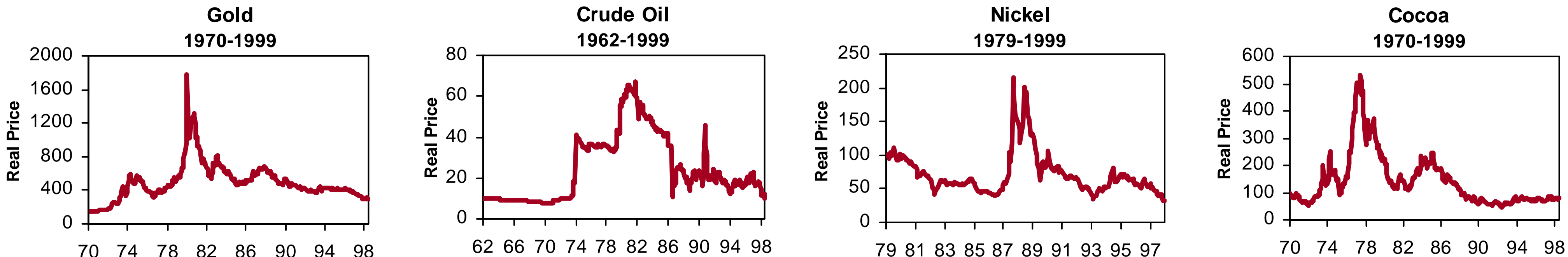


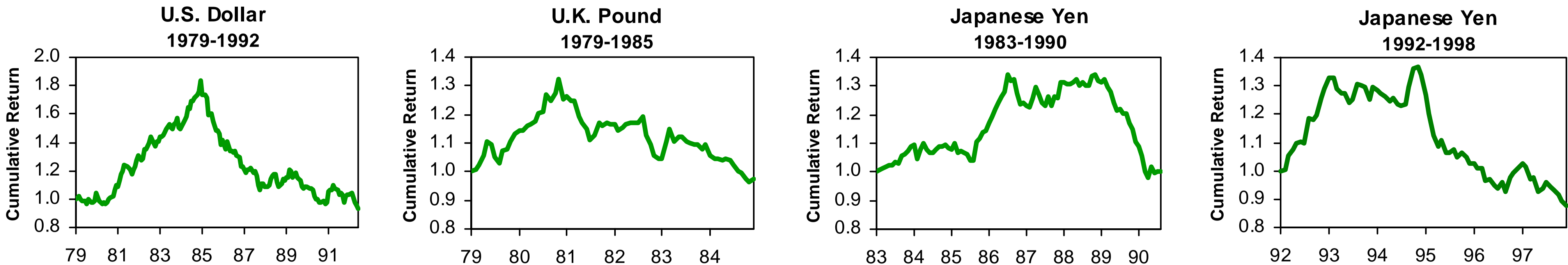
Exhibit 5:

Every Extraordinary Capital Market Gain Has Retreated 100% – or More

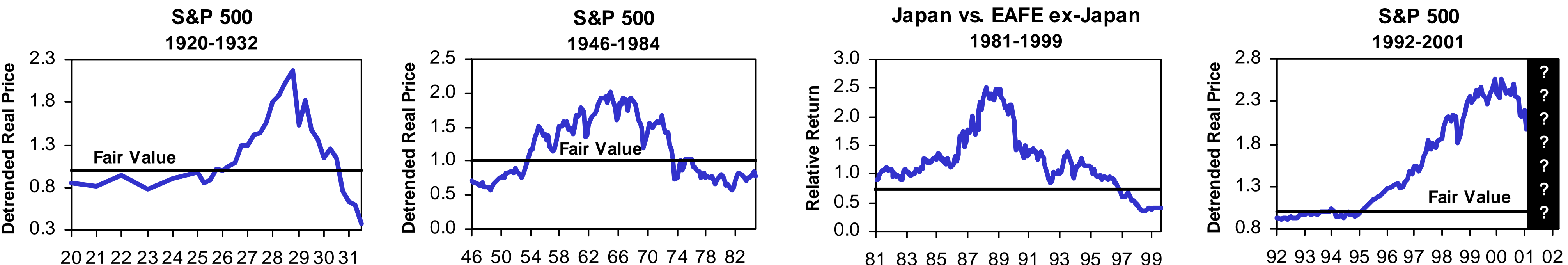
Commodities



Currencies



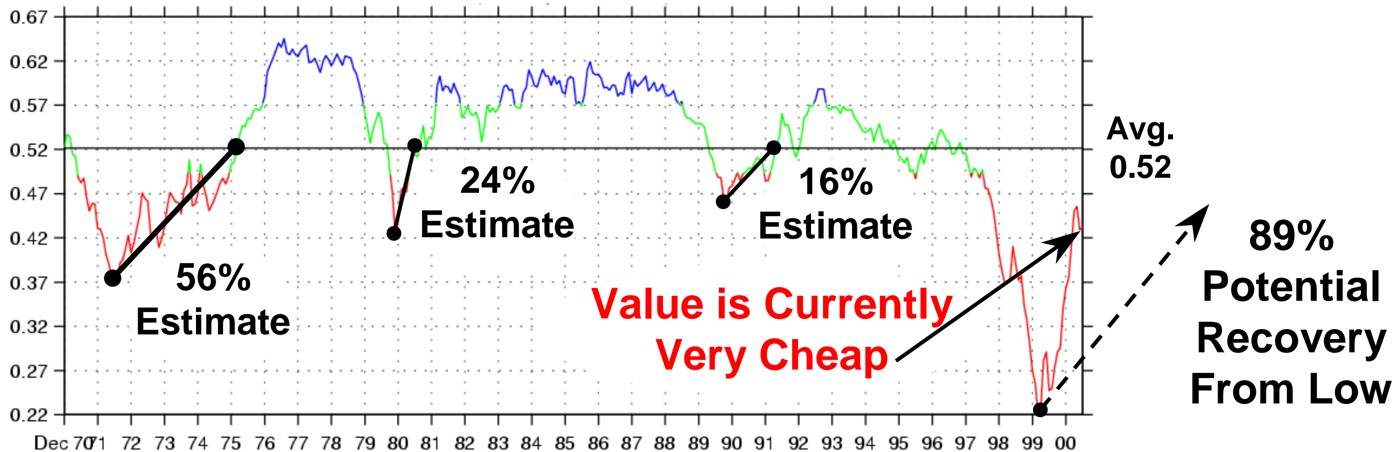
Stocks

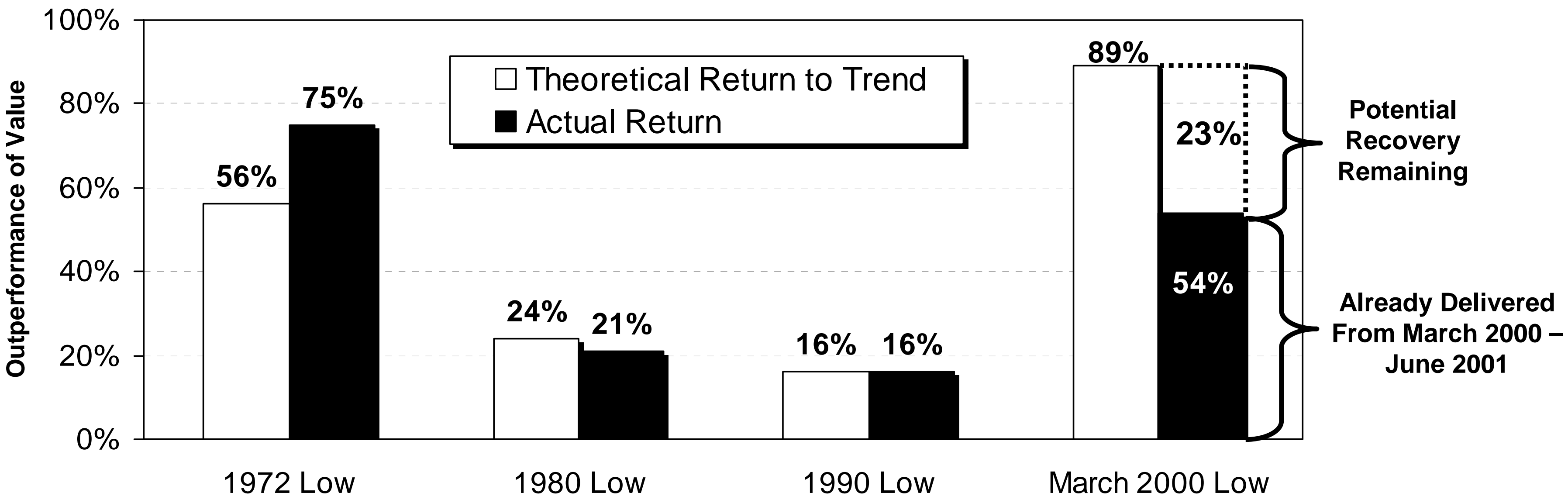


Note: For S&P charts, trend is 2% real price appreciation per year. Data through March 2001.

Exhibit 6:

U.S. Value* Opportunities

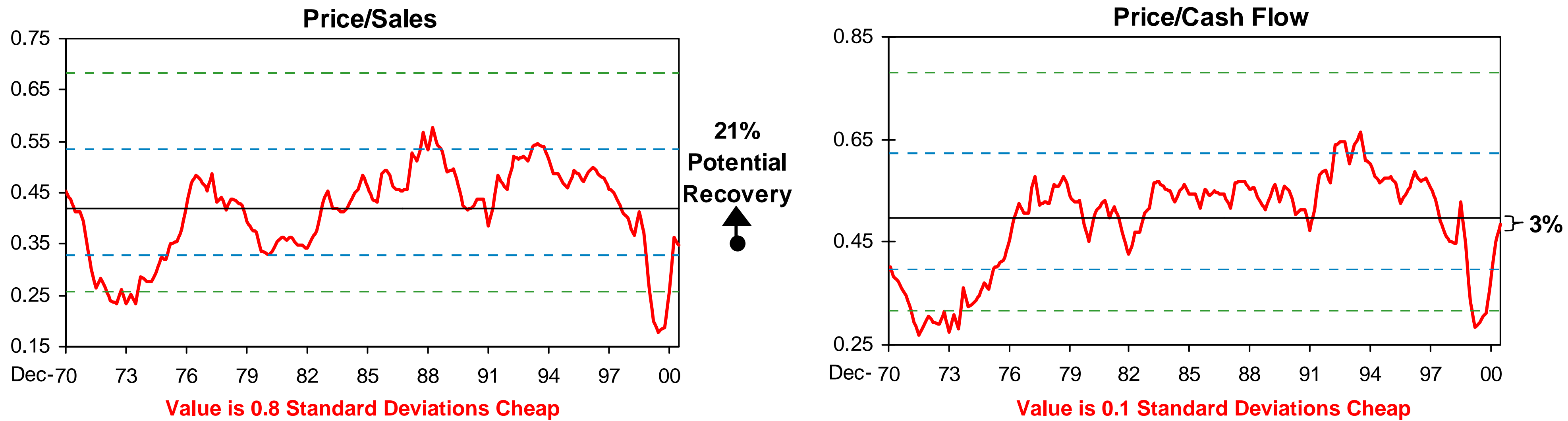


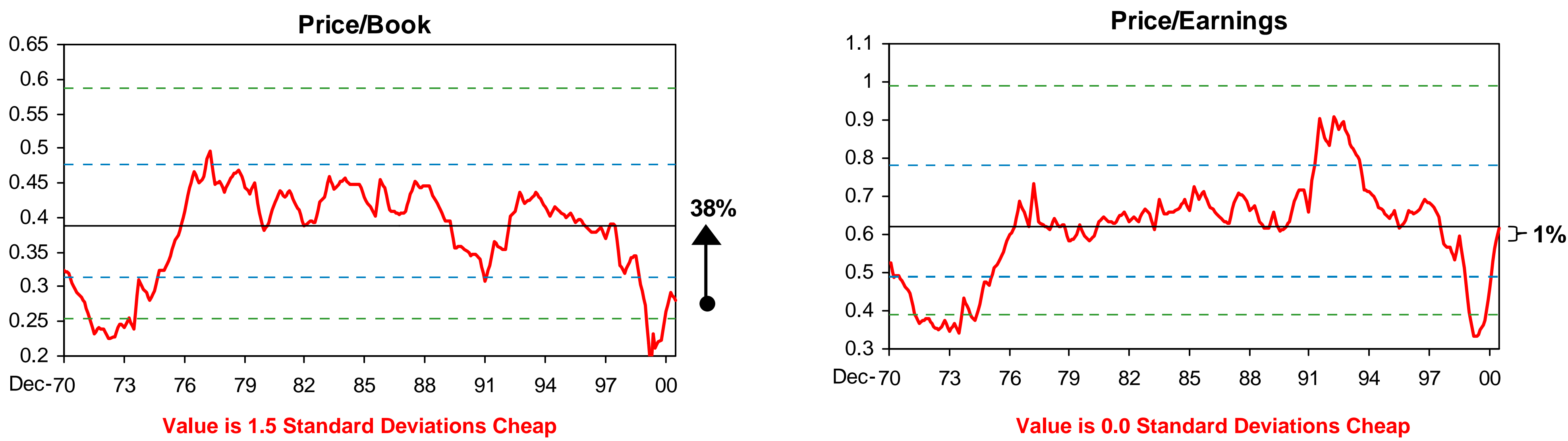


* Best 25% by name. Data as of 6/30/01

Exhibit 7:

S&P Barra Value* vs. S&P Barra Growth*





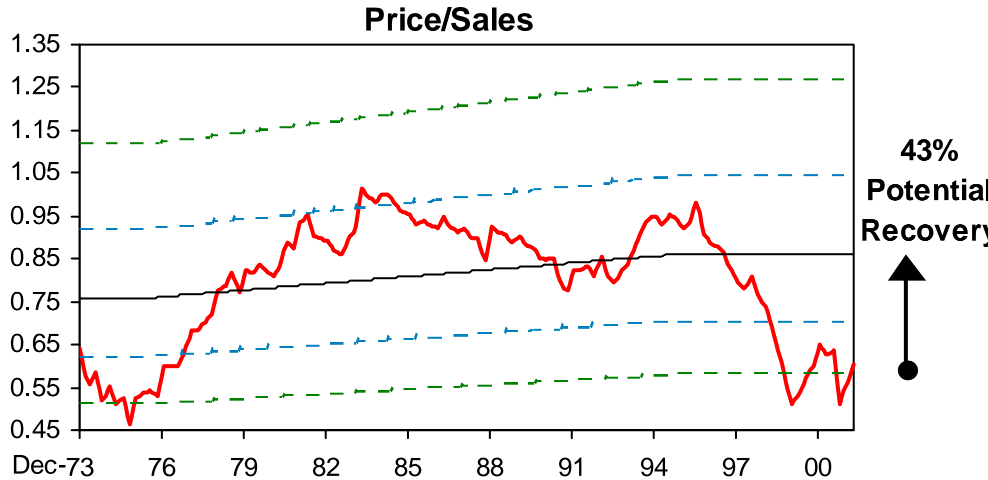
* The S&P/ Barra Value is the cheapest 50% within the S&P on Price/Book.
The S&P/ Barra Growth is the most expensive 50% within the S&P on Price/Book.

Data as of 6/30/01

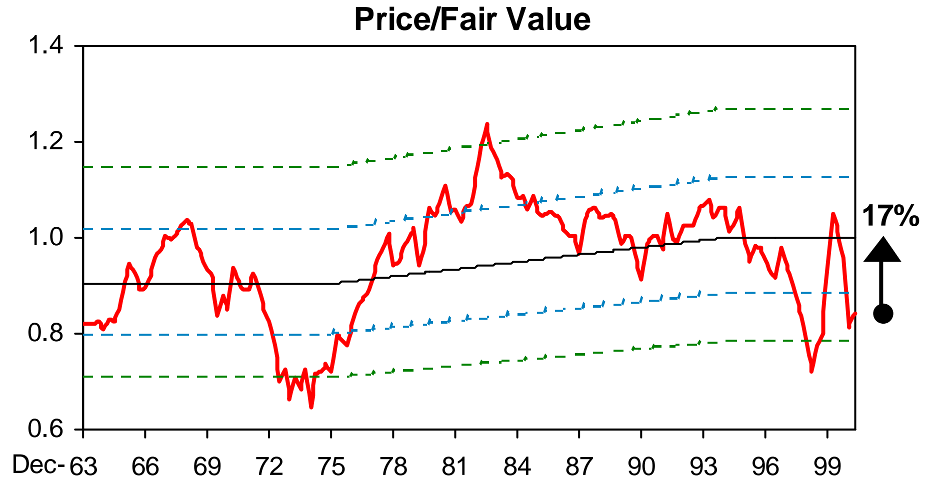
Exhibit 8:

U.S. Small Stocks Are Quite Cheap

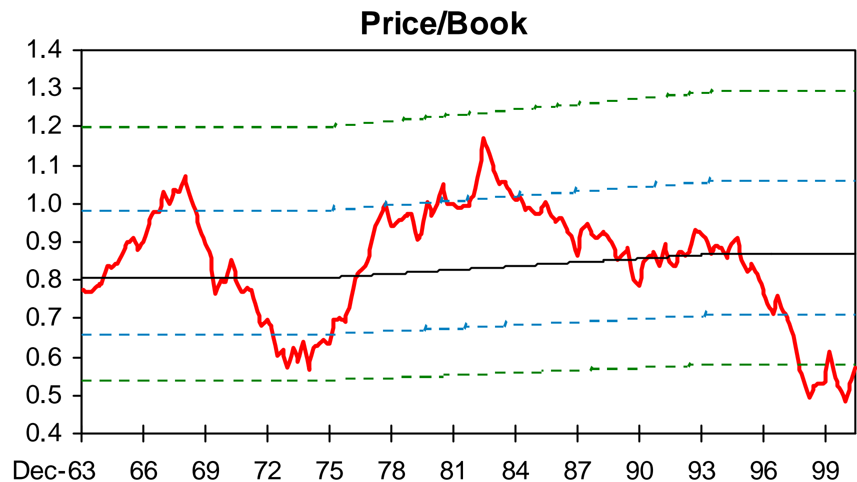
Small Stocks vs. S&P 500



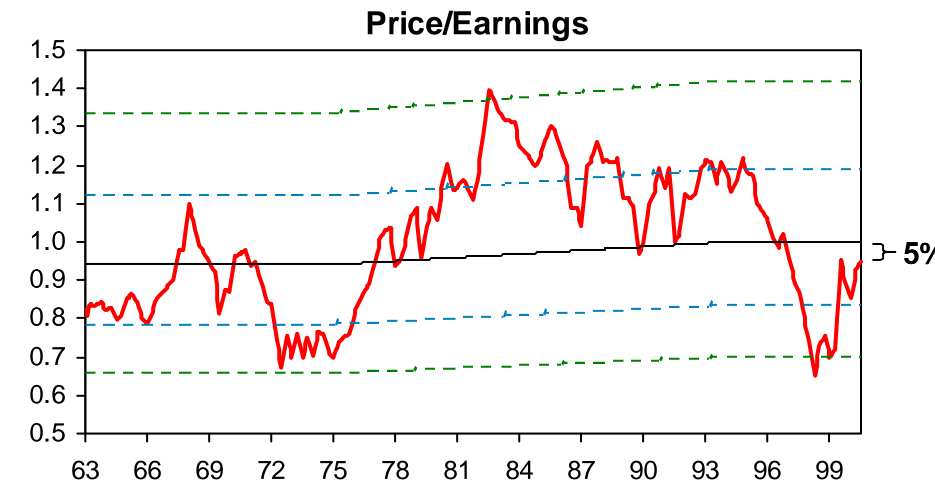
Small is 1.8 Standard Deviations Cheap



Small is 1.3 Standard Deviations Cheap



Small is 2.1 Standard Deviations Cheap



Small is 0.3 Standard Deviations Cheap

Note: Averages slope upward from 1976-1995 to reflect growing institutional acceptability of small stocks. Data as of 6/30/01

Grantham, Mayo, Van Otterloo & Co. LLC
Third Quarter 2001 Quantitative Review
Jeremy Grantham

The End of an Era

Summary and Conclusions

On September 10, the S&P was selling at 1070, and our estimate of fair value was 750. Today our estimate is still 750. On a several year horizon, the economy and market value have probably not been materially affected by the events of September 11, although further attacks could change that. We urge a focus on long-term values, which means the avoidance of large blue chips in the U.S. and, to a lesser extent, growth blue chips overseas. In contrast, foreign large value stocks and all small capitalization value stocks now seem at or close to fair value. Any rallies in the overall market seem a great opportunity to move portfolios towards these and other already cheap or reasonable asset classes and sectors, such as emerging equity, REITs and fixed income. In particular, we should all be wary of the short-term forecasts of consensus earnings, economics, or the market that are swirling around, rapidly changing and often mutually incompatible. Keynes' 'animal spirits' are the most important single factor in determining short-term economic and stock market recoveries, and animal spirits have never been harder to predict.

September 11 and Consequences

I will not attempt to add to what has been said and written about September 11, a particular tragedy for our industry. Its political, social and behavioral consequences will last for years, but our only job here is to focus on the implications for portfolio management, which may not be so profound.

An easy conclusion for the stock market is that uncertainty has increased and therefore the risk premium for stocks should move higher and stay higher for a long time. But this easy conclusion may be wrong if I for once can argue a bull case. In the 1987 crash, the market dropped 23% in a day, and but for some sensible and under analyzed manipulation on the day following the crash, real meltdown might have resulted with a much more serious decline. By normal math, this was a virtually impossible 10 or more standard deviation event. How could stocks not be viewed as much riskier for the next 10 years? The very next day, as it turned out, I was speaking to a group of officers of the largest pension funds, perhaps 40 or so, in New York. I threw away my talk and tried to engage in a give and take on risk. My first question to them was how many of them would raise their discount rate on stocks as a result of the 23% decline the day before. Not a single person there admitted to a raised perception of risk! As a group they declared their intention to soldier on as before.

How this was possible in the face of the data, I cannot say and I confess to being nonplussed at the time. I was a smart professional and knew they were wrong. So what happened? The market slowly recovered and the P/E set out on an irregular rise to the highest levels in history. There was never a hint of a higher risk premium over any significant time period. The roomful of pension fund officers was absolutely right, whether for the right reason or not. The 1987 crash was treated as a singular event utterly unconnected apparently to the future flow of events

as if it really were an irrelevant, non-repeatable event. Fourteen years later, it seems they all were right. Either the market in its gut somehow knew this was not the real McCoy but an imposter, or it was just lucky.

The stock market today (October 5, 2001) is down 1½% from September 10. One distinct possibility is that 10 years from now September 11 will be viewed like the sinking of the Titanic or 1987 – outlier events that do not change much that can be measured in the stock market.

The future will likely hinge of course on the path of future terrorist attacks. If they are few and ineffective, the developed world will settle down. A new damaging attack, however, would likely deliver profound damage to both consumer and investor psychology and raise in people's minds the possibility of an extended series of attacks. I, for one, have no ideas or even strong hunches on this topic.

Concentrate on Long-Term Fair Values

In the 10-year horizon we set for asset class forecasts, we believe that as yet nothing material has changed, except that the range of 10-year possibilities has widened, giving some reason to think of a higher risk premium moderated substantially by the 1987 lesson. We still believe that a long-term P/E of 17½ is the best number we can find for long-term equilibrium and we cannot think of any reason why profit trends should change, so our fair value estimate of 750 for the S&P today remains unchanged. For the 1- to 3-year horizon, we believe September 11 may have set in motion forces that could leave the economy stronger than it would have been. A month ago we were trapped in the social security lockbox mentality, even as the entire world's economy was slowing – not a good idea. Deficit spending is now politically easy and therefore certain. Interest rates are down to the bone and money is very, very easy.

In the near term, of course, there has been severe damage to several industries – in one or two cases perhaps lasting damage – and September and the fourth quarter will be substantially worse than they would have been without the terrorist attack. Perhaps the first quarter of 2002 will also be worse, but the stimulus should kick in beyond that point. The survey of economists carried in *The Economist* (October 6, 2000) showed their estimates for this year's GNP dropping to +1.0% from +1.6% and for next year, more remarkably, dropping from +2.5% to +1.0%! Logically this seems unlikely to owe much to September 11, given the subsequent stimulus, and this drop in estimate may be an over reaction to the attack or an excuse for economists, who had been so slow to recognize the existing weakness of the economy before September 11, to catch up.

Where We Were on September 10

By September 10, profits were in free fall, Ed Hyman of ISI, the widely followed economic service, had thrown in the towel on 2001, lowering his GNP estimate for the year to +1.0% from +1.6%, beating the consensus move by a month. This was satisfying as in our fourth quarter 2000 letter (issued in January) we stuck out our neck and suggested +1.0% ± 2.0%, in contrast to a consensus at that time of 3.0%. The last week in August featured a sharp decline in consumer confidence, and the first week in September showed the first sharp decline in housing starts, which had been amazingly strong. In total the economy, profit margins, and therefore earnings

and the stock market at 25 times falling earnings, looked to be in trouble. September 11 therefore occurred at a painfully sensitive moment and opened the possibilities for a psychological meltdown. These possibilities I would guess have been much reduced by particularly aggressive governmental actions. With the market having retraced most of its immediate losses, it seems reasonable to assume we will be more or less back on our original path, with perhaps a few more weeks tilted towards quality and large stocks in the market, due to the short-term risk avoidance that follows every crisis like clockwork. Any further attack would of course extend this relative move to large, quality companies. Crises are not helpful to GMO's style, which is more effective in steady bear markets without a crisis mentality. Indeed, in recent weeks there has been a global move to large, high quality companies away from the ordinary cheap companies that had been doing so well.

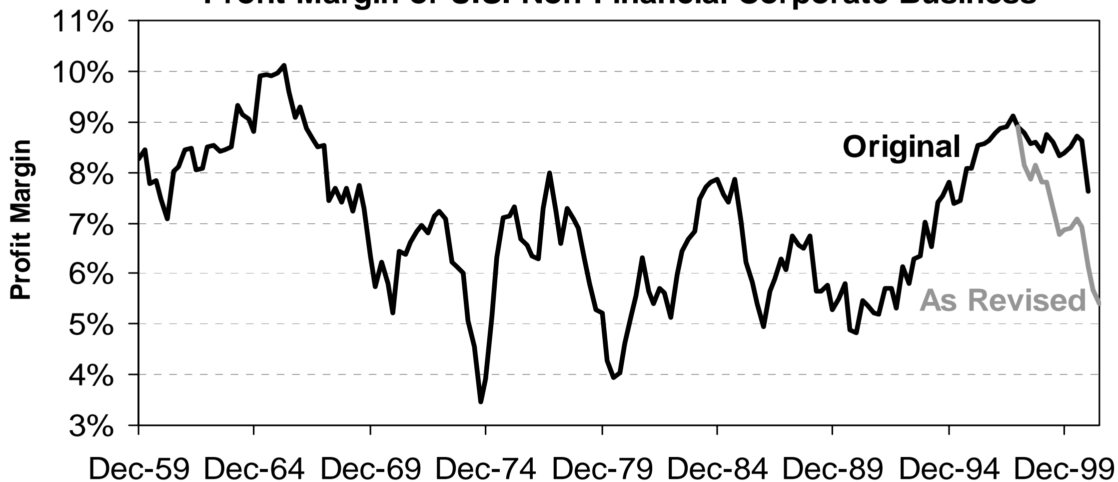
The original stock market path before September 11 was not very attractive. As mentioned, fair pricing for the S&P 500 at 17½ times earnings and a generous 5.8% profit margin on sales gives a target price around 750 near term. That normal profit margin has now been reached (or a level close to it), down from a peak 3 years ago of 8.0% return on sales. The equivalent fundamentally based price target for the NASDAQ is just over 1200 (vs. a market close of 1605 on October 5). The good news, though, is that slice-by-slice, parts of the market are reaching fair value. First are emerging country equity and REITs, which have both been cheap on an absolute basis for some time. Early in the third quarter foreign small cap value fell below fair value, and late in September foreign large cap value also reached fair price, which was cheap only relative to U.S. large caps. U.S. small cap value also got within 10% of fair value in September on our numbers.

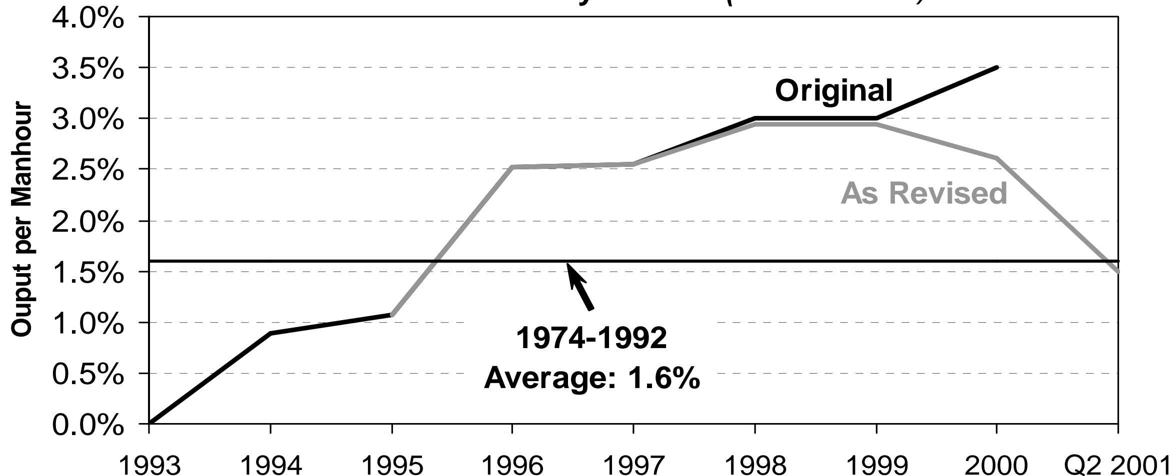
Building a fairly priced diversified portfolio had always been theoretically easier in this cycle than in other market excesses, but had needed career threatening unusual asset mixes to deliver low risk and reasonably high expected returns: portfolios with very large holdings of government bonds (especially TIPs) at one end of the risk profile; unusually large REIT positions in the middle; and large emerging equity and emerging debt at the riskier end. Such a portfolio, which GMO plugged hard at our last two client conferences and was accepted by less than 1% of our client base, has performed heroically for 2 years, actually rising in a falling market, and regaining with substantial profits the losses incurred by those who adopted this approach 2 or 3 years earlier. This latter group is made up only of my two sisters' retirement funds as far as I know! Now, however, with the addition of two more fair value categories, reasonably attractive portfolios can be built that look halfway normal. A larger foreign equity component now has the added advantage of a probable 1% to 3% a year move down by the dollar over 10 years, which is not in our 10-year forecast data.

The End of a 'New Era'

The real damage to the old bull case was done in August when the government revised away all the reasonable claims to a new era. Mr. Greenspan had pointed out that B-to-B Internet had removed doubt from business planning and paved the way to a new high era of profitability. Jim Grant's letter, recently published in the *New York Times* (attached), with its usual eagle eyes, noted that this speech took place 2 weeks before the B-to-B Internet sub index peaked before declining 95%! Exhibits 1 and 2 from Ben Inker show how severe the revisions were. In total they eviscerated the new era argument. The sustained corporate profitability from 1997 to 2000

had impressed us as much as it perplexed us. Where other profit cycles obeyed the laws of gravity, this one hung in. Three years ago at our conference we featured an exhibit of 12 factors that propped up margins, 10 of which looked vulnerable. Two years ago we featured an exhibit that showed that indeed 7 factors were retreating. Last year we skipped the topic because we had nothing new to say and the profits were still on their "new high plateau". Not any longer. Now with recent revisions, margins appear to have declined just as they did following the last great profit peak (and great bull market peak) in 1965. Productivity growth was also revised down brutally (see Exhibit 2). Now stories of 4% new era productivity have been replaced by a perfectly reasonable debate in the 2.0% to 2.5% range. We sympathize with the bulls to have the government turn on them like this. Our jobs are hard enough without the dirty pool of such major revisions.





The Next Year in the Market and the Economy

Two weeks after September 11, GMO had a client conference call in which I offered the idea that a main effect on the market might be to hurry the market down in a few months to where it would have gone anyway in several years. My case was that before September 11 the level of confidence embodied in the market bubble would not be broken easily or quickly. In particular, the extent of brainwashing on the original Siegel-type argument of "stocks win regardless of price" and the original bullish government data had legitimized the new era high multiples. It seemed, though, that September 11 might break this bubble more rapidly than normal, and the lows might be seen next year. In my defense, I prefaced what we said by claiming that at GMO we need weeks or months to feel comfortable with important events. A few weeks later, I have reverted more toward our second quarter letter.

There we reasoned that a broad consensus of economists predicted an economic recovery and that there probably would be one and it would initially carry the market up with it (+10% to +20%) before running into disappointing earnings and an economy sliding back to sub normal levels – +1½% or so – causing a severe market decline in, say, mid 2002. Now with even greater stimulus, offset partially by the economic weakness stemming from the attack, the economy should bounce perhaps a quarter later, and the stock market, reinforced by ever-greater write-offs clearing the way for earnings gains, should rebound also. But nothing changes the grip of fair value which, at 750 on the S&P, continues to exert its longer-term pull on the market. This tug of war should ensure that this great bear market will take its time and is unlikely to see its lows, excluding major new external events, for at least a year, and that any decent rally in blue chips represents a last opportunity to reorient portfolios to the several safer areas, which oddly in an "efficient market" also offer higher returns.

A Postscript on Value Stocks, Small Stocks and Emerging Equity

The unprecedented value rally that we claimed at our last Fall Conference would be good for 80%, has now occurred, delivering moderately less than 80%. This happened mainly because the unusual speed of the recovery allowed for little rebalancing (selling the early movers and buying the late movers). By September 10, growth and value stocks among the large capitalization U.S. stocks seemed to be about at parity. U.S. small value stocks had closed about 80% of the gap with large stocks and small foreign value had closed about 70% of the gap, though both groups of small stocks have fallen back in relative price by 5% to 10% since then in the crisis move to large, quality stocks. Emerging equities have lost more than 10% relative (and absolute) since September 11, as might have been expected in a crisis like this. In the longer run, this is just a better buying opportunity for emerging. Relative value will eventually determine everything, and our emerging portfolio sells at under 8 times 2001 estimates.

GMO's Third Quarter Performance

GMO had very strong performance across the board in the third quarter: exceptionally strong and resistant to declines prior to September 11, and a disappointing and expensive draw with benchmarks for the balance of the month as the market changed to its current crisis mode.

October 2001

Sometimes the Economy Needs A Setback

Reprinted from The New York Times, 9/9/01, By James Grant

The weak economy and the multi-trillion-dollar drop in the value of stocks have raised a rash of recrimination. Never a people to suffer the loss of money in silence, Americans are demanding to know what happened to them. The truth is simple: There was a boom.

A boom is a phase of accelerated prosperity. For ignition, it requires easy money. For inspiration, it draws on new technology. A decade ago, farsighted investors saw a glorious future for the personal computer in the context of the more peaceful world after the cold war. Stock prices began to rise – and rose and rose. The cost of financing new investment fell correspondingly, until by about the middle of the decade the money became too cheap to pass up. Business investment soared, employment rose, reported profits climbed.

Booms begin in reality and rise to fantasy. Stock investors seemed to forget that more capital spending means more competition, not less; that more competition implies lower profit margins, not higher ones; and that lower profit margins do not point to rising stock prices. It seemed to slip their minds that high-technology companies work ceaselessly to make their own products obsolete, not just those of their competitors – that they are inherently self-destructive.

At the 2000 peak of the titanic bull market, as shares in companies with no visible means of support commanded high prices, the value of all stocks as a percentage of the American gross domestic product reached 183 percent, more than twice the level before the crash in 1929. Were investors out of their minds? Wall Street analysts were happy to reassure them on this point: No, they were the privileged financiers of the new economy. Digital communications were like the wheel or gunpowder or the internal combustion engine, only better. The Internet would revolutionize the conveyance of human thought. To quibble about the valuation of companies as potentially transforming as any listed on the Nasdaq stock market was seen almost as an act of ingratitude. The same went for questioning the integrity of the companies' reports of lush profits.

In markets all things are cyclical, even the idea that markets are not cyclical. The notion that the millennial economy was in some way "new" was an early portent of confusion. Since the dawn of the industrial age, technology has been lightening the burden of work and driving the pace of economic change. In 1850, as the telegraph was beginning to anticipate the Internet, about 65 percent of the American labor force worked on farms. In 2000, only 2.4 percent did. The prolonged migration of hands and minds from the field to the factory, office and classroom is all productivity growth – the same phenomenon the chairman of the Federal Reserve Board rhapsodizes over. It's true, just as Alan Greenspan says, that technological progress is the bulwark of the modern economy. Then again, it has been true for most of the past 200 years.

In 1932, an eminent German analyst of business cycles, Wilhelm Ropke, looked back from amid the debris of the Depression. Citing a series of inventions and innovations – railroads, steelmaking, electricity, chemical production, the automobile – he wrote: "The jumpy increases in investment characterizing every boom are usually connected with some technological advance. … Our economic system reacts to the stimulus…with the prompt and complete mobilization of all its inner forces in order to carry it out everywhere in the shortest possible time. But this acceleration and concentration has evidently to be bought at the expense of a disturbance of equilibrium which is slowly overcome in time of depression."

Ropke wrote before the 1946 Employment Act, which directed the United States government to cut recessions short – using tax breaks, for example, or cuts in interest rates – even if these actions stymie a salutary process of economic adjustment. No one doubts the humanity of this law. Yet equally, no one can doubt the inhumanity of a decade-long string of palliatives in Japan, intended to insulate the Japanese people from the consequences of their bubble economy of the 1980s. Rather than suppressing the bust, the government has only managed to prolong it, for a decade and counting.

Booms not only precede busts; they also cause them. When capital is so cheap that it might as well be free, entrepreneurs make marginal investments. They build and hire expecting the good times to continue to roll. Optimistic bankers and steadily rising stock prices shield new businesses from having to show profits any sooner than "eventually." Then, when the stars change alignment and investors decide to withhold new financing, many companies are cash-poor and must retrench or shut down. It is the work of a bear market to reduce the prices of the white elephants until they are cheap enough to interest a new class of buyers.

The boom-and-bust pattern has characterized the United States economy since before the railroads. Growth has been two steps forward and one step back, cycle by cycle. Headlong building has been followed by necessary tearing down, which has been followed by another lusty round of building. Observing this sequence from across the seas, foreigners just shake their heads.

Less and less, however, are we bold and irrepressible Americans willing to suffer the tearing-down phase of the cycle. After all, it has seemed increasingly unnecessary. With a rising incidence of federal intervention in financial markets, expansions have become longer and contractions shorter. And year in and year out, the United States is allowed to consume more of the world's goods then it produces (the difference being approximately defined as the trade deficit, running in excess of $400 billion a year).

We have listened respectfully as our financial elder statesmen have speculated on the likelyhood that digital technology has permanently reduced the level of uncertainty in our commercial life – never mind that last year the information technology industries had no inkling that the demand for their products was beginning to undergo a very old-fashioned collapse.

Even moderate expansions produce their share of misconceived investments, and the 90s boom, the gaudiest on record, was no exception. In the upswing, faith in the American financial leaders bordered on idolatry. Now there is disillusionment. Investors are right to resent Wall Street for its conflicts of interest and to upbraid Alan Greenspan for his wide-eyed embrace of the so-called productivity miracle. But the underlying source of recurring cycles in any economy is the average human being.

The financial historian Max Winkler concluded his tale of the fantastic career of the swindler-financier Ivar Kreuger, the "Swedish match king," with the ancient epigram "Mundus vult decipi; ergo decipiatur": The world wants to be deceived; let it therefore be deceived. The Romans might have added, for financial context, that the world is most credulous during bull markets. Prosperity makes it gullible.

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Grantham, Mayo, Van Otterloo & Co. LLC
Fourth Quarter 2001 Quantitative Review
Jeremy Grantham, Chairman

Momentary Calm

2001

What a year for the market! The shock of September 11 and its consequences, the second half of the most ferocious rally in value and small stocks that we have ever seen and a sharp fourth quarter market rally. After all that, the current situation seems positively anticlimactic.

2001 was a terrible year in general but a good year for GMO. Despite our two major markets, EAFE and the S&P 500, being down 21.4% and 11.9%, respectively, we still finished the year with a few more dollars under management than we started the year with. 85% of our broad product line beat their benchmarks, representing 95% or so of our assets. Honors out of many contenders probably should go to Arjun Divecha's Emerging Markets Fund, which finished the year first out of almost 200 emerging equity mutual funds.

2001 also saw Dick Mayo leave us as an active partner to join his son and others in a U.S. hedge fund based independent firm. Dick and I worked together for 33 years and as many of you know, he was a passionate, hard working professional who shared my and GMO's obsession with winning. And he did win more than his fair share partly because he was also tough enough to make some big, unfashionable bets and hold them.

2002

We are expecting an economic and profit recovery, but a weaker one than average. On one hand there is more money, more government spending, lower oil prices and an inventory bounce. On the other there is substantial excess capacity, very highly leveraged personal and corporate balance sheets, and low or negative personal and corporate savings, all of which will hold back future consumer sales and corporate investment.

At the certain risk of being repetitive, the most important item for us is always value. Economic cycles, available cash for buying stocks and current market psychology are all problematical, unpredictable and often short term. In the longer term, the only thing we can rely on is that value will count; overpriced asset classes like the S&P 500 will underperform and cheap ones like emerging equity will outperform. The next quarter and the next year may have the wrong sign (we still have not discovered a short-term predictive tool), but in the long term, value will work. Our fair value estimate for the S&P 500 is 770 (vs. 1139 on January 17, 2002), based on 17½x normal profit margins. The equivalent for the NASDAQ is 1250 (vs. 1986 on January 17, 2002).

Concerning the economy and profit margins, we can be sure only that they will vary substantially around trend, and when they are way over trend as they were 2 years ago, for example, they will wend their way back to trend and below, as they have always done. When these and other factors are close to trend, predictions are very much harder. Today, operating profit margins

may be close to trend; therefore, to predict a giant, guaranteed recovery or, alternatively, a continued collapse is risky. Operating rates, in contrast, are quite low and sooner or later they will move several percentage points higher in an economic recovery.

One of the more interesting features of today's environment is how optimistic professional and amateur opinion on the market has become. Some research (Ed Hyman's of ISI, for example) shows institutional confidence well in the top 10% of its historical range. Cash reserves of mutual funds are in the lowest 20% of history, and so it goes on. Given the 2 years of pain in the market, the first 2 consecutive down years since 1974, the decline in the economy, the drop in profit margins from 100-year highs to below average, and some fairly serious long-term maladjustments to the economic system, we can only admire and wonder at investors' resilience. The epic 5 years of brainwashing from 1995 to 2000 never seemed likely to be deprogrammable without a long fight, and 2 years into the game this is proving to be the case in spades. It is almost admirable in its way, and may work out better in the long run than a rapid collapse in stock prices would have. I certainly hope so, although if it is the slower way we may get very bored waiting for a real bull market to start.

Recent GMO Forecasts

Last year we won our first and hopefully only serious economic forecast by predicting a +1% GNP growth ±2% in my first and second quarter letters, compared to a forecast of +3% from the 'blue chip' economists, none of whom had estimates below +2%. The actual number amazingly will be about +1%. Our forecast then was based on an insight into the inertia of the 'blue chip' economists: their unwillingness to break ranks with consensus, something we understand well in the stock market. My tentative guess for 2002 has a normal confidence level, that is to say, very low. It is simply that the economic and corporate profit recoveries will occur but will be sub-average and in general disappointing.

While on the topic of our forecasting, we said in our second quarter 2001 letter that there would be an economic recovery preceded by "a substantial knee jerk recovery in the broad market, leaving us in the spring of 2002 or so with the market quite close to its old highs on earnings, still 20% down from their peak, giving record p/e's in the mid to high 30s, which would leave the market enormously vulnerable to the first sign…" of disappointment in the economy. This forecast caught the spirit of the earnings and stock price moves of the last 6 months and still seems a quite good bet today.

The data on profits, profit margins, earnings and p/e's has never been more confused. Pick up one authoritative source and it will talk about a 40% decline in 2001 earnings and a 40 p/e on trailing earnings. The next source will talk about 20% declines in earnings last year and 26x trailing earnings. We believe the p/e on trailing earnings is 28x to 30x, but we also believe that the quality of earnings is poor, manipulated and stated on almost any basis corporations feel will serve their purposes. Accounting issues will be very important for the next several years and, for value managers in particular, weeding out the data imposters from the list of apparently cheap stocks has become a critical and time consuming issue which we are treating very seriously, with an increasing share of our resources.

Bear Market Rallies

I have tried to emphasize, since before this bubble burst, that great bear markets take their time and that this market decline would contain at least one and quite possibly two economic recoveries before its low point is reached. Exhibit 1 shows the three great bear markets of the twentieth century. They lasted for years, and the last two followed the two great bull market highs – definitely, we believe, not a coincidence. That is one reason we believe that forecasting an economic recovery is quite compatible with the expectation of a long, disappointing period for the S&P 500. This is not to say that there will not be impressive rallies, for in the past such rallies have been the rule and were all called 'the new bull market', except in hindsight. 1929 to 1930, for example, had a classic bear market rally. After declining a shocking 45% in a few weeks, the market rallied 47% through to April 10, 1930, down only 19% from its prior high and up 6% from year-end 1928. This was in its way a more dangerous market level, for in April 1930 everyone knew there was a recession and the boom was over. At the peak, the data looked very good and almost everyone believed in Irving Fisher's "new high plateau": a new era of enhanced growth, profitability and productivity. Only historians looking back knew a recession had already started.

In Japan in 1992, 2 years into the second greatest bust of the twentieth century, there was a 60% rally, which was followed by three more rallies of over 50% on the way to a 10-year decline of over 75%. Today's market has also rallied. The S&P 500 is up 21% from the September low to its January 4th high, and the NASDAQ has rallied 44%. Both may easily go higher. But already the p/e for the S&P 500 is approximately as high now as at the peak, for earnings have declined about the same as the S&P's 25% price decline. Similar to the rally of 1930, the economic environment is now clearly far less spectacular than in March 2000, when not only was almost all economic and financial data at their best, but everybody it seemed, not just Alan Greenspan, also believed that this was permanent – that there would always be much higher productivity, higher GNP growth and higher profitability. As we argued last quarter, such faith is harder after the serious reductions in previous data for productivity, growth and profit margins. In this sense, January 2002, just like April 1930, seems more dangerous in some ways than the peaks seemed to be. This is not to say we expect another depression. Quite to the contrary, with money supply running far in excess of real GNP and all the other positive factors of the 'perfect recovery', anything other than an economic recovery seems a remote possibility. But at 30x earnings and 1.8x replacement cost in a world that seems normal as opposed to a new era, the blue chip market has very dim longer-term prospects.

Asset Allocation: Real Risks and Real Return

The good news is that there are still attractive areas to invest in despite the fact that all our current favorites have done much better than the S&P 500 for the last 2 years. REITs, emerging equity and debt, international small cap value, TIPs (inflation protected bonds) and forestry all seem fairly priced or better. If one wanted to look only at traditional risk and our 10-year (or 7-year) asset class forecasts, it is easy to put together portfolios with under half the risk (measured by volatility) and over twice the 10-year expected return of a standard 65% equities and 35% bonds portfolio, even after 2 years of good positive real returns for these low risk portfolios.

It is irresistible to also mention that our asset allocation portfolios that are done on a more typical constrained basis, such as our Global Balanced Allocation Fund, in which the bet against equity, for example, cannot exceed 15%, and is currently 11%. Each of the last 2 years showed a positive absolute return for the Fund, with last year at +3.7% versus –6.1% for the benchmark. More to the point, over 7 years the value added is 1.0% per year over the benchmark with a 20% reduction in the real risk. (The Sharpe Ratio for the Fund is now 0.67 versus 0.39 for the benchmark. The Sharpe Ratio is the ratio of absolute return divided by absolute volatility.) That is, in terms of real risk versus real return, our portfolio has been almost twice as efficient as the benchmark. (For the record, if you avoid asset allocation decisions by using the appropriate GMO funds at benchmark weights, you decrease the efficiency of the portfolio as measured by the Sharpe ratio by around 10%.)

As a postscript, we are changing our 10-year asset class forecasts to a 7-year basis. Research shows that reversion to trend line value occurs on average in close to 6 years, so 7 years is still conservative. Ten is simply too long and tends, by stretching out the pain of being overpriced too far, to understate the pain. By amortizing over and under pricing by 7 years, cheaper asset classes look a little more attractive and expensive ones seem less attractive. 7 years, of course, also has the virtue of edging closer to the 5-year limit of most other work. The 10-year forecast will continue to be available on request.

A Postscript on Enron

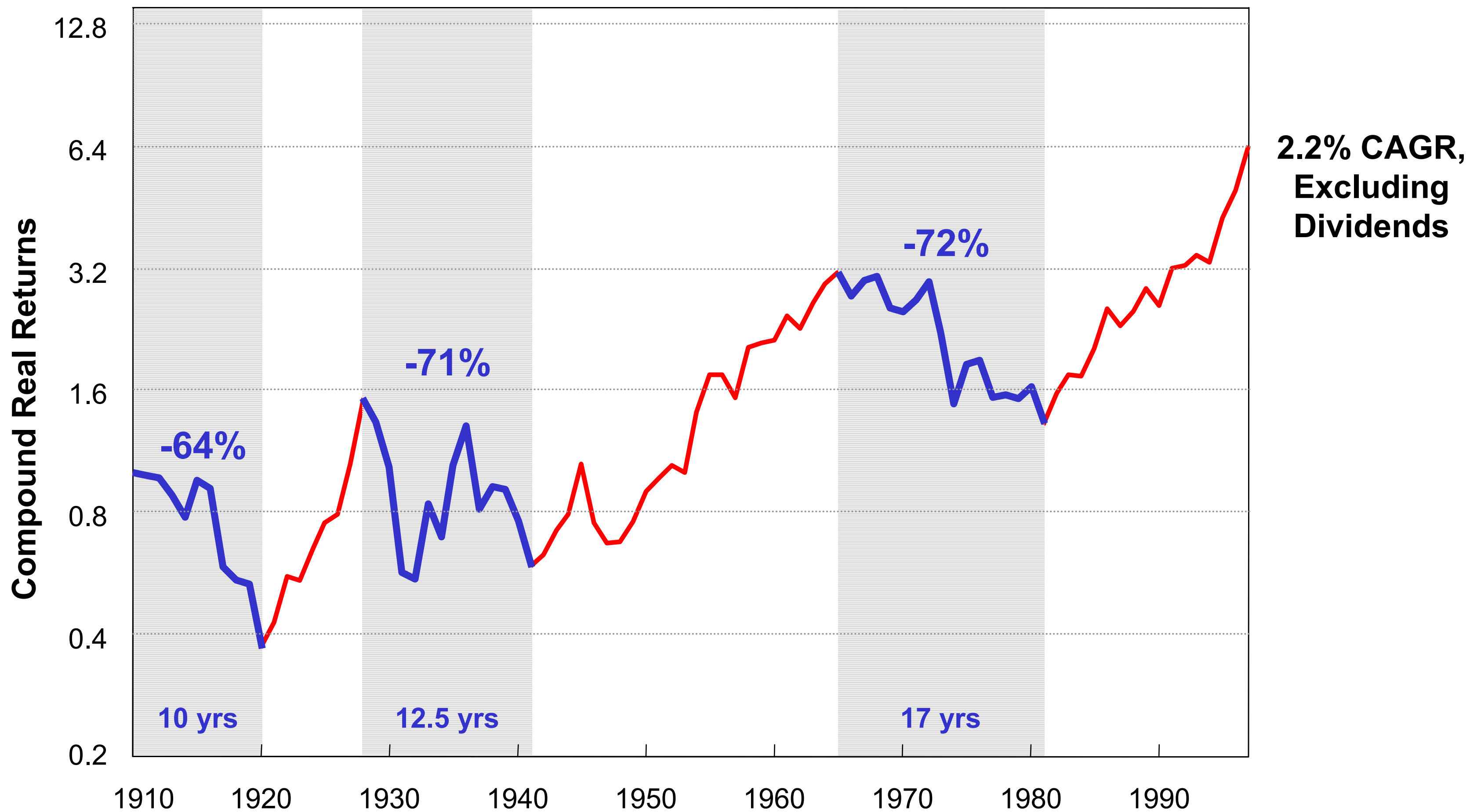
Enron obviously posed an interesting challenge for 'quants'. How and why we stepped through this minefield is too long a story to tell here and we will send you a separate note with a thorough description. Suffice it to say here that we did not own a single share in our value or momentum streams in the decline, but were nicely short in our hedge funds. We owned a tiny position in the Growth Fund, ironically, in a small sub-portfolio based on analysts' estimates. This time it was the large stock picking enterprises that ended up owning millions of shares as Enron flashed from $70 billion in size to nothing.

January 2002

Exhibit 1

The Three Great Bear Markets in the S&P 500

Price Series, Excluding Dividends



Source: Standard & Poors

Grantham, Mayo, Van Otterloo & Co. LLC
First Quarter 2002 Quantitative Review
Jeremy Grantham, Chairman

Too Much of a Good Thing?

Hubris

Once or twice in a long career events may play out precisely according to plan. In an industry where, to say the least, we are not used to the gods smiling so persistently, this is nerve wracking. Year-to-date 2002 has been such a period as value, having regained all its losses last year, continued to forge ahead around the world. Smaller stocks, relative to large, were even more remarkable. In asset allocation, alongside the success of value stocks and small stocks, can be added outstanding performance in emerging country equities and debt and U.S. REITs. The combined effect on global asset allocation was to have the equivalent of 2 perfectly good years in the first quarter (followed even more remarkably by a perfectly good year in the first 2 weeks of April). Now, on any basis, our asset allocation accounts and our major equity products have all delivered strong outperformance over all time periods and at real risk levels well below the benchmark. The Sharpe ratio of our global balanced fund is now twice the benchmark over 8 years; that is, the absolute volatility around its trend line performance has been half that of the market per unit of absolute return.

Gratifyingly, it turned out that the U.S. blue chip equity indexes really could do poorly and move sideways while small cap and emerging, far from collapsing at twice the rate, went up substantially. Value really did turn out to be more important than an average historical tendency of the two asset classes to go down more than blue chips in declines. Such relationships do matter over time, but usually extreme disparities of value matter more.

Obviously such well behaved (for us) mean reverting behavior cannot last forever, and in a world capable of great bursts of irrational behavior, anything can happen.

Where Does This Leave Us Now?

In the U.S., value is no longer materially out of line with its normal relationship to growth. Small stocks are close to and rapidly approaching the same point. In contrast, emerging equity and small cap value international remain good bets, and REITs and fixed income are still about fairly priced in a world where blue chips are still very expensive.

U.S. blue chips have corrected almost half way to long-term fair value. International blue chips have corrected perhaps two-thirds of the way and are substantially less dangerous, particularly after factoring in an overpriced dollar. In short, everything is as it was on December 31 except less so. The expensive items are less expensive and the cheap ones less cheap. Critically, nothing has changed sign yet and the closest (value vs. growth in the U.S.) has an impeccable record of overrunning to give us a safety margin. There is still good relative and absolute money to be made, just less than there was.

The Economy

The economy recovered even better than expected. I am pleased to have said in July and October last year that, "of course there will be an economic recovery". Unfortunately, the stock market is far more about over valuation than economic recovery. Having said that, I believe the market would have rallied another 10% or so without Enron and all it represents. Enron has raised a remarkable list of different factors – all important and all well worth raising and addressing. Standards notoriously slip in great speculative bubbles and, having lived through the greatest bubble of the 20th and perhaps 19th century as well, it is not surprising that standards really seriously declined. As we have enjoyed saying for 4 or 5 years: stock options were not just a way to get rich by delivering excess profitability on a sustained basis. Rather, they were a way to get obscenely rich, sometimes to the tune of hundreds of millions to a single manager and all by the transfer of stockholder wealth. This wealth was awarded not only to the successful racing boats, but this immense tide raised ordinary boats and even leaky boats. The independence of most security analysis has never been in doubt: it is not independent. Corporate earnings were often manipulated and usually believed. Only a small fraction of investment advice in 1998 and 1999 passed a simple test: would it be given to a close relative on a several year horizon? To discuss some of these issues at our Spring Forum on May 14, we are lucky to have Arthur Levitt, former Chairman of the Securities and Exchange Commission; James Chanos, President of Kynikos Associates, a well-known hedge fund manager that was short Enron stock starting in November of 2000; and Bevis Longstreth, a longtime friend, client, and former Commissioner of the Securities and Exchange Commission.

Although it has long seemed inevitable that the economy would recover (that is after all what they do after a setback), it has always seemed likely that the great old days were over. Much of the growth of the late '90s came from increasing private and corporate leverage that could not be sustained. Some of it came from a steady decline in rates to rock bottom levels and some came from an unsustainable boom in capital spending. The economic downturn in manufacturing was exaggerated by an inventory correction, which was likely to snap back, but the rest of the economy hung in relatively well. How was that possible? It turns out that the decline in rates, particularly mortgage rates, did three things. It lowered monthly mortgage costs, which was a boost to spending. It allowed for re-leveraging mortgages, to take out extra money, which also boosted consumption. It also kept housing construction strong and home prices strong, which for many in the middle class is a more important input to feelings of wealth than the stock market. This was for most of us a surprise. It really moderated the decline outside manufacturing, and together with the predictable post September 11 stimuli, allowed for an unexpectedly strong snapback.

But this financial leveraging has come at a price. Although debt servicing expense is not quite at an all-time high versus personal income and corporate income, because of very low nominal interest rates total debt as a percentage of income and inflation-adjusted servicing expense are at a peak for both sectors. What that means is that the first serious increase in rates and debt servicing will be a major problem for the system. Fortunately, a major rise does not seem likely anytime soon, meaning that we are quite likely to noodle through just fine for a while in GNP terms. Profit margins, however, have always been a tougher question. A rapid recovery never seemed very likely. This picture is confused by the uncertainty as to what earnings actually are. The gap between national income accounts earnings and S&P 500 earnings, really quite small

through 1995, widened extraordinarily in the late '90s with the S&P 500 stated earnings becoming far more impressive, indeed touching records. The recent NIPA earnings were extremely depressed where S&P 500 margins were only down to about normal. This has given rise to a similar confusion on P/E. Is it 22x trailing earnings, at the low end, or almost 44x as Rob Arnott of First Quadrant believes? We are using a relatively friendly 28x and conclude that the market is still worth 17½x. Price to replacement costs also suggests a 30% to 40% decline to fair value at 1.6x normal, down from 2.6x normal.

For the market, the central point of caution is probably still the same: "the great bear markets take their time". This bear market is unlikely to be behind us for some time, not perhaps until after a second or even a third economic slowdown, until all the chutzpah of the great bubble has gone and until most investors have swung back to prudence or even over swung. That has been, up until now, the unvarying requirement of ending the great bear markets. Until then, there will be sharp rallies and whole and sub asset classes where careful investors can protect money and even make some real money from time to time.

Any measurable rally in the broad market from here should still be seen as a glorious opportunity to redeploy assets to safer areas. With the economic recovery, such a rally or rallies is quite likely. But this bear market event is very unlikely yet to be "all over but the shouting". There is indeed likely to be plenty of shouting, but also plenty of real disappointment. The great bull market and its demise was never primarily about the economy but about 'animal spirits', a chain of pleasant surprises, and the ensuing spectacular overpricing. The key point of the last 2 years is that we really do live in a mean reverting world, and seldom has this been better demonstrated than in the first quarter. It is sad, but almost certainly true, that the 'bad guys' will have several quarters of their own where overpriced assets and stocks will rally before the broad market bottoms out.

A Postscript on Benchmarking and Asset Allocation

The emphasis on careful benchmarking has increased steadily for the last 30 years to such effect that in some ways the investment management business shows signs of paralysis; few dare make any material bets. Even at the portfolio level for the whole account, it is often not clear what role is played by the Sharpe ratio, the standard measure of real return per unit of real risk. Also not obvious is who has the clear responsibility for making the decision. The default position seems to often be to copy what everyone else is doing with little or no regard for the likely Sharpe ratio. GMO believes a clear antidote to this is "absolute return asset allocation". We have been pitching this concept to clients for a few years now, and over the past 18 months it has gone from impossible to sell to merely difficult. We now have seven accounts totaling $900 million. In this approach we ask only what each asset class is likely to return on a 7-year time frame and what its real risk is. We then attempt to pick the most efficient mix of risk and return, period. The good news is that returns for 2000, 2001, and 2002 have all been nicely positive. Needless to say, we warmly recommend consideration of this approach, which we believe particularly addresses a big failing in the investment business.

April 2002

Grantham, Mayo, Van Otterloo & Co. LLC
Second Quarter 2002 Quantitative Review
Jeremy Grantham, Chairman

Who is to Blame for the Market Mess Part I: Greenspan, Stock Options & The Academics

"A Once in a Generation Frenzy of Speculation" A. Greenspan, July 2002

As the smoke clears, it looks like it was a new era after all. In the late 1920s, there were some spectacular cases of embezzlement, but there was not the **breadth** of weaseling that went on this time. 'Weaseling' covers the shaving of ethical standards, the pushing of reasonable boundaries, massive over compensation, and outright cheating.

Great bubbles breaking offer a paradise for Murphy to operate in. What can go wrong will pick the deflating cycle of a bubble in which to go wrong. As Galbraith pointed out in his book, *The Great Crash* (published in 1954), new accounting standards and new regulations occur in major down markets, and existing rules are applied with new vigor just as they grow slack in bubbles. He claimed that the size of the 'bezzle' as he called it (to describe all cheating and embezzlement) grows on the upside of an investment bubble and shrinks on the downside; and this time the 'bezzle' got to be pretty big – far bigger than any of us expected.

Defenders of the Great Bull Market argued that in each of the previous cycles that really mattered – 1929, 1972, and 1990 (Japan) – some impressive error was made. There was poor monetary and fiscal policy in 1929, the oil crisis in 1972, and every conceivable error in Japan in 1990. This time, though, it was believed that the archangel Alan would save us by doing everything right. To this idea for 4 or 5 years I have countered first that in the downside of a great bubble, the pain will be very severe even if no mistakes are made at all, and if mistakes are made, the pain will be worse. Second, I believe that one may have to wait a few years to find what history will determine is the mistake this time.

There are several candidates for the role of major mistake this time. That Greenspan talked about "irrational exuberance" in late 1996 with perfect timing, but did nothing, is my favorite. Great bubbles are just about the most dangerous thing that can happen to an economy and only the Federal Reserve has the ability to head them off. Greenspan could have raised the rates a little back in 1996 and added a lot of jawboning about determination to prevent an asset price bubble. It probably would have worked and cut off the last 40% of the upswing and offsetting downswing, and reduced the over investment, greed, and corruption that goes with a truly major bubble. Instead, as 1996 waned, Greenspan was asking, "Who am I to disagree with tens of thousands of well-informed investors?" Humble indeed! So instead he became the cheerleader of the dangerous rising stock prices, emphasizing how the internet in particular would push back the dark clouds of corporate ignorance and lack of information and usher in a new era of permanently higher productivity and profitability.

Another candidate for major error would be the egregious use of stock options. The lack of accounting for them was always laughable, justified by nothing but convenience. Either it misled investors, in which case non-disclosure was just wrong, or as *The Wall Street Journal* op-ed page argued today (July 18, 2002): everyone was aware, so why are you complaining? If everyone was aware, and since no cash flow was involved, of course there would be no reason not to disclose. The whole merit of non-disclosure is of course to create the illusion of enhanced value. Another contributory flaw in the system was that the Boards of Directors, often with overlapping membership, were agreeing to almost anything. The standards for exercising options were not adjusted for market performance or rarely for peer performance,

so that options became licenses to raise leaky boats with the market tide. Executive pay rose to obscene multiples of workers' pay – over 200 times compared to the 15 times of the 1970s and Japan today. The manipulation and overstating of earnings, by pushing accountants as well as pushing accounting standards, stood to be hugely rewarded. With hundreds of millions being made by average and sub average performers, it is easy to see how corporate ethics would be subverted.

On a more philosophical level, my particular peeve is with the academic community that in aggregate created an atmosphere in which it was easy for individual and professional investors to be carried away by the great bull market. From Burton Malkiel on – Fama, Jeremy Siegel, and almost the entire academic community – were promoting the concept that the market was either efficient, or at least guaranteed to outperform bonds over any decently long time period by divine right **regardless of price**. Mystically, if the market doubled in price, it did not halve the expected return. It reflected an equal and offsetting increase in the corporate system, growth, and profitability. History, though, might suggest that this corporate system was a battleship and slow to change, where the stock market demonstrably changed dramatically in short periods of time. If the price of Deutsche Telecom at the old 15x earnings embodied best information, then equally at 120x 2 years ago its merits were deemed to have improved commensurately according to the theory. The individual investor can buy at either price with a clear conscience, indeed at any price – 300x earnings, for example – for 'they', the market, must know best. Doing serious work on inefficiencies was academically dangerous for one's health in this time period. A fairly strong efficiency case still dominates at most business schools. If you believe it, indexing is the only choice, the arbitrage mechanism weakens, and you are not personally responsible, particularly non-professionals, for disasters. Buying stocks or asset classes at any price is by definition **prudent** in an efficient world.

The honorable exception list is of course headed once again by Keynes, who laid it all out in 1934 in chapter 12 of his *General Theory*. Career risk for him dominates. It is safer to stay with the crowd and be 'quicker on the draw' or faster at 'musical chairs' than the next man. But the price the market would pay would be that despite occasionally serious research into 'enterprise value' it could from time to time 'be borne along on a current of speculation'.

Keynes' unique features were that he was not only a candidate for the greatest 20th century economist, but also the only candidate who seriously and continuously invested real money. Despite this, his wonderful exposé of the real world apparently never cut any mustard in the academic community. Modigliani also ranks with the good guys. He came to the Boston financial community in 1982, when the S&P 500 was at 8x, and explained that high inflation was not the issue for real assets, like corporations who passed inflation through. He explained that they should sell at replacement cost or about 16x earnings, twice the prevailing price. In 1999 he came back to a Boston quant group and explained that very low inflation was not the issue, etc., and that the market should sell at replacement cost or about half the then current 32x. (I was lucky to be the only person at both meetings.) Unfortunately, for many, he was too busy with other issues to make much of a splash with this. Robert Schiller and Andrew Smithers also labored hard, much more recently, to knock holes in the efficient market.

Unfortunately, the numbers were with the enemy, and the accepted wisdom became that all useful information was in the price so one could go ahead and trust the current price rather than the history books or common sense. Keynes argued, by the way, that a reasonable test of a good economic theory was that it fit the available facts. The efficient market failed this test in many ways. One of my favorite ways is price momentum. The day *A Random Walk Down Wall Street* hit the book stands, arguing that, among other things, there was no useful information in pricing and one could pose a very simple test of this indeed: "Stand up those 10% of stocks that did the best in the last 12 months". Ranked every January 1 for the prior 20 years, these stocks had outperformed by 4.1% a year, within the 600 largest blue chips – capitalization weighted and eminently implementable in the real world. This was a powerful

demonstration of pure information in pricing, but perhaps it was data mining? In the next 25 years in real time and used by GMO, in a fancier formulation, this simple form of momentum outperformed again by 4.1% a year! GMO's record is also not bad as proof of market inefficiency. With almost 400 product years (1 small cap growth fund existing for 10 years counting as 10 product years, for example) we have won 68% of all product years and averaged +3.0% per product year, including discontinued funds, all after fees. With about 40% dependence and 60% independence between our funds, the chance of getting a 68% hit rate is about one in 300,000. For Warren Buffet, the odds are probably longer.

No doubt other 'errors' will appear to have been made in this cycle in the eyes of future historians, and some may even compare to these mentioned. Suffice it to say, major errors have probably been made that will increase the irreducibly large pain that would have been suffered anyway.

The net effect of two of the errors mentioned above is that painful doubts have been raised about the integrity of the US financial system, until so recently, the pride and joy of capitalists everywhere. This is probably what has caused the speed of the recent decline to 850 on the S&P 500 (July 16), down well over 20% for the year and 44% from the peak. Given the surprisingly strong economic recovery, this is singularly rotten performance and a real testimonial to 'WorldComitis'. ('Enronitis' at half the total cost is now passé.)

Long-term Value of the Market

After such a rapid decline, it is time to re-examine our view of long-term value. We had been using 750 on the S&P 500 a year ago, using clearly market-friendly assumptions. Unexpectedly, this has fallen off slightly instead of rising a few percent along the long-term trend. The decline has occurred because corporations have reached back into time and reduced assets, margins, earnings, and even sales that we thought were real. Our new number on exactly the same old friendly assumptions has drifted off to 700 on the S&P 500. The Nasdaq, which we had felt was worth 1250, is not surprisingly much flakier in restatement and has dropped unprecedentedly to 1100. But, unfortunately, this is not as bad as it gets, for it is not appropriate to use 'friendly' assumptions. Eventually, we have to try and get it really right and use the best, most likely assumptions. Ben Inker will be sending a detailed review of old and new assumptions and their implications separately in the next few weeks. The fair value on still very reasonable assumptions, though frankly slightly optimistic, will indicate a number closer to 650.

The good news, on the other hand, is that the percentage of the dollar pain involved in moving from 5050 on the Nasdaq to a fair value of 1100 or a bit less is 94% behind us! Even the S&P 500 has traveled almost three quarters of the way towards our estimate of fair price.

The bad news is, as we have said monotonously, that major moves like this have always over corrected, with, unfortunately, absolutely no exceptions. Over correction land is for us *terra incognita*. We know, or think we do, only one important thing about bubbles: they **will** retrace all their gains back to trend. Below trend, we can predict nothing with high confidence. The best a historian can do is point to a fairly strong **tendency** in stock markets for the degree of under pricing reached eventually to be related to the degree of over pricing preceding it. We certainly hope this will not be the case this time, for it is a very ugly thought, but I think if one wants to be serious, one should at least carry this in the back of one's mind as a possibility. I know this is not encouraging reading, for it means 500 or less for the S&P 500 as a **possibility**, perhaps reached in a single year or perhaps in several.

The Outlook for Major Market Sectors

What about the major sectors in the US market that dominate everyone's **relative** performance? At the market peak in early 2000, US value stocks, relative to growth stocks, were substantially cheaper than ever before, even during the legendary Nifty Fifty era of 1972. In 1974, the value recovery, after 10 years of growth dominance, took 6 years to get back to trend and 3 years over running against growth. This time, value stocks took an amazingly short 18 months to reach trend in the September 2001 decline. After a sharp growth stock rally in the fourth quarter, they regained parity early this year and by the end of the second quarter had begun to over run. Small capitalization stocks had the same history as value stocks with the previous relative low, set in 1973, at extremes that seemed to me unlikely to be ever reached again, only to be substantially exceeded by March 2000. They also had a rally several times faster than their great 1973–1983 rally and are now at parity with large stocks. Even the important subset of small capitalization value hit trend line value against the market. The good news about these rallies of relative performance, unprecedented in both extent and speed, is that they have delivered very unusually strong relative performance for GMO, and investors like us, who were playing both themes to the hilt, partly by natural style, and importantly, as readers of our quarterly letters know, by design. The bad news is that both these important factors are now in the over run mode where investors should have less confidence in the gains than before. One specific manifestation of this new relationship should be that the day-to-day performance of these groups will be closer to their normal relationship to the broad market. If this is so, both groups will lose a substantial part of their defensive nature if the market continues down.

Asset Class Outlook

In terms of asset class movements as well as sector movements, the second quarter, year-to-date, and indeed the entire bear market have been the most perfectly mean reverting market periods in history. Every **absolutely** cheap asset class went up absolutely. Those that were merely relatively cheap at least did well relatively. Above all, the outrageously overpriced large growth stocks collapsed. Even the overpriced US dollar obediently declined this year and the especially cheap currencies (Aussie and New Zealand dollars and the Euro) rallied particularly well. Notably, despite growth skepticism, especially from real estate experts, the REITS continued to outperform, adding another stunning 4.8% this quarter to their 18.2% over the S&P 500. Emerging equities and small cap value globally continued their prodigious outperformance. Since March 2000, their extreme relative cheapness against the S&P 500 overwhelmed their usual tendency to be high beta and hence underperform on the downside. For these asset classes too, as the gap in relative value narrows rapidly, so their more normal correlations will become a bigger influence. Ben Inker and I expect value and small, especially internationally, but also in the US, to be at least a modest help in any further decline, but, unfortunately, much less so than in the last 2 years. We also expect that REITS, with their 7% yield, emerging equity, with its 14 p/e and respectable earnings, and TIPS, with their 3% inflation protected yield, will do well on the downside. So, in general, all our asset dispositions are unchanged; it is just that the expectations are reduced.

To balance these reduced expectations, we have the comfort of recent relative performance. For our firm, I believe this is the best 2¼ years performance I will ever see, even if my 'eat less and live forever' diet works. Highlights are everywhere, but foreign quant and global balanced have performed exceptionally well in both absolute and relative terms. Year-to-date, International Intrinsic Value has added 9.3% over its SSB EPAC Value benchmark and the Global Balanced Allocation Fund has added 10.4% over its benchmark. The Global Balanced Allocation Fund has a conservative traditional benchmark of 65% equity (of which 25% is foreign) and 35% fixed income. The mandate requires a minimum of 50% equity and the fund is currently over 55%. Outperformance of 10.4% therefore requires an outlier event just as extreme, if not more so, as the explosion of the tech stocks was in 1999. Investment bubbles are often surprisingly symmetrical, he says with relief.

The Economy
As you know, we have not been picking serious fights with the economy, which has always seemed robust and in reasonable shape and ready late last year for a recovery. We merely said in our second and third quarter letters last year that after a recovery began, it would turn out to have a shorter strong period than normal. We expected that the downside resulting from previous over investment, personal and corporate over leverage, the need for higher personal savings, and the stock market wealth effect, would hurt corporate earnings, particularly relative to normal and would tend to moderate GNP growth. We still believe exactly that. Our belief is in fact reinforced by the unexpected reduction in 'animal spirits' caused by 'WorldComitis'. This painful stock market period is not about the economy. It is in fact **despite** the recently sturdy economy. It is not about terrorism or even about discouraging ethical standards. These are only catalysts for speeding a decline that was already underway. Great bull markets are in the end about over pricing brought about by placing stock market gains ahead of fiduciary concerns by a great majority of individuals and committees. These bull markets always reverse. Catalysts are usually found, and in their absence, like 1929 and 2000, the market will fall simply because prices have lost touch with reality.

Summary of Complaints
The academics created a dominant, accepted wisdom regarding market efficiency that probably guaranteed a more extended bubble than ever before and Greenspan did nothing to prevent it and eventually became its cheerleader. Investment houses went along with self-interest as did Boards of Directors and top management. Stock options and greed provided the fuel. The media, relatively blameless in my opinion, did what they are paid to do: give the public what it wants. The general public was left on its own, with dangerous brainwashing and perhaps a predisposition anyway to want to play with the crowd and believe good news.

Postscript
GMO believes it is in our clients' best interest for there to be improved accounting standards and that existing standards be implemented with more intention to reflect existing facts accurately. As could be gathered from our Spring Investment Forum in May with Arthur Levitt, Bevis Longstreth, and Jim Chanos, we are in favor of clients being more proactive. Recent initiatives have included the development of various proposed legislation on the subject of improved corporate and auditor accountability. Enclosed is a copy of my letter to Senator Sarbanes supporting his proposed Bill. Fortunately this particular skirmish seems to be going well.

July 1, 2002

The Honorable Paul S. Sarbanes
Chairman, Committee on Banking, Housing and Urban Affairs
534 Dirksen Senate Office Building
U.S. Senate
Washington, D.C. 20510

Dear Senator Sarbanes,

We are an investment management firm with over $26 billion of institutional funds under management. We commend you for authoring the Public Company Accounting Reform and Investor Protection Act of 2002 and for achieving broad bi-partisan support from the Banking Committee for the Bill's submission to the floor of the Senate. We write in support of your bill.

Investor confidence has been badly shaken by the unprecedented number of audit failures in recent years, of which Enron is but one large and dramatic example. Trust in the numbers has been eroding, with no end in sight. If reform measures are not put in place soon, the consequences of this continuing loss of trust could be very detrimental to our nation's pre-eminence as the financial capital of the world and to equity valuations both here and abroad.

It is clear to us that a legislative solution is required. The SEC lacks authority to get the job done. Among the legislative proposals, only the Sarbanes bill contains all the necessary elements to achieve effective reform of the audit function. In particular, we support that bill because it:

- establishes an independent Public Company Accounting Oversight Board, whose members must be full-time and may not engage in any other business or receive any compensation from an accounting firm;
- prohibits auditors from offering specified non-audit services that are likely to compromise independent audits and empowers the Board to proscribe others as needed;
- grants the Board broad powers to establish auditing and quality control standards and ethics rules, to oversee auditors and their audits, to investigate wrongdoing, and to discipline and sanction both audit firms and individuals associated with them; and
- grants the Board enforcement powers, privileges and immunities, comparable to the legislatively granted enforcement powers enjoyed by the National Association of Securities Dealers, Inc., without which the Board could not expect to be effective in regard to the vital matter of imposing discipline on wrongdoers within the audit profession.

Again, we at GMO applaud what you are seeking to accomplish. It is squarely in the public interest and the interest of investors everywhere. We invite you to share this letter with your colleagues on both sides of the aisle in the Senate and in the House. The goals of your bill are not, and must not be treated by politicians as partisan matters. They implicate the investment process in which all Americans have a stake. They must become embodied in law because they will importantly improve the quality of our markets.

Sincerely,

Jeremy Grantham

GMO

Quarterly Letter

October 2002

Jeremy Grantham, Chairman

The Bubble Deflates – Part 7: The Easy Part Ends

Comments on the Economy and Markets

The third quarter for the global equity markets was one of the most brutal quarters and the worst September since 1937. The global economy seems at least a little weak in the knees and the risks are higher than normal. Japan and Germany seem particularly unable to fix their problems. The threat of war with Iraq does not help. The US business world, so recently the envy of the world, has continued to disillusion everyone, including us at GMO, with the degree of ethical compromise and even outright cheating. Investors did not seem to be getting a fair shake, particularly individuals but also institutional investors. Too many of the moving parts – top management and chunks of Wall Street – were not just putting their own interests first, but doing so with a disdain for clients and stockholders not seen since the late 1920s.

Little by little this year, the layers of self-serving behavior have been revealed. The President's previous corporate behavior is apparently not above suspicion. It is clear that many congressmen (led by Senator Lieberman), who in general seem reasonable enough, really did put their campaign contributors ahead of the integrity of the financial system, beating back efforts to reform accounting standards and accounting firms.

More smoking guns have been found around Greenspan. He really did seem to believe in the dangers of a bubble; for a while even that a bubble existed. He thought then at least that he had the tools to arrest the bubble, mainly by increasing margin requirements. That he did not is not very remarkable for he would have taken a lot of political grief, but it is disappointing that he could not have been tougher. Certainly it is nowhere in his job description to have been such an eloquent advocate of the new economy. (My views on Greenspan are attached as a separate piece.)

Most of this damage occurred long before the third quarter, but during the quarter little pieces of the puzzle were added day by day and the picture became more complete. Greenspan's egregious denial of any responsibility for the bubble – sometimes blatantly contradictory of his earlier statements – brought forth another wave of analysis.

The total impact is that all investors, institutional as well as individual, feel betrayed by too many components of our financial and governmental system. The consequences will be far-reaching and already they have hastened the inevitable market correction towards fair value. At a later date this disillusionment may play an unfortunate role in determining just how far the market will overrun fair value, for overrun it very likely will, as we have found no historical exceptions to this tendency to overrun.

To repeat our usual main point, bubbles forming and breaking are by far the most important points in market history. If everything is done right, there will always be lots of pain. If anything is done wrong, there will be more pain. It is increasingly impressive and surprising how much we have done wrong this time.

Market Sectors

There was a strong sense of growing global crisis during the quarter, and quality began to strongly outperform in almost all countries including the US, from mid quarter into October. Small and value, associated with lower quality in a crisis, began to underperform everywhere except Australia, which has interestingly been able to hold onto the old themes of small and value longer and outperform most markets into the bargain.

Value stocks in the US underperformed a desperately weak S&P 500 (-17.3%) by 1.4% and value underperformed growth by 3.7%, probably the worst value has done in a double-digit bear quarter since the 1930s. This relative underperformance was bound to happen sooner or later, but to do so in such a weak market was unusual timing. The unprecedented value versus growth spread of March 2000 had closed by September

2001 and, after a fourth quarter 2001 growth rally, had passed through normal by June 30 into overshoot territory, which is typical. Small stocks had also closed their equally unprecedented gap by June. The remarkable defensiveness of these two bets – rising for the first 21 months into a steadily falling market – has been more impressive than we could reasonably have hoped for. In the second quarter letter, I had mentioned that both were substantially overpriced in an absolute sense and were very likely to suffer severe absolute pain, particularly as they both have substantially more cyclical exposure than the S&P 500 and the economy remains very vulnerable to slower growth than expected. The actual quote was “both groups will lose a substantial part of their defensiveness as the market continues down.” Little did I know how quickly this test would arrive and how conservative “a substantial part” would look. Having said that, by the end of this bear market we expect both value and small to hit new relative highs but to do so with much greater volatility and some very painful periods.

In international markets, small and value fell off their relative highs but were able to hold on to a draw for the quarter.

Our estimate of fair value is 670 on the S&P 500 and 1050 on Nasdaq. The difference from the recent early October low is practically rounding error. Almost 99% of the pain of the Nasdaq, falling from 5050 to 1050 was completed, and 83% of the pain of taking the S&P 500 from 1550 to 670 was behind us. What we all have to worry about now is the degree of overcorrection. If it is severe, and it may be, it may also interact with an already weak global picture.

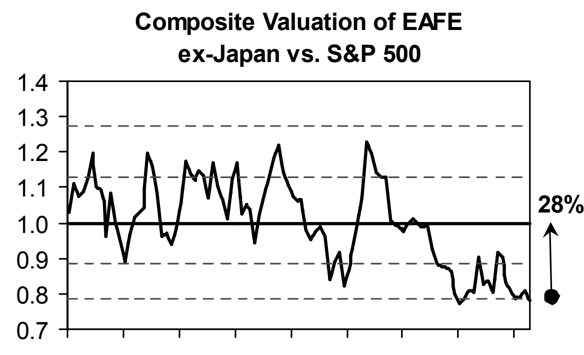
Asset Allocation

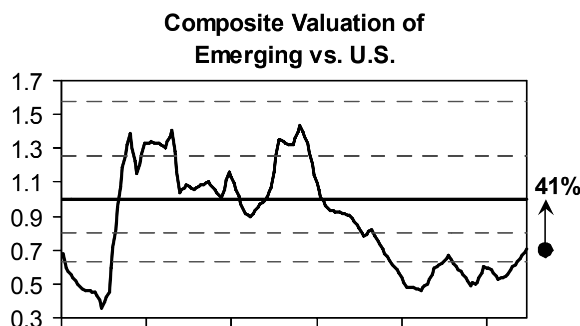
The third quarter, though, was positive in some tough love ways. Non-US equities became absolutely cheap for the first time in years and cheaper than fixed income for the first time in the 12 years we have been doing asset allocation. The potential 7-year return for some non-US components such as small cap value and emerging is downright attractive. The downside to this is that the chance of any foreign stock components actually rising if the US market falls is somewhere between slim and none. But it is better to take pain in an asset with a prospective return of 13% real rising to 17% than in the US rising from 2% to 6% (which incidentally only takes two more Septembers). The gap in value between US and non-US equities is actually as cheap as it has been in 40 years (Exhibit 1). The past moves between US equities and EAFE ex-Japan have been powerful and long-lasting, and the past move in favor of US equities was the longest. Exhibit 2 suggests the cycle may have turned towards EAFE ex-Japan and even if it has not, we expect it to turn soon and make a large multi-year move the other way. This gap between two of the three great building blocks of asset allocation can provide the fuel for several years of substantial value added, but of course as usual, the course of mean reverting true love will not run smooth.

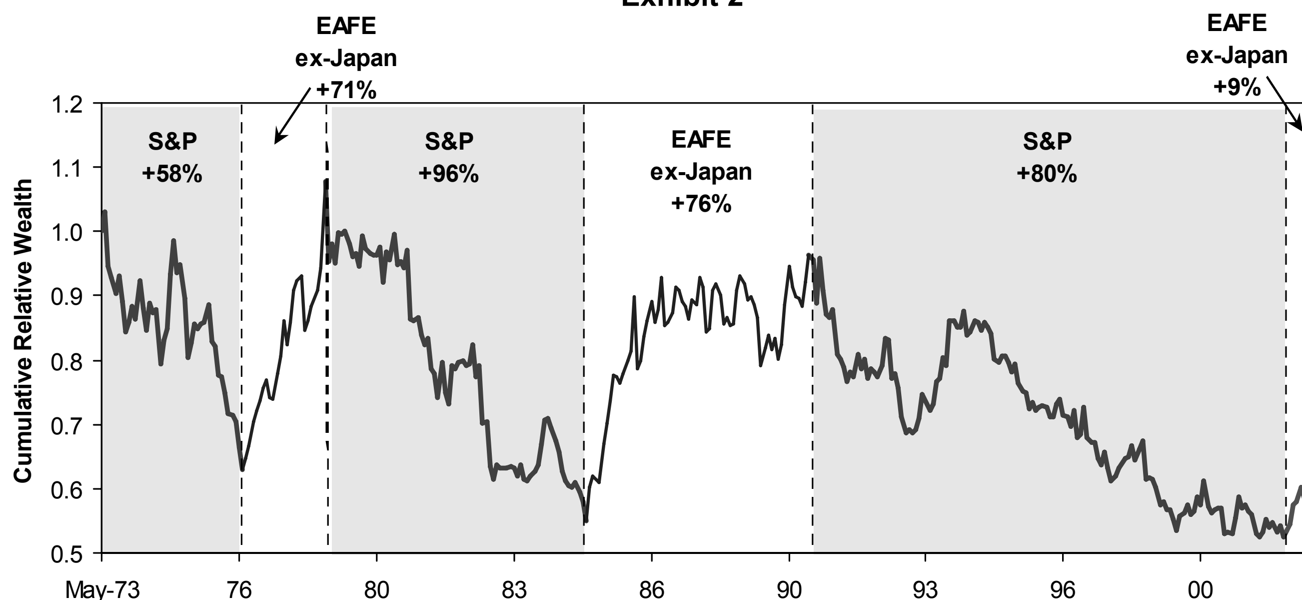
Our preference now on a 7-year horizon is non-US equities first, fixed income a fairly distant second, and US equities third. Even within US equities, REITs are far better than fixed income and small cap value probably a little better. Indeed, fixed income by dint of brilliant performance since March 2000, has become substantially overpriced. Inflation protected US government bonds (TIPS) have dropped from a mouth watering 4.1% to a downright frugal 2.4% after double-digit annual returns. If the crisis mode we have in the stock market continues, they will probably do well even from here, but sensible 7-year planning requires a phase-out of the bet in this area and regular government bonds.

The tension between overpriced bonds and a crisis mode in equities, especially overpriced US equities, has finally forced us into some cash and cash equivalents. For 12

Exhibit 1







years of asset allocation we have always found something better, but now, probably for a few quarters at most, cash seems to be a welcome different bet to add to the portfolio in lieu of our overweighting in regular government bonds.

Japan

Japan remains the great and dangerous enigma. There are signs at last of more serious corrective action being seriously considered. This is the necessary first step. Andrew Smithers has argued for 10 years that without a real crisis Japan will never take serious steps. In the meantime, the market is at a 19-year low yet, perversely, it is by far the least hurt of the major stock markets this year. Our decision to neutral weight Japan by reason of its intrinsic uncertainties has worked well this year, freeing our time and our risk units for more dependable bets.

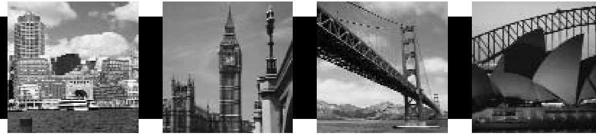
GMO's Third Quarter Performance

The third quarter, unlike the first two, was far from a piece of cake, even the hard to eat relative piece of cake. GMO's relative performance, given the unfavorable trends, was good in foreign, modestly good in asset allocation, a disappointing draw in US equities, and a loss in emerging equities. International intrinsic value outperformed by 4.9% for the quarter (over +16% year-to-date), asset allocation (global balanced) outperformed by 2.7% (over +12% year-to-date), US Core eked out a disappointing +0.1% (+1.6 year-to-date) and emerging equities lost by 1.1% (+5.1% year-to-date). All in all, given the unfavorable cross currents, this was probably acceptable, but with disappointing absolute losses. Seen in the broader context of the 2½ year decline though, all of the above are deep in the pinch-me-am-I-awake outperformance zone.

Conclusions

We are well aware that we are entering a difficult period where our most likely error, as we have said for 2 years or more, will be investing too early in equities that although already cheap, continue to fall in price – the reciprocal of the 1997-2000 situation. The problem is that the overrun phase is once again a greater fool phenomenon and we prefer to make good value bets on a 7-year horizon. However, we have learned that some inertia is a good idea and we always move slowly in asset allocation. Having said this, our early reductions in fixed income during the year have reduced our outperformance in asset allocation. To do the alternative, which is to bet on a certain degree of overrun, is to trade off a hunch (even a likely hunch based as it is on historical observation) against the near certainty of eventual mean reversion. This is what we propose to do: we will move into equities as they pass fair value but we will do it slowly. Before we overweight equities materially, we will wait for stock prices to undershoot by our usual 1+ standard deviations, during which time we will stay close to the benchmark.

Past performance is not indicative of future performance.



Jeremy Grantham, Chairman

Feet of Clay

Alan Greenspan's Contribution to the Great American Equity Bubble

—Part 1 in a Series on The Great American Equity Bubble—

Introduction: What Is the Fed Chairman's Job Description?

In its earlier years, the Fed's emphasis seems to have been on economic activity, a reasonable response to the high unemployment of the 1930s and the fears of a post World War II depression. By the nineties, the heavy emphasis had transferred to inflation control following the pain of the high inflation years from 1973 to 1983. Both of these factors were emphasized when they seemed to be critical to stability, and I believe that the underlying job of the Fed probably is, and certainly should be, the maintenance of general economic stability.

Nothing threatens economic stability more than the deflating of a major stock market bubble, particularly this time when there was a chance of global deflations even before the bubble broke. This severe risk brushes aside the argument that bubbles are hard to detect, for the stakes are just too high not to try; great bubbles are, in any case, like mountains sticking out of the plain of normal stock prices. Comparing 36 times earnings to a previous 1929 high of 21 and a 75-year average of 14 times would not seem to take particularly sharp analytical skills. The potential dangers overwhelm Greenspan's defense that the techniques to resist bubbles are not certain, for what in economics is certain? The stability of the US economy can only be protected against the real dangers of a bubble breaking by the Fed and its Chairman being willing, at rare intervals, to take some substantial political risks. They must attempt to identify and moderate major stock bubbles and be prepared to bear some consequences. If they are not prepared to do this, then the risk level of the economy will rise substantially.

Setting the Scene

Major stock market bubbles are indeed about the most dangerous thing that can happen to an economy. They cause wasteful over investment in hot areas. Through the vast paper wealth they create, they substantially increase the amount of greed that is in any case in plentiful supply in a vigorous capitalist system. This in turn increases corruption a little and unethical behavior a lot. Bubbles also redistribute wealth. Much of it goes temporarily to stockholders and is later given back. But while it is there, the unexpected wealth changes behavior. It increases consumption that further boosts the economic side of the bubble and hence corporate profits and share prices. By the same token, it will reduce saving and the flow of funds into retirement plans, which seem in the bubble to be doing so well from capital gains that they need no further help from incremental savings. When the market tide recedes, the retirement funds will be revealed as inadequate and will be several years of low savings behind the game. The loss of this fools' paradise will cause resentment.

Most of the redistribution of wealth these days will end up in the hands of corporate managers, particularly in this cycle where they have been the beneficiaries of stock options to a remarkable degree. Stock options in this cycle have not been effectively tied to good performance, and most stock option wealth has been awarded at precisely those companies where shareholders have been most hurt. Under the influence of the great wealth created by options, some managers and their accountants crossed from the grey area into outright illegality. All of this will be resented in the aftermath of the bubble. In general, the size of the 'bezzle' – as Galbraith called the weasel factor – will increase in a bubble, and investors, workers, and of course belated politicians, who had done little proactively, will jump to correct or over correct the problems.

The downside of the great bull markets will in fact always prove to be a paradise for Murphy's Law: whatever can go wrong will pick this time to do it. The over investment caused by excessive stock prices and excessive lending will be followed by a capital spending bust. An investing

public who feels to some extent betrayed will lose confidence in investing. The excessive lending that was facilitated by high stock prices will tend to dry up as will foreign investment that was encouraged by both rising stock prices and a booming economy in the US. Many of these factors will interact and it will always be impossible to know how badly things will work out. Certainly, stock prices themselves have always over corrected below their trend-line value. For all these reasons bubbles should be avoided at any reasonable cost. It will be worth taking some risks with the economy and some career risk to decrease the chances of a major bubble forming. The person in the best position to take effective action is the Fed Reserve Boss, Alan Greenspan. The purpose of this article is to ask how he did and give him a scorecard.

Did He See the Bubble Coming and What Could He Do?

There were many contributory factors to the building and bursting of the 1995-2000 bubble, by far the largest and most important in American history. Many things were done badly or left undone, but I believe the facts and common sense indicate that the single largest contributor to our present problem was indeed Alan Greenspan, for only he had the power to head off or reduce the equity bubble.

Greenspan could have raised rates a little back in 1996 and added a lot of jawboning about determination to prevent an asset price bubble. Most obviously, perhaps, he could have increased margin requirements. Had Greenspan been prepared to use all the tools available and shown his determination, it almost certainly would have worked and cut the last substantial piece off the upswing and offsetting downswing in the US equity market. In addition, it would have reduced the over investment, greed, and corruption that go with a truly major bubble.

While I've been trying to marshal my thoughts on the Greenspan fiasco, he has overtaken my efforts with his breathtakingly shameless and complete denial of responsibility for the bubble at Jackson Hole in late August this year.

According to Greenspan, jawboning the market "would have been ineffective unless backed by action." We can agree on that one. He claimed that the belief that "well-timed incremental tightening" of rates could have succeeded against "the late 1990s bubble is almost surely an illusion." Even more controversially, he argued that increasing the margin requirement would also have had little effect. He further asked whether even the size of the bubble could be limited by policy and replied: "From the evidence to date, the answer appears to be no." But what evidence did he offer? Since he did not try any of the above, there is precious little evidence that his case was valid. But the circumstantial evidence that strong action would have indeed been effective is quite substantial.

When he was not the one dodging bullets, Greenspan himself had a very different view as to the responsibilities of the Federal Reserve and what it could achieve. In 1966 he had written scathingly of the consequences of weak-kneed behavior by the Fed in 1928 and the dire consequences of delayed and weak action for everyone in the ensuing crash. He wrote in his chapter in Ayn Rand's *Capitalism: The Unknown Ideal*: "When business in the United States underwent a mild contraction in 1927, the Federal Reserve created more paper reserves in the hope of forestalling any possible bank reserve shortage. The excess credit which the Fed pumped into the economy spilled over into the stock market - triggering a fantastic speculative boom. Belatedly, Federal Reserve officials attempted to sop up the excess reserves and finally succeeded in breaking the boom. But it was too late: by 1929 the speculative imbalances had become so overwhelming that the attempt precipitated a sharp retrenching and a consequent demoralizing of business confidence. As a result, the American economy collapsed…" He is clearly blaming the Fed for both the boom and the resulting crash.

J.K. Galbraith, with presumably no axe to grind, having studied the last great equity bubble of the late twenties for his book *The Great Crash* (John Kenneth Galbraith, *The Great Crash*, 1929, pp. 189-194, New York, Mariner, 1997), concluded his analysis with a resounding vote that the Federal Reserve did indeed have the tools to prevent a major bubble but argued presciently it seems that such tools would never be used! He argued "that the chance for recurrence of a speculative orgy (like that leading up to 1929) remains good. No one can doubt that the American people remain susceptible to the speculative mood … The government preventatives and controls are ready. In the hands of a determined government their efficacy cannot be doubted. There are, however, a hundred reasons why a government will determine not to use them … Action to break up a boom must always be weighed against the chance that it will cause unemployment at a politically inopportune moment. It will always look, as it did to the frightened men on the Federal Reserve Board in February 1929, like a decision in favor of immediate as against ultimate death. As we have seen, the immediate death not only has the disadvantage of being immediate but of

identifying the executioner … One might expect that … The Federal Reserve would be asked by bankers and brokers to lift margins to the limit … The public would be warned sharply and often of the risks inherent in buying stocks for the rise … all this might logically be expected. However, it did not happen in the go-go years of the late sixties … nor will it ever come to pass … Long-run salvation by men of business has never been highly regarded if it means disturbance of orderly life and convenience in the present. So inaction will be advocated in the present even though it means deep trouble in the future … It is what causes men who know that things are going quite wrong to say that things are fundamentally sound." This unfortunately for everyone sounds all too like the present Fed Reserve Boss.

Greenspan himself back in 1996, when the market at under half its final price was already irrational in his eyes, lets on that a bubble can indeed be broken. Paul Krugman recently pointed out Greenspan's remarkable September 1996 statement to fellow Open Market Committee colleagues, "I recognize that there is a stock market bubble problem at this point. We do have the possibility of increasing margin requirements. I guarantee that if you want to get rid of the bubble, whatever it is, that will do it." This is only one of several smoking guns.

So despite believing that bubbles were dangerous and delay potentially ruinous, despite knowing that he had the tools to break it, and despite sensing back in 1996 - probably with perfect timing the time to act - he did not act, leaving us to face the painful consequences, one of the worst of which is being forced to listen to his excuses and to see the willingness of so many acolytes to nod agreement.

Why did Greenspan not follow through after "irrational exuberance?" Galbraith probably had it nailed. No one wants to be the one caught "holding the pin." No one looks forward to taking a lot of political heat and we know that Greenspan took a good deal because of "irrational exuberance." Hesitating under that pressure is reasonable, and hesitation in dealing with a bubble has been likened to jumping off a London bus as it accelerates. It is at first an unpleasant proposition, but as soon as you delay it becomes just plain dangerous. At such times, wishful thinking becomes an appealing proposition, and Greenspan seems genuinely to have been deep into wishful thinking. As a believer in the new era, only a few sell-side strategists such as Goldman Sachs' Abbey Cohen and Lehman Brothers' Jeff Applegate ran him a close second for relentless and increasing enthusiasm for the new economy, its new high plateau of productivity, profitability and growth, and its justification for higher stock prices. Greenspan, though, was not selling shares and yet he seems to have believed more completely in this new era nonsense by March 2000 than anyone else. (What an unfortunate coincidence that the title of 'most credulous' and the title of Federal Reserve Chairman belong to the same man.)

Some elements of the conflict between his earlier views and later wishful thinking can be seen in the carefully hedged use of language in the great Jackson Hole Denial of Responsibility. "It is very difficult to definitely identify a bubble until after the fact." Of course it is difficult to definitely identify a bubble, although he himself had claimed in September 1996 to have identified one, and even now he confesses to "strongly suspecting" that one existed then. "No monetary tightening … can reliably deflate a bubble," he went on. No, of course monetary tightening would not have 'reliably' worked, but together with jawboning and increased margin requirements (which he claimed to know would work), it very probably would have worked. The consequences of a bubble breaking are also not definitively or reliably known, but are typically severe. In any responsible job dealing with the soft sciences of economics and finance, certainty is too high a hurdle. His job is to do the best he can with uncertainties, and in this he failed and failed badly.

What Was in His Head?

Greenspan's vacillation and change of heart may have involved some woolly thinking, although it is hard to separate woolly thinking from a tendency to change arguments to fit the politically convenient position. There are two prime examples. First, his view of market efficiency. His 1966 view is that excesses or bubbles do indeed exist and can be identified and acted on. After having his head slapped by congressmen for his 'irrational exuberance' miscalculation, he hurriedly moves to cover his tail by adopting a view that the market is efficient: "to spot a bubble in advance requires a judgment that hundreds of thousands of investors have it all wrong." Yet his suspicions in his earlier 1996 statement did sound like flat-out belief in an inefficient market. Now in the summer of 2002 he returns to his earlier view: "history attests, investors too often exaggerate the extent of the improvement in economic fundamentals. Human psychology being what it is, bubbles tend to feed on themselves and booms in later stages are often supported by implausible projections of potential demand." "Implausible projections!" Here he

sounds like a behavioralist who believes the market is a dangerous jungle of psychological impulse!

His other remarkable intellectual woolliness regards the cost of capital. His new defense includes an apparent belief that productivity improvements might permit corporate profits to rise at a rate that would have justified the new high stock price. This is a common enough error, but an oddly amateurish one for Greenspan. If indeed profit margins, and hence return to corporations, had improved in a permanent way, then return to stockholders must also improve - and this only occurs with lower stock prices and higher yields, not higher prices. This counter-intuitive result is only the same as saying that the cost of capital must be in balance with the return to capital. Without this balance, there is set up a classic capitalist arbitrage. If the return to stocks is higher than the return to corporate investment, then no company will invest but simply buy cheaper assets in the stock market until a shortage of new assets drives up corporate returns. Conversely, if it is less, then corporations will raise new capital by selling expensive shares and invest in new plant (shades of the telecom boom), bidding down the returns on new investment until the system is in balance. Greenspan's logic would fail a Finance 101 final!

Greenspan: the Great Promoter

With Galbraith's help, it is easy to understand how a politically minded Federal Reserve Chairman would avoid taking decisive action against an asset class bubble. We can even understand that his muddled thinking on several issues would not have helped him be decisive. Much harder to understand, though, are his statements of bullishness about the economy. Given his stated misgivings and "suspicions" on the probability of a bubble, why would he frequently make the most extravagantly optimistic statements about the new economy to a broad public? Given his status, did he not expect this to be used as fuel for the fire? Did he not realize it would encourage precisely the "exaggeration" of economic progress he now blames for the bubble? Did he really see this as being in his job description whereas controlling an asset class bubble was not?

It is worth reminding ourselves of the extravagance of some of his statements. In January 2000, for example, he claimed that "the American economy was experiencing a once-in-a-century acceleration of innovation, which propelled forward productivity, output, corporate profits and stock prices at a pace not seen in generations, if ever." Phew! The internet, which had "pushed back the fog of uncertainty" for corporations, was his particular pet. "Lofty equity prices," he said, "have reduced the cost of capital. The result has been a veritable explosion of spending on high-tech equipment … And I see nothing to suggest that these opportunities will peter out anytime soon … Indeed many argue that the pace of innovation will continue to quicken … to exploit the still largely untapped potential for e-commerce, especially the business-to-business arena." All this within one week of the peak from which the Nasdaq's "lofty prices" declined by 75% and the business-to-business sub index fell by over 95%!

The economic basis for his enthusiasm always looked shaky. Not that the economy and productivity were not doing well. They were much better than the seventies, eighties, and early nineties. It simply did not seem to be as good as Greenspan believed. Skeptics argued, for example, that hedonic inflation adjustment, which argued that four times the speed in a computer was equivalent to a 75% reduction in real prices, was unrealistic. It added some ½% a year to productivity and was not used by many perfectly serious countries. Too much of the productivity gains came from an unsustainable boom in capital equipment for technology. Productivity was calculated per person, not per hour, and Americans and Brits were alone in working longer in the nineties as they got richer. The rest of the developed world quite sensibly worked less. This list of earlier challenges to the validity of the new economy is just a sample. In short, for many of us, the case for a permanent and significant improvement was possible but absolutely not proven, and the degree of improvement was seen as entirely unlikely to rival Greenspan's vision.

Whatever Greenspan's motives for voicing his enthusiasm for the new economy, we know what its effect was. It removed reasonable doubt for most investors. The *Financial Times*, who incidentally get the award for least boot-licking of the major papers regarding Greenspan over the last 5 years, pointed out that his "increasingly bullish observations … may well have contributed to the explosion of exuberance in the late 1990s." Morgan Stanley's economist, Stephen Roach went further, arguing that Greenspan's outspoken belief in the unique features of this cycle – rapid growth yet low inflationary pressure – removed the need to raise interest rates. "That was the buy signal every investor and speculator dreamed of."

Summary

In the end, what Greenspan faced was not a moral dilemma. The morality was clear. He had the knowledge, experience, and belief and failed to act. What he had was

a career dilemma. If he jumped off the moving bus early, he would have taken some considerable grief. If the economy had slowed, he would have been blamed. The timing of occasional ordinary recessions is not of vital importance to society. Indeed, an occasional moderate recession may be necessary for a healthy economy in the long run, although you could find economists who would argue the other side. The real cost to society comes from the corruption, disappointments, reduced savings, and the wasted investments brought on by a bubble. The timing of recessions is, however, of real importance to politicians who want to be re-elected and who face an electorate whose view of their political platforms is often a simple, "It's the Economy, Stupid!" In Greenspan's defense, we can agree he would have received little or no thanks for preventing the evils of a boom and bust for it could never be proved. What we do know is the world's willingness to believe that things would work out well despite the bubble. So if he had acted, his reputation and career would have suffered at least temporarily. If he had engaged in wishful thinking, he could believe that there would be either a chance that things would muddle through or a chance that his denials of responsibility, muddled and contradictory as they are, would suffice. For a Federal Reserve boss to have volunteered to have taken a lot of political heat and certain short-term damage to his reputation without a realistic hope of offsetting rewards simply because it was the right thing to do would have taken very high ethical standards and considerable strength of character. Paul Volker perhaps might have made that choice.

As for Greenpan's recent defense, in the end what did we expect? That he would repent his lack of character? That he would admit even partial fault? His complete denial on this regard brings to mind an incident in the Profumo sex scandal of the 1960s in England. One of the women involved, Mandy Rice Davis, on hearing that the government minister had denied having sex with her, replied with the immortal words, "Well he would say that, wouldn't he?" Sometimes the blindingly obvious is funny. This time the equally predictable denial of responsibility and the apparent credulousness of many opinion makers (but encouragingly not all of them) in accepting his argument are merely irritating.

Irritating or not, it must be conceded that in terms of avoiding blame he appears to have mostly gotten away with it. You can indeed 'fool most of the people all of the time.' 'Most of the people' this time probably included Her Majesty who recently knighted him for his global services. My secret hope though is that she justified it by having had a good short position for the last 3 years.

GMO

Quarterly Letter

December 2002

Jeremy Grantham, Chairman

Predictive 'Entrails' and the Case for a Time-out in the Great Bear Market?

Last Year

2002 was an unusually weak economic recovery coming out of the 2001 recession and a rare and miserable third consecutive down year in the market in which almost all equity markets declined and the dollar was weak. It was easy to lose a lot of money, for the third year was a far broader decline than the first two and much worse in total wealth lost. In 2002, small caps and value stocks may have outperformed others, but they were still painfully down.

For those who believe in mean reversion and that all bubbles break, however, 2002 had some consolations. 'Value' and 'small' round-tripped from their largest-ever relative mispricing to normal, and did so in a neat, symmetrical way, forming almost perfect bubbles. The decline in U.S. blue chips retraced 82% of the way back to trend line, though it did so considerably more quickly than it went up so is entitled to take another year or so to hit trend (680 or so on the S&P 500).

We have spent some time looking at **how long** it takes for bubbles to break (back to trend), and a surprisingly large majority take about the same time as they spent expanding, give or take a year, so that a good **guess** would be that the S&P 500 would hit trend by early 2004 ± 1 year. Then the difficulties really start, for **all** bubbles over correct – 'value' and 'small' already have – but the magnitude and timing are very uncertain. It would be very unlikely, though, for any of these three major cycles to hit their ultimate lows in less than an extra year (i.e., U.S. 1932), and many years is not unheard of (i.e., Japan).

As expected, the economy was not too bad and not too good and earnings increased, but a little disappointingly. The market in 2002 was not about GNP or earnings (although spectacular surprises would have had an effect), nor was it about terrorism. It was about a bubble deflating with the consequent lowered animal spirits and capital spending hangover, and about stock prices that were simply too high.

In general, relative performance for GMO in the year was very strong despite a moderately weak fourth quarter. In absolute terms, most products lost absolute money, but all fixed income and our hedge funds made substantial real money, and REITs, emerging country equity, and most of our global balanced money squeaked out a slight gain. All in all, it was an excellent relative year for GMO. In absolute terms it was a tough year of losses for our U.S. equity funds, though our non-U.S. equity funds, with exceptional outperformance, came close to breakeven.

Increasing the odds of strong economic recovery last year was the impact of tax cuts and many rate reductions. Lowering the odds for an economic rally last year was the dreary impact of a major investment bubble breaking. This downward pressure typically includes increasing pessimism both on the part of consumers and investors, the effects of extreme over investment – write-downs, excess capacity, margin pressure, and high debt levels – and the increased 'bezzle' talked about in earlier quarters. The combined fiscal and monetary stimulus was probably vital in ensuring an economic recovery, and the after-effects of the bubble were effective in preventing a much stronger recovery, of the type that typically follows a recession.

In the last half of the year the beneficial cumulative effects of rate cuts were still very much around, most noticeably in keeping the housing sector strong and providing enormous extra consumer firepower through mortgage refinancing, which both reduced monthly payments and provided truly massive quantities of incremental and very cheap borrowing. This force that had kept the tug-of-war more or less even might still be good for one last 2- or 3-month surge of refinancing, although a weak Christmas season did suggest that there may be limits to the willingness to borrow even at very cheap rates. Total consumer debt even dropped unexpectedly in November for the first time in several years.

2003

This year the rate cuts should still have a lagged beneficial effect. The effect is typically felt up to a year from the last cut, and there now looks likely to be a new round of fiscal stimulus, which like last time might well be very necessary to prevent the economy from stalling out. Over leveraged and possibly tapped out consumers can use some help from other parts of the economy. For the record, the original tax cut proposal does not seem very effective for its size because it is too pushed into the future and too skewed to the very rich, but with luck it will become more useful before it is passed. The size of the growing budget deficit implied by such large tax cuts could also come back to haunt the market at a later date.

Predictive "Entrails"

Looking at the tax proposal reminded me of the old presidential cycle stock market rule. We used it 25 years ago as one of several components in a commercially unsuccessful 'market timing' model designed to call calendar years in the market – no easy objective. It still is, in a word, remarkable. Since 1925, the real return of the S&P 500 for the last 2 years of the presidential cycle is a multiple of the first 2 years.

Presidential Years Since 1925	% Return	% Up Years
1	1.7	47
2	1.8	42
3	14.2	84
4	10.0	84

The logic is pretty straightforward. In the third year, the President and his party make a determined effort to stimulate the economy with a package of changes put in place by the spring, which a year later will have their maximum effect in the run-up to the election (exactly as they are doing now). I have considerably more faith in these behavioral factors triumphing for years over an alleged efficient market than I used to. This one is so effective I can't imagine why I haven't proposed the 2-year sabbatical rotation to keep money managers out of trouble in the first 2 years. It is analogous to the reason sometimes given for *homo sapiens* to sleep for 8 hours: to prevent them from wandering around in the dark, getting eaten by creatures with sharper eyes and claws. *Homo investis* should get an urge to sit on the beach or teach for 2 years every presidential cycle.

A second factor in our model 25 years ago was the January rule: that January does predict the next 11 months. There has been a lot of nonsense talked about this rule over the years, with one of the bigger bits of nonsense being that since it has been known for 35 years (just like the presidential cycle), it therefore must have been competed away. Since 1970, when it was already well-known, a down January for the S&P 500 has been followed by a down 11 months (all in real terms) 4½ times as often as an up January has! (For the record, it used to be thought that for the impatient the first 5 trading days of January were also predictive, but this is certainly not true now, if it ever was.) Combining these two rules has always looked impressive, but the third presidential year does not need much help. 35% of all years have been down in real terms, but the last third year to be down was 1947! Truman, with low popularity, was facing the Soviet Union's determined efforts to take over everywhere, including Turkey and Greece, and North Korea was about to invade. Truman was on his way to the classic 'Dewey beats Truman' squeaker, and in spite of these factors, the year was down only 3½%. There was another tiny loss in 1939 of 1%. You have to go all the way back to 1931 for a large loss. Does it take a depression to overwhelm aggressive politics? More to the point, 1931 was pre-Keynes and the idea of stimulus and the role of consumption in economic recoveries were far beyond Hoover, whose response to problems was to tighten the screws. So the presidential cycle could not be expected to exist prior to FDR.

From a pure value perspective for the U.S. equity market, this year and the next 6 look to have a 1% real imputed return, and this year has a probability of around 45% for an up year. From a purely third year cycle perspective, it has a +14.2% outlook and a probability of 84% for an up year. How January goes (which, in my opinion, is really a measure of how animal spirits are holding up) would affect the odds. When these positive 'entrail' factors met negative value in the past, they put up a good fight. 1999 was the most recent in which a third year was confirmed by a strong January and, despite huge over pricing, did just fine. 1967 and 1971 were both cheap enough by recent standards, but were considered expensive at the time; both third years were solidly up. Value as always is a very strong **eventual** influence, but a very unreliable **timing** influence.

On the other hand, throwing judgment into the pot, I believe once a bubble has started to burst it is very hard to rally the troops until the market is very cheap. The problem in checking this idea is the lack of data. The 1929 break went 4 down years in a row (although it had a very short 42% rally for a few months ending in April, 1930), followed by a rally in 1933 from very cheap indeed. The next major bubble broke in 1973 and 1974,

two particularly vicious years that left many stocks yielding 10% for the rally in 1975. Only in Japan can we find a calendar year (1993) that rallied from the market down 60%, but still probably substantially expensive. I say probably because certainty in Japan is notoriously elusive. Japan was also able to sustain several powerful short rallies of 50%, but only one 12-month rally of +18% starting in September 1990 when the market was 'only' down 50% and more obviously expensive. So with very sparse data we might conclude that rallies as a bubble breaks are possible but difficult, and – though sometimes powerful – are almost always very brief, until the market is cheap, usually very cheap.

The above analysis is partly for fun, partly for old time's sake, and partly to use these two old remarkably non-random factors to take another poke at the idea of market efficiency. It is **not** part of our 7-year forecast, which is based purely on value. It will not give us any delusions that the short term is predictable. But it is interesting, and my **guess** is that the odds of an up year are about 50/50 or a bit better (with the January outcome changing the odds by at least 10% in either direction), so that this would not be a great year to be heroically short, and certainly not heroically long, the U.S. market. **On a longer perspective, the odds are very high indeed that we have not seen the lows.** The U.S. market is expensive at 22x reasonable trailing earnings, higher than any previous bull market peak. Every major bull market has ended below the long-term trend of 16x. There have been no exceptions. And the overshoot below trend, although unpredictable, has typically been severe. Against this case, the decent possibility of a moderately up year does not rate very highly. Japan, for example, has had 3 up years since the peak and they meant nothing.

Uncertainty

The market and the economy on short horizons are intrinsically hard to predict. In a year like 2003 with its powerful extra cross currents, this is bound to be particularly true. With the wild cards of Iraq and terrorism, it is an excellent year to be uncertain of almost everything. Only in the long-term logic of mean reversion can there be comfort for predictions, and lack of any certainty in timing is a pretty severe reservation.

Current Asset Allocation

Our current equity bets, falling out of our 7-year forecasts, are strongly in favor of emerging country equity and REITs (although our REIT bet has been reduced by about half from its peak), and modestly in favor of developed equity and emerging country debt against U.S. equities and the dollar. Within debt, we are betting against traditional U.S. bonds (which have done so well for 3 years and are now as a result overpriced), in favor of a series of small overweightings of inflation protected bonds, foreign bonds, and the first cash we have used in 12 years of asset allocation. The main difference compared to a year ago is that we have no major bet in favor of fixed income, and only our normal tilt towards value and small in recognition of the fact that at their normal relationship to growth and large, respectively, they can be expected to outperform them by their usual 2%+ a year. The only high confidence 2 standard deviation event now is the gap between moderately cheap non-U.S. equities and expensive U.S. equities – about as large a gap as has ever occurred. In that area, we are making as large a bet as we are allowed by account limits. Should the combination of fiscal stimulus and residual animal spirits cause a time-out from the bear market in the U.S. and produce a moderately up year, then this also removes the main fear I have that already reasonably cheap foreign markets would be dragged down by the U.S. market. I believe the odds are decently better than 50/50 that foreign developed markets, probably with some help from currency, would beat the U.S. market in a moderately up year, and significantly better than 50/50 that emerging market equities would win.

GMO's Viability

2002 was substantially the best year in GMO's 25 years from a commercial viewpoint and we would like to thank our long-standing clients for their loyalty and our new clients for their confidence.

Part II of my ongoing diatribe on the 2000 bubble, this time aimed at academics, is attached.

A Technical Post-Script on Dividend Tax Cuts

A dividend tax cut may have a behavioral effect on the market. It certainly feels like a comfort increasing factor, and comfort is everything in the market short term. Longer term, though, the economic realty is that in aggregate the fair value of the market is its true replacement cost, or Tobin's Q. (We believe 16x normal profit margins reflects the same number.) If the market is way over replacement value, we get a capital spending boom, gluts, and crushed profit margins. If it is below, firms can buy assets more cheaply in the market, resulting in no new building, eventual shortages, increased profits, and so on; the real arbitrage which makes capitalism work. So how can replacement cost of factories and brands be changed by a shift in dividend tax? It seems fairly obvious that it can't be.

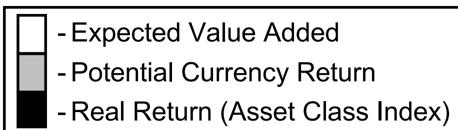
GMO 7-Year Asset Class Return Forecasts

As of December 31, 2002

Annual Real Return Over 7 Years

Group	Asset class	Real Return (Asset Class Index)	Potential Currency Return	Expected Value Added	Total	Estimated Range of 7-Year Annualized Returns
Stocks	U.S. equities (large cap)	0.7%		2.1%	*2.8%*	±6.5
Stocks	U.S. equities (small cap)	3.7%		2.1%	*5.8%*	±7.0
Stocks	Int'l. equities (large cap)	6.1%	1.3%	2.3%	*9.7%*	±6.5
Stocks	Int'l. equities (small cap)	9.0%	1.3%	2.3%	*12.6%*	±7.0
Stocks	Equities (emerging)	8.7%	0.7%	4.1%	*13.5%*	±10.5
Bonds	U.S. Bonds[2] (gov't.)	2.0%		1.0%	*3.0%*	±4.0
Bonds	Int'l. Bonds[3] (gov't.)	2.3%	1.3%	1.0%	*4.6%*	±4.0
Bonds	Bonds (emerging)	6.4%		2.5%	*8.9%*	±8.5
Bonds	Bonds (inflation indexed)	2.6%		0.2%	*2.8%*	±1.5
Bonds	U.S. treasury (30 days to 2 yrs.)	1.9%		1.6%[4]	*3.5%*	±1.5
Other	REITs	6.8%		0.2%	*7.0%*	±6.0
Other	Managed Timber	7.0%		2.5%	*9.5%*	±5.5

The chart represents real return forecasts[1] for several asset classes and an estimate of value expected to be added from active management.



1 Long-term inflation assumption: 2.2% per year.
2 Bond with same duration as Lehman Brothers Government Bond Index.
3 Bond with same duration as J.P. Morgan Non-U.S. Government Bond Index.
4 Alpha transported from management of global equities.

GMO

Special Topic January 2003

Jeremy Grantham, Chairman

Ivory Towers

The Contributions of Academics to the Great American Equity Bubble: The Idea of Market Efficiency and "Stocks for the Long Term"

—Part 2 in a Series—

Summary and Introduction

I believe that markets are usually inefficiently priced, both in detail and in aggregate, and that they are driven by very fallible, emotional investors who have neither the mathematical nor the psychological means to process data efficiently in economic terms, nor, in the case of professionals, the incentive. One of the major inefficiencies relates to the processing of risk. Behavioral responses get in the way, as an increasing number of research projects reveal. More importantly, though, professional investors are not even trying to minimize economic risk or MPT beta or volatility risk. They are trying to minimize career and business risk as Keynes (as always), ahead of his time, pointed out in 1936. Investors must give their clients what they want. Clients are predominately amateurs and are more prone to behavioral glitches than professionals, who have more training and perhaps a natural inclination to resist the glitches. Managers would often like to more closely approximate economic efficiency, but if they do not go with the flow in the larger psychological events – the great bubbles – they will probably not survive to tell the tale. "The market can stay irrational longer than the investor can stay solvent," as Keynes said. For a value manager, he pointed out, who under performs as he must surely do, will "not receive much mercy" from his clients. Therefore, "it is better to be wrong in company than right on your own." To prosper, the professional must buy into the powerful trends, however ridiculous. As Andrew Smithers, a financial consultant reviewing this problem said, "If you want to invest, don't be rational and if you want to be rational, don't invest."

Most academics, for their own reasons – mostly career reasons and what might be called 'physics envy' – have chosen to weigh in behind the efficient market hypothesis (EMH), a hypothesis with remarkably little support from the data. There were always a few honorable exceptions amongst academics, and today the previous almost monolithic support for EMH is rapidly breaking up, as reflected by the last two 'Nobel' prizes for economics. A more balanced view is rapidly arriving, but in the meantime, belief in EMH did a lot of damage by facilitating the 1995-2000 equity bubble.

Background to the Efficient Market Hypothesis

There were some spectacular booms and busts in the 19th century, but prices, measured by normalized price-to-earnings ratios, had risen considerably higher by the peaks of the 1929 and 1965 bull markets, which both reached about 21x earnings. The great 1995-2000 bubble in equity prices was, though, the biggest in U.S. history. It left those earlier prices far behind before reaching its maximum extent in March of 2000 at 33x those earnings that were claimed at the time, or about 37x earnings, as subsequently revised downward. Not far short of twice the previous record, this was indeed a 'new era' for stock prices.

Major bubbles in asset class prices at best cause severe waste of resources, encourage inadequate savings, break many investors' hearts, and bring forth increased greed and unethical, sometimes illegal, behavior. As they break (or deflate) they are dangerous and unpredictable. It is therefore critically important to identify bubbles and reduce them in size, both of which can and should be done by a competent Federal Reserve.

In this bubble, many forces acted together to allow the new high levels of pricing to be reached. One of the most important, because it was so insidious, was the change in belief about the nature of markets that had occurred in the 20 years prior to 1995. Earlier spectacular bubbles, such

as the 1721 South Sea Bubble in England, had been accompanied by considerable cynicism to the effect that investors were inherently greedy, gullible, and prone to group hysteria. The 1995-2000 bubble was the first one to be built on a remarkably different belief: that the market was efficient. In an efficient market, an individual can always rest assured that prices are an accurate reflection of reality and that there can never in fact be a bubble. This belief had become completely dominant in academic circles and was steadily impacting the views held by the investment world as well-regarded investment people promoted the idea that it was a losing proposition to try and outguess the market. (I have begun to call this idea the 'watch the locomotive coming effect'.)

The efficient market hypothesis can be viewed as a branch of new classical macroeconomics in which economic forces are assumed to be driven exclusively by the drive to maximize profits for firms and utility for individuals. The efficient market hypothesis comes in several consistencies, from soft to hard. In general, it assumes that investors are well and speedily informed about all knowable data; that they have the skills and wisdom to process the data accurately and sensibly, and the psychological make-up not to mess it all up. Most critically, their motivation is economically driven – to maximize their returns at prudent risk. This collective wisdom is deemed to be embedded in the market so effectively that no meaningful number of players can beat the market after costs (although perhaps an insignificant handful may succeed). It has always seemed to me to be self-evidently wrong in almost all particulars as well as completely missing the overall flavor: that the market is a behavioral jungle.

Mystically, in the efficient market theory, if the market doubled in price, it did not halve the expected future return. It reflected an equal and offsetting increase in the corporate system, growth, and profitability. History, though, might suggest that this corporate system was a battleship and slow to change, while the stock market demonstrably changed dramatically in short periods of time, a contradiction that a leading heretic, Robert Shiller of Yale, noted some years ago. If the price of Deutsche Telecom at the old 15x earnings embodied best information, then equally at 120x 3 years ago its merits were deemed to have simply improved commensurately. The individual investor can buy at either price with a clear conscience, indeed at any price – 300x earnings, for example – for 'they', the market, must know best.

Until very recently, doing serious work on inefficiencies was academically dangerous for one's health in this time period from 1975 or so, and a fairly strong efficiency case still dominates at most business schools. The academic financial establishment whose membership included Sharpe, Malkiel, Fama, French, Merton, and Ibbotson was so powerfully and monolithically behind the efficient market hypothesis that interesting contradictory work was usually kept out of journals and generally marginalized, and career advancement was threatened for the heretics. "Heretics" is in fact a good word, for there was a religious, faith-based quality to the belief in market efficiency. It was based on axioms – some dating back decades to Von Neumann and Morgenstern – that for example proposed that adequate quantitative tools were available and used by all investors to process the available data effectively. Like many other axioms, this one has not been established as a fact and flies in the face of a growing number of behavioral studies claiming that this is precisely not the case. Axioms, though, are hard to struggle with, and new proofs of inefficiency were incorporated as merely another risk factor that had been missed in the original formulation, a process that could presumably go on forever and still never be useful. A useful theory should not only do its best to fit the facts, but be capable of being proved wrong by the right data. The theory of efficient markets seems to fail both tests. The intensity of the religious belief in efficiency is attested to by a comment by Robert Haugen in his book *The New Finance: the Case Against Efficient Markets* (which does seem perfectly sensible). He claims that while speaking at a conference, Eugene Fama became so enraged with his long list of probable inefficiencies that he called out from the crowd, "You're a criminal." Haugen further says that Fama added that, "*God* knows that the market is efficient." Shades of Einstein's "God doesn't play at dice." There has always been a need for scientists and wannabees to believe in order, neatness, and, above all, in **elegance**. In investing I have always said that there should be a sign in every quant's office: "There are no points for elegance." Confronted with Fama rather than Einstein, I hope Heisenberg would have said, "Stop telling God what to believe."

Jeremy Siegel and *Stocks for the Long Run*

Another group of academics also proved to be dangerous and expensive for American stock investors. There are the believers in the theory that, "in the long run, not only do stocks have higher returns than bonds, but also lower risk," and that therefore a very large fraction of personal wealth can be invested in equities. The quote is from the Dean of this group, Jeremy Siegel, whose book *Stocks for the Long Run* has been very popular and has a lot to

answer for. The book can be summarized in one line for an intelligent layman as, "Price does not matter!" Just tuck stocks away and you will do well. His more recent follow-up work in journals and the press can also be summarized as, "Whoops, price really does matter." But the damage has been done. His work was ceaselessly quoted as a cause to relax as p/e ratios rose into new high ground. His work, and others like it, brought out a good quote from a serious economist (you can rightly deduce that I believe there are many of the non-serious variety). Paul Samuelson, designated interestingly by *Forbes* as "also an astute investor," was quoted in that magazine in June 16, 1997 as saying, "I have students of mine – PhDs – going around the country telling people it's a sure thing to be 100% invested in equities, if only you will sit out the temporary declines. It makes me cringe." Me too.

Siegel's book, more than any other semi-serious book (this means ignoring the more farcical, indeed 'criminal' *Dow 36,000* type), delivered what the typical investor wanted to hear. It also echoed a remarkably similar book from the late 1920s which did precisely the same thing. In 1925, Edgar Smith wrote *Common Stocks as Long-Term Investments*. This book, serious enough to be positively reviewed by Irving Fisher, the infamous believer in the "new high plateau" for stocks, had as its central idea that stocks not only had higher returns, but were also less risky than bonds. Irving Fisher's respect for this idea was so great that in February, 1930 in his book *The Great Crash and After* he produced the remarkable sentence, "It was only a few years ago that stocks were considered more risky than bonds!" Such a thought could not have resurfaced for several decades after February, 1930, but it certainly resurfaced in Siegel's book. Unfortunately, this predecessor is well acknowledged by Siegel or we could have had him up for academic plagiarism.

Keynes was also impressed by the results shown in Smith's earlier book and seemed in a letter he wrote almost willing to accept the idea that stocks had the lower risk. Though he added a typically Keynesian killer thought: "It is dangerous, however, to apply to the future arguments based on past experience, unless one can distinguish the broad reasons why past experience was what it was." This quote should be Siegel's epitaph. The 7% of historical real return he reports from stocks – so superior in the past to bonds – was observed in a world where Siegel and others confirm that the average p/e ratio was only 14, or the earnings ratio (e/p) was 7: the market was on average priced to return 7% real. To suggest that this large and very superior return applies at any p/e ratio is to ignore Keynes's warning. At 36x trailing earnings in March 2000, the market was priced with an earnings yield of 3% real and inflation protected bonds yielded 4.1% real: a different world indeed! (The real rates on these bonds, by the way, peaked at 4.1% in the very month the S&P also peaked at 33x earnings: a typical demonstration of strange market behavior and exactly the opposite of what Finance 101 would lead us to expect.)

Some Data on Market Efficiency

It was Keynes (of course) who first said that a reasonable test of a good economic theory was that it fit the available facts. The efficient market failed this test in many ways. One of my favorite ways is price momentum. The day *A Random Walk Down Wall Street* hit the book stands in 1973, arguing that, among other things, there was no useful information in pricing alone, and one could pose a very simple test of this indeed: "Stand up those 10% of stocks that did the best in the last 12 months." Ranked every January 1 for the prior 20 years, these stocks had outperformed by 4.2% a year, within the 600 largest blue chips – capitalization weighted and eminently implementable in the real world. This was a powerful demonstration of pure information in pricing, but perhaps it was data mining? In the next 25 years in real time and used by GMO in a fancier formulation, this simple form of momentum outperformed again by about 4.2% a year! GMO's record is also not bad as proof of market inefficiency. With almost 400 product years (e.g., one small cap growth fund existing for 10 years counting as 10 product years) we have won 68% of all product years and averaged +3.0% per product year, including discontinued funds, all after fees. With about 33% dependence and 67% independence between our funds, the chance of getting a 68% hit rate is about one in 10,000. For Warren Buffet, the odds are probably longer.

Another measure of market inefficiency is shown by any of several effective dividend discount models that have, in my experience, worked reliably for 30 years in identifying stocks that will out perform and under perform. This technique is related to the price-to-book advantage used by practitioners from Graham and Dodd on, if not long before, and noted finally by Fama and French some 20 years ago, who claimed it as their own perhaps by virtue of renaming it the book-to-price effect.

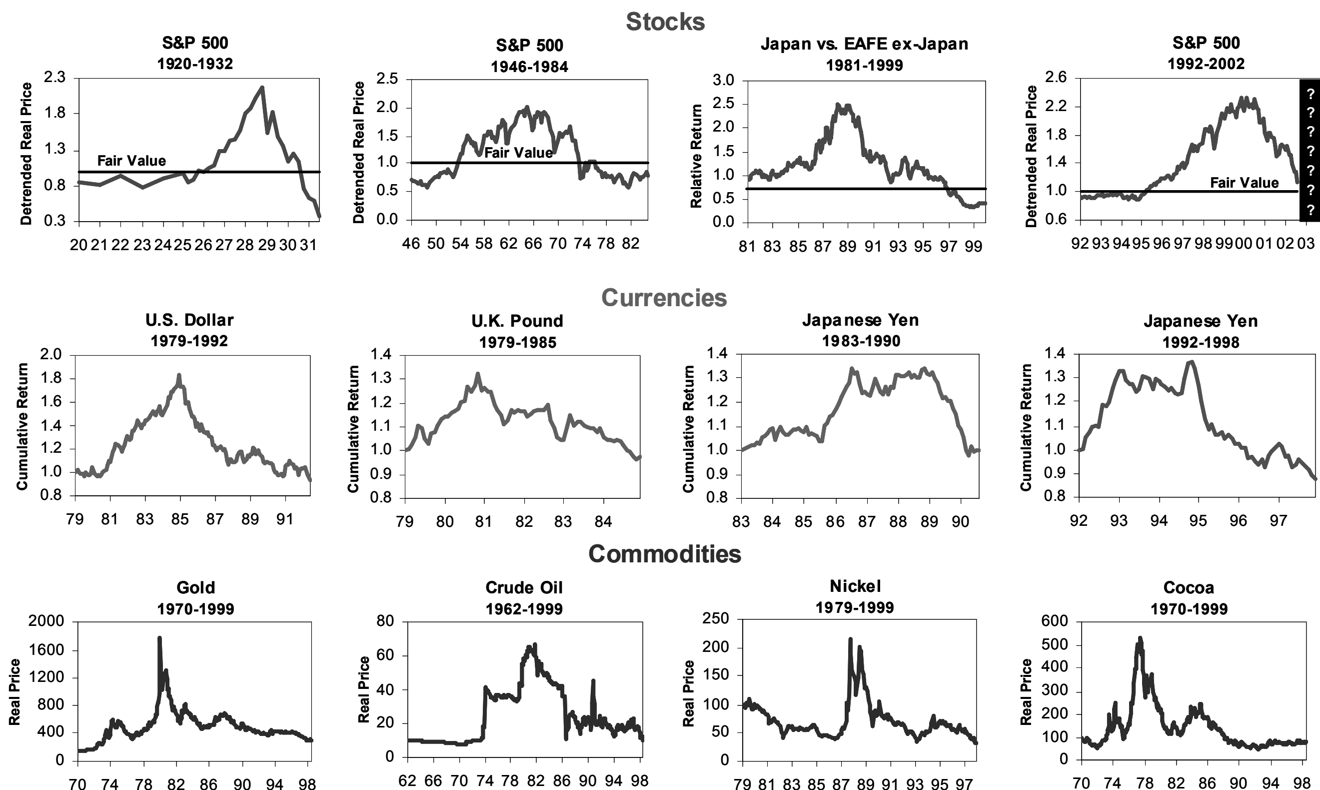
Our dividend discount model, also like most, regresses profitability over time towards average, recognizing that this is how capitalism works; unusual profitability attracts extra competition, which competes returns down and vice

versa. Unlike many models, ours regresses profitability based on the actual historical average rates of observed regression. The model in simulation and real life has outperformed the price-to-book advantage and has added around 4% a year to a blue chip universe, if the most attractive 10% are selected over 40 years, the first of 15 only simulated, but the second 25 in real time. Critically for my argument here, this 10% has outperformed despite an average fundamental 'quality' that is equal to the S&P 500, and, for the record, with a modestly lower beta (or market related volatility) than the market.

Another very compelling argument against market efficiency comes from the evidence for the major alternative theory – that the market is mean reverting. Ben Inker and I have collected data for all of the asset class bubbles we could find: commodities, currencies, and stock and bond markets. We defined bubbles as two standard deviation events or 1 in 40-year upside moves. The data was available to calculate the trend in long-term prices and calculate the volatility of each series, and that was all that was needed. We found 27 examples. Of these how many turned out to be 'new eras' from whose peak the new price series wandered off randomly? None. Every single one retracted all of the gain to go all the way back to the **original** trend line.

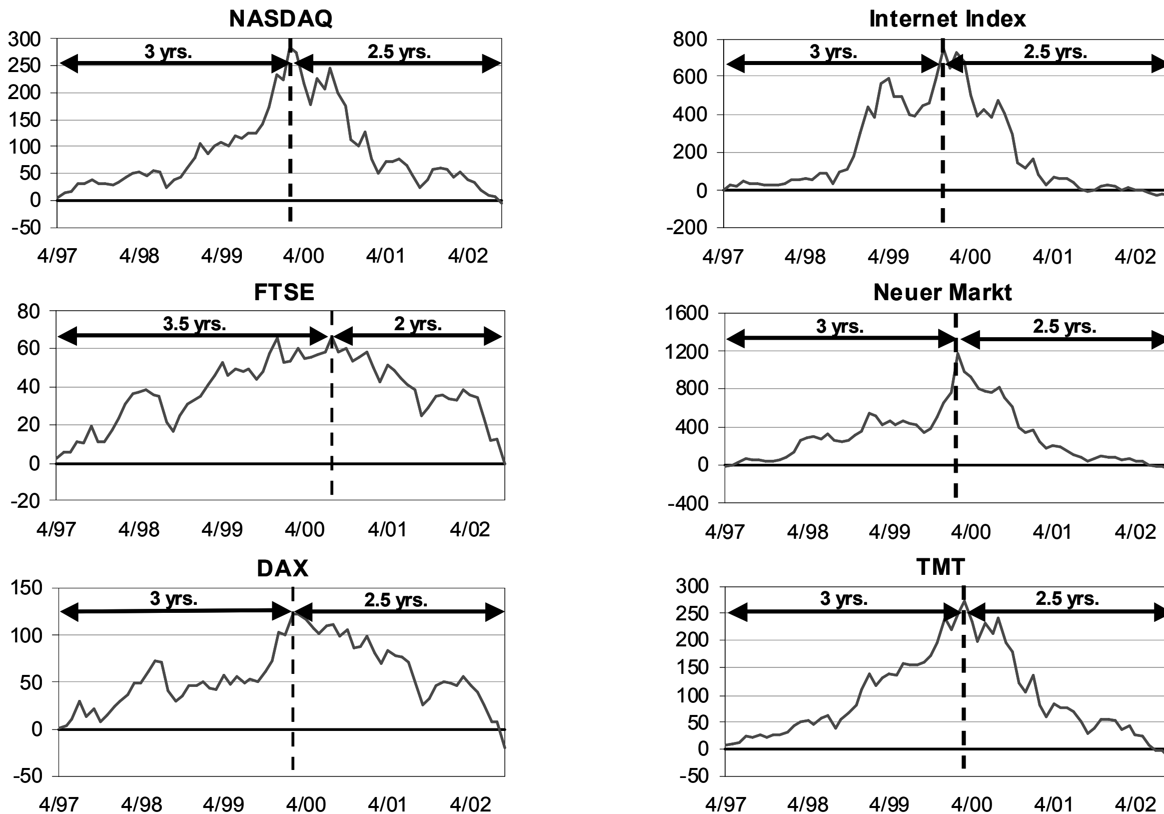
What is remarkable here is that these bubbles broke in a symmetrical way, taking on average the same time, within a year, to retrace their way back to trend as they took digressing. Academics of course concede that two standard deviation upside events occur every 40 years and may ask what is the fuss. The fuss is that the chances of a 40-year event being followed immediately by another two standard deviation event of the opposite sign is one in forty times one in forty or one in 1600! That there have been so many neat round trips, indeed that there have been no exceptions to that principle, would require luck into the tens of thousands to one. Exhibit 1 reproduces the familiar most famous bubbles out of the total 27. Exhibit 2, from our fall conference, shows 6 recent examples of almost perfect bubbles. My favorite here is the Neuer Markt. Having risen by a stunning 12x in 3 years, it proceeded to reverse all the way in an almost

Exhibit 1
Every Extraordinary Capital Market Gain Has Retreated 100% – or More



Note: For S&P charts, trend is 2% real price appreciation per year. Source: GMO. Data through 9/30/02.

Exhibit 2
Perfect Bubbles



Source: GMO, Datastream. Data through 9/30/02.

perfectly shaped 2½ year bubble. In a random, efficient world one might have to wait about as long for this as for the monkeys to randomly type out Hamlet.

The most recently completed epic round trip for the record was U.S. growth stocks relative to value stocks. After an unprecedented multi-year growth rally, the relationship in March 2000 in favor of growth was more out of line from normal than even the so-called Nifty Fifty growth peak of 1972. By October 2001, all of this record deviation had gone and value stocks were **exactly** back to their trend-line relationship. Mean reversion seems to be alive and very well indeed.

Also, for the record, we have surveyed 1350 full time equity professionals over the last 5 years as to their belief in mean reversion. In response to the question of whether the price earnings multiple of the S&P 500 would retreat from its 25 to 33 zone to cross the long-term trend of 17½, 1343 believed it would within 10 years, guaranteeing a significant bear market; 7 believed that it would not! This is discouraging in one sense. The academics have been enormously successful in persuading amateurs, who own the money, despite 99% of the rank and file full-time professionals believing in a dramatically different view. (It is also discouraging in a very different sense in that the spokespeople for the firms employing the 1350 equity professionals overwhelmingly professed a public belief that the market was still attractive all the way up. An interesting difference, but that is another story.)

Perhaps the most powerful demonstration, though, of the extreme and probably increasing inefficiency of the market is Pumatech and all the other Pumatechs of the internet bubble, which was in its way like a bubble within the larger total market bubble. Certainly the evaluations and scale of the internet frenzy had known no equal in U.S. market history. At its peak, the total internet market value reached over 1 trillion dollars on earnings of negative $3.4 billion! (In May 2000 in a debate with Henry Blodgett, the now notorious internet analyst [*Forbes*, June 12, 2000], I was happy to say that the internet subset was not so much about overvaluation as mere survival: "80% of these companies will simply cease to exist." One wonders, 2½ years later, whether indeed 20% will make it.) But, back to Pumatech. An old

friend and partner of mine had been fortunate 7 years ago in acquiring 140,000 shares of Puma Technology at 25¢ a share in a venture start-up. As it came public he gave the stock at $4 a share in trust to his seven children. This generous gift was worth $280,000 in July 1999; an improbable $6.2 million in early March 2000 at $41 per share, a mere 8 months later; and an even more improbable $15 million ($102 per share) in mid March 3 weeks later. By another 4 weeks, it had dropped 80% to $20¼ per share, and by July 2002 it was back to 45 cents. In case one is tempted to believe that this reflects considered re-evaluation of great fundamental changes (none of which appeared to be significant then or now), consider the facts of Terrible Tuesday, March 4th 2000. In the last 3 hours of the day, Puma rallied by an almost unbelievable 70%. Yet it closed down less than 1% for the day, having fallen over 40% in the morning, on no news! The rest of Nasdaq technology stocks kept it company that day in a lesser but still spectacular fashion. Can we believe that the underlying reality was changing more than a tiny fraction of these hysterical moves? At its peak worth of $4 billion on $24 million in sales, the stock represents the epitome of this spectacularly speculative market.

It is hard for serious people to believe that price can be so independent of underlying reality, but it was not hard for John Maynard Keynes. The most influential economist of the 20th century was a sophisticated and experienced investor, and he understood the nature of bubbles and psychology in investing. He wrote in his *The General Theory of Employment, Interest and Money* in 1936,

> "A valuation, which is established as the outcome of the mass psychology of a large number of ignorant individuals is liable to change violently as the result of a sudden fluctuation of opinion due to factors which really do not make much difference . . . since there will be no strong roots of conviction to hold it steady."

That is a perfect description of the Nasdaq and Puma in the last few months of the bull market, and one of many proofs to me that Keynes was much more than 65 years ahead of the academic world in understanding equities.

Why the Belief in the EMH?

Why did the academic community cling so hard for 20 years to a theory that did not fit the facts or pass the common sense test of any experienced practitioner? I believe there are three main reasons. The first, to be charitable, is the flawed statistical tools with which they attacked the problem. Although I believe the evidence supporting a substantial degree of market inefficiency is overwhelming, the academic community had great trouble with it. It is a slippery problem and the statistical tools used in the early years were simply not up to the task. According to a paper by Larry Summers, even if the market had waves of inefficiency (which it does) that moved it far away from fair value on a fairly routine basis, the techniques used to test efficiency were so weak that it would have taken 1,000 years of data to deliver proof! The second reason has been described by Andrew Lo as another example of the "physics envy" so common in soft science. Few branches of study are softer than the study of markets made up as they are of unproven axioms, wishful thinking, and closed minds. Most academics would love investors to behave as fully reasonable economic man, for the more reasonable investors are, the more closely they will follow logically rigorous rules treatable by econometric techniques. The actual behavioral jungle makes a mockery of most econometric approaches. "We would love to have three laws," says Andrew Lo, "that explain 99% of economic behavior; instead we have about 99 laws that explain maybe 3% of economic behavior." Emanuel Derman of Goldman Sachs, a former physicist now in investments (we have four from particle physics), takes this point the final 3%. "There is no fundamental theory in finance. There are no laws." Investors' feelings 'are ephemeral'. Shades once again of Keynes. Of course, the ultimate demonstration of physics envy is that a 'Nobel' Prize was invented for this soft science not considered worthy of one by Alfred himself. Academics in finance would love their branch of study to be more scientific – more like physics – to dignify their work, but wishing does not make it so.

A third reason for sustaining this belief in efficiency in the face of the facts is that the overwhelming majority of academics past and present who have written on the market could be fairly described as amateurs. It is perhaps a little unfair to complain so bitterly of the academics given that most of them have never managed a penny, for they have therefore never felt the pull of crowd psychology or felt what it was like to have your job or your firm threatened by a large, failing bet. Fischer Black, a hero of mine, was getting at this amateur principle when he famously said: "The market looks more efficient from the banks of the Charles than from the banks of the Hudson." It is certainly less surprising given the lack of battle experience of most academics that they can believe the preposterous: that the market is indeed peopled by reasonable, well-informed, and law abiding investors.

The 99% of the professionals I polled who believe in mean reversion have all, in contrast, experienced these pressures, very recently and often to their extreme discomfort. The few academics that have extensive investment experience also tend to come to very different conclusions than the majority as to market efficiency. In recent years for example, Andrei Schleifer from Harvard set up shop with Josef Lakonishok from the University of Illinois, running money successfully based on systematic market inefficiencies. Schleifer wrote a book, *Inefficient Markets: An Introduction to Behavioral Finance*, detailing his view of just how inefficient the market was. But here again Keynes is the yardstick, for Keynes's unique features were that he was not only a candidate for the greatest 20th century economist, but also the only candidate who seriously and continuously invested real money. His famous Chapter 12 of the *General Theory* and his less well-known Volume 12 of his collected works lay out his remarkably modern views. For Keynes, career risk dominates. It is safer to stay with the crowd and be 'quicker on the draw' or faster at 'musical chairs' than the next man than it is to engage in the laborious search for "enterprise value." In such a search for real value, you will often be seen to be different from the crowd and "eccentric" and when wrong, which sooner or later will inevitably be the case, "you will not receive much mercy." But the price the market would pay for having most investors 'go with the flow' would be that the market itself could from time to time, "become the bubble on a whirlpool of speculation."

Honorable Exceptions

Joining Keynes amongst the handful of honorable heretics in the academic world who held out against the idea of market efficiency is Modigliani. He came to the Boston financial community in 1982, when the S&P 500 was at 8x, and explained that high inflation did not justify low prices, for companies were real assets that passed inflation through. He explained that stocks should sell at replacement cost or about 16x earnings, twice the then prevailing price. In 1999 he came back to a Boston quant group and explained that very low inflation was not the issue, etc., and that the market should sell at replacement cost or about half the then current 32x. (I was lucky to be the only person at both meetings.) Unfortunately, for many, he was too busy with more important issues to make much of a splash with his views on market inefficiency. Robert Shiller (*Irrational Exuberance*) and Andrew Smithers (*Valuing Wall Street*) also labored hard, much more recently, to knock holes in the efficient market. John Cochrane, John Campbell, Andrei Schleifer, and Josef Lakonishok also produced academic papers and books promoting the mean reverting nature of stock prices and hence the predictability of prices within bounds and over the long run. My second favorite quote from this newer work is from John Cochrane: "Stock and bond returns turn out to be predictive at long horizons. They also reflect the information in prices; high prices lead to low returns and low prices lead to high returns." Never let it be said that at least one academic hasn't said something that was both sensible and simple. But my favorite quote is by Larry Summers, who apparently subscribes to typical GMO equivocation: "The EMH is the most remarkable error in the history of economics." Other than that, he likes it.

The Pendulum Swings Back

The better news recently on this issue is that the pendulum has begun to swing back towards a belief in substantial inefficiency. There is no better indication of this than the last 2 years' awards for economics of the prize in honor of Alfred Nobel. 2 years ago in his acceptance speech, Akerloff detailed a long list of behavioral factors in economics and the stock market. In doing so, he acknowledged both in his opening and closing paragraphs the role played by Keynes, both in his neglected role in introducing the importance of 'animal spirits' in general economics, and also in his detailed (and I believe accurate) description of the profound degree of behavioral influences in the stock market.

A recent rereading of *Manias, Panics and Crashes* by Charles Kindleberger, the MIT economist, suggested another subgroup to add to the academic practitioners who avoided the efficient market nonsense: market historians. Economic and other historians, who were observing bubbles afterwards, or better yet, at the time, seemed to have no trouble recognizing investors as flawed beings capable en masse of bursts of hysterical euphoria and almost incredible credulousness, and equally capable of sustaining waves of subsequent despair. They all seemed to recognize that this was above all a recurrent affair.

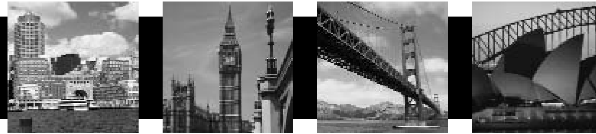
The Early Days of Behavioralism

Cato's letter was a stock market newsletter in 1721 during the South Sea Bubble, a bubble that might reasonably be claimed as The Real McCoy. His letter circulated in coffee houses, which served as brokerage offices of the time. As quoted in Edward Chancellor's excellent book on bubbles, *The Devil Take the Hindmost*, Cato philosophized, "There must certainly be a vast fund of

stupidity in human nature else men would not be caught as they are, a thousand times over, by the same snare." About 100 years later Walter Bagehot, founder of *The Economist*, also wrote, "But one thing is certain, that at particular times a great deal of stupid people have a great deal of stupid money." Another century later, give or take, in December 1929 reviewing that year's bubble, Roy Young, the Treasurer of the New York Fed, said, "With this comes a recurrence of the familiar 'new era' theory, which seems to blossom about once in a generation with unfailing regularity." I had believed until about 6 years ago that, although offering great opportunities to make money through the use of judgment, the market appeared to be in general "approximately efficient and getting more so." This naiveté and faith in the effectiveness of a growing number of MBAs and CFAs and the remorseless march of science was touching. It was galling to realize how this view had been debunked and mocked so often and so long ago. In the last paragraph of his book, Kindleberger concludes, "Dismissing financial crisis on the grounds that bubbles and busts cannot take place because that would imply irrationality is to ignore a condition for the sake of a theory." Ladies and gentlemen of academia, I beseech you in the name of Keynes, make your theories fit the facts!

GMO

Quarterly Letter



April 2003

Jeremy Grantham, Chairman

The Fog of War and the Price of Stocks

Summary

There are many complicated events affecting the world economy that are desperately hard to predict. But even if we knew the economic consequences with certainty, we would know little about the stock market consequences, particularly in the longer term. In contrast, we know quite a lot about the pricing of asset classes, and their price does drive market performance, particularly in the longer term.

Iraq, Tax Cuts and Rate Cuts

The stock markets of the world have been lurching around recently, first on the prospects for war and later on its apparent development, with major moves coming on the basis of the flimsiest data, often flatly wrong. Some economists write about the profound effect and others about the trivial effect the war will have on the long-term and short-term economy, which adds to the confusion. Some economists laud the power of tax cuts to boost the economy while others, including Modigliani and two other Nobel Prize winners, counter-argue that the cuts will hurt the longer-term economy by boosting the government deficit. One possible tax cut in particular, the dividend tax, is claimed by most stock market commentators, but not all (and certainly not me), to substantially increase the intrinsic value of the stock market. Almost all economists consider that rate cuts have helped and will continue to help the economy, but some worry that as the rates approach zero, the dangers of a Japanese liquidity trap increase – a scary situation where prices fall and real rates rise and the Fed loses the power to stimulate because nominal rates cannot drop below zero. The effect of rate cuts on the stock market is still widely held to increase the justifiable value of the stock market despite prodigious efforts to debunk this approach (known as the 'Fed Model') by historical data and logic.

The Problem with the Economy as an Explanatory Variable

All of the above economic arguments are complicated and uncertain because economics is a soft, poorly understood science and some Nobel Prize winners are working on a long time horizon and others on shorter ones. I believe that Iraq will not have a particularly noticeable effect on the shorter-term economy, which is weak for other reasons, and in the longer term the war's effect is unknowable, possibly even good, but almost certainly slight. But of course I may easily be wrong.

The real problem is that even if we knew what the economy would do and approximately when it would do it, it would probably tell us little about the stock market. Remember the exhibit we did 2 years ago to rebut the Merrill Lynch economist who claimed that the 1990s was "the best decade of the 20th century"? We had the 10 decades lined up on productivity and real GNP growth and the 1970s and the 1990s were number five and number six. The decade of the 1970s was hugely unloved by the stock market (the second worst in the century) and the decade of the 1990s was the second best (to the 1920s), yet the economic performance of the two decades was very, very similar. Before the peak of the bubble, I also argued that the bear market would last a long time and would contain at least one economic recovery and probably two before the market hit its eventual low, which I still believe. An economic recovery does not magically justify an overpriced market.

There is also, very inconveniently, no correlation between a country's GNP growth rate and stock market returns. Many countries have hugely outgrown the U.S. in the last 50 years and most have outgrown it by some margin, yet very few have materially outperformed its stock market. Italy, a spectacularly poor country in 1945 (or 1939 for that matter) has brilliantly caught up economically (so

much for government efficiency as a predictor) yet has badly underperformed most other countries' stock markets. In estimating market returns, it is clear that longer-term corporate profitability and good governance are more important to per share stock returns than raw GNP growth rates.

Yet, the other day, a bull argued with me that future stock returns in the U.S. would be high because we had strong population growth plus strong productivity. I countered by asking the audience to imagine a large island with good resources, good education, a good work ethic, and modern plant, but no population growth and no technological change. Each machine tool was worn out and replaced by an identical one. Each worker, well educated and motivated, was similarly worn out and replaced. Factories, too, and roads and schools. The imaginary island had a static GNP and a static GNP/capita, happily a prosperous one. The corporate sector made good profit margins, and a satisfactory but static total profit, say 10% of GNP. The corporate system paid out a lot since it only needed to replace its assets and not grow them, so the stockholders made the necessary, respectable 5.7% real return needed to induce them to invest. Incidentally, there would be few booms and busts since even Abby herself would be hard-pressed to get carried away with such an economy. But clearly (to me anyway) there is no reason the corporate system would not make a good profit in this static island economy, rather like Ancient Egyptian enterprises must have flourished in their 2000-year period of remarkably stable GNP. No, GNP growth is not necessary for a normal return to stock investors. All that is necessary is a solid profit margin, and that in turn only requires Adam Smith's 'invisible hand' of self interest and a modicum of non-interference by the authorities. (Of course if I thought more quickly and wasn't so long winded, I would have replied that the bull could have said exactly the same in March 2000 at the top and it would have been much more obviously wrong.)

The point is that for purposes of predicting the stock market, it is not the economy, even if you could unravel the complexities and predict them, which you largely cannot.

Short Term, It's Behavioral

Behavioral reflexes to unexpected real and imagined events are what drive the market short term. Uncomfortable news drives the market down for the day and vice versa. Investors know what makes them feel comfortable and they put the right sign on it. The problems are three fold. First, what makes investors feel comfortable, such as low rates and low inflation, are mean reverting so that they are coincident indicators that negatively predict the future; high profit margins, low rates, and low inflation predict below average stock returns, not high returns. Second, investors like all other people have a 'basing bias': they assume incorrectly that the starting point is reasonable. Thus, in March 2000, at 40x normalized earnings (or 33x earnings at peak margins) on a day with unexpected comfortable news, the market would still rise. Similarly, in December 1974 at 6x normalized earnings, unexpectedly bad or uncomfortable news would still depress the market yet further for the day. Third, although the daily direction of the market makes sense, at least in behavioral terms, the extent does not. A little good news, given high visibility and a Merrill Lynch plug on a sunny day, might have twice the effect that it would another day: there is a lot of noise!

Long Term, It's Tobin's Q

Long term, the market is all about price. The bedrock for measuring the fair value of the market is the replacement value of the whole corporate system as a fraction of the market price (or Tobin's Q), which is calculated by the Federal Reserve. Andrew Smithers, an economic consultant in London, has ground the data to death in his book *Valuing Wall Street*, and a recent article by Harney and Tower in this month's *Journal of Investing* argues that it is the most predictive measure of future market moves that exists.

It should be. It is obvious, I believe, that if the corporate system sells at twice its replacement value, shares will be issued and capital investment made until we drown, in say, fiber optic cable. If excessive profits and excessive stock prices do not increase competition then capitalism is broken. Similarly, low margins and stock prices at half replacement deter competition and reduce new capacity until there is a shortage. For example, if you can buy a chemical plant at half price in the stock market, why on earth would you build a new one when capacity is already excessive and profit margins are depressed?

At GMO, Ben Inker and I have labored (mainly his labor) to determine the P/E based formula that equates with replacement cost. The solution seems to be 'normal' P/E (currently 16x normalized earnings) based on earnings at average or trend line profitability. The movement of the stock market around both this series and the series for Tobin's Q looks suitably identical to the naked eye and they are equally predictive. It is unusual and gratifying

that what should work does, for normal P/E x normal earnings should, by definition, equal the fair value of the assets involved.

Tobin's Q as the Antidote to Infections of Sloppy Logic

Going back to my opening comments on Iraq, taxes, and rates, it all makes sense when observed through a filter of replacement cost. For example, here are three critical questions:

1. Does the outcome of the Iraqi war change the replacement cost of the U.S. market (or any other market outside Iraq)?
2. Does a change in taxes, even dividend taxes, change replacement cost?
3. Do lower interest rates change replacement cost?

The answers are blindingly obvious. "Does it change replacement cost?" is a good mantra to chant when reading brokerage reports or the morning newspapers or when tempted to use the 'Fed Model'.

Other Business: the First Quarter of 2003

The first quarter was another in a series of difficult quarters during this bear market when value and small cap badly underperformed growth and large cap in the U.S. Momentum was not as useful as normal for a period when value fails, although it was about neutral. This failure of momentum to bail out value is unfortunately typical of bear market rallies because momentum has recycled substantially into value stocks after their 2½ good years and bear market rallies are typically led by the old bull market favorites. (My favorite ridiculous bull market stock, Pumatech, which doubled three times last year – and still closed down for the year – jumped from 18 cents last October by 18 times to 2.87 yesterday.) The results bore heavily on U.S. Core and Intrinsic Value and our U.S. equity hedge funds. As written about in last year's quarterlies, this bear market rally effect, painful even in 2000 and 2001 rallies, was likely to become more frequent as value and small cap retraced their relative cheapness and hence lost most, but probably not all, of their defensiveness. Fortunately some of our U.S. equity funds were able to sidestep some of these problems and outperform, including U.S. active, U.S. small value and U.S. small growth.

GMO's important foreign funds in contrast, despite the large cap growth effect in some countries, in general did well, with a successful but moderate currency bet adding to some favorable country bets and some luck (our overweighted countries were ones in which value and small continued to work and vice versa). Emerging equity and debt also did well. So in general, GMO did fine although it doesn't feel like it: probably after the last 3 years our expectations for broad based outperformance are unreasonably high.

The Economy

After what I have written above, it is probably not worth commenting on the economy, but I will anyway. I have argued for 3 years that of course the economy would recover, but the hangover from the bubble, excessive debt at all levels, excess capacity stemming from excessive capital spending, and the negative wealth effect from a declining stock market would create a prolonged head wind in which the economic recovery would be intermittently disappointing and corporate earnings fairly consistently disappointing. I still feel almost the same about future prospects although slightly more pessimistic about the economy for the balance of this year, which clearly has some chance of tipping into a double-dip recession.

The Market and Bubbles Declining to Fair Value

Ben and I believe fair value on the S&P 500 is 680 (±10% to allow for measurement error) compared to today's 890, and for once we know something about the timing. Breaking bubbles have a strong tendency to return to trend line a little faster than they went up and about 85% of all examples follow this pattern ± a year. So the most likely time to hit trend would be the fall of this year, and the earliest likely time was the fall of last year when at 775 the S&P 500 just missed trend ±10%.

Over Run

The really bad news still is that all bubbles over correct, with no exceptions yet, and that the timing and extent of the over corrections appear to be largely unknowable, but they usually take several years. (Japan, for example, is 5 years below trend and counting.)

Safe Havens?

Although emerging equities and REITs are reasonably cheap and developed foreign equities slightly cheap, they all run the risk of being dragged down by a declining S&P 500. Emerging equity and REITs have a good chance to buck the S&P effect, but developed equity probably has a poor chance. On the other hand, to go down less in developed foreign equity – in an inefficient asset class where more value can be added, with a good chance of a currency kicker and the knowledge that a

cheap asset is getting very cheap – is a lot better than losing money in an overpriced asset class. Still, in short, it is still a good time to keep one's head down. The one short-term positive note is that the presidential cycle (see last quarter's client letter) is powerful and may postpone serious declines for a while.

Attachment

I have attached a short piece called "Lessons from the Bubble," which will be appearing in the European pension fund magazine, *Investment & Pensions Europe*. It covers a lot of old ground, but has the virtue of being brief.

GMO

Special Topic

April 2003

Jeremy Grantham, Chairman

Lessons from the Great Bubble

Lesson 1: Do not believe the consensus and particularly the bullish propaganda.

It is a natural human tendency to believe that 'they' are right, that the experts know what they are doing. Remember that most of what you read and hear in a bull market is **propaganda**. Ask yourself about the probable motive of the speakers. Are they trying to sell stocks? It is many times easier selling stocks in bullish times with optimistic clients. Are they like Greenspan trying to keep congressmen happy? Witness how fast he backed off his beautifully timed advice on "irrational exuberance". Recognize that the government has a vested interest in bull market revenues. Recognize that, especially in this cycle, corporate officers have a huge vested interest in talking their stocks up and exaggerating their earnings because of their excessive, sloppily issued stock options. Recognize that corporate accountants want to keep their jobs by providing the answers that CEOs want. Most importantly, in recognizing propaganda, recognize that the media's job description is to attract viewers and sell copies. This means, in general, delivering what makes readers feel good. If raining on the parade reduces sales, why should they do it?

When all of these factors are in sync, they create an enormous brain-washing capability and your first job – we have all painfully relearned – is resisting this pressure. "They" are usually wrong. You must dare to be independent. Contrarian impulses are usually better. They are *always* better in major bubbles and busts.

Lesson 2: The market is inefficient.

The dominant academic group in stock market research has held, since about 1970, that the market is efficient. The efficient market hypothesis (EMH) assumes that investors are well and speedily informed about all knowable data and that they have the skills and wisdom to process the data accurately, and the psychological makeup not to mess it all up. The reality, I believe, is that investors are fallible and emotional and have neither the mathematical nor the psychic means to process data accurately, nor in the case of professionals, whose main job is protecting their careers, the incentive.

We have just had the type of bubble that should occur by chance in an efficient market every 60 years. It has been followed immediately by the type of downward move that should occur every 40 years. This immediate connection should occur regularly every 1 in 60 times 1 in 40 years, or every 2400 years! Yet every major bubble since before the South Sea Bubble in 1721 and including the 1929 Crash and Japan in 1990 has had exactly that configuration.

One of the many traits of human behavior that causes inefficient markets is wishful thinking, and this, ironically, has been shared by the academic establishment. They wished investors to be rational. They wished investors not to be biased by wishful thinking. They wished the 'heretical' data proving market inefficiency to be inaccurate. They wished the study of markets to be as serious as physics. They wished the evidence of irrational crowd behavior that typified all historical market cycles would simply go away. But their wishing has not made it so. The market is enormously inefficient and getting more so. This mismatch of the EMH and reality has been described by Larry Summers, President of Harvard University and former U.S. Secretary of the Treasury, as the most remarkable error in the history of economic theory.

Lesson 3: The market is driven by behavioralism.

Individual investors not only want to believe that "they" are right, but also that good news is better than bad. They are also good at suppressing dissonant information, so that bearish input easily bounces off those who have decided to be bulls. They also disproportionately prefer markets, situations, stocks, and so on, that make them feel comfortable. Worst of all, they adopt the convention for dealing with the future (that Keynes pointed out in 1936) that the current situation will continue. In this way, they extrapolated the unprecedented fat profit margins, low inflation, and low interest rates of March 2000 into the

indefinite future, just as they had extrapolated the 13% inflation and low profit margins of 1982.

Lesson 4: The real, cruel world regresses to the mean, and the current bear market is a great example.

Unfortunately, the world record profit margins of 2000 had to regress back to average and below. That is, after all, how capitalism works. If exceptional profit margins do not attract assets and increased competition, until we drown in say fiber optic cable, then the capitalistic system is broken. So investor comfort and good times are coincident indicators, and as inflation and rates rise and margins fall, so investors' discomfort drives down p/e's. Perversely, therefore, 1982 with terrible inflation, 15% government bonds, a recession, an oil crisis, and destroyed profit margins also had a low p/e. Similarly, March 2000 had perfect comfort factors and the highest p/e ever (33x stated or 40x normal margins). All of which were doomed to regress painfully. For the record, all 27 of the bubbles in all asset classes that we have identified in the last 100 years went all the way back to the pre-existing trend. There were NO NEW ERAS, despite Irving Fisher's "new high plateau" belief in 1929; despite the belief in "Japan Inc." in 1989; despite Greenspan's belief that the internet and new technology had caused higher productivity that in general probably justified higher stock prices. 'This time' is never different.

The bubbles that reached their biggest peaks in March 2000 have all regressed back towards normal once again. Growth stocks were at the highest premium ever to value stocks, and in the last 3 years the gap has completely closed. In the process, value stocks saved enormous pain. Large cap stocks had the second largest gap over small caps and are now back to normal. The S&P 500 has retreated 80% of the way back to normal. These bubbles have all behaved perfectly. Regression to the mean is alive and well.

Lesson 5: Regression may be near certain, but the timing of regression to the mean is very uncertain and therefore playing it is dangerous to your career health.

Risk for investors is not primarily the volatility of the asset prices. Risk for practitioners is mainly career and business risk of being wrong in the short term. For individual investors, risk is primarily the chance of losing money.

The value of all asset classes passes through the mean, but you cannot know when; the future is unknowable. This is like the bag of feathers thrown into the hurricane from a high building. Some will land a block away in a few minutes and some will blow from Jamaica to Maine in 2 weeks. You don't know how high they will go or how long they will be up, but you know one thing with absolute certainty – they will all hit the ground. The feathers are a good analogy to the gravitational pull of value.

The timing uncertainty, though, creates enormous risk. No fund manager would build up a lot of cash even if he knew the probabilities were 70% in favor of cash outperforming and only 30% for equities. No professional would take a 30% chance of losing his career. If he did, he would have a 2.4 year life expectancy.

With more specializations like small cap value and emerging countries, few managers can move across boundaries so that the arbitrage mechanism between categories is weakened and inefficiencies become larger, but also riskier to play. These great opportunities will therefore always exist and always be dangerous to careers.

Lesson 6: Great bubbles are not like ordinary bull markets.

Major bubbles and busts are the only very important events in investing. The rest of the time, you show up for work, do a competent job, keep your nose clean, and everything works out okay because nothing much is happening. In a major bubble everything changes; stock picking fades into relative insignificance and asset and sector mix dominates completely. A major bubble is the kind that occurs every 40 years or so (statistically, a two sigma event), and there are only three important ones in equities prior to the current one: 1929 and 1965 in the U.S. and 1990 in Japan.

The major error in analyzing bear markets is to apply rules derived from ordinary bull and bear markets. "After three interest rate cuts, the market on average is up 21% a year later." "Six months before the end of a recession, the market turns up and on average is up 26% two years later." Many more than three interest rate cuts did not stop the Japanese decline or the current U.S. decline. After the first recession in Japan and the U.S. recently, the market continued to decline. Different rules apply to major bubbles, and the most important difference is that when major bubbles break moves to stimulate the economy seem to get much reduced traction.

Lesson 7: Great bear markets take their time and always over run on the downside.

Great bubbles usually take about the same time period, or a bit less, to get back to trend as they took to rise above it. This market should therefore have been expected to hit trend (680 ±10% on the S&P 500) by about the fall of this year. Typically, the over run below trend will also take several years. Remember, all asset classes spend half their time below trend, much of it following the bursting of bubbles. Following the 1929 crash, it took over 20 years from the early 1931 trend line market to get back over trend and stay there for a few years. After the 1965 peak, it took 13 years from when the trend was crossed in early 1974 to get back above trend. Japan, following its bust in 1990, took 7 years on its way down to trend and is now 5 years below trend and counting and counting. This information was all available in March 2000, but by far the most common opinion given by the investment industry was that the bear market would be mild and quick and last no more than a year. Such a short decline after a major bubble would have been unique in history!

Summary

There are no 'new eras'. The behaviorally driven, inefficient market is full of minor distortions that can usually be helped a lot by governmental action, and a few, very much more important major bubbles and busts in which the rules change and the usual governmental moves are of little or much reduced help. Only price matters and can be depended on in the long run, but sometimes it can be painfully long before rational pricing is restored.

GMO

Quarterly Letter July 2003

Jeremy Grantham, Chairman

Stocks Have Rallied And Will Now Return Less. Hip Hip Hooray! But Now What?

The Strangely Different Responses to Higher Prices by Stock and Bond Investors

The second quarter was a good one for bonds, especially junk and emerging country debt, and a sensational one for global equities, with the S&P 500 up 15%, EAFE up 19% and emerging countries up 23%! It was a good time to compare how bond and equity investors react to price increases.

The strong rally in bond prices, on one hand, has been greeted with justifiable dismay by bond and asset allocation investors as it lowered the available yields and took away reasonable long-term investment options and replaced them with fears of the capital losses that will occur when yields move higher at some uncertain future date. At GMO, for example, we loved inflation protected government bonds (TIPS) in early 2000 when they yielded 4.2%. We argued that 4.2% was so attractive at zero risk that we were highly likely to see a capital gain as the yields came down to the 2.7% to 3.0% range that we saw as reasonable in the long term. Not only did this yield reduction happen, but the yields kept on falling right through our view of fair value to today's much less satisfactory return of 2.0%. (Efficient market believers please explain.) Ben Inker and I, and most proponents of investing in TIPS, are heart broken to lose this wonderful investment and are only partially consoled by having made so much money in them by overstaying our legitimate welcome. This pushing of our luck in TIPS was partly because of the increasing lack of fairly priced alternatives and partly because of the inertia we built long ago into our asset allocation moves. The same logic applied in a lesser degree to all fixed income, but both these factors have their limits, and late last year and early this year, metaphysically cursing and swearing (sentiments that seem to be broadly shared by fixed income professionals), we eliminated our huge overweight in now overpriced fixed income.

The regret at lost opportunities and the resulting reduction in the size of the asset class bet seem absolutely normal to me. An asset class rallies in price and the imbedded return drops. A wonderful feature of bonds is you have to try very, very hard to miss this point. Not only did the real (after inflation) return drop by 60%, but the near certainty of a substantial capital gain was replaced by the near certainty of a capital loss.

What then are we supposed to make of the response to a 25% rally in the U.S. market? Far from being seen as an increasing risk or even as a lost or reduced investment opportunity, it is seen, nearly universally, as an unmitigated good. Individuals, net sellers of mutual funds at 775 on the S&P in October, are now heavy buyers at 1000. Newsletters and other advisers are at a multi-year high in optimism about future equity prices. (Yet stocks, like bonds and indeed every other asset class, share the characteristic that at higher prices you get a lower return.)

Why does this disparity exist between the dismay of bond investors to higher prices and the joy of stock investors to higher prices? Partly, I believe, it is an after effect of the great bull market in stocks and Greenspan's logic that permanently high productivity might justify permanently higher p/e ratios, not yet by any means out of our collective system. More particularly, the math is so simple and compelling for bonds that no reasonable person can miss it. For stocks, the logic of growth versus yield is not so clear.

The Economy

The economy, however, has continued to take my last eight quarterly letters to heart by being intermittently disappointing. It has continued to move up, but on a path that varies from perfectly adequate in some quarters to obviously sluggish in others, such as the first quarter this

year at 1.4% GNP growth. In total, as suspected, the economy is still suffering from the overhang of debt that is too high everywhere, personal savings that are too low, and the previous capital spending boom.

This is in fact the worst recovery from a recession in at least three ways. Excess capacity, for the first time, is greater today than when the recession appeared to end and in fact lower than all but 5 quarters in the last 25 years. The number of jobs has dropped since the recession 'ended' for the first time and real wages have been flat. Capital spending is still falling on a year over year basis. With these pressures, it is not surprising that profits have been disappointing when compared to what was expected a year ago for the first half of 2003. Indeed, it is remarkable, and I believe suspicious, that the S&P 500 companies are claiming that today's profit margins are normal on a percentage of sales basis. (The profit margins declared to the IRS remain very subnormal. The estimate of total corporate earnings from the national income accounts also remains below average, and the gaps between the claimed corporate operating earnings and the other two series remain at record wide levels.)

So on one hand, we have a classic third year presidential effect: a rising stock and bond market supported by stimulus, particularly low rates, and plentiful availability of funds, with little competition for funds from corporations facing weak sales and excess capacity, with a resulting flow of money to financial assets. On the other hand, we have a sluggish and disappointing economy and earnings that typically follow a major economic and stock market bubble, combined with an overpriced market. The net effect is that we expect a continuation of intermittently **disappointing** GNP growth and earnings, but not disastrously so: remember, last week's average GNP estimate – by 50 economists in *The Wall Street Journal* for the next 12 months – was 3.7% real growth. There is plenty of room there for muddling through okay while still being disappointing.

Asset Allocation: Fortune Favors the Virtuous

Prompted by the extraordinarily good performance of fixed income and its cousin, the REITs, in the 3-year bear market, we sold our overweighted fixed income positions down to parity late in the fourth quarter and early in the first quarter, having held the maximum overweight possible for 6 years, typically 15% points overweight. REITs were also reduced to 1/3 of their peak overweight.

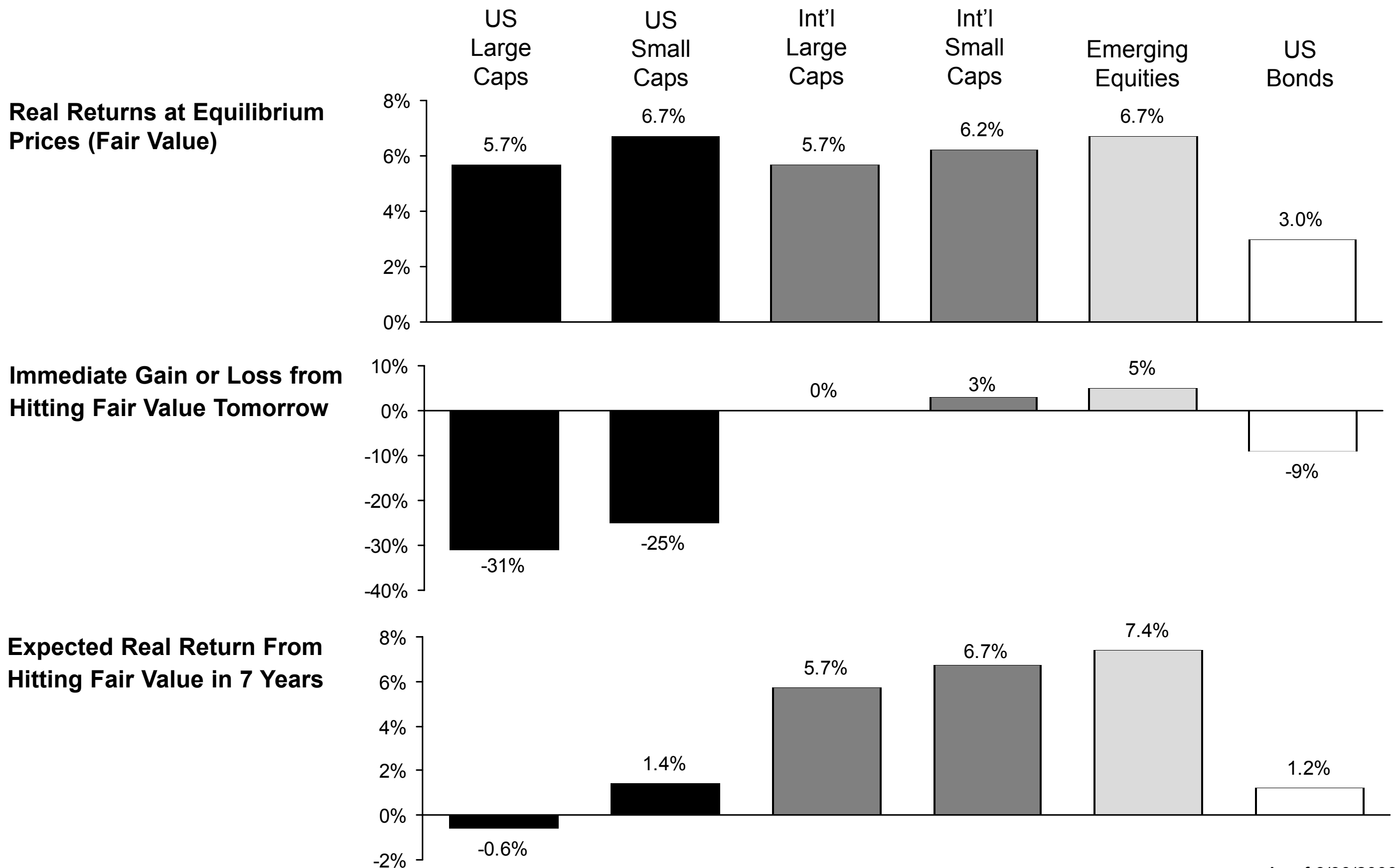
Impressed by the uniquely wide gap in value between U.S. equities and non U.S. equities (the widest in at least 50 years), we moved all of the 15% to non-U.S. equities with a twin emphasis on emerging countries and small cap developed.

Almost uniquely, in our experience, non-U.S. equities outperformed the S&P 500 even as the S&P rallied 15% in a quarter. The normal experience would be to have foreign stocks deliver 1/3 to 2/3 of the U.S. performance in a very strong quarter like this one for the U.S. This time, the S&P 500 lost to EAFE by 4% and emerging by 8%. This extremely favorable outcome for GMO and its clients generally allowed our allocation accounts to win in a rally despite having won in three consecutive down years. Partly, this was the **fortunate** timing of our rapid sale of fixed income (unfortunately, asset allocation is simply not that precise a business usually) and, more importantly, it was due to a spectacular weakness in the dollar that favored our foreign accounts by over 8% this year and over 15% since early December last year. Yes, we budgeted for 15%—2% a year for 7 years was in our budget. We just did not expect this entire 7-year forecast to occur in 7 months!

There is usually a worm in any apple this good and the bad news now is that all of the best investment ideas have performed the best and have lost all or some of their attractiveness. **There has probably not been a time in my 35-year career when asset classes in the U.S. were so broadly unattractive.** This is typically the case in a great bull market but was wonderfully not the case this time. In March 2000 there were many places to hide with many cheap asset classes in which to make money. Now, bonds globally are expensive and value and small in the global markets have done their job and are now in line with the rest of their markets. Our beloved REITs have gone from extraordinarily cheap to slightly above fair price and their near-term fundamentals look awful. Only foreign stocks look reasonable, at or close to fair value. And the usual reflex to fill a portfolio in this situation, which is to hold cash, is met by most of us with a cold shudder at the thought of knowingly investing at a negative real return.

What Is Left, if Anything?

Exhibit 1 shows our relatively new exhibit on our 7-year asset class forecasts. The top line shows the real returns (after inflation) that we expect from each asset class at fair value. The numbers are unusually uncontroversial, agreeing with most consultants and other sources, plus or minus a few basis points: 5.7% real from stocks and 3.0% real from bonds giving a "risk premium" of 2.7%. The



incremental return from owning riskier small caps and emerging country stocks is a reasonable extra 1% a year.

The problems start in row two which shows the move that would have to occur **tomorrow**, in our opinion, to move mispriced asset classes to normal fair value (or trend line price).

Row three amortizes the pain of being overpriced and the pleasure of being cheap evenly over 7 years and is our usual 7-year forecast. Seven years is picked because market asset prices have historically passed through fair value every 6¼ years and we wanted to be conservative.

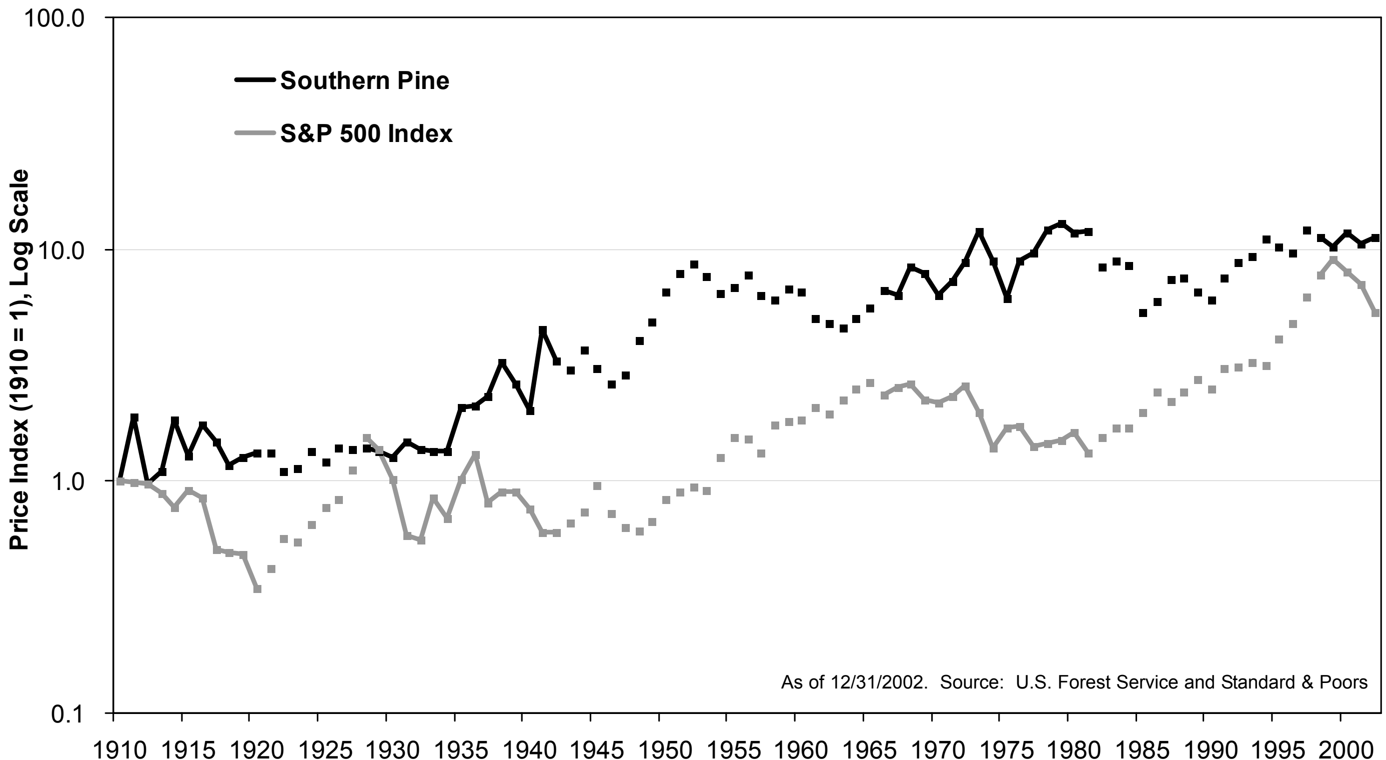
The bad news is that bubbles breaking take about the same time to deflate as they took to move above trend, which was mentioned in my December 2002 letter. This means that it is very likely that U.S. stocks will move back to the trend line (and fair value) of just under 700 on the S&P 500 sooner than 7 years: 1 to 3 years from now would be a much better guess historically than 7 years.

But, staying with our more conservative 7-year forecast, it is readily apparent from rows two and three that U.S. stocks and bonds are badly overpriced and foreign developed and emerging country equities are priced at fair value. This is the biggest deviation between the two equity blocks in history and is the backbone of our current asset allocation positioning.

What this all boils down to is that the **best we can** recommend to investors is to own as much foreign and emerging as you dare within equities and own as much cash as you can stand within fixed income, or where possible own conservative or market neutral type hedge funds designed to outperform cash by a few percentage points or more. Finally, consider forestry as a different and defensive investment.

A Good Time to Consider Forestry

Exhibit 2 shows the updated version of my favorite forestry exhibit. First, it shows that for 92 years the price of timber beat the price of a share of the S&P 500 in a fair fight. But highlighted in this exhibit are the timber prices in the great market declines. We have used this exhibit for several years to make the point that in the three great bear markets of the 20th century, the price of timber,



according to the U.S. Forestry Service, rose. When the stock market rose in the past, timber happily had a slightly positive correlation, rising a little. But in these three great declines, it had a strongly negative correlation, actually rising in all three of these over 50% U.S. equity declines. Now we have the first great bear market of the 21st century and once again the price of timber stayed steady in a 50% equity decline!

In addition to the price, there is also yield. The yield on the S&P 500 averaged 4.5% over 75 years but is currently below 2%. The yield on forestry averaged 6.5% and is currently about 6.5%.

The reasons for the outperformance of a very conservative asset class relative to the risk in equities are, I believe, very straight forward. It is a non-traditional investment that most of your peers will not be using, giving it substantial career risk. It is also illiquid, needing to be locked up for 10 years. These are probably the two pet hates of institutional investors (even though it seems a bit irrational), and each of these characteristics is worth a couple of extra points of return. So an asset class with highly desirable portfolio attributes yields 8% or 9% real instead of the 4% to 5% real that finance 101 (which notoriously cares little about behavioralism) would suggest. So for those with both a long time horizon and a willingness to have some illiquidity, it seems as close to a free lunch as exists. At a time when the alternatives are so wretched on a 7 year horizon, it seems a particularly good time to consider a timber investment.

The Third Year of the Presidential Cycle: an Update

I described the third year of the Presidential Cycle in my December 2002 letter, "Predictive 'Entrails' and the Case for a Time-out in the Great Bear Market" as a very bad year for short sellers to try to be heroes. The third year has an average of 17.2% real return since 1932 (compared to an average below 3% for the first 2 years) and has only two small declines. It can be described as the King Kong of bullish factors. The Godzilla factor of bear market factors, however, is the aftermath of a major bubble breaking, which has historically made it difficult to sustain a major rally until the market is very cheap, which in January it clearly was not.

The Presidential third year is bullish because of the amount of fiscal and monetary stimulus that the administration of the time attempts to pack into it. This year has been a doozy for stimulus with the rate cuts to 40-year lows, strongly negative real rates, and a large (if

inefficient) second round of tax cuts. The Fed also made as blatant a promise as has ever been made to uphold the principle of moral hazard, suggesting last week that it would keep interest rates low for a long time. This, in turn, offered the hope that investors could leverage portfolios without too much risk. So determined is the language and action of the Fed to keep rates low and money flowing that Stephen Roach of Morgan Stanley suggests that Greenspan is in the business of producing "chain linked bubbles" (a mixed metaphor if ever there was one, but one that still works beautifully). The future possible bubbles we are risking are in long bonds and housing. But for now, despite reservations about the future, King Kong has won, the market has done well, and although the year is far from over, an up year seems very likely.

It is interesting to note that the U.S. Presidential Cycle is so powerful that it exists in Europe. In the U.K. it is particularly powerful: since 1932 the average of the first 2 years of the American presidents' terms has been 3.9% and the average for the third year an astonishing 19.0%! The Prime Ministerial Cycle, on the other hand, is completely non-existent. The only thing left is to become the 51st state. In the whole of Europe, since 1970, the comparable numbers are 4.6% and 16.8%. It's a strange world in which U.S. politically driven stimulus programs would have such a broad impact, but that's the way it is.

As a longer-term bear it is probably appropriate for me to admit how 'healthy', in a traditional sense, this second quarter rally felt. Each of the three prior rallies were classic bear market rallies in that they were dominated by the favorites from the late, great bull market, tech and growth stocks in particular, with value stocks left far behind. This turned in the second quarter as value stocks outperformed growth by 3% and the Russell 2000 outperformed the S&P 500 by over 8%. A rally this broad led by a different type of company is what you look for in a new bull market. In this sense, any market historian has to treat this rally with respect. For historians, though, it lacks just one, unfortunately cosmically important characteristic: this rally emphatically did not start from a cheap level, bottoming at 19 times adjusted trailing earnings compared to a trend line 16 times. The animal spirits and unrealistic high hopes of the great bubble had been substantially reduced but had not been by any means totally crushed. This rally is driven by Greenspan and Bush, by availability of cash at give away rates, and tax stimulus. It is unusual, but not amazing in these circumstances, that this rally has felt so impressive. But for a major and sustained rally to start lacking cheapness following the breaking of a major bubble would rewrite the history books. (With a hit rate of 27 out of 27 major bubbles retreating all the way to trend and below, we recognize the possibility of a new bull market, but only as a very remote possibility.)

The fourth year of the presidential cycle is also strong up to the election, although it does not have the same heroic success rate as the third year. The strength of this year's stimulus and the strong historic record of the fourth year make me believe that for the next 15 months, predictions are unwise and that anything can happen, including the U.S. stock market holding or adding to its gains. This would make this rally one of the best bear market rallies in history and perhaps the very best, but one with good reasons to explain it. However, I would also not be totally surprised to see a substantial decline from current levels in this 15-month period in the face of overpricing. The greatest short-term danger would be if the intermittent disappointments in GNP growth, employment, wage rates, and corporate earnings were to take an unexpectedly severe decline, which is quite possible. So, a toss up.

The Cliff and the Lemmings?

2005 and 2006, however, are a completely different story, and the odds are far longer against a decent stock market. In the first 2 years the administration typically looks to put its house in order and this particular house is pretty disorderly and very overpriced. That the bear market should take this kind of time may seem unusual, but it absolutely is not. Quite the reverse is true as, after a great bull market, taking 6 or 7 years to hit the low for the cycle would be very normal. If the market p/e is still up at these levels towards the end of next year, it will present a glorious opportunity indeed to take evasive action – for us lemmings to stop at or near the cliff edge and to think better of it.

GMO Second Quarter Performance

This was definitely one of our best (and luckiest) quarters in 25 years, with broad based outperformance in individual U.S. and foreign equity funds, asset allocation, fixed income, and hedge funds, all in the face of a 15% move in the S&P 500 and the usual GMO bear market bias that exists in everything we do. It doesn't get much better than this and if we made any Faustian bargain with the devil, I'm happy to say it wasn't me who signed the contract!

GMO

Quarterly Letter

October 2003

Jeremy Grantham, Chairman

The Greatest Sucker Rally in History?

The Third Quarter and 'Bear Market Rallies'

The third quarter was right back into classic 'bear market rally' mode: a huge rally in last year's crushed stocks, and leadership by growth, low quality, and small cap. This of course was not GMO's type of market, unlike the second quarter where we had an unexpected broad value rally, which I reluctantly conceded felt like a serious bull market.

Even small cap, usually at least a modest GMO bias in recent years, was not extraordinarily helpful as we had scored small cap as fully valued relative to large by the beginning of the year, and only our deliberate inertia (a slow 18-month cycle of slicing out of old investments) left us modestly overweight small in the U.S. and substantially overweight in foreign quant, although less than half of our peak bet.

I concede that bear market rallies are a fairly nebulous concept because you cannot be sure what they were until later – the only proof of a bear market rally is that you go to a new low in the not too distant future. But despite this reservation, I cannot resist noodling with the concept.

The characteristics usually attached to a bear market rally are:

a. the prior low was not particularly cheap;

b. the leadership reverts back to that of the prior bull market;

c. the rally is sharp, unusually persistent while it lasts, and has a speculative tone, perhaps because investors are trying to make up lost ground;

d. investors' hearts were only half broken by the previous low in the market, allowing confidence and speculation to recover rapidly.

How do the prior three great bubbles and busts score on this front? (They are: U.S. from 1929 to 1932; U.S. from 1965 to 1974 (or 1982); and Japan from 1990 to 2002 (?).

a. **Value**

All three were scrap iron value or barely half long-term trend. *FAIL*

b. **Leadership**

The changes in the market leadership in Japan and the U.S. in 1932 and 1974 were dramatic, as everything changed; in the U.S. in 1982 they were merely very substantial as energy and commodities declined and value and all small cap rallied. *FAIL*

c. **Sharp, speculative rally**

After 1982 there was some speculation otherwise, *FAIL*

d. **Heart-broken**

All three pass the test and stock ownership halved. *VERY FAIL*

How does this current rally in the aftermath of the fourth great bubble stack up?

a. **Value**

September 2002 low was barely lower than the prior two great bubble highs (19 times to their 21 times). *Spectacular PASS*

b. **Leadership**

Classic reversal to prior bull market leadership, especially growth and tech. *Spectacular PASS.*

c. **Sharp, speculative rally**

This rally has shown substantial outperformance of low quality and rapid build-up of speculation in which Nasdaq margin debt has risen to new highs! *Handsome PASS*

d. **Heart-broken**

Investor confidence has quickly bounced into top quartile levels and newsletter confidence has rebounded to 1999 levels! Cash holdings in funds are also way below normal! *PASS*

The minor rallies in 2001 to 2003 also pass the tests, not surprisingly. Each time we had very strong rallies in the heroes of the prior bubble – tech, growth, and the real internet flakes of the prior cycle. Pumatech remember, doubled three separate times last year and was still down for the year! Well, as Crocodile Dundee would say, "You call that a rally?" Since its low last October, Pumatech climbed 40 times. Yes, 40 times! From 18 cents (down from $100) to $7.21. Pumatech, for the record, has been my selection of the quintessential stock 'flake' for 4 years. This is nothing personal. The company may be a fine, tiny company on its way to break-even, but the stock is flakey. Accompanying Pumatech this year were a substantial percentage of the survivors of the tech IPO frenzy of the late 90s, led in size by Amazon (+211% YTD) and Ebay (+58% YTD). As in 1998 to 1999, growth beat value and tech trounced everything.

But, you may answer, this bear market rally is **bigger** in some ways (the Nasdaq is up over 50%, for example) than any previous bear market rally and certainly **longer**: no other bear market rally after the three great bubbles broke in 1929, 1965, and Japan in 1980 came close to this performance. And this is true! But it is also true that more stimulus and moral hazard has been offered to this rally than any previous one, by a wide margin. It is reasonable, therefore, to expect a big response and we are certainly getting it.

But Ben Inker, more cold blooded than I and less interested in semantics says, "Who cares what you call it, it's going to end badly eventually because it's overpriced."

Third Quarter Performance

Both the quarter and the year so far have had mixed performance for GMO funds, certainly by the standards of the last 3 years, but with two mitigating circumstances. First, all the equity markets are up a lot, and, in the average up month, all our funds tend to lose a little to the benchmark (happily more than offset by downside outperformance in the past). Second, in the U.S., growth has beaten value, 'low quality' has beaten 'high quality', and momentum has failed as last year's wiped out stocks have come surging back. Value, high quality, and positive momentum simply work better with our methodology. *The Financial Times* a month ago had a tidbit that characterized our U.S. problems: the 25% of stocks that were down the worst last year were up 44% this year; the almost 25% of the companies that had no earnings at all were up 41%, but the cheapest 25% on p/e were up only 9.4%! Given this, the underperformance of some of our U.S. funds seems reasonable. In international and emerging, value continued to work through most of the quarter, although the U.S. low quality infection spread rapidly. By the end, I was relieved to see two of our funds that are important to asset allocation – international small cap and emerging – have a good third quarter. Asset allocation, with its huge bear market bias historically, continued to walk on water with a 5.7% YTD gain on its benchmark as I write (October 20), and ahead of the S&P 500's +20% despite holding 35% fixed income. (But I apologized for our good fortune last quarter so I won't again.)

The Presidential Cycle and the Greatest Sucker Rally in History

This topic will be addressed at our Fall Conference and will be written up as a separate piece and sent next quarter. So please bear with me, as many clients do not come to the conference. The argument very briefly is:

- The third year of the Presidential Cycle is used by the administration to attempt to stimulate the economy for year four to create a favorable re-election environment.
- This President, perhaps learning from his father's error, succeeded in having truly record stimulus.
- This stimulus has a moderate effect on the economy in years three and four, but has an extravagant effect on the stock market.

This is partly the traditional effect of lower rates, but is largely psychological; consumer confidence rises, which is coincident with higher p/e's, and we hypothesize that investors generally feel some substantial underwriting of their risks, or moral hazard, by the Fed and the Administration, who imply that they will keep money available and rates low for a chunk of time so that investors can speculate at low risk.

The net effect on the U.S. market is remarkable: since 1932, years one and two have been 4.5 points below average, **year three 8 points over** average, and year four, 1 point over.

Also remarkable is that this U.S. Presidential Cycle effect has been stronger in the UK than in the U.S. since 1932!

(Gallingly, there is absolutely no Prime Ministerial Effect for the Brits!) Since 1970, when good data starts, the effect of the U.S. Presidential Cycle has even been one third as strong in continental Europe and two thirds as strong in Japan. Yes, Japan! Where everything is always considered independent.

Notably, in year three, other normally important influences seem to be swamped by this Presidential Effect and either disappear or are muted. For example: the value of the market (in price/earnings or price/book terms), which is usually moderately indicative of next year's performance, appears to have no effect. In round numbers, all third years are up and 1999, by far the most expensive year ever recorded then, kept going straight up like a good third year. Similarly, the substantially powerful January effect (the strong tendency for January performance to predict the balance of the year) also bounces off year three: witness this year with its slightly down January.

Interestingly, the sector effects in year three are completely compatible with increased confidence and an increased willingness to speculate under the protective umbrella of the Administration and the Fed. Growth, small cap, and low quality all do well in year three just as they are doing this year. Growth stocks beat their average performance relative to value by 5% in year three, small beat large by 6.5% over normal, and low quality beat high quality by 2% over normal.

Outlook for 2004

Yet year four, in complete contrast to year three, is a reasonably normal year. The fourth year outperforms by a statistically insignificant 1% over normal, and small cap is also near normal. What is interesting and surprising to us, however, is that low quality has a poor year and value has its best year. So, if 2004 is an up year, we may do better (or at least less badly) than we would have expected otherwise.

The exceptional fiscal and monetary stimulus program appears to have worked quite well this time, and we expect a continued decent economic recovery and quite good profits for a while longer into next year. These conditions would typically cause a rising market and a growth and speculative tone at least until next year.

Next year, though, anything can happen. The stimulus program will still be having a beneficial lagged effect, **but** the 50%+ odds for a continued rally next year, that I gave in a previous quarterly letter, begin to look vulnerable for several reasons. First, our new research shows, to my surprise, that the Presidential Cycle is largely played out by year four. Second, the fourth year's performance is normally sensitive to the market's aggregate value (unlike year three), and the current market has been rising in an accelerating fashion, which is characteristic of mini (or maxi) bubbles, but more critically has already carried the market to 24x trailing normalized earnings and at this rate, would be in the 25x to 30x range by year end!

So it would be prudent to revise the odds of a continued rally next year to below 50%, though given the exceptional stimulus, the odds of a continued rally should still be reasonable, say 40%. If this year's rally continues at current rates, the odds should fall considerably further from there. So this is a significant and relatively rapid change in my view on next year. I had really hoped for a very slow market advance deep into next year during which we would very slowly and reluctantly increase our defensiveness until later in the year, when we would batten down the hatches and try to be heroes in any ensuing decline.

Outlook for 2005 and 2006

The outlook for 2005 and 2006 unfortunately still looks like a black hole however one massages the data for next year. That would be a very likely time to take this market down to fair value (16x) or below. For as mentioned in earlier quarterly letters, in the first two Presidential Cycle years all the house cleaning – like moving against excessive debt – gets to be done, and debt levels are the highest ever and still growing. This time the chances that small cap or value stocks will materially buck the trend seem slim or none, since they are both fully valued against the market, although in a **major** decline value should help a little. Foreign developed also seems very vulnerable to a sympathetic decline if the U.S. market falls, although given the record **relative** cheapness of foreign developed, the decline should be substantially less and probably further helped by a continued weak dollar. Emerging market equities, despite their huge move, is now the only cheap equity subset, and only slightly cheap at that. But its economics look stronger than in developed countries and there is enormous institutional interest. We have said for years that the reasons to own emerging are that it's different, and that in one 12-month period someday it would double. If the U.S. market hangs in next year, we are probably in

that year. If the U.S. falls (and a faltering economy would still be the most likely catalyst) then emerging might still hang in or at least fight a tough rearguard action.

Summary

Today we have substantially the worst prospects for long-term global investment returns of my 35-year career when all asset classes are considered, particularly for U.S. centric investors. The asset classes **collectively** are simply the most overpriced they have been. There are no large categories that are good hiding places, unlike March 2000, which offered real estate, REITs, all bonds (especially TIPS), small cap value everywhere, and emerging country equities. Only the huge, politically driven stimulus gives cause for hope, and that is for a short-term reprieve or rather a 'stay of execution'. In the longer run, boring old value is **extremely** predictive and at 24x trailing earnings, the 7-year forecast is below -1% a year real return for the S&P 500, to be followed after our assumed 7-year decline by a normal 5.7% a year return. Of course, if the S&P reaches its normal p/e of 16x faster than 7 years, then the short-term pain will be commensurately greater.

Welcome to the unexpectedly large number of new clients; I hope my comments are not too shockingly gloomy. The good news is that my letters are not usually this long, at least not when the attachment is included.

The attachment is an opening salvo on the effect on performance of asset size and how GMO is trying to cope with it.

GMO

Special Topic

October 2003

Jeremy Grantham, Chairman

The Size of Assets and its Effect on Performance

Two of our best performing strategies closed to new accounts on September 30 – Emerging Market Equity and Emerging Country Debt – both candidates since their inception for the best performance in their respective categories. Size of assets in any style is the ultimate barrier to adding value, and is the perfect example of the Peter Principle: do well with 2 billion and they'll give you 4 and keep on giving until your good performance has gone.

The appeal of extra marginal business in any business is enormous because some costs are fixed, but in the investment management business, the 'cost of goods' can be small and there can be a strong illusion that there is no material marginal cost at all so that an extra dollar of revenue becomes a dollar of profit. Because of the extreme profitability of the next dollar of revenue, it is desperately hard for a very commercial enterprise to refuse it, and a public company can argue that unlimited growth is justified by its fiduciary responsibility to its stockholders to maximize the firm's profits. In any case, they overwhelmingly act as if this is indeed a guiding principle and few funds are closed. The exception of course is the hedge fund business, and this is interesting for it reflects its different incentives. Hedge fund managers' incentives are not perfect from a client's perspective; they are not paid to maximize the client's performance, but, second best, they are paid to maximize the total dollar outperformance and to do so with absolute performance that at least compares well with competitors. (For example, they are likely to prefer producing 20% performance with $300 million over 25% performance with $100 million.) Institutional long only managers, in complete contrast, are paid to maximize their assets under management, so it should not be a major surprise that this is apparently what they try to do.

Fifteen years ago or so I proposed at one of our client conferences a rule for relating size of assets to value added, or alpha: every time you double your assets, you lower a positive alpha by 30%, or if you quadruple your assets, you will halve your alpha if you prefer. Fifteen years later, it still seems like as well informed a guess as I can come up with.

There has been a considerable amount of nonsense written on this topic. I believe that **every** professional investor knows that it is an ironclad law that size reduces outperformance, but I also understand the investment guild's vested financial interest in muddying the water.

The basic truth is that as you add assets, you have three disagreeable alternatives. You can either add more stocks or buy more of the original list, or both. As you extend your list, you dilute the one or two **brilliant** stock ideas that many good professionals have every now and then, and you dilute the dozen or so **good** ideas. You are quickly into your "B-team" stocks, and eventually you are forced to buy anything that is merely acceptable. If the 'merely acceptable' beat or even equal your highest confidence bets, then you have a very eccentric talent.

It is even easier to understand the point that buying more of the same idea increases the true transaction costs, which eats into your outperformance. Instead of buying 10% of the daily volume for 5 trading days to complete a position, you are in there for 20 days or, finally, months on end buying every day. Alternatively, you can pull back for a while to let the stock cool down, but with a strong alpha, time is money and as you wait, other people get the same good idea. With more money, you are not only pushing the stock more yourself, but allowing more time for others to push with you and share the benefits. I suppose there is yet another alternative and that is to buy more of the daily volume. This is severely bounded at the top as it's hard to buy over 100% of a day's volume, but even at 40% to 50% you are fairly obviously courting disaster.

This problem is not confined to individual stocks, but applies also to larger ideas. In international investing, for example, if a central idea is that Austria is cheaper than other countries, the relative illiquidity of that whole

market will impose severe size or cost limitations; buy less of your best idea or pay more.

There are few unarguable first principles in investing, but I believe larger size equals smaller outperformance to be one. So why have the academics, free of the commercial vested interest, not proven it? Because it's very difficult to prove without a long-term controlled experiment. The time that has been wasted comparing large mutual funds with small ones is impressive. Large funds, of course, get to be large primarily because they are good, and many small funds stay small because they are not. How can one prove that a firm with, say $50 billion in emerging market equities (there is no such firm) would have done even better than they did had they had one tenth of the money. It cannot be done.

Perhaps the best try would be to take the largest 10 funds in, say 1960 and see how they did for 5 or 10 years against funds sized 90 to 100 in 1960. And repeat every 5 years. It doesn't feel like scientific proof, but it might be indicative. When we have time, we will try it and keep you informed, but since we completely believe this whole issue to be self-evident on first principles, it is not at the top of our agenda.

The best counter argument is that by adding more and more good people, you can pick more and more good stocks. The trouble with this is that, like diamond or gold mining, there are only a few great strikes to be had. In a platonic sense, if everything were known to a person of ultimate wisdom, there are at most 50 truly underpriced stocks in the largest 1000. Two or three good old pros might get 25 of these and ten more pros might get 20 more, leaving the last five good ideas to the next 50 pros you might hire or, indeed, the next 500 old pros! The Law of Diminishing Returns exists in almost everything, and in few areas more than investment management.

So for now, let us assume that the point is proven – size hurts. What is GMO to do about it? For at least 25 years I have had some apparently contradictory beliefs. First, I believed it was an exciting challenge to help build a large and profitable firm. Second, I believed the main characteristic of a good money manager was reasonably steady outperformance. Third, I knew that my partners and I wanted above all to be seen as good money managers, for to repeat my own axiom, "There is nothing more supremely useless than a mediocre money manager." But fourth, my partners and I shared the belief that size impacts performance. The way to reconcile or compromise with the conflicts was to have a very broad product line, doing everything we thought we could do that did not compete with our other products, and to close each product down at an appropriate size.

GMO's history at least suggests that our heart is in the right place:

1. Dick Mayo and I, along with Chris Darnell, closed our first product, U.S. Active, at $250 million in 1981 and closed it about as 'hard' as could be done, taking no money from anyone. (There were plenty of temptations, for our first 9 years we were ahead of the S&P 500 by an average of 8% a year.) Eventually we did take a few clients, but only to partially replace those who had left.

2. Foreign active closed to new accounts after its first 3 years at $550 million. (Even though its hit rate for new business presentations was running over 90%. Honest!) After a few years, we decided that the great increase in global liquidity meant that we could manage more money, and we entered an unusual phase of moderate growth, limiting our growth to a **maximum** of 10%. Today's $8 billion seems a reasonable and manageable number given the past performance and the size of the market, and carefully limited growth remains the policy.

3. The closing of the two emerging products (equities and debt) continues this tradition and introduces the topic of the best way to close down or limit growth. There are two relatively different obstructions to steady outperformance. First, there is the steady maintenance of a more or less fixed book of business, and second, there is the incremental impact of new inflow, which all has to be invested fairly quickly lest the manager be debited for poor relative performance if the market rises. These two distinctly different factors suggest at least a two-stage closing. First, at an asset level substantially below the estimated total that the manager feels he can handle well, the manger must limit the inflow of new money, expressed either as dollars or as a percentage increase in assets. This controls the impact of new money to a small fraction of the maintenance impact. Second, as assets carefully grow, the manager can better estimate the level at which **no** new assets should be accepted.

At GMO, we have tried several approaches, but not until now have we had to face an asset class becoming as hot in a few months as emerging country equity has become this year. Last year we set a time target for closing to new

accounts in our Emerging Markets Fund – September 30th of this year. At that time, there was very little money flowing into the asset class and we wanted to give clients as long a lead time to invest as we could. In the interim, as emerging heated up, we ended up with more assets than intended, raising the question of what to do. Our current proposal is to gain experience with the size impact of this new larger amount without any inflow. If with experience, the manager feels the size has pushed us past a desired level of long-term outperformance (this is not necessarily about 1 or even 2 years, which are always buffeted by many other factors than size) then we will **at least** not replace any business that leaves. **At most**, we might reluctantly decide to give money back, a battle plan that should always be considered in any product if market conditions change, say by liquidity drying up.

There are so many factors to be considered in size limitation that we might as well admit it is nearly impossible to be simon pure. No doubt from time to time we will take more money in a given product than we should. But we can and do undertake to go after "the spirit of the exercise". We have designed many of our products quantitatively to handle considerable assets, but we will in **every** product be conscious of the size effect, and we are prepared to close every product at an appropriate size.

We would like GMO, in fact, to be the first broad-based firm who both announces this intention years in advance and lives up to it. Because we have 55 products and still a few more to add, we expect to be able eventually to handle $100 billion or so in today's market terms and still do a good job. It should also be mentioned here that over 90% of our products are quantitative, which is a substantial advantage in building extra liquidity into each fund. We expect (or at least hope) that given favorable circumstances, most of our products will be closed in 10 years. Indeed, I look forward to tottering into work one day when all our products are closed to new clients.

We believe the industry worries far too little about the consequences of unrestricted growth, and our side of the business listens too much to the Goldman Sachs argument that any manager with less than $150 billion is a piker and likely to be squeezed out or absorbed by larger competitors with greater economies of scale. There are two economies in our business. There is a substantial economy of scale in marketing and brand building, and there is a great diseconomy of scale in investment management. I for one will be delighted to hammer at this issue and with any luck seriously embarrass some of our competitors. Given our policy, this issue is gloriously self-serving, but all the best issues are, and this one at least has the virtue of being undeniably correct in general principle.

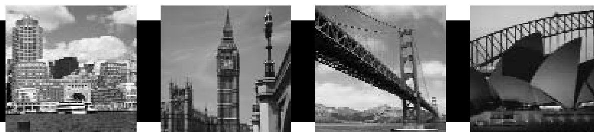
One question this topic is bound to bring up is which GMO products will be next to close **if** assets continue to flow in. All our hedge funds are very sensitive to size and one big year could close any of them. In long only investing, GMO International Small Cap is a likely candidate. (This is our quant version. The active version – Foreign Small – is already closed.) Similarly, we are already thinking about managing future growth in assets in our flagship Australian equity strategy. Having learned some lessons from emerging markets, we are very likely to close in two stages, and I would expect that we would announce before the end of next year a limited **growth** phase starting when our assets, currently $1.5 billion, hit a maximum $2.5 billion (at today's market level), and probably less. A more complete close would come at a later date when we have more experience.

This topic, we admit, is full of compromises and GMO's main compromise concerns asset allocation. All of our otherwise 'closed' products will be available for broad asset allocation products for some considerable time, including our Multi-Strategy Hedge Fund. We believe, not surprisingly, that the broader funds are the highest and best use of GMO's competence, our best diversification, and importantly, they are contrarian fund buyers: they have been big buyers of GMO funds when the asset class is out of favor – a debt crisis for emerging debt, for example – when client money is leaving. As asset allocation at GMO grows, this will increasingly help stabilize the funds.

Where component funds are otherwise 'closed' to the extent that they do take asset allocation money, they will not otherwise replace departing clients. Typically, it should also be mentioned, the funds that close earlier will be in the illiquid markets that are usually a small percentage of the allocation funds. Where this is not always the case, notably in the absolute return funds, then these allocation funds will have to be the first allocation funds to close.

We would really welcome client feedback on this issue. (I think.)

GMO

Quarterly Letter  January 2004

Jeremy Grantham, Chairman

Skating on Thin Ice

Last Year's Forecasts, Errors and Lessons Learned

This time last year my quarterly letter was titled "Predictive 'Entrails' and The Case for a Time-out in the Great Bear Market?" This was a good heads-up for any bears like us, but, to be fair, I thought the direction of the market was a fifty-fifty proposition. I was obviously surprised how well global markets did. The economy, I suggested, would recover, but with occasional disappointments. As it turned out, the economy was stronger than expected in everything but job creation where it remains weak. In hindsight, we were fortunate that fixed income had done so well in the bear market that it had become overpriced, causing us to reduce our substantial overweighting down to neutral early last year, with the funds moving into larger foreign and emerging country stock positions. However, by staying neutral in fixed income, we missed incremental returns; our internal rules do not allow us to overweight equities when they are overpriced whatever our short-term 'entrails' may predict.

The lesson learned, though, from 2003 is very clear: **never, ever, underestimate the desire of an administration to be re-elected** or the substantial cooperation that the Fed will typically provide. 2003 saw as much combined stimulus as has ever been delivered, and since all actions have consequences, the typical third year Presidential Cycle's bullish and speculative spin was bigger and better than normal. And, rightly or wrongly, I have become more of a devotee of politics as an intermediate-term influence on the market (see attached Special Topic).

2003 and GMO's Performance

In most cases, though, you are not shot for what you **don't** own but what you **do** own, and the part of our prediction that we got very right was the ordering of performance. We bet on foreign developed, particularly emerging equity and small cap, which, helped by currency, outperformed the S&P handsomely: GMO Emerging Markets +70.2%, GMO International Small Companies +67.4%, and International Intrinsic Value +43.5% versus an S&P at +28.7%. (The two strategies on which asset allocation had the heaviest overweights were also our best relative performers: Emerging Markets at +13.1% and International Small Companies at +13.7%! But that, as Will Rogers would have said, is only why we bought in the first place.) We also had the right bets within our fixed income position, which was about neutral in total: we had bets against the benchmark US Bond (+4%) in favor of Emerging Debt (+36%), Foreign Debt (+26%), and Foreign Debt Currency Hedged (+9%). Consequently, our GMO Global Balanced Asset Allocation Strategy and similar portfolios outperformed their benchmarks by 6.5% and even held the S&P 500 for the year, despite our benchmark neutral 35% fixed income position.

Where the year was tough for GMO was in US equities where we struggled to hold the benchmarks. Neither momentum nor value worked well, and our quality bias, relative to other value approaches, particularly hurt in a year in which low quality did exceptionally well. In the end, we just won in our small cap growth (+2.2%) and small cap value (+0.3%) strategies and just lost in our large cap value strategy (-0.3%). Our large cap growth portfolio was down by 1.5%, and U.S. Core by just over 2%. (It is cheating to say this, but both have reduced last year's shortfalls by over 60% in the first 2 weeks of this year.) All of our equity strategies, and U.S. Core in particular, have a strong bear market bias, and these slightly negative results were typical of our performance in very strong years over the 23 years of our US quantitative investing.

Our fixed income portfolios had a strong year with International Bond up over 8% to its benchmark and Emerging Country Debt having another remarkable year, finishing nearly 11 points ahead!

All in all, it was a very satisfactory year for GMO's performance in such a strong up year for the markets, and

perhaps even more successful on the asset growth front, with our asset base growing from $23 billion to $54 billion, incomparably the strongest year in our history. Our emphasis going forward will be on very controlled growth. Half of our asset base is in products that are closed to new accounts or in very limited growth mode. We expect to limit or completely stop the growth of the great majority of our funds in the next 5 years if they continue to attract assets. I write this touching wood. Thank you for your confidence in us – we will do our very best to justify it.

The Outlook for 2004

As a new devotee of the Presidential Cycle, I think we can count on a high probability of a relatively stable stock market year. The value of the market, which on a 1-year basis never matters as much as sensible investors would like, simply does not matter at all in year three, but in year four, it has an almost normal effect and obviously at 25 times normal profit margins, this is a very overpriced market. However, the stimulus program was profound and the economy has responded and this momentum is an obvious positive. The January Effect (which also does not matter at all in year three) reverts to giving its usual, useful signal this year. On average, value stocks (or low growth) also have their best year in year four, perhaps just making up for year three's overdoing it with growth stocks. My conclusion is that the economy, profits, and the market are likely to do quite well or better in the first half, and less well in the second half, as the stimulus runs out and the overpricing of the market is felt.

(The January Effect is the tendency of the market's performance in January to predict the next 11 months. A weak January is over three times more likely to be followed by below average performance than is a strong January, for example. Even market themes have a good January record, particularly value, size, and quality; for example, if small stocks are weak in January, they are over 2½ times as likely as normal to underperform for the rest of the year.)

The Longer-Term Outlook: 'A Black Hole'

In the longer run, we have to worry about extended debt at all levels, and financial assets and housing that have been inflated by too much monetary ease and too much moral hazard. Unfortunately, we also have to worry about a jobless recovery, rigged exchange rates (particularly China's), a deflating dollar, and, quite possibly, ensuing trade wars.

The outlook for 2005 and 2006 looks about as bad as it could get as the house-cleaning phase of the political cycle (half of all first and second years are down!) meets the potentially dangerous excess debt and the badly overpriced market in which the hiding places of March 2000 – REITs, bonds, small cap, and value – have all done far too well for their own good. We will try to protect accounts as best we can, upgrading quality in individual funds, and for asset allocation, using the new GMO Quality Fund for US equities and quite possibly a new GMO Real Assets Fund, for which the go-ahead decision has still not been made. Reluctantly (chewing glass might be a better description), we will also move back into overweighting fixed income funds, even if they are still overpriced. We will take little unnecessary risk there, and see this more simply as a necessary haven. But, all this still lies at least a few months out in the future.

What to Do in 2004?

The outlook for 2004 is not bad, but the market is very overpriced and all predictors look bad for next year and the year after.

The purist's investment position is clear: the market is overpriced and investors should duck! The problem with this strategy, as we have all painfully learned over and over again, is that an overpriced market can really run, and this overpriced market has quite a lot going for it in the near term. The pragmatic position, which I hope is not too greedy, is that the political period of moral hazard is still with us and careful and balanced risk taking is the percentage shot. Our current battle plan is to leave everything untouched through January and then slowly reduce our risk in some individual funds and allocation through June to about neutral. (Remember, we have very large positions in some aggressive asset classes: emerging equity and small cap international). After June, the plan would be to steadily batten down the hatches, reaching maximum conservatism by year-end. All of which would be subject to revision based on changing data and possible loss of nerve.

The Risks in 2004 of Skating on Thin Ice

I am confident – but far from certain – that the long-term problems already discussed, which will affect every country, lie out beyond the next 6 months and probably this year. If things go wrong earlier I think it is likely that, in dollar terms, the US will do worse than 'the rest' collectively, but let's hope the thin ice holds.

The essence of the strength in the third and fourth year of the Presidential Cycle is the implicit offer by the Administration and its ally, the Fed, to try to fix any unexpected problems that may turn up. Another potential problem for this fourth year may be that nearly all their ammunition has already been used up. The interest rates can come down a little, but not much. Taxes can be cut, but probably not by much. It would obviously be fiscally ridiculous and politically cynical to cut taxes, but administrations really, really want to be re-elected so we can't rule it out. So the real risk is that something goes unexpectedly wrong with the economy and that the help offered by the Administration and Fed is seen to be too little or ineffective. In this event, which I would place at less than one in five or so through June, the market would probably decline. After June, the odds of a bump in the road are probably higher, as the incentives from the 2002 and 2003 stimulus programs will be wearing off. Perhaps the odds are as high as one in three, but probably no higher, for the economy has a decent head of steam and a broad consensus of economists is predicting a strong 4½% real GNP growth, and once in a while they get to be right.

There is also some chance that the sheer overpricing of the market will cause it to fall, despite decent growth in the economy and corporate earnings, but this is probably the value manager in me trying to take over. The sad truth is that although the value of the market is a decent indicator of the next year's performance (see Special Topic), value is not as reliable an indicator as managers would like. There are plenty of exceptions where overpriced markets rise; most of these are in year three, and some are in year four, but, for the record, few are in years one and two. Over 5 and 10 years, value is a great predictor, but over 1 year, the Presidential Cycle is stronger and the January Effect equally strong. And unfortunately, short-term 'noise' and 'random events' have an even greater effect on a 1-year horizon than any of these three factors.

The Picks of the Litter for 2004

Emerging Market Equities

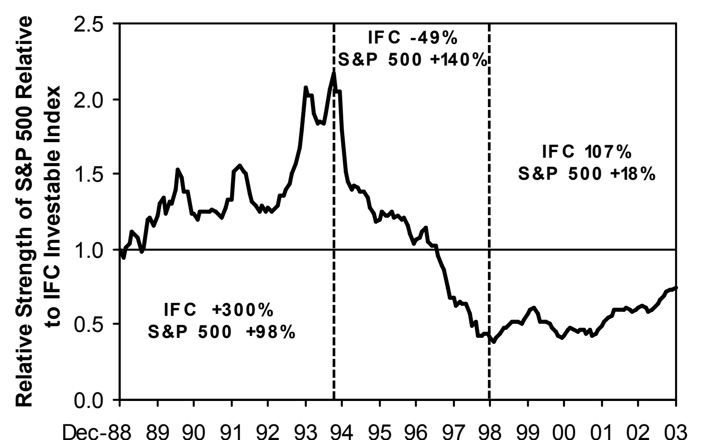
The star for the next few months seems likely to continue to be emerging markets equity; all it needs, in my opinion, is for the US market to hang in. Emerging is the cheapest segment of equities. It appeals to speculators in speculative market phases, and 2003 was the most broadly based speculative year on record. The local emerging economies are strong, improving, and better yet, stronger than the developed world. Arjun Divecha's work suggests that they are not particularly vulnerable to a financial crisis. Their currencies are neutral to strong, and their recent market performance is excellent, encouraging local wealth invested abroad to return to local markets. Finally, US institutions are now clamoring to invest in this quite illiquid market. What's not to like? In a flat or better US market and without a sudden bolt out of the blue, like a Chinese crisis, emerging could go straight up 30%, 40%, or more early this year.

It is argued that emerging market equities have done too well. Exhibit 1 shows the longer-term view. Since the index for emerging markets started in 1988, there have been three prodigious relative moves – two in favor of emerging relative to the S&P 500, but the emerging index still has to rally almost 30% to catch up since inception. If Ben Inker and I are correct in our estimates of fair value, and if both indices moved to fair value tomorrow, emerging would have closed the gap and be nicely ahead, finally. More to the point, emerging is still under 14 times last year's earnings, much cheaper than US alternatives. Being a very inefficient asset class where Arjun Divecha has added 6% a year for 10 years doesn't hurt either!

EAFE Relative to the US

The gap in relative value in favor of EAFE has never been wider in the last 35 years for which we have decent data. Last year in local currency, international developed equities underperformed the S&P and only outperformed for US investors because of the weak dollar. The

Exhibit 1: Volatile, But Emerging Behind Since Inception of IFC Investable Index



unprecedented advantage in relative value should result in excellent relative performance over the next several years, although it should be recognized that in absolute terms, EAFE is a little overpriced and in a major decline its correlation with the US makes it unlikely to do well; it is, though, likely to go down substantially less.

Non Dollar Investments

We had an unusually large bet against the dollar last year and it was even weaker than we had expected. Today, in purchasing parity terms, the dollar is about right, but it is hard for us to imagine that with a trade deficit of half a trillion dollars the dollar is likely to make a large, sustained upward move. There is also some risk that investors might lose confidence in the dollar and by bringing money home – in emerging countries for example – out of dollar deposits, create a self-reinforcing downward cycle. We retain substantial anti-dollar exposure, but it must be admitted that once again, this is on thinner ice than the case a year ago against the dollar when value and deficits agreed.

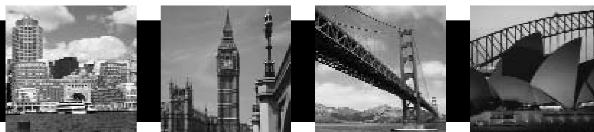
Forestry

The only relevant data for forestry investing is the attractiveness of everything else, since forestry is more or less a constant. Enough said.

The broad range of investment opportunities are unattractive, and in the US, about as unattractive as they have ever been.

2004 Predictive Model (see also Special Topic)

Nick Nanda, a fairly new arrival to GMO, and I have tried to put together a rough and ready model to predict 1 year ahead and the 11 months after January using three factors: the year of the Presidential Cycle, the strength of January, and the overall value of the market. For this year, the Presidential Cycle suggests a low probability of a major decline, and performance in the -1% to +19% range. (This range for the fourth year, shown for one standard deviation, is only half that of the other 3 years.) Current overpricing of the market suggests performance will be in the lower three quarters of this range, or -1% to +14%. January, if down, would suggest a -1% to +10% year, and if up, a +5% to +16% year. Our special research topic this month has a fancier (more over engineered?) model.



Jeremy Grantham, Chairman

Predicting the Market on a 1-Year Horizon

Part I: Yet More on the Presidential Cycle

Exactly a year ago, I reintroduced this topic with the data summarized in Exhibits 1 & 2. It became, in the second half of the year, a training research project for Nick Nanda, who recently joined us fresh from college. It seems to have developed a life of its own because the more we dig, the more it reveals. First of all, it is compellingly easy to understand and appreciate. We know that politicians would like to be re-elected. What is surprising is how effective they have been at influencing the economy to advance their cause. It turns out that changes in unemployment have a much stronger correlation with voting swings than changes in GNP growth (see Exhibit 3). And why wouldnt they? GNP growth is a fairly nebulous concept to the voter in the street, but unemployment is, in contrast, simple and concrete. Anecdotally, people are also well aware of those around them who lose jobs. Well, by trial and error, or sheer talent, administrations have learned to have unemployment rise on average in years one and two, fall quite rapidly in year three, and drift slowly down to its cycle low in the fourth year (see Exhibit 4). Not bad! In comparison, the shifts in GNP, or productivity, are barely measurable. What is measurable, though, is the effect on the stock market. What traditional stimulus there is – money supply, tax cuts, and interest rate cuts – is not as much as we expected; in fact, it is quite modest and its impact on growth is even more modest. The stimulus, though usually modest, has a more powerful effect on the market than the economy as funds, which often cannot be effectively absorbed by the economy in the short-run, run off into the financial system. But even this indirect effect of stimulus is not nearly enough to fully explain the market effect. The real driver of the market is what the Fed and the administration say: it is about **jaw boning** and **moral hazard**. Basically, the powers that be are saying to the market that should anything unexpected go wrong in the run-up to the election, they will ride to the rescue. If you have ever wanted to speculate, now is the time is the sub text, and seldom has this been made clearer than Chairman Greenspan spelling out that rates will stay low way into the future. The Federal Reserve may be very independent, but since 1932 the combination of the Fed and the Administration has created a remarkably effective team that has engineered falling unemployment through to the election and, as probably unintended consequences, rising stock prices in the third year followed by an incredibly stable stock market in the fourth year with half the normal volatility (see Exhibit 5). Isnt this exactly what any politician would desire? Strong, sometimes risky action in year three and then let things stabilize with just a **little** more of the same, perhaps more visible than real to nudge the game along in a safe way up to the election. Well, believe it or not, they have got this down to a fine art and whether this is teamwork or good fortune the numbers do not reveal.

One of the nicer features of this Presidential Cycle work has been finding how logical it all is. A good example is the effect of a new party in power compared to a re-elected party. Of course, they both have to create elbow room in years one and two to have room to move and create stimulus in years three and four. But a new party has someone to blame for the necessary house cleaning. Look at what a mess weve been left by those incompetents, which we now have to clean up since, unlike them, we are fiscally prudent. Not surprisingly, therefore, we find that although the old partys actions drive the market down in years one and two, a new party drives it down more. Equally unsurprisingly, having driven it down more, the new party benefits from a bigger bounce than a re-elected party (see Exhibit 6).

There is also some indication that markets do better in general in Democratic terms than for Republicans. This is one part of the puzzle we have not fully digested and we do not yet find it convincing. It does, though, come with some reassurance on one of our expectations: the low volatility in year four that we are counting on is substantially lower for Republican fourth years than Democratic fourth years (see Exhibit 7). We have not used this input as it seems to be slicing the data pie too thinly, but at worst, it cannot hurt and at best it gives us a little safety margin on the low volatility number we are using.

The First and Second Years

The first 2 years underperform on average by 5.5% and 3.8% respectively and fully half of these years are down in complete contrast to the last 2 years of the cycle. The good news is that the January Effect and the value of the market are both substantially more predictive than in the last 2 years. So, in 11 months we will enter the weakest year of the cycle with (probably) one of the two or three most overpriced markets in history and the complete removal, normally, of any moral hazard.

Year Three of the Cycle

Because the Presidential Cycle is clear in its logic and clear and powerful in the data, I have become more impressed than I was a year ago. The year just finished was a classic year three. It had, to be sure, more actual stimulus than average and even clearer moral hazard. This should have caused the year three characteristics to be even more pronounced than normal, and this is **exactly** what occurred. Year three is much stronger than average (+9½% since 1932), and this one was almost +20%. It is typically by far the best year for growth, and this one was excellent too. The 30% of stocks with the best growth estimates steadily outperformed the market and ended up almost 10% ahead. (For the record, price to book type proxies for growth have completely broken down under increasingly odd accounting practices. High versus low growth estimates, however, capture the same historical flavor of the old growth/value cycles and unlike price to book are still working well.) Low quality stocks and small caps have their best year in the third year as befits the speculative environment that moral hazard produces, and this third year 2003 was a doozy. Russell 2000 beat the S&P by 19% and low quality won by 7%. (Exhibit 8 shows the typical year three data and how 2003 compared.)

The substantial added strength of year three comes with slightly reduced volatility so that only 2 of the last 18 third years have been down, and those just barely. The Presidential Cycle effect in the third year is in fact so powerful that our other useful 1-year predictors – the value of the market and the January Effect – have absolutely no influence on them; third years simply go up. Because of this, we study the other two variables **excluding** all third years.

The Fourth Year

Year four of the Presidential Cycle has interesting characteristics as shown in Exhibit 9. Its most distinctive and reliable feature is its extremely low stock market volatility. Its return is, on average, almost normal; small caps are not exceptional, low quality continues to do quite well after a strong year three, but value reverses – having had by far its worst stomping on by growth in year three – coming back to its strongest year of the cycle at 5½% over average.

Part II: The January Effect

The fact that the January performance has predicted the balance of the year has been known for years, just like the Presidential Cycle. It probably derives its usefulness from the indisputable tendency of most of us to sit around at the end of each year and worry about taxes, capital gains, the disposition of portfolios, and, particularly, the use of year end bonuses. Its the only time most of us sit back and ask ourselves, What do we think this next year is going to be like? The good news, is that, like all market inefficiencies, it is intellectually interesting to think what causes them, but it is not necessary. It is only necessary to understand and to measure the **consequences** of the behavior. There is some evidence that investors are picking up on the January Effect as the average effectiveness over the last 25 years, although still substantial, is a third less than its original predictive power (see Exhibit 10).

Part III: The Value of the Market

The correlation coefficient of current market value and future performance rises with time, and at 10 years it is a heart warming .71. At 3 years, it is still a reasonable .44, but at 1 year, it is down to .26. To find out what percentage of the market move this explains, it is necessary to square this, so at 1 year, the explanatory power is only about 7%. Another more confidence inspiring way to approach this is to say that since 1927, the cheapest 20% of markets have outperformed over the following year by 10%; that is, if you excluded all year threes, the cheapest 20% beat the remaining 80% by 10 percentage points. This sounds heart warming, but has two drawbacks. First, there is a dishearteningly large variability around this, so that many cheap years decline and many expensive years go up, and second, the record for the last 35 years is down to a 7 percentage points spread (see Exhibit 11). Still, a 7% spread feels a lot more impressive than a .26 correlation coefficient and since it is only the tail ends of distributions that induce us to bet heavily at GMO, you can easily see why this rugged type of analysis – focusing only on the highest and lowest 20% of a distribution – is usually more useful to us than correlation coefficients. (Year three of the Presidential Cycle is, in comparison, a meat cleaver. It adds 9½% and with somewhat lower variability, so that only 2 years out of 18 are down, and those barely.)

But still, the decline in predictive power in the last 30 years is disturbing to worshipers of mean reversion. What is going on here? Is value, surprisingly, being used so much that it is losing its power? Or is short-term momentum and other noise becoming larger, a likely candidate given the high jinks of the last 7 years. To test this hypothesis, we looked at the predictiveness of value for 3- and 5-year holding periods and were surprised to find that at 3 and 5 years the numbers, although quite strong, were again well behind the dazzlingly strong data of 1932 to 1967 (see Exhibit 12). This raises an important, but not too surprising issue: to win on value, you must be prepared for increasing noise and greater pain and time on average before you win.

This does not seem to be a formula likely to have an army of strategists lining up to try their luck with long-term value. What else is new? Indeed, this casts an interesting light on Keynes famous Chapter 12 of his General Theory, which moans of the career dangers of choosing long-term value over the relative safety of short-term momentum, or the beauty contest. What a wimp! He made this point when 1- and 5-year predictions based on value were twice as powerful and reliable as they are now! If ever there was data to reinforce our belief that almost all firepower should be kept for outliers, this is it, for it is only at the outer 20% at most of these series that there is reliable power, and the outer 10% is surely better. Even then there is, of course, plenty of pain to go around.

Part IV: Putting it all Together

From all the data we have studied these past 6 months, it appears that three factors signal the outcome of the market on a 1-year time horizon:

- Presidential Cycle
- January effect
- Value (Price to 10-year trailing earnings)

Since 1932, the average real return for the S&P in a calendar year has been 9% and the fourth years of the Presidential Cycle (2004 is a year 4) have averaged about the same. Assuming that the characteristically low volatility of year 4 (11%) continues to hold through 2004, the S&P should return somewhere between -2% and +20% (9% ± 11%). As mentioned earlier, volatility under Republican administrations tends to be about half of what it is under Democrats. While we are not explicitly using this knowledge in our prediction, it certainly reinforces our belief that there is a low probability of a huge upward or downward move in the market this year. Lets now incorporate the January effect into our estimate.

Up January

Given where the S&P stands currently, it is hard to imagine that January will register as a down month. Assuming that January ends up at a reasonable +2% we can expect the overall year to be in the top half of our range i.e., +9% to +20% or, in other words, the remaining 11 months of the year will return between +7% and +18%. While January might give us a positive signal, there is no escaping the fact that on a value basis this is one of the most overpriced markets in history, so we need to bias our estimate downwards to the lower two-thirds of our range, which leaves us at +7% to +14%. Adding back our assumption of a +2% January, we are predicting an overall return of **+9% to +16%** for 2004.

The prediction of +9% to +16% does appear a little optimistic, but we take comfort in the fact that the party in power is serving out its first term, and, on average years three and four of the cycle do better under a new administration than under a re-elected party. Under new parties the fourth years of the cycle have returned almost +15%, and compared to this figure, our estimate of +9% to +16% seems appropriate.

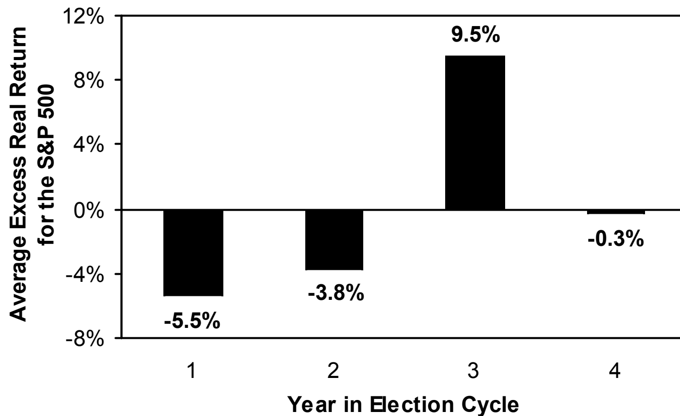
Down January

In the unlikely event that January is a down month, we need to move our primary estimate of 2% to +20% towards the bottom half of this range i.e., -2% to +9%. So assuming a -1% January, this implies the February to December period should return between -1% and +10%. Since a down January still leaves the market overpriced, we need to take a debit for that. So, slicing off the top third of our range gives us an estimate of -1% to +6%, which after subtracting the down January, leaves us predicting **-2% to +5%** for the entire year.

Summary

Admittedly, the Presidential Cycle effect lacks sufficient data points to make all our results statistically significant. Also, there is a certain crudeness to our decilization or quartilization approach of figuring out the January Effect or the impact of value on the market. However, given the surprisingly logical nature of our findings, and how neatly all these factors fit together, our estimates are probably better than ignoring the intermediate term completely. The actual outcome, though, could be very different if the ice breaks.

Exhibit 1: Market Returns for the Years of the Presidential Cycle Relative to Average (1932-2003)*



* The numbers presented here are slightly different from those shown at our 2003 Fall Conference because we have switched from PPI to CPI as a deflator.

Exhibit 4: Level of Unemployment in the Different Years of the Presidential Cycle (1948-2003)

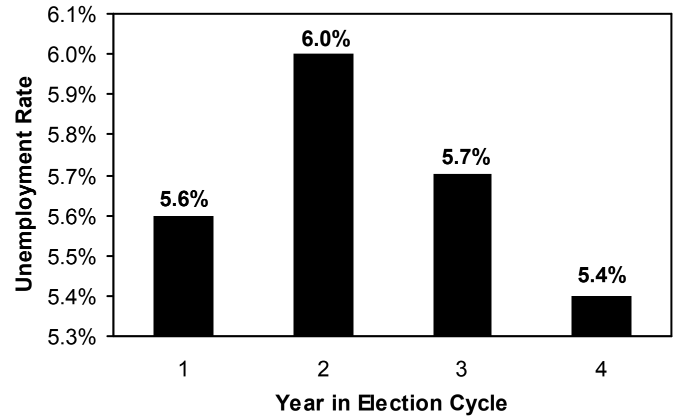


Exhibit 2: Ratio of Up Years to Down Years for the Years of the Presidential Cycle (1932-2003)

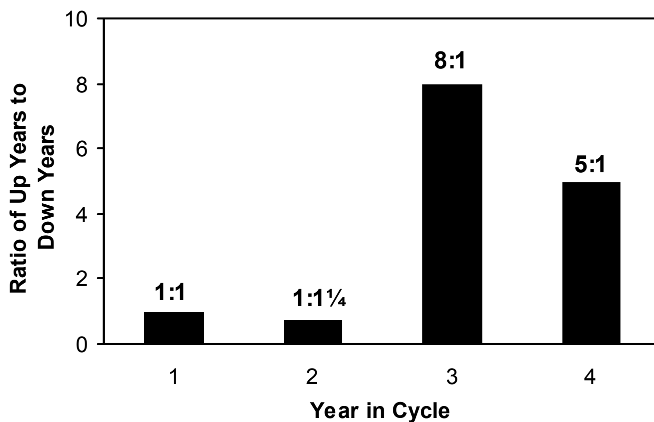


Exhibit 5: Market Volatility (1932-2003)

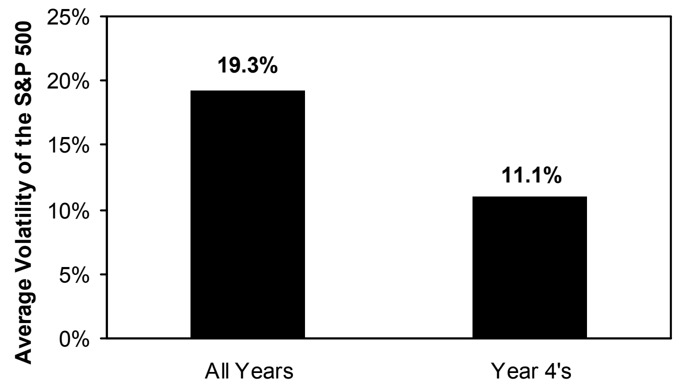


Exhibit 3: Explaining Vote Swings Using Unemployment, GDP and Market Return

	Votes Sorted by		
1952-2000	Decline in Unemployment	Increase in GDP	Market Gain
1	20.1	10.2	0.9
2	2.0	11.8	11.1
3	1.6	1.7	9.7

The numbers above represent the ratio of Electoral College votes won by the incumbent party to votes of the other party. **Decline in Unemployment**: 1 represents those years where unemployment reduced the most in the year leading up to the election and 3 represents those years where unemployment increased the most. **Increase in GDP**: 1 represents those years where real GDP had its biggest increase in the year leading up to the election and 3 represents those years where GDP increased the least. **Market Gain**: 1 represents those years where the S&P 500 had its biggest gains in the year leading up to the election and 3 represents those years where the S&P 500 had its smallest gain.

Exhibit 6: Market Returns for New Party vs. Reelected Party

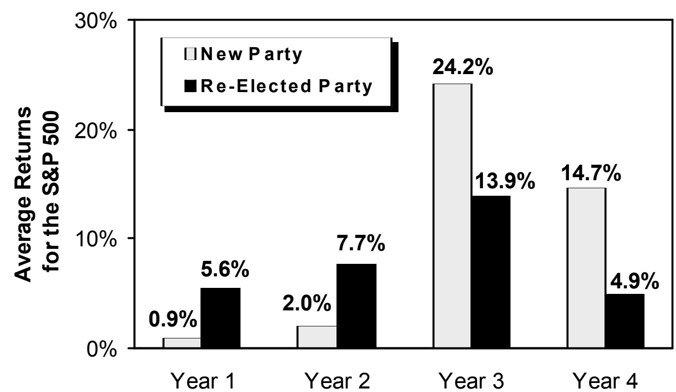


Exhibit 7: Volatilities Relating to Political Parties (1932-2003)

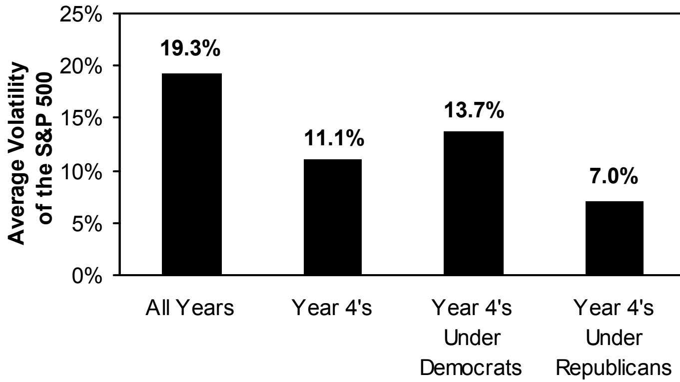


Exhibit 10: January Predicting the Following 11 Months

	S&P 500 Return	
Quintile	1936-1967	1968-2003
1	18.8%	13.9%
2	3.0%	6.7%
3	20.0%	-4.0%
4	-1.4%	-1.2%
5	-3.9%	-2.4%

All Year 3's have been excluded

1 represents the Januaries where the S&P 500 experienced its biggest gains and 5 represents the Januaries where the S&P 500 experienced its biggest losses

Exhibit 8: Comparing 2003 to an Average Year 3

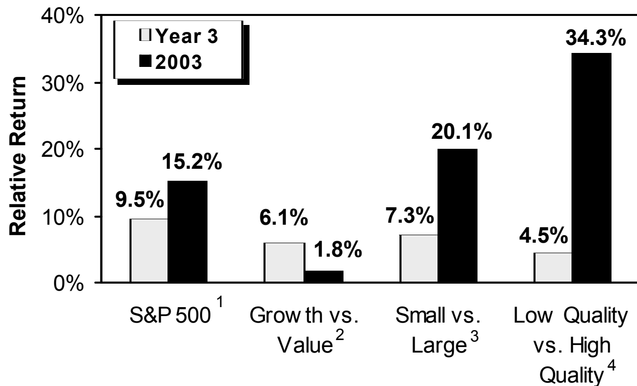


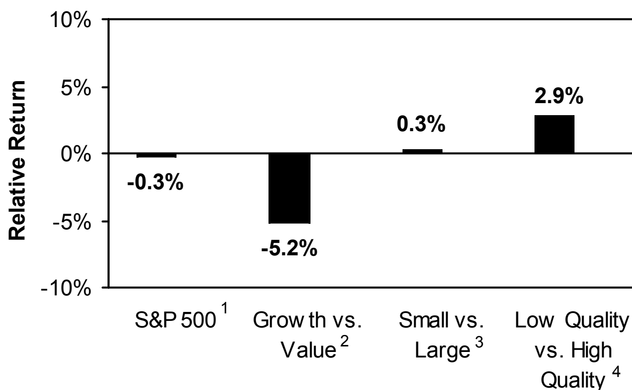
Exhibit 11: Value as a Short-Term (1-Year) Predictor

	S&P 500 Return	
Quintile	1927-2003	1968-2003
1	14.0%	8.0%
2	9.4%	2.6%
3	5.1%	-1.1%
4	0.5%	0.5%
5	1.4%	4.5%

All Year 3s have been excluded

1 represents the cheapest years and 5 the most expensive on a Price/10-year trailing earnings basis

Exhibit 9: Performance in Year 4 Relative to Average



[1] S&P 500: 1932-2003
[2] Growth vs. Value: 1960-2003
[3] Small vs. Large: 1961-2003
[4] Low Quality vs. High Quality: 1960-2003

Exhibit 12: Value as a Long-Term Predictor

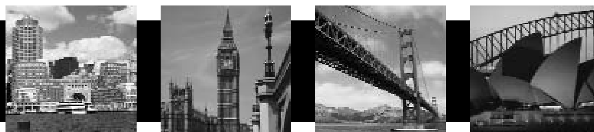
	S&P 500 Return			
	1932-1967		**1968-2003**	
Quintile	3-Year	5-Year	3-Year	5-Year
1	63.7%	97.6%	31.7%	74.6%
2	56.4%	75.1%	22.0%	31.7%
3	14.2%	61.4%	12.0%	41.4%
4	15.2%	35.2%	16.5%	24.1%
5	15.3%	19.6%	20.5%	50.0%

Year 3's have not been excluded

1 represents the cheapest years and 5 the most expensive on a Price/10-year trailing earnings basis

GMO

Quarterly Letter



April 2004

Jeremy Grantham, Chairman

"Lord Make Me Prudent, But Not Yet."

Skating on Thin Ice in the First Quarter: Greenspan Coughs and the Ice Creaks

So we survived the first quarter. The return to risk taking, relative to the market, became very high 18 months ago and GMO took more risk than it normally does. This was most evident in asset allocation where we had maximum positions in emerging country equity and small cap international, but even within specific funds we also took more risk than usual. This was still the pattern as we came into this year. We started the year with most of our funds moderately more aggressive than their benchmarks, but decreased the risk during the quarter. By the end of June we expect to be about normal for GMO, which is to say moderately more conservative than our benchmarks. And by the end of the third quarter, we should approach as much conservatism as our specific client mandates and specific fund positioning make appropriate.

All in all, the first quarter was kind to our risk taking. Our two biggest bets – emerging equity and small cap international – finished up 10.4% and 9.4%, respectively, compared to the S&P 500's +1.7%. In the funds, our relative performance was also ahead generally in U.S. equities, other developed country equities, fixed income, and hedge funds – where all 14 of our funds had a positive return. In asset allocation, global balanced was up 4.6%, over 2% ahead of benchmark, and all of the other asset allocation funds were ahead. The only important equity category in which we were behind the benchmark was emerging country equity where we trailed by 2.5%, but last year's +13% outperformance takes some sting out of the pain.

Greenspan, however, gave us risk takers a scare in the first quarter. On January 17, he changed his statement of moral hazard so delicately that only stock and bond traders – all linguistic experts – noticed. And the return to risk nose-dived. Almost every high risk investment was punished for a few weeks and several important ones such as tech stocks, growth stocks, high volatility stocks, and the Nasdaq in general did not show signs of regrouping until the last week or so of the quarter. For example, the most volatile stocks (top 25%) were up 4% over the market on January 17 and fell to -3% late in the quarter, and technology stocks were ahead by 6% and fell to -6%. More important for us was that other measures of risk also took a hit, but then rallied back to new highs. Emerging equities, emerging debt, small cap international stocks – all higher risk assets – ended with strong to very strong quarters, and by the closing 2 weeks, all the risky assets were outperforming again. But the real significance of this substantial hiccup based on such slender input from Greenspan was the reminder of how thin the ice is, how central moral hazard is to this rally of the last year of the political cycle, and how central the Chairman of the Federal Reserve is to the issue of moral hazard.

Credit Problems, Housing Prices, and Mortgage Refinancing

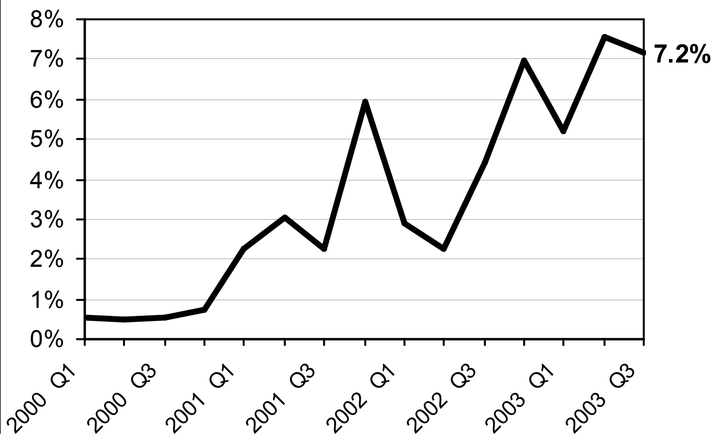
The essence of the Fed's moral hazard is to create an environment conducive to debt expansion: the unspoken promise that there will be no negative consequence from more debt . . . at least for the "foreseeable future". The real problem with credit, though, is that you never know how strong the elastic band is, and in the U.S. it tends to be very strong. Unprecedented levels of debt can always get larger, and with a favorable wind all will still be well. But higher debt levels reduce the margins of safety and markets, and therefore, with higher debt, should return more to compensate for higher risk. More highly leveraged markets should be cheaper, for only cheapness increases the returns to stock holders in the long term. (In the short term, to be sure, surges of earnings can look impressive, but profit margins are mean reverting and upsurges are followed by downsurges whereas buying cheaply is a joy forever.)

The credit vulnerability that impresses us most – out of many good candidates – is mortgage refinancing. Easy

credit and low rates were designed to offset the negative effects on the economy of the bubble forming and then breaking – expensive excess investment and a negative wealth effect. Probably the most effective component of the program was the enormous increase in mortgage refinancings. Exhibit 1 shows that an incremental credit equal to 6½% of GNP became available for consumer spending in the last 3 years, probably a more powerful stimulus than the tax cuts. Cheap mortgages made home buying attractive relative to renting and pushed up prices. This, in turn, stimulated house building, but equally importantly, by increasing the amount of housing equity that could be used as collateral for yet more borrowing, it reinforced the virtuous cycle, to stretch the use of the word "virtuous". Increasing house prices also directly offset the negative stock wealth effect; in fact, for most middle class families, net wealth gained from increased housing prices outweighed decreasing stock prices.

The prodigious increase in outstanding mortgages obviously helped keep consumer spending, and the general economy, far stronger than it would otherwise have been. Unfortunately, it has also increased the sensitivity of consumer spending to interest rates, and mortgage refinancing has perhaps become the most vulnerable part of this 4-year political cycle. The usual need to 'clean house' in the first and second years of the next cycle of any administration will be confronted by dangerously extended credit on all fronts, but particularly for extended house mortgages. High and still increasing home prices will consequently have a central role in how this cycle's politically driven financial house cleaning plays out in the next 2 years. The whole credit system, as well as consumption, the strength of the economy, and the stock market, will be unusually vulnerable to a combination of a house price decline and higher rates. (For the record, on Friday, April 16, *The New York Times* reported that the price of Manhattan apartments is up a stunning 35% year over year! These are real bubble numbers even if much of the rest of the country's housing is still merely in a bull market.)

Exhibit 1: Refinancing as a Percentage of GNP



Our emphasis here on mortgages and housing is not intended to minimize the obvious credit risks posed by other consumer debt, corporate debt, government debt, and U.S. foreign debts, all at or near record levels. A particular flash point might be the increase in the so-called 'carry trade', the unprecedented use of short-term borrowing to buy higher yielding or higher returning bonds and stocks, particularly by banks, investment houses, and hedge funds. Another vulnerability might lie in the extravagant increase in hedge funds with their sheer speed and high turnover.

The consequences of these increased financial vulnerabilities for investors is that in selecting hiding places, investors should take credit problems as seriously as an overpriced market.

Fallen Angels

In the 50% decline from the March 2000 high, value stocks and small stocks cushioned most of the pain and small value stocks cushioned all of it. The very probable cause for this outperformance was that small stocks were very cheap indeed relative to the rest of the market. In fact, Ben Inker and I took more grief in our asset allocation forecasts over favoring small caps (and emerging equities) than anything else. "If you're so gloomy on the market and particularly Nasdaq, how on earth can you recommend small caps (and emerging) as a haven?" would be a close approximation of the objection. Our answer was that yes, in the past, both categories had, on average, underperformed in market declines, but that if you divided all bear market periods into four quartiles (based on how cheap these two groups were relative to the S&P) you would see that when they were in the cheapest quarter, they in fact outperformed in bear periods and that in March 2000, they were at the very top of the best quartile of value. The good news is that they did indeed handsomely outperform in the bear market after March 2000; the bad news is that now small stocks are in the worst quartile of their range (although emerging – thank heavens – is still in its top quartile).

Value stocks in March 2000 were off-the-scale cheap relative to the market and so performed heroically on the downside. This time, they are in the worst half and therefore will probably only eke out a modest reduction in market pain, even in a severe decline.

Other angels that have fallen since March 2000 include real estate, particularly REITs that yielded 9.1% at the market peak and, after brilliant performance, now yield under 5.5%; all of fixed income, and especially emerging country debt and TIPS, which were also very protective and, in fact, attractive. Now they are all overpriced.

Small Stocks

Far from being defensive, as they were in the 2000 to 2003 market, small caps may well turn out to have one of the more unexpected and painful setbacks in a broad market decline. Exhibit 2 shows the long-term performance of small caps versus large caps. There are two great rallies – 1973 to 1983 and 2000 to present – and one extended decline from 1983 to 2000. Exhibit 3 shows our composite measure of value for the small caps relative to the large. It can be seen how spectacularly cheap 'small' got in the Nifty Fifty market of 1973, still their biggest distortion in history. Certainly I did not believe there was a 1 in 100 chance of this distortion being exceeded, but 2000 really gave it a run for its money. As has always happened, the bubble in large stocks of 1972 was followed by an over correction in the opposite direction. By 1983, small stocks reached the highest relative value that they have ever attained by tripling relative to the S&P 500! In this recent bubble, small caps, now up over 100% relative to the market, have also substantially over run their relative fair value, but by substantially less. What are the prospects from here?

Exhibit 2: Relative Return of Small Cap

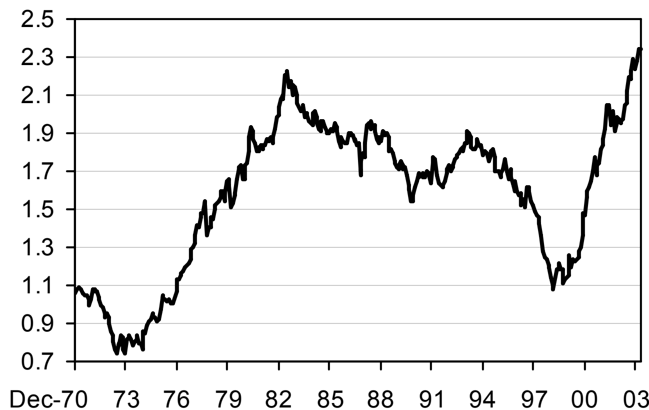
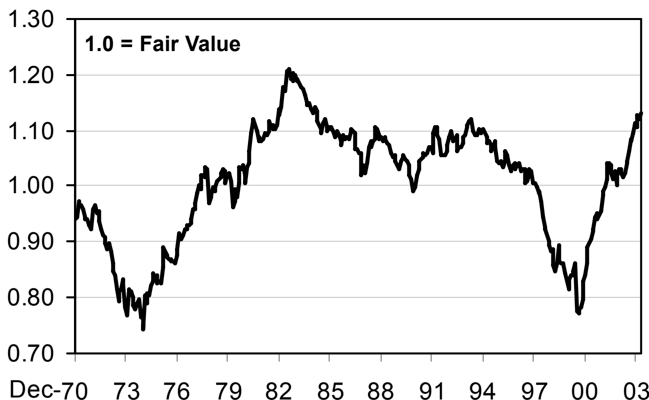


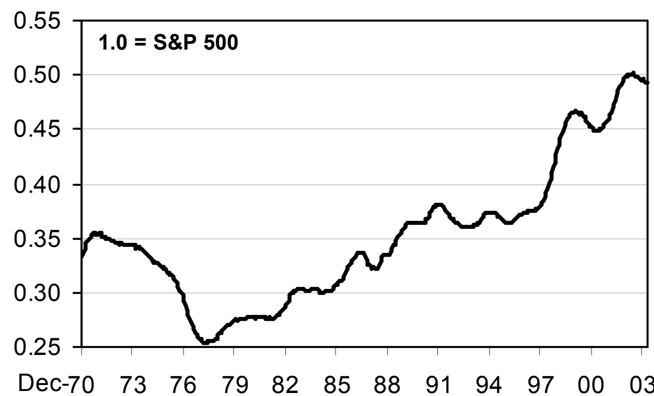
Exhibit 3: Small Cap Valuation Relative to the S&P 500



In the longer term, it is easy – small will correct back to trend. In the very short run, however, the fortunes of small caps are caught up with the same moral hazard political issues we've been obsessing about. 'Small' benefits from the current speculative tone of the market and has prodigious momentum, but what it does not have – at least not yet – is strong relative earnings. In the 1974 to 1983 rally, the profit margins (and hence earnings) of small companies had an unexpected surge to a unique level, where for a minute or two in 1983, the profit margins of small companies exceeded those for large companies for the only time in history outside of World War II, when profit controls were applied only to large companies. Since 1983, relative profits and profit margins of small companies have not been strong and have shown little sign of improving dramatically yet. So it is unlikely that the stock surge of 1973 to 1983 will be closely rivaled this time. However, it is a decent bet (over 50/50 I think) that they have a few more months of relative outperformance. If they get their outperformance, 'small' will become another particularly vulnerable segment of the market in the next decline, and even with no further relative gains it is likely to be vulnerable enough.

Exhibit 4 shows the rising level of debt in small stocks. This is frightening enough that I think today's level can be fairly described as a 'possibly terminal level of debt'. Small stocks are definitely not the place to be in a debt crisis.

Exhibit 4: Debt Leverage of Small Companies



Volatility

Volatile stocks also reached a relatively cheap point in September 2002, but the most volatile 10% have had a spectacular rally of over 55% against the market in the rally since then, along with all other speculative measures, and are now substantially overpriced. This group is always dangerous and has the added ugly characteristic of underperforming the market in the long run by over 4% a year (and even the most volatile 25% have underperformed by 2.5% a year). Over valuation further increases the pain that volatile stocks are likely to inflict in any market setback.

Any Port in a Storm

As the year wears on, prudence should become a more compelling virtue, and reducing exposure to credit problems, small cap, and volatility should feature prominently. With so many factors to worry about and with the much reduced dependability of value on the downside, what is left? For accounts that cannot short extremely overpriced asset classes like U.S. equities, **the painfully brief list of not very satisfactory responses is: 'quality', cash, and market neutral hedge funds**. A fourth, more problematical response is commodities and real assets, of which forestry (surprise, surprise!) is by far the most dependable in the longer run.

The GMO U.S. Quality Equity Fund

We introduced a new U.S. quality equity fund in the first quarter and took initial small positions in it in many asset allocation accounts. It owns no stocks with material debt and no small caps. The largest positions are the obvious companies with global franchises.

Both modern portfolio theory and common sense strongly suggest that quality stocks should return a little less than ordinary stocks in the market. Theoretically, in return for accepting lower returns, clients should get to feel comfortable with the obviously successful companies in their portfolios. Should another 1932 depression come along, these are also the names that will survive, as many did in fact actually survive 1932. Remarkably however, quality stocks have slightly outperformed the market over at least the last 40 years. I believe this is due to the willingness of the market to overpay for the sex appeal and rapid volatile growth of lower quality companies. The 'great' or 'quality' companies are staid in comparison. They are a little boring, and 'boring' sells at a discount in the real world, as opposed to the academic, theoretical world.

Equally important, today 'quality' as a characteristic in the market is usefully cheaper than average. It also comes with absolutely no exposure to credit problems and consequently in any credit crisis will likely accrue a scarcity premium. In a severe market decline, the strategy should be a relative haven for those of us who have to invest in U.S. equities.

Cash

I have described investing in cash at -1% real return as 'chewing glass' and I was grateful for Warren Buffet's annual report. Berkshire Hathaway's portfolio has built up a huge reserve of unattractive cash to prevent making even less attractive equity investments. What else is there to say? Yes, you might well make some more money in more normal portfolios in the next 6 months, but only by taking a lot of risk.

Market Neutral Hedge Funds

'Cash Plus' in the form of market neutral hedge funds seems a lot less painful a proposition than pure cash, and might reasonably return 5% to 10% depending on the success of selecting from the huge pool of offerings. We warmly recommend that strategy to clients, although we recognize it would be difficult for Mr. Buffet's $31 billion. Ah well, the problems of size are very democratic; they reduce flexibility and returns for everyone!

And while I'm on the subject, it was also interesting to read Mr. Buffet's regret at not having sold more in 1999 and 2000. His laid-back attitude to overpricing at the 2000 peak, of the 'yes it's a bit overpriced' variety, undercut GMO's then 'shrill' bearish position. We warmly welcome him as an ally this time.

A Digression on the Risks and Advantages of Hedge Fund Investing

There is no question that hedge fund investing is extremely faddish and that both the number of funds and the total amount invested in them have shown explosive growth. There is also no doubt that this growth of hedge fund investing has caused some types of market risk to increase. For example, the ultra low costs of borrowing and moral hazard have increased the vulnerability of hedge funds to rate increases, and given their leverage and the speed that they can move, it is clear that if they are collectively surprised there could

be a bigger rush for the door than normal. The seed of another big problem is that most hedge funds are short liquidity: their short positions are more liquid than their longs so that a liquidity squeeze has the possibility of being self-sustaining as one wave of hedge funds covering shorts forces others to follow, and there is many times more hedge fund money today than in Long Term Capital's day!

Most fads end badly and perhaps this one will too one day, but I believe this fad is currently one to follow because by sheer random good luck it has timing in its favor. If we are within months of a major market decline – a decline that may easily last through 2006 – as I believe we are, then hedge funds, with even modest positive returns, will look brilliant and will no doubt attract even more money. Any hedge fund liquidity or interest rate crisis that occurs before the market low will probably seem small potatoes relative to the broad market pain.

Real Asset Fund

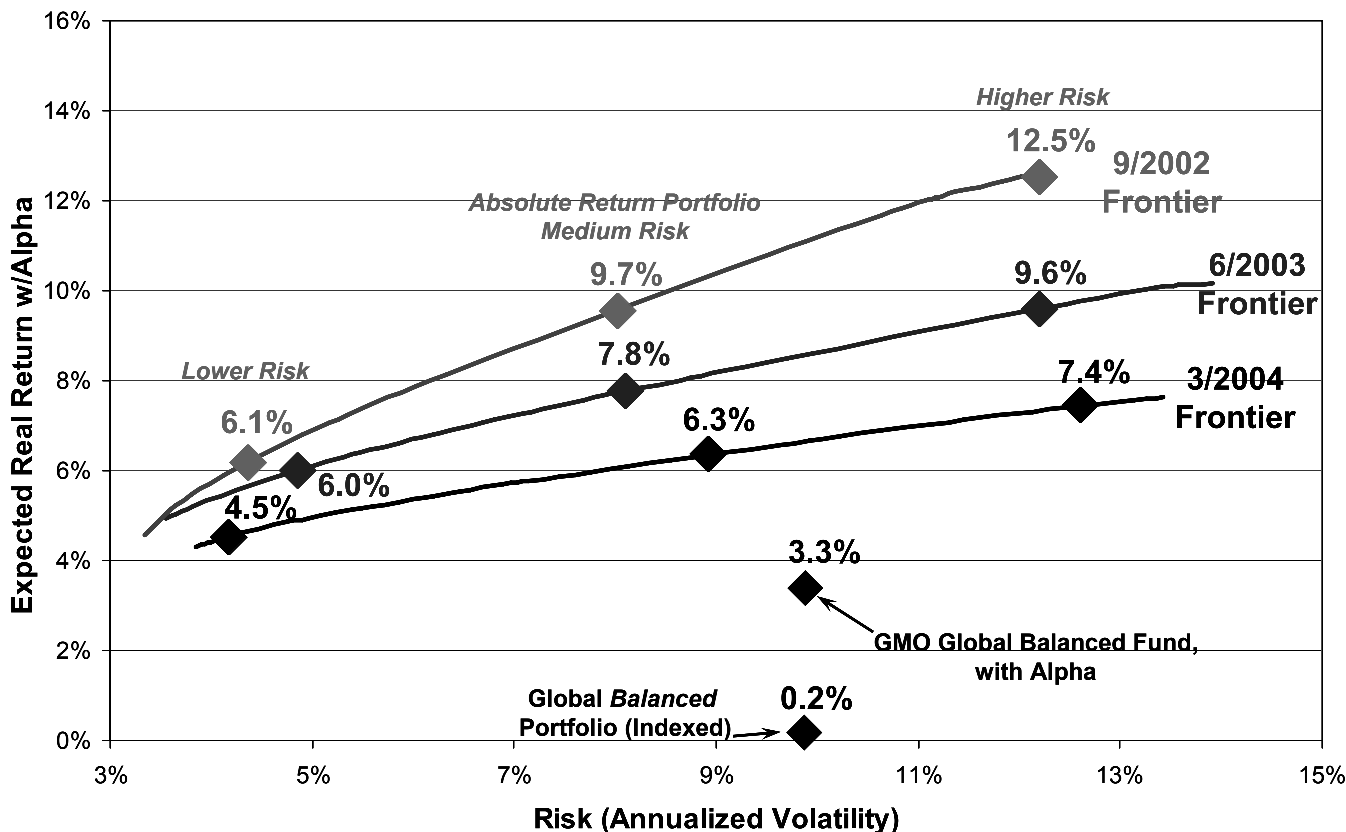
To create a means for achieving exposure to commodities, GMO will be starting the GMO Real Asset Fund in the third quarter unless we hit some major snags. It will own gold and precious metal stocks, industrial metal stocks, oil and natural gas stocks, and securities creating exposure to agricultural commodities.[1]

Our legal department limits what I can say about this topic of a new fund including, strangely, the several caveats about what can go wrong with commodities.

The Changing Return to Risk Taking

Sometimes the incremental return to taking another unit of risk, as defined by volatility, is very high. Sometimes it is negligible. It is intuitively appealing that if the riskiest stocks and bonds and risky asset classes in general have just had their best relative 18 months in years, then the future return to risk taking must have dropped precipitously. This is perhaps best illustrated by our absolute return portfolios because we have been showing an efficient frontier exhibit for that approach for several years, for all levels of risk. As shown in Exhibit 5,

Exhibit 5: Absolute Return Portfolios – Efficient Frontier of Risk and Return



by September 2002, the return to risk curve we showed had become very steep. Risky investments had been badly hurt and traded at much lower prices than less risky assets, and they offered a real inducement to move to the right up the curve and take more risk. By March 2004 however, the risk curve has flattened very considerably for the predictable reason that the higher risk portfolios did spectacularly well recently. There are two points to be made here. The first is that the median risk taker should rationally not be fixed in the middle of the risk curve. He should move to more risk when the curve is steep and less risk when the curve is flat. For example, when the curve is totally flat, that is when risk taking shows no incremental return, we can all agree that both high and low risk takers should end up all in cash.

Traditional risk calculations that are based solely on historical volatility and ignore shifts in return miss this point. Value at risk (VAR), for example, will always produce the same amount of risk taking for each investor, assuming that market volatilities stay the same. Under the same assumption of unchanged volatility, GMO's risk return frontier however can dramatically change, as indeed it has recently. The difference is that our return forecasts change dramatically with price changes and since volatility by and large stays fixed, the GMO return to risk curve rises and falls with asset price changes. With VAR it does not.

The second point concerns today. The risk curve is relatively flat and I believe the odds are better than 50/50 that it will flatten further in the next few months. Surely this justifies a move towards the lower end of the risk curve? Our current low risk absolute return portfolio, for example, has 60% bonds, 20% enhanced cash through our multi-strategy hedge fund, and only 20% high risk assets. This contrasts to our current high risk absolute return portfolio that has no bonds and 80% high risk asset classes. Both portfolios reflect the unique scarcity of attractive assets and the inability to go materially short in these accounts.

Unfortunate Convergence of Negatives

The market characteristics we face going into 2005 are as follows:

- The broadest overpricing of all assets yet recorded: global equities, global bonds, and with a few exceptions, global real estate.
- By far the most important single market, U.S. equity, is particularly badly overpriced.
- The weak first 2 years of the next Presidential Cycle, with particular weakness in these years for risky stocks.
- Unusually high credit vulnerability, going into the first 2 years of the Presidential Cycle, which are all about cleaning up the credit situation.
- Very little reward for taking risk (a flat risk curve).
- Dramatically strong performance over the last 4 years in those asset categories and sub-categories that were so useful in 2000 in cushioning pain, so that today they will be mainly of little use.

The Outlook for the Next few Months

In the blue corner we have over valuation of the market and a fear of more terrorism, higher interest rates, higher inflation, and all that that would mean. In the red corner, we have a high probability of good earnings, very high margins, great productivity, good GNP, a strong China and India, and reasonable global economic strength.

(-) Market Over Valuation

Normal p/e (16x) on normal profit margins (6.0% on sales) produces a **trend line or fair market value that still looks like 720 on the S&P 500 versus today's 1120**. We could, of course, be in a new paradigm of permanently higher average p/e's. We know intellectually that new paradigms are possible despite none occurring yet at the asset class level, but hey, there's always a first time.

(-) Interest Rate Risk

The postponing of rate rises, which allows further extension of record debt levels, has been likened to a cosmic game of chicken or as St. Augustine might have said, "Lord, make me prudent, but not yet." The longer the raising of rates is left, the higher the price will be that will eventually have to be paid.

(+) Good Near-Term Fundamentals

There is a strong consensus that this year and particularly this second quarter will show higher margins, earnings, GNP, and productivity. We have no reason to disagree. Therefore, since value works slowly and so does Greenspan, the probabilities favor a reasonably good market and a continued positive return to risk for a while longer. So the sun continues to shine, but the ice gets thinner and thinner.

Conclusion

I wrote in the last quarter that our skating on thin ice strategy – our steady rather than precipitous reduction in risk taking – was subject to "changing data and loss of nerve". Well, I believe the data has shifted slightly for the worse and certainly my nerve has decreased. So, even though the odds favor a few more months of reasonable outperformance, our new recommendation would be to increase 'quality', cash, market neutral hedge funds, and any other relatively safe investments faster than previously recommended, that is, to move to a highly defensive portfolio by September 30 rather than year-end.

Postscript:

Closing GMO Funds to New Money

My diatribe as to why closing is integral to decent performance was attached to my last quarterly letter. We had originally closed Emerging Equity, Emerging Country Debt, the Foreign Small Fund, and our Emerging Country Debt Hedge Fund. International Small (our quant version) was recently added to the list and on April 7, three more funds closed: International Equity Allocation Fund and related strategies, Global Allocation Absolute Return Strategy, and the Mean Reversion Long-Short Hedge Fund. These recent three were all closed because of strong continuing inflow and their heavy dependence on the use of emerging equity and international small cap.

We realize that it can be very irritating to clients, potential clients, and consultants when we close funds, especially without several months' warning. Unfortunately, lengthy warnings can be dangerous as we found out with emerging equity where the size of the inflow was very high. We apologize for any inconvenience.

The policy of closing is central to maintaining performance for you (and us) and that, in turn, is central to how we see ourselves. As I'm fond of saying, there is nothing more supremely useless than a mediocre money manager.

Possible Use of a New Emerging Equity Fund

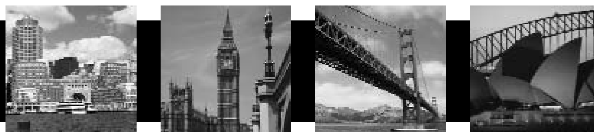
GMO is seriously considering the start of a new emerging equity fund that will not have the objective of creating alpha (value added), but will provide for exposure to emerging equities. This fund, which would be priced appropriately cheaper than our active fund, will provide a solution to the capacity constraints of our active fund. We will keep you posted. Some clients might also consider the use of other firms' emerging equity funds, at our suggested percentage weight, together with other GMO funds.[1]

[1] The foregoing does not constitute an offer of any securities for sale.

GMO

Quarterly Letter

July 2004



Jeremy Grantham, Chairman

Back to Basics: Warnings of Impending Pain

At least by the standards of the last 7 years, 2004 has been unvolatile and uneventful. My "Skating on Thin Ice" strategy has also been boring. The melting ice still hasn't cracked, but the skating has been heavy going and not very successful. It seems, therefore, a good time to take some time away from attempting to analyze the next few quarters and the last few, and get back to basics. What follows is a review and recap of how we, Ben Inker and I, actually produce our asset class forecasts. It's tough reading for the summer, and I'm sorry about that, but it backs up in detail the most powerful point we have to offer: that the US market is extremely dangerous. To show some mercy, I have settled for a management summary and attached the main argument in a special report. And let me add that Ben Inker is our Commander in Chief of Asset Allocation and a huge input into this thinking. Have a good summer.

Summary of Back to Basics

When p/e ratios and profit margins, both of which are currently above average, return to normal, the US equity market will be priced to return 5.7% real. If they fall slowly over 7 years, the predicted return in this transition period would be -1.7% real annually. If it happened tomorrow, the S&P 500 would decline by 38%, from 1140 to around 700. My best guess is that it will take 2 to 3 years to hit fair value. Increasing the market's p/e is the only likely way to reach a satisfactory 7-year return and that would be just about the worst possible long-term outcome for wealth generation.

The Trouble with Trend Lines

So, 700 or so is the trend line or fair market value of the S&P 500. But the trouble with trend lines is that half the time, by definition, is spent below trend and most of this time spent below trend immediately follows the breaking of the great bubbles. For example, the 1929 bubble broke by 1932, and all of the 1930s, 1940s, and 1950s, up to 1956, were below trend. After the 1965 major bull market collapsed in 1974, the market stayed below trend until 1986. In Japan, the market has been below its long-term price trend for over 6 years and counting.

Over Correction

Each of these three major bubbles described in the above paragraph therefore fell well below trend line value. Good taste prevents us from reproducing our familiar exhibits on these declines. Suffice it to say, that at least in the back of one's mind, one should allow for the **possibility** of substantially lower prices for a while. If it happens, it will be the buying opportunity of a career, or for older investors, the second. As I have said often before, there is little doubt in my mind that my next **major** mistake will be buying too soon.

Skating on Thin Ice: Half Time Report

The positive argument for stretching a bit this year to make some money – despite the broad based overpricing of assets and a high level of potential risk, caused by excess debt and related problems – was partly that we were coming off unprecedented stimulus last year. This stimulus had its immediate positive effect on the economy (and, unfortunately, a longer-term offsetting negative effect through increasing government deficits and higher debt), but the positive effect had resulted in above average GNP growth and productivity and substantially increased profits, and all of this good stuff was expected by almost everyone, including us, to last through this year. Another favorable factor was the long history of the fourth year of the Presidential Cycle having a very low volatility stock market associated with very few bad declines. This combination seemed to justify some risk taking, but with eyes wide open to the possibilities of things going wrong.

The first few weeks of this year were a powerful continuation of last year's positive return to risk, but late in January the market began to get steadily more nervous about the approaching turn in the interest rate cycle and the extensive use of leverage. One by one, indicators of

risk started to underperform. Exhibit 1 shows the relative performance of the most volatile quarter of the market (top 600 stocks) by market capitalization. All of last year through mid January of 2004, volatile stocks were brilliant, but, since then, they have unrelentingly underperformed. Emerging market equities' relative strength lasted into April with the S&P/IFC Investable Composite up 14%, but then suffered a severe setback, falling 20% in 3 or 4 weeks before recovering to +0.7% for the year-to-date through June. Junk bonds, emerging country debt, technology stocks, and almost all other riskier factors had a rocky second quarter. The ledger by mid year showed that taking some incremental risk to make incremental return looked clever in the first quarter, too clever by half in the second quarter, and through mid year, was an unusually close draw. That is to say that a conservative strategy of risk avoidance adopted on January 1st would have done about as well as risk taking. As reasonable proof of the pudding, our Global Balanced Asset Allocation Fund – which embodied our strategy of reaching a little for extra return in both allocation and implementation of the individual funds – outperformed its benchmark by 2% in the first quarter, underperformed by 1½% in the second quarter, and netted out as a modest winner for the half year.

GMO's Second Quarter Performance

All in all, this was a tough quarter for our relative performance and exactly opposite of the first quarter. A substantial majority of our funds underperformed their benchmarks, leaving us as a firm in about a draw for the first half of the year. Particularly painful was the underperformance of our emerging market equities, wherein the same countries that helped us outperform by 7% in the fourth quarter of last year led the way down this year, causing us to underperform by 2½% in the second quarter and 4½% year-to-date, both relative to the benchmark. Our hedge funds – like many others – also had a poor quarter. On the positive side, foreign active and foreign quantitative, which account for a third of our funds under management, and emerging country debt slightly increased their first quarter gains.

Exhibit 1
Return of High Volatility Stocks vs. the S&P 500

Accuracy of Recent Predictions

The Presidential Cycle did us proud in that the market had a **very low** volatile half year and modest gains, both as expected in the election year. I was a little surprised, though, given last year's stimulus and this year's good earnings and GNP growth that the market's gains were not greater. But, counter-intuitively, it turns out that the second half of the election year (since 1932) is, on average, moderately higher than the first half, for reasons that are certainly not clear to me. We recommended overweighting small cap foreign stocks as one of our bigger bets. Despite riskier assets in general doing very poorly in the second quarter, this group gave up only ½% of its first quarter's 7½% lead over the S&P. We also recommended the heaviest overweighting manageable of foreign developed versus US equities this year, and EAFE held onto a 1% lead year-to-date, down from +2½% at the end of the first quarter, despite a 2% hit from a strong dollar in the second quarter. (And EAFE is, once again, over 3.5% ahead by July 19.)

The big error so far has been in emerging equity, now 2.7% behind the S&P's modest 3.4% gain for the first half, after being 8.7% ahead for the first quarter. I had thought that if the S&P had "a modest gain or better," then emerging equity would really run, supported as it was by good fundamentals and growing investor interest. Emerging equities' sensitivity to credit concerns turned out to be by far the highest of any asset group, as it fell in just a few weeks almost 20% from its high. It was not that their own fundamental financial shape was particularly poor, as has been the case in some crises; indeed, emerging countries are more fundamentally sound than normal. They are growing fast, profits are good, currencies are stable, and reserves are in good shape. The problem is that they are often owned these days in a leveraged manner, particularly by hedge funds.

Indeed, the Indian market dropping 22% in 1½ days of trading established this. We went to considerable pains to establish who the sellers were. We are quite big investors in India and have good brokerage connections who told us that the sellers were not the big US institutions or the locals, but "unknown" US names. The hit to India and emerging was an ominous comment on leverage and what can happen to illiquid and nervous markets if sellers attempt to sell too much too quickly.

Recommendations for the Balance of the Year

I still believe first, that the market can do quite well this year, and second, that the ice is getting thinner. I still recommend that investors move steadily to lower the risk profile of their accounts to the lowest risk part of their acceptable range by (or at least during) the fourth quarter. The next two calendar years still look like a black hole, as overpriced markets, dangerous leverage, and a newly gigantic hedge fund business ($2 trillion long +/-) collide with the housecleaning phase of the Presidential Cycle and the contraction phase of what has been a very long interest rate cycle. Suitable investment vehicles still include cash and conservative hedge funds, and, for all of us who must own stocks, as strong an emphasis on non-US stocks over their US brethren as our career risk can stand. And for those of us who must own US equities, we recommend as strong an emphasis on quality (especially debt avoidance) as possible.

GMO and Risk Reduction

In all our funds the average level of volatility has dropped and the average quality input has increased during this year. The best bottom line way of expressing this is as a percentage of down days won. As we often repeat, all of GMO's equity funds have a downside bias: that is, we make all our outperformance in down months, and usually more than all, so that in most funds we lose a little on up days. The average hit rate on down days for the US Core Fund, for example, for the last 10 years was that we won 64% of down days. (For information, by the way, only 53% of all days for the S&P 500 are up.) By the peak of our unusual risk taking late last year and early this year, we were **losing** 58% of down days, but abnormally winning 71% of up days. But by this June, we were on our way back to normal, winning over 50% of down days, and after our next trade we expect to move close to normal. The progress in GMO foreign and emerging equity funds is also considerable, and all of them should be normal or better by September 30, and measurably more defensive than usual by December.

Looking Ahead to the Dangers of 2005 – A Continuing Series: Market Volatility and Hedge Funds

We know there has been a massive increase in money invested with hedge funds in the last 5 years, from about $370 billion to almost $900 billion; incidentally, over 70% is US based, mainly in New York. We know the hedge funds have leveraged this $900 billion by at least a factor of two. Many of us have talked about the speed with which they can (and almost certainly will) move out of assets that begin to fall in price. For investors who are leveraged, and whose reputations and financial success rest on avoiding big losses, there is no choice. But declining price is not the only factor they must watch. Most of them will be trying to keep their total volatility to a given level. Sharpe Ratios may not be important yet to ordinary long institutional investing (although surely they will be soon?) but they are an important yardstick for many hedge funds, and increasingly so. (The Sharpe Ratio of a fund is the ratio of its return in excess of a T-Bill over its volatility, which seems like a reasonable measure of efficiency.) The problem here is that the current US market volatility is extremely low, and as it rises – and next year would be a very likely time for such an increase – then hedge funds must reduce their leverage to maintain their desired volatility and to protect their Sharpe Ratios. (As we have pointed out, volatility is remarkably low in the fourth year of a Presidential Cycle – about half normal – and reverts to normal in year one.) So even if prices did not fall, rising volatility alone would start many hedge funds selling!

As if this were not enough of a worry, their leverage is also a function of low interest rates and friendly bankers. Therefore, as prices fall, interest rates rise, volatility rises, and bankers become less friendly, hedge funds could have four piranhas biting them at the same time. And if this combined onslaught occurs, we will all be reminded of the largest risk of all: in total, **hedge funds are net long illiquidity** as the Long-Term Capital crisis revealed; that is, the stocks they are long tend to be less liquid than the stocks they are short.

And what about GMO's hedge funds? First of all, eight of our nine funds in Multi-Strategy are equally short as long. (Emerging Country Debt, the exception, has a positive beta on the emerging debt index of about 0.30.) In total, our Multi-Strategy Fund does better on down days than up days, probably because we are long better value than we are short, and, also, we are slightly net long high quality. The net effect is that **typically** we are not

under pressure to sell into weakness, although accidents may happen, and all competent hedge fund managers have to be a bit paranoid. Several of our funds are, in fact, overtly **net** buyers into weakness, not sellers (although we necessarily do some selling into weakness on the short side). And yes, we do have modest leverage, but no more than we would want even at substantially higher interest costs. Helpfully, Multi-Strategy's volatility has been running very substantially below levels we assumed in our original presentations to clients, so that we have a good safety margin in that area as well. And most importantly, we are slightly net long liquidity; that is, the stocks we own are generally larger than the stocks we are short. The exception, once again, to this general principle is Emerging Country Debt LP where we are routinely net illiquid, but this fund is only 10% of Multi-Strategy. Furthermore, the Emerging Country Debt LP is currently short 25% S&P 500, which in most scenarios will be a powerful help in lowering the liquidity risk of that fund.

Still, this is a scary situation for the hedge fund sub-industry and we intend to watch it very carefully. The fallout risks to the rest of the market are the hardest to calculate, but we know this is a large and brand new risk for the next down leg in the market. Paradoxically, it is quite possible, even probable, that the running for cover of many hedge funds at the same time may pose bigger problems for the long-only industry than the more flexible hedge funds themselves.

What Can Go *Unexpectedly* Right for the Market and What Is our Safety Margin?

Corporate profit margins are unlikely to be higher in 2 years because they are already so high, and interest rates are almost certain to be higher, but what can surprise us **positively**? Even though the Presidential Cycle in years one and two, combined with an overpriced market, give a 70% chance of tough times ahead, what about the remaining 30%? There were 2 very strong years in this remaining 30% – 1997 and 1998 – and they were very overpriced. This, of course, can happen again, but it is unlikely. Profitability in 1997 was above average, as it is today, but then surged to all-time record highs, which, at the time, were even further overstated before later downward corrections. There are many reasons why next year's profit margins are likely to decline. The main one is that we are at the start of a new, increasing interest rate cycle. The second is the normal strong tendency for above average margins to mean revert. But, unfortunately for forecasting, anything can always happen over a year or two!

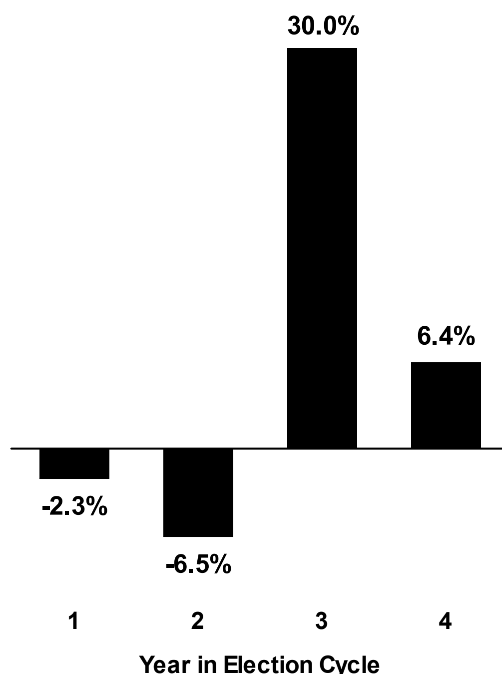
Although our 7-year forecasts seem inflexible, and perhaps vulnerable to the unexpected, we believe they have two important safety margins. First, as described in our special topic, we allow for a broad band around our assumed fair value, in which we don't make much of a bet, saving our big bets for extreme outliers. Second, and less obviously, is the safety margin caused by the market's huge volatility: at the one standard deviation level (or 65% of the time) the market moves within ±22% around trend line return, and 95% of the time it is within ±44%! This volatility, by the way, as pointed out by Professor Shiller years ago, bears absolutely no relationship to the much lower volatility in corporate GNP growth. This unnecessary and unjustified volatility seems a pure testimonial to the market as a behavioral jungle. But surprisingly, this volatility is extremely useful and error reducing for our bets in asset allocation. Let us assume, for example, that fair value is not the 16 times earnings that it appears to be to us, but is 19 times. This would be either a very large measurement error by us, or a revolutionary shift in the trend at unprecedented speed, and would imply a remarkably low 4.7% implied long run return to stocks. It would be a true new era. But, we will imagine it has happened. The normal volatility around this 19 p/e would be 19 ±4. This would mean that 35% of the time the market's p/e would be **outside** the range of 23 times to 15 times normal earnings, and half of that time, or 17½%, the p/e would be below 15. So, well over 20% of the time it would be at 16x or lower. Needless to say, in such a world, waiting to move back to a normal weight in US equities at 16 p/e would almost certainly work out fine if investors were patient. We would outperform by less than if we had calibrated normal p/e accurately, but we would still outperform, despite a miscalculation of this magnitude. Our policy of making no bets in a wide zone around fair value also protects us against errors, for if we assess 16 p/e as fair value, we would make little or no bet from about 19 p/e to 14 p/e so that at 19 p/e, were that the real fair value, our bets would still be approximately neutral, other things being equal.

Risk Avoidance and the Presidential Cycle

I have written in several quarterly letters about the work that Nick Nanda and I have been doing on the Presidential Cycle for over a year now. The most useful new tidbit, which is seriously relevant to our quality

theme, is the pattern of return to risk in the years of the cycle. Exhibit 2 shows the pattern of the return to risk, measured by volatility. The risk group here is the most volatile 25% of the total market cap of the largest 600 US stocks. Year 3 shows a return of 30% per year above inflation in the period since 1964 when our good volatility data starts. Years 1 and 2 are negative. Not relative to normal, just plain down. This comparison makes this exhibit one of the most remarkable I can think of. It would take some remarkably tortured logic to have this data be compatible with an efficient market view, but given its past efforts in tortured logic, I'm sure the academic establishment can still rise to the occasion. Down boy!

Exhibit 2
Return of High Volatility Stocks During the Presidential Cycle



Real Asset Fund Postponed

We have decided to postpone, perhaps indefinitely, a GMO Real Asset Fund. Commodities have just done so well over the last 18 months, and the stocks are at least as overpriced on standard analysis as the S&P 500. The net result is that we are not prepared to use the Fund ourselves in our own asset allocation accounts – at least not yet. Given that, it seems improper, or certainly uncomfortable, for us to offer it to clients and be seen to endorse the idea when we don't have enough confidence to use it ourselves. We apologize for any inconvenience.

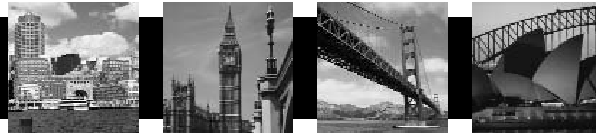
A Footnote on Odd and Interesting Ways to Predict the Market

Kenneth Fisher wrote in *Forbes* magazine about 3 months ago, in a rousingly bullish article, that the bull market would not end until some notorious bears like Bill Gross and me took some public abuse. My first thought was that it was comforting to be tarred with the same brush as Bill. But later on, it led me to also look for odd predictive tools. And I think I have one. I don't think the bear market that began in March 2000 will end until one or two of the public bulls claim to have predicted this long, 2-legged bear market all along.

Disclaimer: The foregoing does not constitute an offer of any securities for sale. Past performance is not indicative of future results. The views expressed herein are those of Jeremy Grantham and GMO and are not intended as investment advice.

GMO

Special Topic



July 2004

Jeremy Grantham, Chairman

Back to Basics: GMO's 7 Year Forecast – All the Dirty Details

Exhibit 1 reviews the basic information that goes into our asset class forecasts. The top row is what we believe to be fair or normal returns to these asset classes. Consultants and others do not seem to disagree by more than the odd 10 or 20 basis points. It shows a much reduced **expected** 'risk premium' between stocks and bonds compared to the actual outcome of the last many decades. Institutional client surveys confirm this kind of gap. For example, if institutional professionals are asked to assume that stocks would return 5.7% real, and are then asked what return they would need from intermediate government bonds to justify a 65% equity/35% bond split, the answer comes back about 3.0%. (Similarly, about 5.7% for stocks is the average answer if the question is reversed.) 5.7% is a very useful answer to get because it is the return you would expect historically from a market selling at 16 p/e, which we also believe to be the trend line p/e. (The eagle-eyed will notice that a genuine p/e of 16 produces an earnings yield of 6¼%, not 5.7%. This difference exists because,

Exhibit 1
Equilibrium Returns vs. GMO Forecasts

	US Large Caps	US Small Caps	Int'l Large Caps	Int'l Small Caps	Emerging Equities	US Bonds
Real Returns at Equilibrium Prices (Fair Value)	5.7%	6.7%	5.7%	6.2%	6.7%	3.0%
Real Return Holding Today's Valuation Constant	3.4%	4.2%	4.5%	4.7%	6.7%	2.2%
Immediate Gain or Loss from Hitting Fair Value Tomorrow	-38%	-41%	-16%	-15%	0%	-4%
Expected Real Return from Hitting Fair Value in 7 Years	-1.7%	-1.7%	2.9%	3.2%	6.6%	2.1%

As of 6/30/04

historically, there has been 'slippage' between the earnings yield and real returns of over 1% across all time and all countries [except Italy for some reason] and we have subtracted less than half this historical slippage [in order to be friendly or conservative] from the 6¼% earnings yield. The slippage is probably caused by over-stated earnings, which in turn are probably caused by systematic under depreciation of assets.)

Fixing the trend line p/e at 16 is straightforward. The data series for relatively cleaned up p/e's goes back a long way. The trend appears to be just over 12 in 1900; it averages just over 14 for the whole period, and ends today at 16. Today's higher p/e trend line is another way of saying that the return to stocks should be less today than in 1900. And why not? Transaction costs are less. GNP in aggregate is more stable than in 1900, because the stable service sector has grown from a small to a dominant percentage of the total GNP, just as the size of the volatile industrial sector has shrunk. And governance has improved and fraud and insider dealing have decreased. Honest!

The problem with Exhibit 1 begins with row two. This shows the return embedded at today's above average asset class prices. The US market at 22 times adjusted trailing is priced to return just 3.4% in perpetuity (the WSJ uses 21 times, but their number is unadjusted). This is presumably what Warren Buffet had in mind a year ago, when the market was much cheaper, when he said it was priced to return about 4%. The problem with that 4% and today's 3.4% is that it simply is not going to happen. These returns are far lower than is commensurate with the risk in equities; they do not give enough of a premium over bonds, and most importantly, they are far lower than is expected by institutional investors who are looking for nearly 6% real and individual investors who expect over 10%. And the really bad news about row 2 is that all of the returns are below both investors' expectations and our estimate of fair returns, with only the riskiest category 'emerging equity' priced to deliver a fair return.

Row 3 is the decline in these asset classes that would be needed to hit fair price tomorrow, so that we could all have the returns required on the top row, i.e., 5.7% for US blue chips, etc. This is a fairly brutal looking row, but it does strongly suggest that the pain involved outside the US is far less than inside it. In fact, the gap **has never been materially higher**. It is a two standard deviation event, the kind that should occur randomly every 40 years or so. As such, it represents the single best liquid way to reduce potential pain in ordinary portfolios – that is, by weighting equities away from the US.

Row 4 is how GMO typically deals with this data. We amortize the pain or pleasure of getting back to fair price over 7 years. 7 years is conservatively a little longer than the data-mined average for this mean reverting process, which is 6¼ years. If the US equity market dragged out the punishment for 7 years, it would return –1.7% a year real for 7 years. (After that point, it would be fair price and would return 5.7%.)

That we at GMO use a conservative 7-year amortization should not for a second lead you astray. The market is 4½ years into a decline and I believe another 2½ years should see us back at trend. Such a faster flight path will of course produce significantly larger annual losses. The quicker the move to reasonable prices, however, the better the longer-term returns. For example, if all the pain to get to trend was taken tomorrow, as opposed to evenly over 7 years, you would end up with about 10% more money because by taking pain up front, you get a full 5.7% return for those 7 years, while if you glide down gracefully, you are overpriced for those 7 years and consequently have a below average performance. This might be thought of as a rather sick example of looking at the bright side, but it is, I believe, the most underappreciated point in investing: **long-term investors should all welcome lower prices and their associated higher compound returns**, but most investors perversely seem to welcome higher and rising prices and their accompanying lower compound rates of return as if their cash-out date is 1 or 2 years away. For example, if you have a cheap 10 p/e world with a 10% compounding return compared to an expensive 20 p/e world with a 5% compound return, you double your money every 7 years compared to every 14 years. Even if you have to take an up front 50% hit to get to the cheap p/e world, you catch up in 15 years, have twice the total pension you would have had in 30 years, and four times the amount in 45 years! For a 20 year old worker who retires at 65, four times the money would seem well worth the up front pain. In the stock market, greed is not good, pain is good!

A current popular argument today says that a higher current p/e is acceptable because the profit growth outlook is good. For the next couple of quarters I suspect that higher earnings will indeed be the case, but in our methodology the argument cuts no ice, for **profit margins are already above average** and margins are the most dependably mean reverting series in finance. As we are fond of saying at GMO, "If profit margins do not mean revert, capitalism is broke!" Fat margins must attract competition – and always have – and this competition will drive margins down. Usually, in fact,

the end result of a period of excess profits is a glut in which we drown in, say, fiber-optic cable.

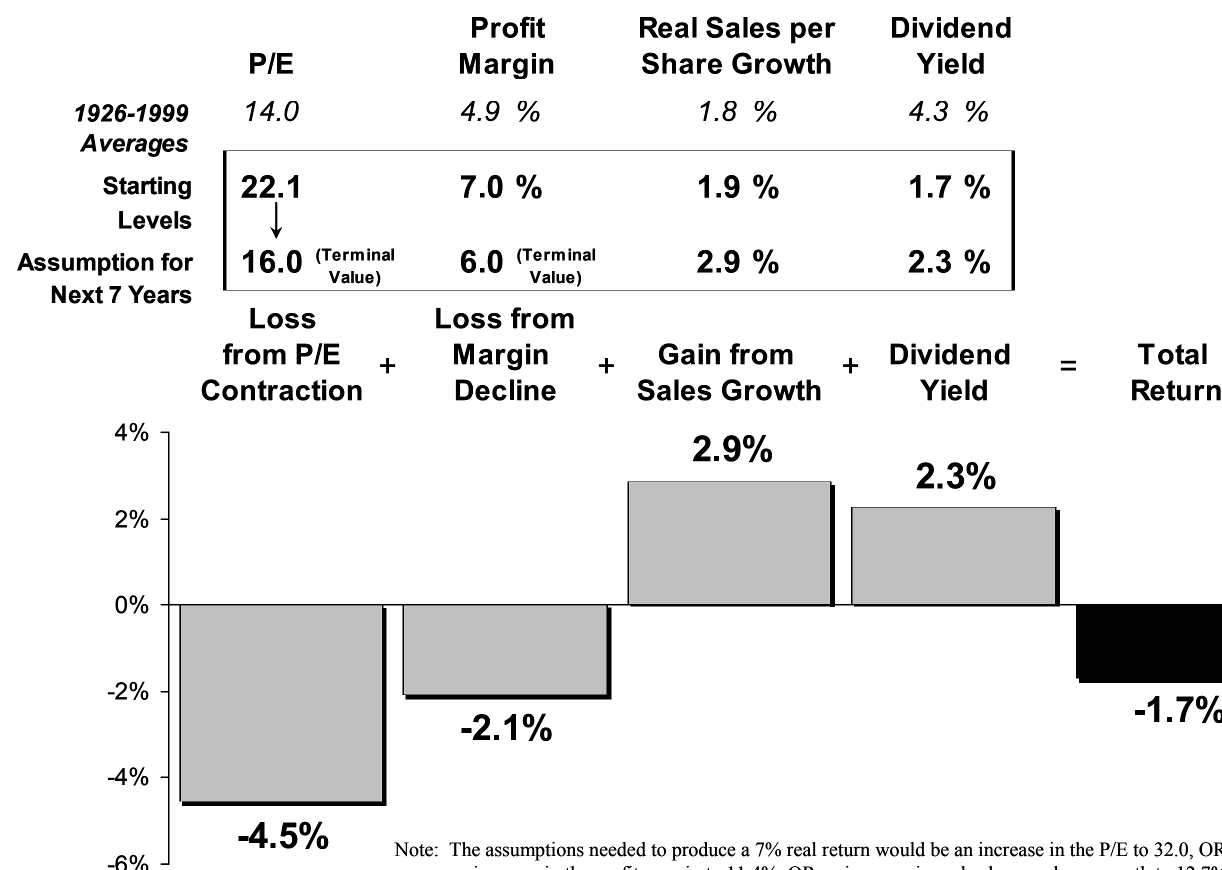
Exhibit 2 shows the complete picture for the S&P 500 and shows how we arrive at our current 7-year forecast of -1.7% a year. (We have one of these analyses for every asset and sub asset class, updated monthly.) Column 1 on the left shows that the average p/e for the last 79 years for the S&P 500 has been a little over 14 times. Today it starts at 22 times trailing earnings. This is arrived at by taking claimed operating earnings and adjusting them downward by 14%, which is the average write-down from operating earnings to net income over the last 10 years. The pain from this level to the 16 times trend line (and fair value) is shown at the bottom, -4.5% a year. The next column shows that the average profit per dollar of sales since 1926 has averaged 4.9%. Today it starts at 7% and we have it trending down to 6.0%. There is some pain from this too: -2.1% a year. This pain, though, is probably understated, because 6.0% is clearly a generous level that accepts some measure of new era increased margins.

Because we regress above average margins back to average, further short-term margin improvements expected this year have almost no effect on our 7-year estimate. In comparison to our view, the investment world, as reflected in the press, seems to completely miss the point of mean reversion of margins and believes that higher margins can justify higher p/e's. For us, though, p/e's are meaningless unless profits are normalized. You simply cannot compare total market earnings in profit booms and busts. Robert Shiller of Yale fixes this problem by using a p/e in which he compares today's price with the average of the past 10 years of earnings in today's dollars. This is obviously a reasonable way of doing it, but a recent British study, co-authored by Matthew Harney and Edward Tower, which appeared in the Fall 2003 issue of *The Journal of Investing*, claims that, although the 10-year p/e is more predictive than

Exhibit 2

S&P 500: Building a 7-Year Estimate

Components of Annual Return of S&P 500, with Regression over 7 Years



Note: The assumptions needed to produce a 7% real return would be an increase in the P/E to 32.0, OR an increase in the profit margin to 11.4%, OR an increase in real sales per share growth to 12.7%. As of 6/30/04

5-year smoothed p/e's, which in turn outperform standard 1-year p/e's, it is less predictive than price to replacement cost or Tobin's Q. In a theoretically perfect world, the value of the market on replacement cost should equal its value based on normal or fair p/e using earnings at normal profit margins, and this is how we do it since it seems more manageable and more easily updated. Surprisingly, perhaps, it comes out with a very similar fair value for the S&P 500 as Tobin's Q. **They are both around 700 as fair value for the S&P 500, compared to today's 1120.**

Column 3 shows the historical growth rate in sales per share. This has been a remarkably modest 1.8% real a year, in complete contrast to the typical expectations of the bubble period, when every company with pretensions to respectability was expected to produce 10% a year. The last 10 years, far from being a new era ("The greatest economic decade of the 20th century" was how Merrill Lynch's economist described the nineties), were unusually normal at 1.9% a year. We have it rising to 2.9% a year for the next decade. This generous number again has an element of New Era belief in it and also allows for a lower dividend payout, and therefore higher retention. **More to the point, it reflects our general philosophy in asset allocation of being generous in our assumptions regarding overpriced assets, and tough for assets that appear cheap.** This approach creates a wide neutral zone around fair value as we tighten or loosen our assumptions, where we take no major bets, which is how I believe it should be done.

The remaining column is for dividends, which are assumed to grow at the same rate as sales per share. The four inputs are run through the straightforward 7-year move to normal, producing our estimate of -1.7% a year.

Using this simple, but rigorous approach, we can test competing assumptions for future market returns. For example, to take a typical market estimate of 7% a year future real returns, we can ask what it would take to get there. To deliver 7% a year by increasing profit margins but keeping our other assumptions would take profit margins of 12.7% far higher than any ever recorded. Similarly, to get there by increasing sales growth per share is a workable definition of the impossible: an eight standard deviation event. But you can always deliver another good 7 years of return by further increasing p/e's. All it would take is a return to the p/e levels of March 2000. The problem, of course, is the curse of the 'no free lunch'. At those prices – 32 times earnings – the stable return, or earnings yield, would be about 2.5% – a Japanese style outcome. (Adjusting for 50% crossholdings, even the p/e's in their bubble were only higher than 32 times for about a year.)

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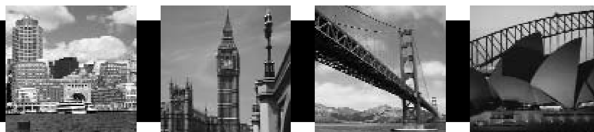


Jeremy Grantham, Chairman

The Countdown Continues & Letters to the Investment Committee I

Introduction

We're down to 3 little months, probably quite good ones before we reach the difficult years one and two of the Presidential Cycle. In the meantime, the third quarter was very stealthy. Nothing seemed to be happening, and yet, by the end, there had been important shifts, most of them happily to our advantage. Our biggest bets this year on emerging and small cap international equities, and to a lesser extent REITs, all relative to the S&P, had won handsomely in the first quarter and had been hammered in the second. In this recent quarter, the emerging and REIT indices both beat the S&P by over 10%, and the small cap international index slightly increased its year-to-date lead over the S&P to +8%. In fact, all 17 components in GMO's Global Balanced Asset Allocation Strategy (from regular domestic bonds and TIPS to EAFE equities) beat the S&P in the quarter, and also year-to-date, except for our new Quality Strategy which, unkindest cut of all, fell behind on the last day of the quarter because of Merck's unexpected withdrawal of Vioxx. In a choppy year, the steadiest trends have been in the underperformance of technology stocks, growth stocks, and highly volatile (or risky) stocks. Each of these trends continued in the third quarter

Accuracy of GMO's Short-Term Forecasts

Coming into this year, we had predicted outperformance by foreign and emerging equities, and as growing believers in the Presidential Cycle, we had also looked for a typical low volatile year with quite good US equity gains. Well, we've certainly had a wonderfully low volatile year for the S&P with about half the normal volatility almost exactly equal to the remarkably low average for all year fours of the Presidential Cycle. Foreign and emerging equities also outperformed US equities as predicted, but the US equity market itself is not yet up as much as we forecast in last year's fourth quarter letter (+11%). The year however is not yet over and it turns out, counter-intuitively I think, that the strongest quarter of the election year since 1932 has been the fourth quarter, and I still think a decent fourth quarter this year for equity markets is a better than even bet.

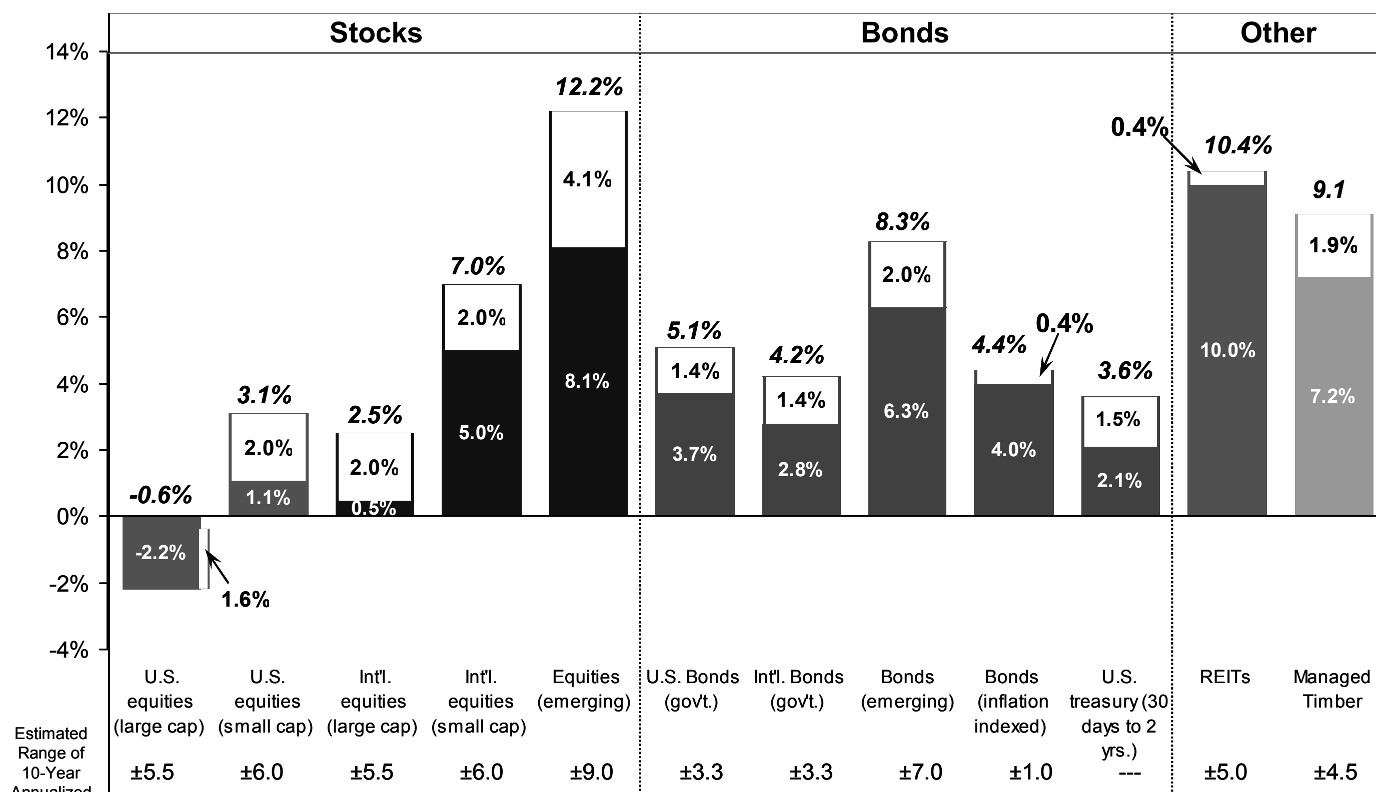
The Hubris Award for 2004

Amid the reasonable predictions from last year, the one for emerging markets equity stands out as remarkably aggressive. Since it is up 13% (as of 10/4/04) in a flattish year, and may do some more yet, a simple preference for emerging would have worked out fine, but the hottest language yet was wheeled out. "Without a Chinese crisis, emerging could go **straight up 30%, 40%, or more**." Well I did and still do believe that emerging will beat the S&P from then by 30 or 40% **eventually**, but "straight up" or straight anything is to completely ignore one of the central market truths: careful estimates based on value eventually winning will usually treat you well, but timing will usually try to kill you.

Accuracy of Intermediate-Term Forecasts

Exhibit 1 reproduces our actual 10-year asset class forecast done at the top of the market, 4½ years ago in March 2000. (Our current 7-year format started a year later.) What is surprising to me now is how many of the asset classes looked quite attractive then despite the ugliness of the S&P 500. Table 1 is a ranking at March 2000 by estimated attractiveness of 12 asset classes, 10 of which come from Exhibit 1 with cash and forestry excluded, and two are added from the usual part two of our monthly forecasts – the important US small cap value and large cap value categories. The table compares our forecasts to the actual results. It is far from a perfect ranking, but on the right is the average for the delivered returns of the best four original estimates, the middle four, and the worst four. They are certainly ranked in the right order, and the average error of each block is unexpectedly small with outperformance of some favorites offsetting underperformance of others. The average outperformance of the benchmark by GMO was

Exhibit 1
GMO 10-Year Asset Class Return Forecasts*
As of March 31, 2000



***The chart represents real return forecasts[1] for several asset classes and an estimate of value expected to be added from active management. These forecasts are forward-looking statements based upon the reasonable beliefs of GMO and are not a guarantee of future performance.**

[1] Long-term inflation assumption: 2.2% per year.
[2] Bond with same duration as Lehman Brothers Government Bond Index.
[3] Bond with same duration as J.P. Morgan Non-U.S. Government Bond Index. Forecast is for unhedged international bond returns. Hedged is 0.2% higher.
[4] Alpha transported from management of global bonds.

Table 1
March 31, 2000 GMO Asset Class Ranking:
Forecasts vs. Actual Results

	Estimate		Actual	
REITs	10.0	Avg. +7.5	17.5	Avg. +9.6
Emerging Equities	8.1		0.4	
Emerging Debt	6.3		9.4	
Small Cap Value	5.5		11.2	
International Small	5.0	Avg. +3.9	1.2	Avg. +5.0
Inflation-Indexed Bonds	4.0		8.2	
US Bonds	3.7		5.1	
Int'l Govt. Bonds	2.8		5.4	
US Small	1.1	Avg. +0.1	0.2	Avg. -3.1
US Large Value	0.8		1.2	
International Large	0.5		-6.6	
US Large	-2.2		-7.2	
Total	**45.6**		**46.0**	
Average	**3.8**		**3.8**	

estimated to be 1.7% per year and was actually 4.1%, flattered by the market decline and the typical bear market bias of our strategies. Notable for me is the equal weighted average estimate of our 12 asset classes of +3.8% which compares to the average delivered performance of (drum roll) +3.8%! In real life the delivered 3.8%, when added to our actual 4.1% alpha, produced a perfectly respectable 7.9% real return. (Ah, the good old days.) And our ultra bearish US large cap estimate of -2.2% real was trumped by the market actually dropping 7.2% a year! Now if we could just control our unjustifiable optimism… Our inflation estimate in March 2000, for the record from the footnotes, was 2.2% per year and the actual was 2.3%.

The only bad news here is having bragged about these so-far-so-good estimates, we will, no doubt, be nagged into doing it again at the 10th anniversary in March 2010, where the Laws of Averages are no doubt lying in wait for us.

GMO Third Quarter and Year-to-Date Performance

Over 80% of our money under management beat its respective benchmark for the third quarter, and over 70% won year-to-date. Strong outperformers for the quarter were our emerging markets and emerging country debt strategies, international value, international bonds, and US core. Underperforming for the year are emerging equities, behind by about 2%, and almost all our US equity portfolios, other than US core, although all the underperformers are contained in the 0% to -2% range, rather than a severe decline. The particularly choppy year in the US has been brutal for our momentum streams – and everyone else's – and our quality bias to value has been quite strongly perverse. Our value models are about level with the S&P, but far behind lower quality versions like price/earnings and price/book.

A Short Digression on 'Quality' and 'Beta'

This last point – the underperformance this year of high quality – is interesting to us as it represents a divergence from the **outperformance** of low volatile or low beta stocks. Most of the world, including us, have tended to think of quality – fundamentally defined as low debt, high profit margins, and high margin stability – as having generally the same portfolio virtues and vices as low beta, but they turn out to be interestingly different. For starters, the best 25% by market cap on our high quality definition is down 4½% year-to-date while the least volatile 25% is up 5%, both relative to the market. More surprisingly, the long-term correlation in their relative performance is **negative** 6%! We are currently researching the ins and outs of this puzzle. The results could bear quite importantly on how to best protect portfolios in the next 2 dangerous years. We will cover our early work on this at our client conference, but our initial work suggests that historical low beta and low volatility is even more helpful in a decline than we expected and high quality less so. Stay tuned.

GMO Digs In

As mentioned in several quarterlies, I was hoping for a quiet year with some market gains to buy us time to reposition carefully to more conservative portfolios. We could still use a few more months, and as mentioned, I do expect the fourth quarter to be up, but we have already covered some considerable ground in making our portfolios more conservative.

The best proof of the pudding is in the eating, so how have our strategies performed recently compared to earlier in the year? To start with, U.S. Core, our flagship quantitative strategy, lost 14 of the first 15 down days this year and won the first 18 out of 18 up days – a uniquely aggressive posture for this strategy, which typically wins 62% of down days. Well, over the last 3 months, it has won 60% of down days; perfectly satisfactory, but not yet heroic. GMO's largest developed country international quant strategy (International Intrinsic Value), which typically wins a remarkable 77% of down days, has won 62% of them in the last 3 months, already a bear market bias, but clearly not yet our normal bias. Our Global Balanced Asset Allocation Strategy, a proxy for our asset allocation strategy, has beaten its benchmark on 65% of the down days in the quarter compared to a normal 80%. GMO, for the record, has had a distinct winning edge on the downside in the past for **all** its equity portfolios, except emerging equity, which is neutral.

Measured in more traditional qualitative ways, we have reduced our risk in the International Intrinsic Value Strategy this year by lowering our overweight in small cap to just +4.2% from over +8%. The bet on high quality (best 25%) has moved from -3 percentage points to +9, and particularly dangerous high volatile stocks (highest 25%) have moved from +6 percentage points to -5. In U.S. Core, our highly unusual 17% overweighting in the 25% highest volatile stocks that existed last year and into this year has disappeared completely. In all equity strategies, including emerging and UK equity, there has been a steady, but cumulatively large move to increased quality and away from high volatility over the last 9 months.

The Bull and Bear Cases for the US Equity Market

I have to reluctantly admit that the current bear case seems complicated and relatively sophisticated or "intellectual" unlike March 2000 when it seemed very, very simple: the market was obviously overpriced on every **reasonable** measure. The bull arguments then, in contrast, could be summarized (no doubt with some negative spin) as falling into two camps. First, Abby Cohen, et al.: "the economy, productivity, and profits are fine so the market will be fine." Second, the more ludicrous Dow 36000 type of argument: "stocks are less risky than bonds and therefore should sell at a lower total return than bonds," which meant, for the record, since bond rates were low, that the market would sell at four times replacement cost! Now, in contrast, the current bull case seems straightforward, appealing, and easily understood. The bull case is that due to very strong earnings for 2 years, the earnings have caught up with a recently flat market to bring the p/e multiple down to

18½, and a multiple of 18½ is reasonable given the current above average profit margins, low interest rates, low inflation, and quite strong outlook for next year's GNP growth, for which the consensus is +3½%, which is at or above long-term trend, and global growth is expected to be among the highest of the last 20 years

Unfortunately, if that indeed is the bull case, then it is wrong both theoretically and historically. First, above average profit margins are a negative for future forecasts, not a positive, since profit margins are dependably mean reverting and, historically, very high margins, as we have now, are followed by below average stock markets as margins move back down. Second, GNP growth has unfortunately no easy relationship with stock market returns. My favorite example of this is that the decades of the 1990s and the 1970s – which felt like Heaven and Hell, respectively, in the stock market – had almost identical GNP growth rates, and productivity growth rates for that matter. This year's GNP growth is negatively correlated with next year's market returns (-26%) in that above average GNP this year tends to be followed by below average market returns next year. Thirdly, interest rates do not affect the fair value of the market, which I hope we agree is equal to replacement cost, and replacement cost is obviously not affected by interest rate changes. As further encouragement, the 90-year historical record is that the correlations between interest rates and equity market moves is approximately nil.

Finally, and most importantly I believe, you simply cannot look at unnormalized p/e ratios when dealing with the total market. In addition to adjusting for the profit cycle, you have to allow for write-downs of prior claimed earnings. In theory, operating income and net income should be the same, with unusual debits in the long run being offset by unusual credits. In real life there is a bias to unusual debits because of systematic overstatement of earnings. In the last 10 years, there has been an average of 14% net write-downs. So fair market value today should be based on current operating earnings less the normal 14% downward adjustment for write-offs, and a further downward adjustment to allow for abnormally high current profit margins that will regress, very probably in the next 2 years. A normal profit margin combined with a normalized or trend line p/e of 16 unfortunately produces for the S&P 500 a fair value of 725, which compares painfully to the S&P's current price of just over 1100. Today's easy logic of current market reasonableness is both very seductive and very common and therefore quite dangerous.

The Nightmare for Asset Allocators: What on Earth Can We Do to Prevent Losses?

As mentioned in other quarterlies, asset allocators like Ben Inker and me have a lot in common with bond managers in that both groups wail and gnash their teeth when their bets win because of lost opportunities, in complete contrast to equity investors, who when presented with strong market gains don't appear to notice the lost opportunities, but jump up and down with cries of "Whoopee we're rich!" Well things have gone so well for value based asset allocation in the last 4½ years that opportunities are looking extremely thin. (When, I wonder, did a run of mean reverting bets like this one last occur?) The results of this have been that our asset allocation has had 5 consecutive very easy years: our Global Balanced Asset Allocation Strategy, for example, has outperformed its benchmark in sequence by 10%, 10%, 11%, 5%, and 2½%. And, it has done so at much lower risk. The Great Ugly for our allocation was, in contrast, only 3 years (1997 to 1999) and, although our asset allocation underperformed badly for these 3 years, it at least did so with far less risk, I add unpersuasively. (For the record, why was much lower real risk so unpersuasive then and why is it still?)

The nightmare today for asset allocation is **exactly** the result of these 5 successful years for mean reversion or value. Small stocks and value stocks globally were brilliant and have used up either all their under valuation or even more than all. US REITs have delivered at least 80% of the benefits that might have been expected from their enormous relative cheapness 4½ years ago. Emerging country equity and emerging country debt handsomely beat the S&P 500 as did all other fixed income, with our favorite TIPS at the front. The closest to failure of any asset class bet was on EAFE to beat the S&P 500, limping home by a +3% total over the 4½ years. That same bet – EAFE to beat the S&P 500 – is, not so coincidentally, **by far** the best bet remaining.

But what else is interesting? On our current 7-year forecast every equity and fixed income asset class shows as overpriced except for emerging equity, which is just about fair value.

Our summary advice for asset allocation on a **relative to benchmark** basis is easy enough though:

- Tilt equities as much towards international and away from the US as your career risk account will allow, with emerging more overweight than developed, but

recognizing the potential for some heart stopping down periods in emerging before the US bear market is over.

- Tilt all portfolios (US and international) to quality and low volatile stocks, especially those with low debt. Be particularly careful of US small low quality issues whose increased leverage may turn out to be very dangerous.
- Have a slight tilt to fixed income versus equity. A heavy tilt to fixed income needs to place an awfully high confidence on the **timing** of a large equity decline, for with fixed income itself moderately overpriced, our **7-year** estimates for several equity sub categories, plus their imputed alphas (our GMO outperformance), look better than most or all fixed income categories.

Our summary advice on an **absolute** basis is much more painful to deliver though shorter: PANIC. With the rallies in the third quarter in global fixed income, emerging equity and debt, and US REITs, there has never been a more broadly overpriced mix of assets. Hide in conservative hedge funds. Buy some foreign and emerging equities, but be reconciled to periods of negative return. Look closely at diversification into commodities including forestry, and if you can stand the low returns, hold some cash. But whatever you do, and however desperate you may be, **do not reach for return**; do not try to get blood out of stones. The extra potential return for taking extra risk is very low or even negative after a wonderful rally for risky assets in 2003. Now is the time to lower risk and survive to fight another day with your assets as intact as you can manage.

Outlook for 2005 & 2006

No news is bad news in this case as our forecast remains the same – gloomy. To cut the argument down to its basics: over half of all years one and two of the Presidential Cycle since 1932 have been down, 19 in total in real terms, in startling comparison to years three and four when only 5 years are down. To make matters worse, the value of the market (which does not matter in year three where expensive markets go up anyway) matters a lot in years one and two. If you are in the worst half of all years by value in years one and two, your odds of a loss rise to about 70% for each year separately! These fairly miserable odds cover the **normal** run of events. What remains to be decided is whether the risks now are higher than normal.

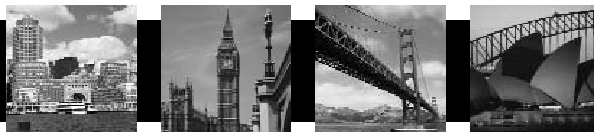
The first incremental risk is that we are not only in the most expensive half of all markets since 1925, we are in the worst 10%. Second, the Presidential Cycle is primarily a financial or monetary phenomenon and without getting into terrorism, which I assume rightly or wrongly will have little effect, we can all agree that the risks to the financial system are above average. Corporate debt is at the higher end of its range as are both the federal deficit and the trade deficit, while accumulated foreign debt is at a 100-year high, and accumulated household debt is at a new US all-time record. The housing market is also clearly over stimulated through prolonged easy and cheap credit and contains a real threat to consumption when home prices finally fall off even a little. A major potential risk is that a combination of price weakness in financial assets and price weakness in housing, both resulting from overpricing, will coincide with some financial crisis, even a minor one. The threat posed by high oil prices to consumer demand and the possibility (slight I believe) of a Chinese derailment are other quite separate risks.

All things considered, I would say we are at the more vulnerable end of the spectrum of overpriced markets going into the dangerous year one of the Cycle. But, probably and hopefully, we have 3 more reasonable months to enjoy.

Disclaimer: The foregoing does not constitute an offer of any securities for sale. Past performance is not indicative of future results. The views expressed herein are those of Jeremy Grantham and GMO and are not intended as investment advice.

GMO

Special Topic



October 2004

Jeremy Grantham, Chairman

Letters to the Investment Committee I

Introduction

It's my intention to write a series of topics designed to cover the most important investment issues seen through the eyes of those committee members who are well informed, but not full-time professionals. This, my opening effort, starts at the very beginning of what I believe is the basic machinery that drives the stock market. Our markets are certainly not the well oiled machines of the efficient market hypothesis, but cantankerous and unreliable machines that sometimes run smoothly and sometimes have fits.

Letter #1: "Regression Is Mean"

Everything important about markets is 'mean reverting' or, if you prefer, wanders around a trend. Prices are pushed away from fair price by a series of "inefficiencies" and eventually dragged back by the logic of value.

In markets where investors are acting for themselves, prices are pushed away from fair price by behavioral twitches. We are not hard wired to be 'economic man', quickly and efficiently processing all available data. In contrast, we are plagued by herding, overconfidence, wishful thinking, and difficulties when processing multiple factors, particularly when they involve probabilities. In markets where investors hand over their money to professionals, the major inefficiency becomes **career risk**. Everyone's ultimate job description becomes "keep your job." Career risk reduction takes precedence over maximizing the clients' return. Efficient career risk management means never being wrong on your own, so herding, perhaps for different reasons, also characterizes professional investing. Herding produces momentum in prices, pushing them further away from fair value as people buy because others are buying.

Prices are eventually pulled back to fair price by the need for the return of each asset class to relate sensibly to its risk. This is the force that exercises a persistent gravitational pull on inefficient prices and this force is generally described as 'value'. An investor in equities in the ultra cheap markets of 1982 or 1945 who is receiving 10% or 20% a year real return for owning equities will sooner or later get a lot of company to bid down the returns. Conversely, all investors in 2000 faced with a market p/e of 33x, and an imbedded return of under 3% a year while bearing full equity risk, will eventually lose heart and sell. A mix of behavioral inefficiencies and value based efficiencies means that bubbles will form and all of them will break.

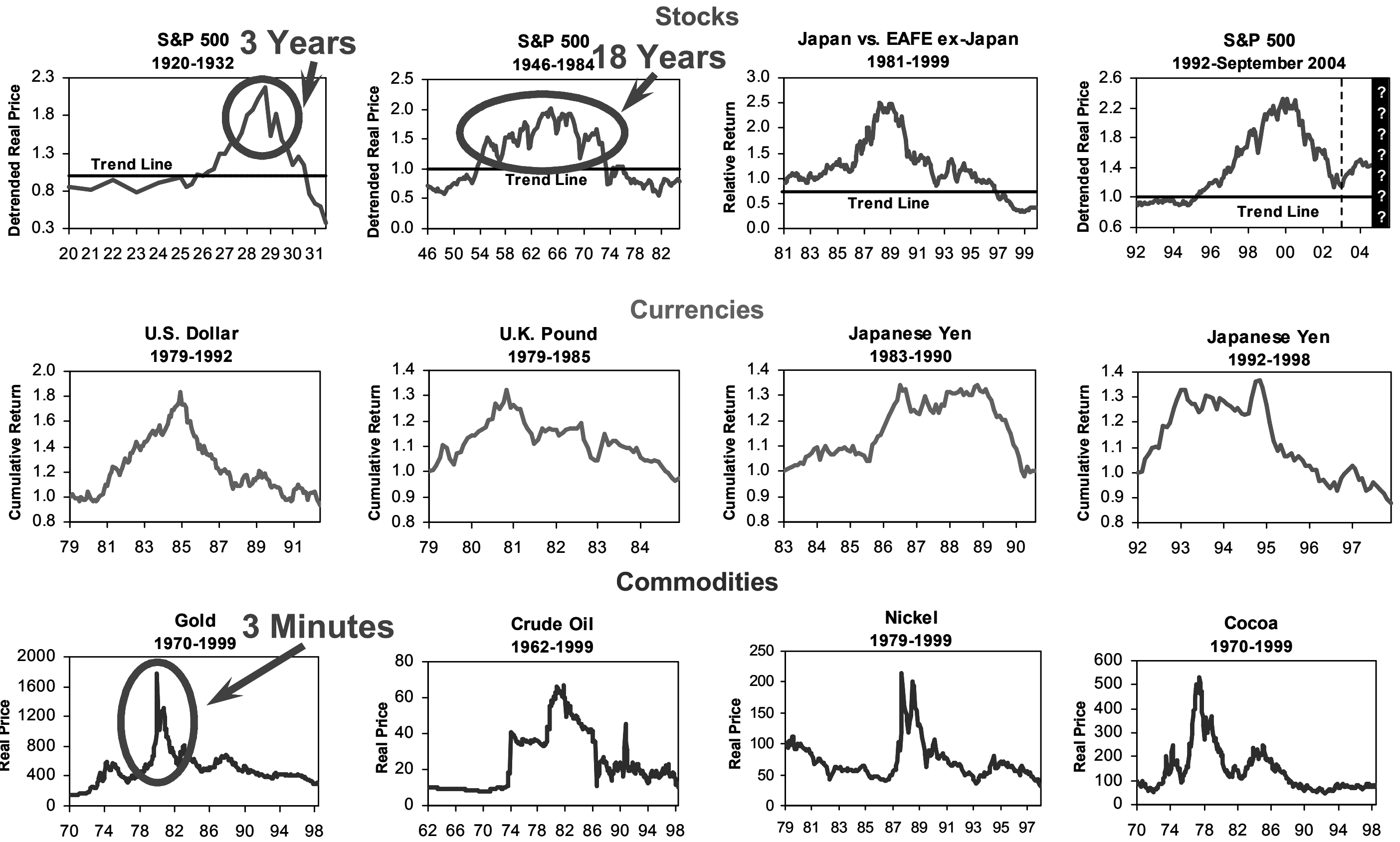
We have in fact searched through absolutely all the data that we can find on currencies, commodities, and stock markets and have found 27 bubbles. Unlike Chairman Greenspan, we have no trouble in defining a bubble: we arbitrarily use a two standard deviation event, the kind that would occur randomly every 40 years. Predictably (at least for believers in regression to the mean), **all 27** bubbles broke and went all the way back to the pre-existing trend! To be equally predictable, the current bubble, which at its maximum inflation in March 2000 was the biggest bubble in American history, will have to pass through its trend of 720 on the S&P 500, currently at just over 1100. If it does not do this it will be the first failure to do so in modern times.

Exhibit 1 shows the 12 most famous bubbles in their respective classes. All have reverted to trend except the top right hand corner – the current US equity bubble. It has had a solid bear market rally as all three others next to it had, and will probably join the other 27 at or below trend.

The problem with bubbles breaking and going back to trend is that some do it quickly and some slowly. Exhibit 1 also shows this point by highlighting three of the bubbles with the most obviously different timing.

So at extremes you will always know **what** will happen but never **when**. You will know something certain about the indefinite future, but usually nothing material about the immediate future. This is why asset class prices resemble feathers in a hurricane – all **certain** to hit the ground, but lord knows when. If the timing was also knowable, it would be an arbitrageable situation: if you knew what would happen and when, then, like a Star Trek "paradox," it would be anticipated and could, therefore, never occur.

Exhibit 1
All Bubbles Break: but Not at the Same Speed!



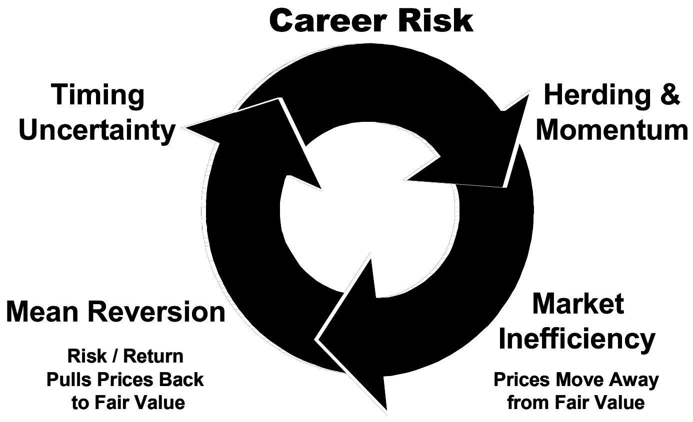
Note: For S&P charts, trend is 2% real price appreciation per year. Source: GMO. Data through 9/30/04.

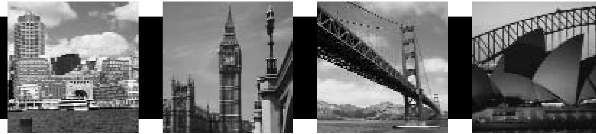
But not knowing the timing creates critical career and business risk, which has molded the business of investing. If you are smarter than most and want to take no career risk, then anticipate other players and be quicker and slicker in execution, or as Keynes said, "beat them on the draw." Refusing on value principles to buy in a bubble will, in contrast, look dangerously eccentric and when your timing is wrong, which is inevitable sooner or later, you will, in Keynes's words, "not receive much mercy."

The more the investment industry has become specialized and the more carefully benchmark deviations are measured, the greater the career risk of moving outside your narrow style. This has weakened the arbitrage mechanism and guaranteed increasingly larger and longer market distortions. Today the challenge is not getting the big bets right, it's arriving back at trend with the same clients you left with, and GMO, for sure, has not solved this problem. The key investment task is to structure a firm where you can make more of these long-term mean reverting bets and live to tell the tale. (Warren Buffet's closed end fund, Berkshire Hathaway, or a forestry fund with a 10-year lock-up are nearly perfect solutions, but they are hard to engineer.) The good news is that human nature, which leaves its mark on all financial markets, will never change and we will always have these great opportunities to make money and have dangerous careers.

Or if you prefer serious brevity…

The Way the Investment World Goes Around





Jeremy Grantham, Chairman

Apocalypse Not Now: Inevitable Pain Postponed

Letters to the Investment Committee II

Barron's Interview Reprint

Great Bear Markets Take Their Time

Yes, it already seems like we've been waiting a long time for the market low, but actually this wait is far from remarkable on a historical basis. In fact, a low in these next 24 months would be the most typical timing we could expect from history. But this market cycle has been interestingly different from earlier bubbles and probably we should not expect a typical experience.

The first difference is that the market in 2000 went far higher than ever before: 34 times trailing earnings versus 21 times at the market tops of 1965 and 1929. Even Japan, adjusted for cross holdings, was not materially higher. Second, the sustained phase of declining interest rates and easy money has no historical US parallel, either in extent or duration. Third, stock ownership was far broader than ever before, so that the great majority of the readers of large circulation magazines, for example, owned stocks this time, while they did not in the other bull markets. Other media, notably TV, joined in, culminating at the top of the market in 1999 – 2000 in a blizzard of coverage that was overwhelmingly bullish, for bullishness in a bull market provably sells magazines and attracts TV audiences, whereas bearishness does not. Fourth, bullishness is also good for business at financial firms, and bullish recommendations far outnumber bearish ones, but that is by now an old story. Fifth, we had unprecedented moral hazard in this cycle from a Federal Reserve boss who was not only acting as cheerleader for the internet revolution, high productivity, and high profit margins, but was also making it clear 2 years ago that speculation and the carry trade was a free lunch.

I review this old ground to point out how powerful the forces were that pushed us in 2000 to such substantial new highs in P/Es. Perhaps more interestingly, the favorable credit cycle and moral hazard of the upswing continued through the first leg of the bear market, allowing – indeed setting up – a sustained bear market rally that has been one of the longest in history, and one characterized by extreme speculation of a breadth not seen in prior new bull markets. But is it really a surprise that the market's "animal spirits" – Keynes's term for willingness to take risk – were not thoroughly broken this time as they were following the bubbles in 1929, 1965, and Japan? Don't bigger actions need bigger reactions? Doesn't the removal of such excessive bullishness and faith in a new era need **either** more than typical bad news **or** more time? September 11 might have broken the market's heart, but the Fed and the Administration moved against the negative fallout of September 11 to an unprecedented degree, with low rates and easy credit and also with tax cuts that would never have passed without that disaster.

But now, finally, the credit cycle is turning down and interest rates are being raised carefully, although they remain far lower than normal and are therefore still stimulative. Moral hazard is being removed equally carefully by sprinkling a few cautious comments around; the recent Fed's rate setting committee (of December 14) suggested that sustained easy money "might be" encouraging "potentially excessive risk taking" and pushing up asset prices (they noticed!), and separately Greenspan suggested that speculators would be well advised to prepare for higher rates. Doesn't this all feel like an ordinary beginning of a stock market downturn?

The normal tendency is for the length of the market decline following a bubble to take about the same time or a little less to get back to trend as the market increase took from trend line to peak. For this down cycle from March 2000, that would lead us to expect a market low this year or next. And admittedly there is quite a bit of noise around this average, although less than you'd probably

think. A low in 2009 and 2010 would be just within the normal range at the longer end and 2002 would equally have been just within the short end of the normal range. Indeed, in September 2002 when the S&P tumbled to 775, which was half its peak price, the market looked for a couple of weeks like it might just make the real break and slice through the then fair value of 700+/- and establish a real low, say in the low 600s, and get this whole unpleasantness out of the way. That would have felt like the S&L bloodbath of the late 1980s, in which there were dramatic and rapid declines in the entire US real estate market to way below fair value, followed by an equally rapid gathering of the vultures that came flying in to make fortunes and set the cycle turning again. That event was nasty and brutish and short, but how much better that was than, say, the drawn-out Japanese land cycle at the other extreme, where land prices have declined for 13 consecutive years! As I boringly repeat, we all make more money when asset classes are cheap and we should welcome falling asset prices, not rising prices, if we have a decently long time horizon. **And equally, we should prefer a rapid market decline to a slow one.** You simply end up with more money if you hit the market low more quickly and then have more time compounding higher returns at the lower prices.

So a low in late 2002 would have been the best. A low this year would be more painful both psychologically and to the pocket book than in 2002, but much less painful than dragging this thing out to 2009, 2010, or later. Unfortunately, this last alternative seems increasingly likely to me and I wish for us and everyone else that it not be the case and that the market low comes soon. Above all, particularly with a looming retirement crisis, we need the high compound returns that come from lower prices. But the painful fact is that now we come once again into the unfavorable first 2 years of the Presidential Cycle with two challenges: animal spirits are artificially high and the global economy is artificially strong. (Animal spirits are 'artificially' high because they have been raised by the long favorable environment for risk taking, and global growth is 'artificially strong' because the sustained US credit expansion has been allowed to flow around the world through our sustained and growing US trade deficit. This deficit in turn has stimulated the economies of the surplus countries like China as they responded by increasing their money supplies.) Both components – animal spirits and global growth – just seem too strong for the market to get to trend line and below (725 on the S&P 500) in the next 2 years, **unless there is an unexpected crisis**. (Given this important caveat, my title should probably have read "Apocalypse **Probably** Not Now".) This does not mean that we should expect these next 2 years to be anything but dreary, as we'll get to later, but a 'dreary' environment just seems unlikely to get the market to fair value that quickly. And come 2007, we will be re-entering the Presidential third year pre-election stimulus. Betting on a market decline between late 2006 and December 2007 is a very low percentage game indeed. But although the market is unlikely to do badly in 2007 and even 2008, just the steady passage of time allows for the great bubble mentality to become a more distant memory and for high global growth rates and fat profit margins to regress to more average levels, which would set the scene for a final market low in 2009 and 2010.

Greenspanner* in the Works: Inadequate Pensions

The consequences of this drawing out of the market decline would be many and painful. Probably the worst would be for retirement accounts. Corporate defined benefit pension plans would probably be looking at another 6 years of investment returns far below actual assumptions. They would be deep in a crisis of underfunding and would be facing much increased annual pension costs as a drain to earnings. Many firms facing that would close their DB plans, which have clearly been the jewel of the retirement world. Unfortunately, this seems likely to happen and it will be a bitter blow for many retirees. Returns on individual retirement accounts will also be far below expectations at exactly the time that retirement rates hit the baby boom. There will then be a growing realization that we are collectively saving far too little, for by then we will have been undersaving for at least 10 years. Individuals, seduced by overpriced markets and overpriced hype into believing in the great bubble, will have taken an even longer 'pension holiday' than the DB corporate plans. During the bubble, aggregate personal savings fell to almost zero from the formerly normal level of 8% of income, and have not yet materially recovered, just as many DB plans made no contributions at all for several years. When the smoke clears, it will probably be seen that for well over 10 years personal pension savings averaged under 3% of income instead of the normal and necessary 8%, creating a total shortfall of over 50% of 1 year's income. The shortfall of DB plans is likely to be similarly painful. Even if the reality of undersaving is then appreciated and personal savings moves up by, say, 2% a year over the old normal

* For you American dudes, a spanner is proper English for a monkey wrench, and the expression means totally fouled up.

to a total of 10%, two things would be true. First, the extra savings would be a slight drag on parts of the consumer oriented economy for **many** years to come, and second, it would still take 25 years to catch up with where accumulated savings should have been! In this way, pain from the bubble will have been pushed very deep into the future where, given the population profile, funding retirements will be even more difficult than today. In this sense there really is no free lunch. There is a certain amount of pain from moving back to more normal debt and interest rate levels, and 'Greenspannery' can postpone the pain and spread it out over a long time, Japanese fashion, but it cannot remove it. Indeed, uniquely for pensions, delaying the time it takes for asset prices to reach fair value does not just cause the same amount of pain to be moved into the future, it causes **incremental** pain. Higher asset prices not only suppress your savings rates because you feel rich, but also compound your accumulated savings at a lower rate than would occur with more reasonable asset prices.

2004 Predictions and Results

In 2003's fourth quarter letter we estimated that for 2004 the S&P 500 would return 10.5% ±5.5%, if January last year showed a market gain, which it did. As a suitable reward for having the chutzpah to make a 1-year forecast for the first time in 26 years, the market ended up +10.9%! Last year we forecast very low market volatility and a strong value year, and both were also correct, owing a lot to our research on the Presidential Cycle, which has been running exceptionally true to form recently. We also predicted moderate outperformance for foreign developed equities which came in 9.5% higher than the S&P, and very strong outperformance for emerging which, due to a brilliant November, came in 17.5% ahead of the S&P. There were no other predictions.

It's blindingly obvious that we should retire this 1-year forecast and settle for a perfect record. However hubris being what it is, and the Presidential Cycle as well as value and the January effect being on a roll, we – Nick Nanda and I – will try again.

Forecast for 2005: The Attack of the Drearies

Value matters in the first 2 years of the Presidential Cycle, unlike the third year, where almost all years go up. If in the first 2 years you are in the worst quarter by value (and we are currently deep in the worst quarter), then the market has delivered on average since 1932 a negative real return almost exactly two-thirds of the time and delivered on average a real return of -6%. This forecast of -6% would also apply to next year, 2006, unless there is a dramatic market decline, but let's concentrate on this year first. The problem with this estimate is the volatility. Unlike predicting 2004, when volatility in the Presidential Cycle's fourth year is famously low, this first year's volatility is moderately above average. So the range around our -6% real, which is intended to include two-thirds of all years (one standard deviation) is a modest ±21%, or a range of +15% to -27%! As for the remaining one-third of the years that lie outside this range, we recommend benign neglect, since it is just too painful to be reminded of the real uncertainties involved in our business.

Forecast for 2005 from February 1

This is where the January effect rides to the rescue, as it not only has considerable forecasting ability, but has also served in the past to substantially narrow the yearly distribution of returns following bad Januaries. In year's 1 and 2 of the Presidential Cycle, when prior Januaries have been below their average returns of +1.0% and the market has been in the worst quarter of overpricing as it is now, the balance of the year over the past 72 years has risen only 22% of the time and has delivered an average real return of -9%. The best performance was only +6.5%, and the range itself narrowed to ±10% at one standard deviation.

In substantial contrast, if the prior January has been **above average** in these overpriced years, the rest of the year has been up 56% of the time, and the average return has improved to -2%, but with a normally wide distribution range.

Caveats and Forecasts for the Next Several Years

We have three inputs that all seem to give an edge in making 1-year market predictions: the January Rule, the Presidential Cycle, and the current market valuations. These three are embodied in our estimates above, but we urge readers, probably unnecessarily, not to put a lot of weight in them. History, even 72 years of it, is just waiting to trap us in the short term. The range around these estimates is, as indicated, mind boggling. More importantly, the principle of focusing on a 1-year horizon is probably a bad idea. You should also know that GMO does not **materially** use this short-term input in its asset allocation process. We are intrigued by it and are informed by it on the margin, but overwhelmingly our decisions are driven by our 7-year asset class forecasts, always available at www.gmo.com, which are based on slow, steady regression to the mean. Bets made on this

7-year basis are highly likely to win, based on long-term history and actual 35-year experience, although timing uncertainty in contrast can be nearly fatal. So far, only one important long-term bet has failed, which is that emerging equity should beat the S&P 500. Even that bet, when these two asset classes eventually reach fair value, will be well ahead since inception. The single most important prediction we have is still what it has been for the last 8 years: that the S&P 500 is overpriced and will go back to trend line fair value sooner or later. This is about 730 on the S&P 500 compared to almost 1200 today. To us this is far more serious input than last year being likely to outperform by 10.5% or this year to underperform by 6%. **The only seriously prudent position in our view is to lower risk and prepare for substantially lower prices.** The rest is simply interesting, short-term gamesmanship and career risk management. But to one degree or another, almost all of us have to deal with these real life considerations.

Risks to the System

Our forecast of -6% real for 2005 is based on nothing unusual going wrong, but an unusual number of things **could** go wrong. Let us count the ways:

Possible Problems for the Next 2 Years ...	and Suggested Odds
■ China stumbles	.15
■ *Major* terrorism or dramatically bad Iraqi developments	.15
■ Other major political problems (Russia or totally unexpected)	.10
■ Unexpected major economic weakness in Japan and/or Europe	.15
■ Substantial increase in US inflation	.15
■ Major increase in commodity prices, including oil	.20
■ *Minor* or major financial crisis	.30
■ Rapid decline in dollar (over -10%)	.15
■ All other major problems out of left field	.10
■ Odds of *none* of the above going wrong (assuming above odds were right)	.20

Other than the fact that our odds are probably only worth what you're paying for them, what can be said about this picture? The **odds** of each problem are not exceptionally high and many strategists would put them higher. The possible exception would be the odds of at least a minor financial crisis, which at .30 are pretty serious in our opinion. The **number** of problems, though is unusually high, and that is one important reason why one should tread very carefully for the next 2 years, for the odds of **something** going wrong are 4 to 1, if my component odds are correct. In the interest of full disclosure though, I believe one or two minor factors going wrong is business as usual. It will probably take one or two major problems to bring this market to its knees in the next 2 years.

GMO Performance in 2004

After 4 fairly consistently good years, GMO had a completely mixed one. Starting at the worst end, our US large cap value strategies were behind their benchmarks by almost 4% and our US core and US large cap growth strategies were behind by about 1%. Emerging market equity and small cap international quant both ended up behind by about 1.5%, but both had outperformed by over 13% the year before. The $4.5 billion in our 11 hedge strategies was a bit disappointing, but not disastrous, with a range from +1% to +15% absolute return. On the more positive side, our large cap international equity strategies – by far our largest pool of assets – were ahead of their respective benchmarks by 1% to 3%, and our US and foreign bond strategies were both nicely ahead. Asset allocation had its fifth consecutive good year with a lead of over 3% for our global balanced strategy. Finally, our emerging debt strategy once again was ahead of its benchmark by an eyebrow raising 7 percentage points this year.

The main problem for us in the US equity market in both long only and hedge strategies was a sustained outperformance of low quality stocks. GMO's strategies tend to do best in declining markets that tilt to quality, next best in rising markets that tilt to quality, and worst in rising markets where low quality wins, which unfortunately describes both of the last 2 years in the US. Since high quality is now cheap and since our outlook this year is for a moderate, but perhaps sustained bear market, we expect to do much better across the board in the US, other things being even, which I suppose they are about two–thirds of the time.

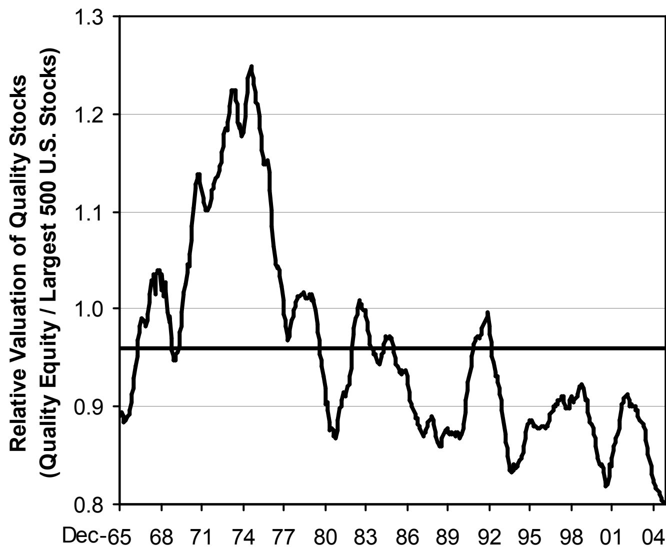
Recommendations for 'Staying Alive in 2005'

We recommend as much avoidance of risk as is possible, given the constraints of career risk management; for one

of the paradoxes of our business is that reducing or avoiding real risk in portfolios can seriously increase career and business risk, which rises with any deviation from standard behavior. For global equities, the biggest portfolio risks are likely to come from any exposure to small cap and low quality, particularly those that are highly volatile and have high levels of debt. This is likely to be particularly true in the US. Conversely, investors should emphasize large, high quality blue chips. Fortunately both quality stocks and large cap stocks following 2 very poor years are substantially cheaper than the market in the US and moderately cheaper in EAFE, and both are likely to outperform in bear markets. Exhibit 1 shows GMO's measurement of the long-term ebb and flow of the relative value of US quality stocks against the rest of the market. Low on this exhibit is good, and as you can see high 'quality' today is very well positioned. The attractive relative pricing of high quality and large cap stocks is a much improved situation from a year ago when the 'skating on thin ice' phase started. Exhibit 2 shows in contrast how dangerous the most volatile quarter of the market is in bear markets, and how different the pain is, according to how relatively cheap volatility is. Today, as you can see, it is in the worst third, where it has underperformed in the past by a stunning -28.5% a year on average. For bonds, we also recommend an emphasis on quality and below average duration. Cash is hard to own, given its low yield, and it is particularly career-threatening when you're wrong, but in most cases it should be seriously considered. Conservative hedge funds are an easier and better alternative if you have access to them. Up to 10% in commodities is a great diversifier since they are positively correlated with inflation, in complete contrast to stocks and bonds, which are both negatively correlated. We do not particularly fear inflation and have no special insight into it, but an acceleration in inflation is clearly one of the many risks we face in the next 2 years, and rapid global growth with increasing demands for commodities led by China and India could well be a cause. Timber (of course!) is a fine commodity in this respect too, for China is using rapidly increasing quantities

Exhibit 1
High Quality Stocks Are Cheap Today

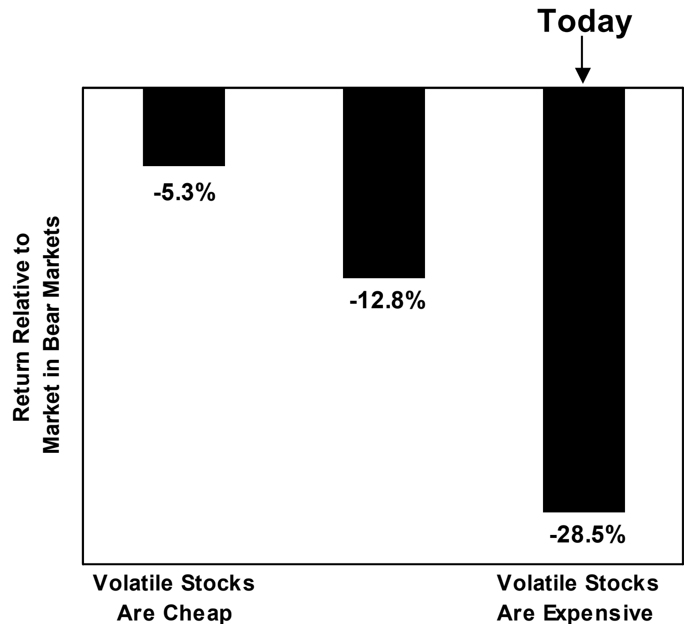
Quality is cheaper today than it has been for 95% of the time since 1965.



Source: GMO. As of 12/31/04

Exhibit 2
High Volatile Stocks (25% by Market Cap) Are Painful in Bear Markets*

Return of high volatile stocks, relative to the market



* Peak to trough, a real return of -9% or less.
Source: GMO. Data from 1/1/1964 - 9/30/2004

Yes, But What Do <u>You</u> Do?

Perhaps not surprisingly, having a broad line of asset allocation strategies with different levels of aggressiveness gives rise to criticisms that if I believe the US market will go down, how can I with a clear conscience simultaneously be associated with a strategy like our global balanced strategy, which has over 25% in US stocks. The point is that we cannot tell a client how much career risk to take and having absolutely no US

stocks can often be extremely risky for a career or a business, for it is an uncertain world where almost anything can happen for a year or 2, and 2 years is a long time in investing. Everyone's situation and willingness to take risk is different. For myself, in my own account, I am net short US stocks, but then I am confident I will not be fired and I can stand the lost opportunities of a rising market. I know that to be true since I did have huge lost opportunities in 1998 and 1999.

By exceeding the client's tolerance for short-term underperformance and getting fired, you commit a substantial disservice to yourself as a manager, but even more so to the client, who has not only underperformed with you, but then in addition often transfers into a stronger performing alternative, usually doomed to suffer the consequences of a mean-reverting world by falling badly just as the investment strategy they terminated recovers. And we have certainly been there and done that!

So everyone has to manage his or her own career risk, and being too extreme or 'wrong on your own' has cost many people their jobs, however right they might eventually have been. In asset allocation we do not therefore try to push our own instincts on aggressiveness or risk preference; we just try to set the scene in terms of risk and return as accurately as we can. All GMO strategies have fairly precise job descriptions. Our equity strategies must stay fully invested and within their category for example. Our asset allocation strategies also come in various levels of aggressiveness designed to suit different purposes and different risk preferences. At the aggressive end, we have our 'mean reversion' strategy for example (now closed to new clients) that is designed for clients who share our view that some asset class bets almost certainly will win, but with very uncertain timing: This of course requires clients who understand the need for patience, occasionally of the extreme variety. In this strategy we are short the S&P 500 and low quality US stocks and long emerging and international stocks, as well as some very high quality US stocks.

At the more traditional end of asset allocation, we have our global balanced strategy that is a fund of funds and the type of portfolio we also run for Evergreen. In this style we do not go short and do not expect to drop below 50% total equities or about 25% US equities. But given these constraints, we build the most efficient portfolio we can using our 7-year forecasts for return, volatility as a measure of risk, and traditional correlations to measure the differences between asset classes. The attached Barron's article has more on this topic, including an admission that this type of account is likely to lose a little money if our forecast for the next 2 years is right. It adds the advice that if you wanted to lower the risk of substantial loss to a very low level, **in the event of our bearish view being correct**, you should hedge such a traditional strategy by going short the S&P 500 through futures or ETFs (exchange traded funds) to a level of about 30% of the face value of the portfolio.

All other GMO asset allocation strategies fall between these 'no holds barred' and 'traditional' extremes. The bottom line of this unfortunately convoluted section is that there is no one-size-fits-all in this business and never will be, and we have no choice but to try and pick our way through the minefield. But we can say one thing with certainty: quite a few clients who ask for aggressiveness in asset allocation are also aggressive in firing managers for underperforming more successful competitors in the short term. (On the other hand, the job pays well and is a whole lot of fun!)

GMO's Current Positioning and Potential for Outperformance

All of our individual equity strategies are fully invested within their respective universes, so our US small cap growth, for example, is not going to sidestep much of the disappointment we see coming from the market. And some of our riskier strategies, like emerging equity and debt, may have some real weakness if we have even a whiff of a financial crisis, which is of course a distinct possibility. However, all of our equity strategies are now tilted towards quality and large cap from their normal positions, even emerging equity, and by the end of March or April we will be about as defensive as we ever get or feel we can get within our constraints. Over 2 dreary years this should certainly save something. Whether it's a lot or a little will depend on the particular spin of the decline and global economic and political developments which are more or less unknowable.

Disclaimer: The foregoing does not constitute an offer of any securities for sale. Past performance is not indicative of future results. The views expressed herein are those of Jeremy Grantham and GMO and are not intended as investment advice.

GMO

Special Topic

January 2005

Jeremy Grantham, Chairman

Letters to the Investment Committee II

Replacement Cost: The Bedrock of Value

However hard I find it deciding what to believe about the market, I always find it harder persuading others that what I believe makes sense. Several aspects of how the market actually works seem initially counter-intuitive. Many arguments that seem to me provably wrong in contrast, seem to be easily believable and appealing.

The total market must sell at about the total cost of replacement. It may be hard to calculate, but if we could know the true replacement value it would be the fair value of the market. If assets in the market sell away from replacement or fair value, an arbitrage takes place that is central to the effective working of capitalism.

If the market sold at three times replacement value for example, companies would sell a billion dollars of stock, build a new billion dollar plant, and have it sell immediately at $3 billion in the market. Hugely encouraged, they would sell more stock and build more plant until they drowned in fiber optic cable, for example, at which point profits and stock values would crash back to replacement cost or below.

Conversely, if the market sold at half replacement cost, which company would build a greenfield plant when it could buy a competitor's plant in the market for half the price? No new plants would be built until eventually a shortage developed and then profits and stock prices would rise, until the new profits justified a new plant selling in the market at full price.

If fair value in the stock market equals replacement cost, then it surely follows that:

a) changes in short or long interest rates cannot change replacement cost and are therefore irrelevant to fair market value, in contrast to the easy appeal of the "Fed Model" (surely the Fed doesn't actually believe this model?) that argues exactly the opposite.

b) Tax changes such as capital gains tax rates are also clearly irrelevant to replacement cost and fair market value.

c) Similarly, inflation changes cannot affect the **real** replacement value. Yes, investors hate inflation and P/Es tend to rise and fall with inflation, but that is very different – a purely behavioral response that can be exploited with a value manager's longer-term orientation. For stocks are real assets and pass through inflation, or deflation for that matter. If that were not the case, rapid inflation countries like Brazil and Turkey would have been selling at under one time earnings long ago.

d) Even imbalances in supply and demand, which will of course change short-term stock prices, cannot affect replacement value. Take for example the supply demand imbalance suggested by the looming baby boom retirees. (See the article authored by Rob Arnott and Anne Casscells in the March/April 2003 *Financial Analysts Journal* titled "Demographics and Capital Market Returns".) There may be more retired sellers of big houses and stock portfolios and fewer younger buyers than there used to be, but replacement cost does not change. Only if you **never** need any new houses or any new chemical plants can they sell below replacement value for any length of time. **Any** demand for a new chemical plant, for example, will require that the system moves back to replacement cost. (Although I'm willing to concede that land, which really has no replacement cost, may be an interesting special case.)

e) If the market **averages** replacement cost in the long term for the arbitrage reasons given above, then the market must also equal the **average** profit margins of the corporate system times the **average** P/E. This is how GMO approaches fair value: normal margins times normal P/E. This method results in a fair value very close to the Federal Reserve's Replacement Value (or Tobin's Q), both around 725 on the S&P, currently trading just under 1200. Another reasonable way of estimating fair value is to take a long-term normalized P/E. Robert Shiller of Yale

suggests taking the last 10 years' earnings after inflation adjustment divided into the market price. This should also come close to Tobin's Q. Exhibit 1 shows the actual market since 1925 compared to these two measures. The top panel shows the market price moving around the Fed's estimate of replacement value, and the bottom panel shows the market against the price to 10-year trailing earnings calculation. **Two more clearly mean-reverting series would be hard to find. The deviations around the two black trend lines are remarkably similar and should be.** For the record, the 10-year P/E is more predictive of future market performance than 1-year P/E as you might expect, and Tobin's Q is the most predictive of all. Exhibit 2 shows the predictiveness of Tobin's Q over the following 10-year holding periods. Every month since 1925 the market's price to replacement cost ratio is put into five bins from cheap to expensive. The results, as you can see, are surprisingly good, especially for expensive markets: 20% of all the time since 1925, identified as expensive on Tobin's Q, investors only received 1.2% a year real return!

f) If fair value = replacement cost and since total profit margins are very different in booms and busts, it follows that:

Replacement cost = high profit margins × low P/Es

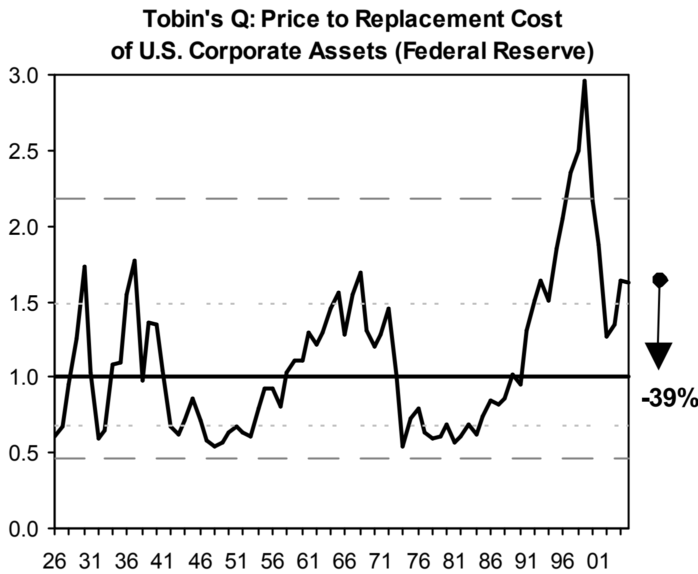
or = low profit margins × high P/Es

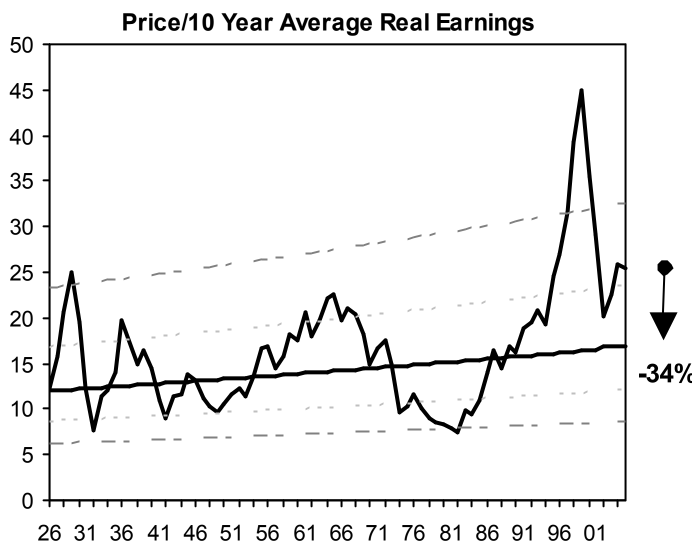
If P/Es don't move exactly opposite the changes in profit margins, then the market could not equal replacement cost.

This is just another way of saying that you can't use P/Es to meaningfully compare high profit margin periods with low margin periods. When you read in the paper today that the P/E of the market is reasonable, it completely misses the point that margins are unsustainably high. In the next 2 years, I quite expect more market pain from falling margins than from falling P/Es.

Exhibit 1

U.S. Equities Are Still Materially Overpriced



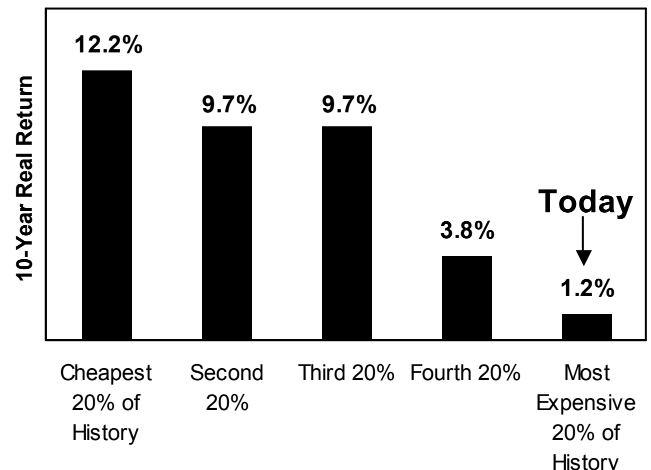


Note: Tobin's Q renormalized to average one.

Source: GMO, Standard & Poor's, Federal Reserve. As of 9/30/04

Exhibit 2

Quintiles of Tobin's Q to Predict 10-Year Returns



Source: GMO, Standard & Poor's. Data: 1926-2003.

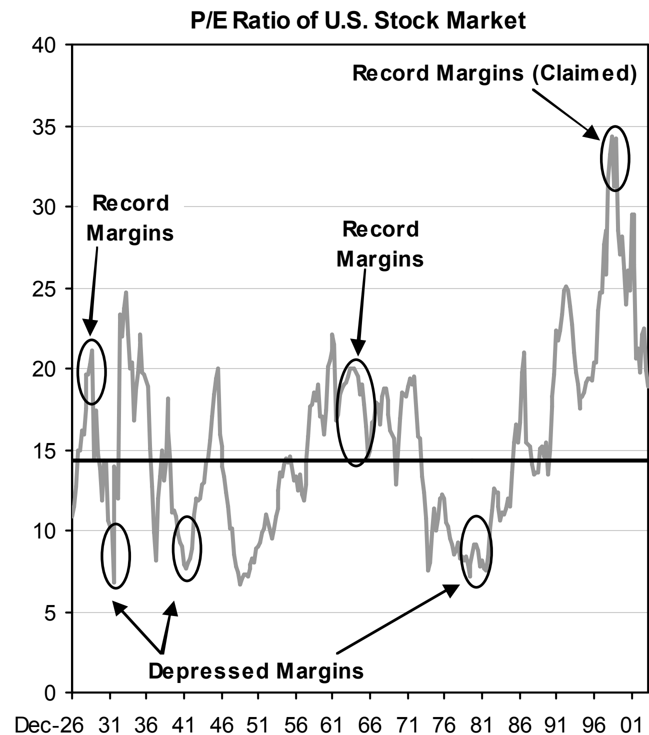
It is worth noting though that the requirement for aggregate profit margins to move against aggregate P/Es is counter-intuitive for many investors because it is obviously not the case for an **individual** firm. If a single company in an industry has consistently higher returns than its competitors (say, Microsoft) then we can all agree it is worth a consistently above average P/E. But for the whole economy it works the other way, and one of the important jobs for financial analysts is to normalize for the economic cycle. The difference is that the profit margins of the total economy are very reliably mean-reverting, as new money floods in, attracted by higher returns, whereas a great franchise like Microsoft always has an element of monopoly that resists regression.

A cross check on this logic is to realize that if return on capital is unusually high for the whole corporate sector, then to be in balance and remove the arbitrage opportunities, the system must also offer an equally high return to stock investors, and the only way returns to investors rise is for the P/E to fall. It may be superficially counter-intuitive, but that is how it works for the financial system to be in balance.

For fair price to equal replacement cost, then it must follow that P/E should be perfectly negatively correlated with profit margins. Exhibit 3 shows how the market actually works. Investors extrapolate good times into the indefinite future by assuming high margins will remain. In this way they double count: they take peak margins times peak P/Es (instead of low P/Es) and they multiply depressed margins times depressed P/Es. This is particularly true in great bubbles, when the market appears to believe in golden new eras. The market peaks of 1929 and 1965 both had near record profit margins and near record P/Es. But neither came close to the recent bubble of March 2000 where margins were at a new world record and P/E went to 35 times actual earnings compared to a previous high of 21 times. (Not a bad increment!) The market low of 1982, before our current bubble began, was exactly the reverse, with very depressed corporate profits being multiplied by the lowest P/E – 8 times – in 40 years. The actual measured correlation between profit margins and P/Es is far from a perfect -1. In fact, it cannot even get the sign right! The measured correlation is +0.26.

The market is therefore on average extrapolating, not normalizing. This extrapolation which takes place, instead of the normalization that is required to make the market stay close to fair value, is pure behavioralism and was noticed (as always, it seems) by Keynes.

Exhibit 3
How the Market Actually Works



Actual correlation between profit margins and P/Es is +31.8%

Source: GMO. As of 9/30/03.

Extrapolation, he explained, is the "convention" we adopt to deal with an uncertain future even though we know from personal experience that it is not the case.

For the record, extrapolation of today"s conditions gives analysts a sure way of clustering together and avoiding the potentially terminal career risk of being wrong on your own. The double counting that extrapolation causes is the reason that the market is far more volatile than it should be. Robert Shiller noted over 15 years ago that if you had clairvoyance about the future the market would be quite stable because the economy is mostly a battleship that is reluctant to move off trend, resulting in a surprisingly stable stream of earnings and dividends. He noted that the real market never learned how stable reality is. Greed and fear, career risk, and above all, extrapolation and the P/E profit margin double counting have introduced several times the necessary modest volatility that must be caused by an uncertain future.

Finally, if you have time, read *Valuing Wall Street: Protecting Wealth in Turbulent Markets* by Andrew Smithers and Stephen Wright, the final long word on the importance of replacement cost.

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Jeremy Grantham, Chairman

The Canary in the Coal Mine*

& Letters to the Investment Committee III

Traveling around the world for my first time – 19 flights in 35 days – mostly on business, I could not help noticing a few things. First, you should travel east to west. Yes, it's 10 or 12 hours longer flying time, but your jet lag kicks in at 6 p.m. at your new location when nobody cares. Going the other way, I found myself continually trying to talk to a group of analysts or clients at 4:15 a.m. on my internal clock. And as soon as you adjust, you move on again.

More importantly, a traveler could not help but notice how grimly expensive things are **everywhere**, seen through dollar eyes. When you have a bet against the dollar (who doesn't?) it is disturbing and serves to underline my points from last quarter's letter that were attached in a *Barron's* article. First, that the dollar is probably not overpriced on any fundamental basis. Second, though, that no one seems to sound convincing on the topic of currency valuation. And third, yes, what are you going to do long term in the face of a 700 billion dollar annual accumulation of foreign obligations but bet against the dollar? I said last quarter that the only thing I really lay awake sweating about was the fear of a quick 15% move in the dollar's favor. History says that this kind of upward move is routine, even if the real trend is still down. Well the ink on *Barron's* had barely time to dry when the dollar set off on a 6.5% run against the euro from its low. Anyway, trust me, Sydney and Auckland are expensive, Tahiti is very expensive, and as for London, has anyone worked out how the locals can afford to live there?

The other thing you'd have to try to avoid noticing is the attention given to house prices in the three English speaking markets … and who would not give attention to these house prices? New Zealand is up over 20% in the last 2 years. The whole of the north of England moved up a staggering 40% in a 12-month period a year or two before that, and it is rumored that Sydney has pushed San Francisco out of the champion's spot in the "who's got the lowest return to renting your house?" contest. During my trip, I was happily quoted in the *Australian Financial Review* as saying that the Australian residential real estate market could be the canary in the coal mine – that is, a harbinger of bad things to come for a lot of us. And it may be. Sydney house prices rose earlier, faster, and further than any other. Australia also raised its rates earlier and further than England, where rates were in turn raised earlier and have climbed further than the U.S. And both of these foreign markets have overwhelmingly floating rate mortgages so it would reasonably be expected that the effect of higher rates would impact prices faster.

Well, GMO's office in Sydney is on an old wharf, and right next to it is another long, converted wharf, at the end of which is a splendiferous apartment bought 6 months ago for $3 million and now converted into two still pretty splendid units, now for sale for $2.5 million combined. The official numbers confirm that Sydney prices are well off their highs, although as yet far from a real bust. Nearer to home, London prices are also flat to off a little – finally – in most, but not all, districts. Real estate has a long history of lagging stock market breaks and had every reason to do even better than normal this time, as global interest rates were cut and money and credit made so available. What was new this time, though, was the degree to which home owners in these Anglo-Saxon markets increased the size of the mortgages as they refinanced, supporting their rapidly growing consumption in the face of only modest increases in income.

Increasing paper wealth from houses in fact more than offset the negative wealth effect from the stock market declines of 2000 through 2002. By making home owners feel wealthier, it also helped suppress the need to save, and all three countries saw their personal savings rates drop and hold at unprecedentedly low rates, despite the aging population problem. In this way, delusions caused by stock market paper wealth were followed by similar

* After 40 years in America, I'm still apparently using Englishisms. Miners used to take a caged canary into the coal mines, which would oblige by dropping dead from odorless gases before the miner holding the cage did.

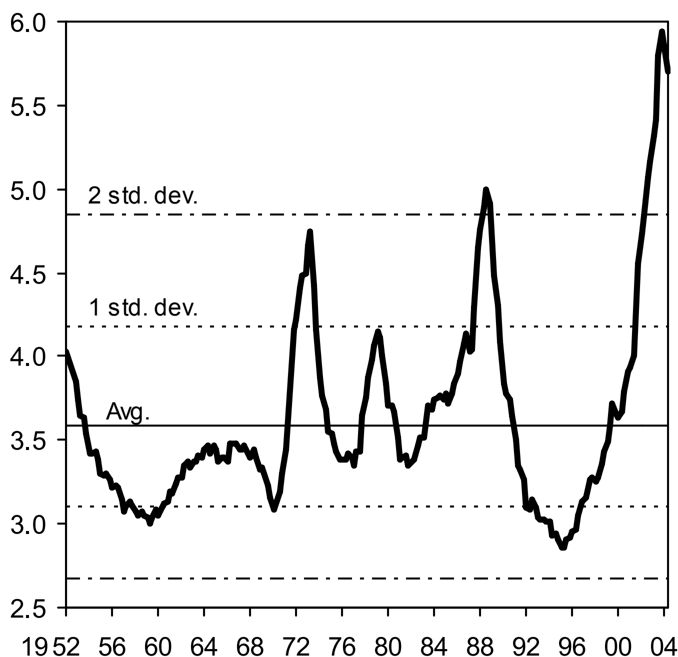
delusions driven by paper housing wealth. Alan Greenspan may be impressed by the increases in household financial strength caused by higher house prices, but any believer in replacement value cannot be impressed, and I am certainly one of them. (See January's Special Topic titled "Letters to the Investment Committee II – Replacement Cost: The Bedrock of Value".) When the price of a chemical company's stock doubles, I always urge focusing on its more or less unchanged replacement value and not the change in its paper value to twice that. And how much easier it is to see this effect with the house you live in: the price of my house in Boston may have tripled in 10 years, but the flow of **real** service that it offers me is clearly unchanged. It protected me from the wind and the rain exactly as well 10 years ago as it does now, in fact, slightly better back then since it's now older. (Yes, the replacement cost for the 20% that is land is the least simple of all asset classes, since clearly they don't make any more land at any cost, but for the record, land too is mean reverting and has in Europe a several hundred year record of rising at about the rate of the GNP.) But apart from land, it is **very** much easier to understand that the changes in housing values around replacement value are paper events, than it is to appreciate the same point for stocks where analysts always justify **every** price increase in the market by proposing some equal and offsetting increase in future prospects. Perhaps as much as 10% of these perceived increased virtues for stocks are real, but I doubt it. Also, the increased price of an owner-occupied house is clearly not contributing to the owner's ability to service his increased mortgage!

The increased role that housing price increases have played in sustaining the expansion of credit and consumption in the last several years has made us realize that we have not put enough research effort into this area and we are attempting to address this.

Replacement cost for housing is a messy and difficult way to approach this problem, but fortunately as a long-term reader of *The Economist* I am well aware that house prices are also mean reverting around a trend line multiple of household income. Our quants in our London office reviewed the data and found, to our mild surprise, that for the last 45 years this trend seems to show no clear upward trend in this ratio as we would have guessed; Brits seem willing to spend only the same fraction of their income on housing over time – although they certainly have a lot of fun roller coasting around this flat trend. **Exhibit 1** shows the data and it makes a very worthy exhibit for the Bubble Hall of Fame: on the modern data, current housing prices in the U.K. are over 3 standard deviations above trend, having as recently as 1995 been

Exhibit 1

United Kingdom: Home Prices as a Multiple of Average Earnings



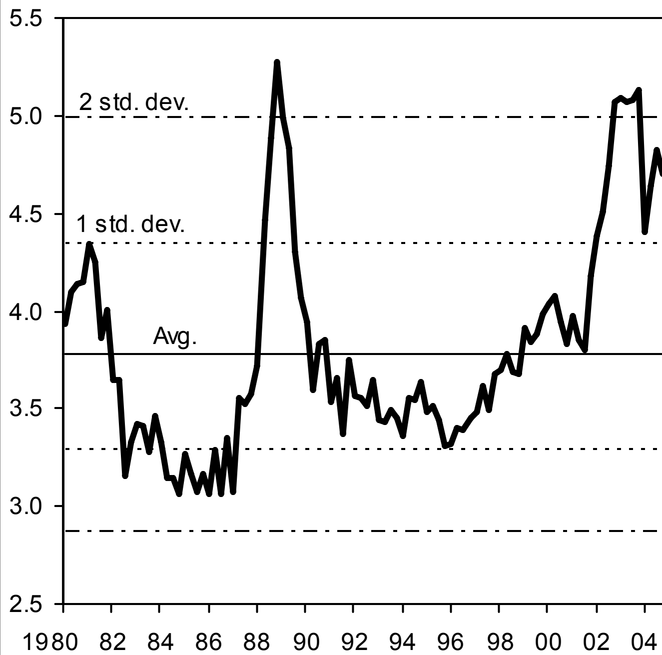
Sources: Nationwide, Office of National Statistics (UK), GMO

more than 1 standard deviation below it. This is about as extreme an event as the recent March 2000 U.S. equity bubble. This is remarkable, since March 2000 was the largest deviation from trend in modern U.S. equity history. I have absolutely no doubt that the consequences will be similar, and that U.K. housing will also return to trend or below.

We beg your indulgence for **Exhibit 2** – recent Sydney house prices – because neither our Sydney nor U.S. office could come up with a decent series longer than 25 years. Still, it does capture the spirit of the exercise and indicates the potential for a major decline. **Exhibits 3 and 4** show off the great advantage of the size and diversification of the U.S. housing market, where side by side on the two coasts we have something close to a bubble versus something near normal through most of the rest of the country. Exhibit 3 uses median income to median house price ratio and indicates that U.S. average house prices are probably only about 25% over trend. The March 3 *Economist* has a series based on house rentals that indicates about a 30% overpricing. A conservative compromise would be to assume a one-third overpricing that would require a 25% decline to get back to trend. Exhibit 4, in contrast, shows the situation in Boston – selected entirely at random to help persuade my wife to sell our house and pay rent – which reflects a more Sydney-like rise to 52% over trend, again all in the last

Exhibit 2

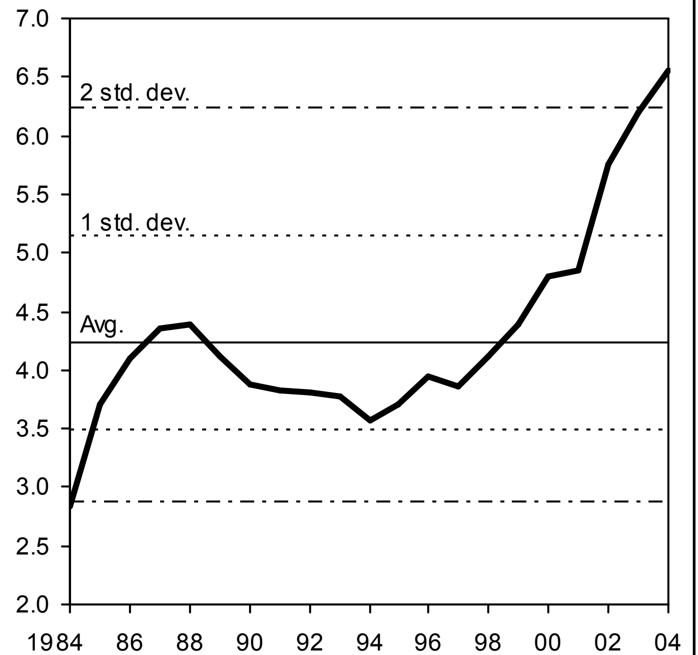
Sydney: Home Prices as a Multiple of Australian Household Income



Sources: Real Estate Institute of Australia, Australian Bureau of Statistics, GMO

Exhibit 4

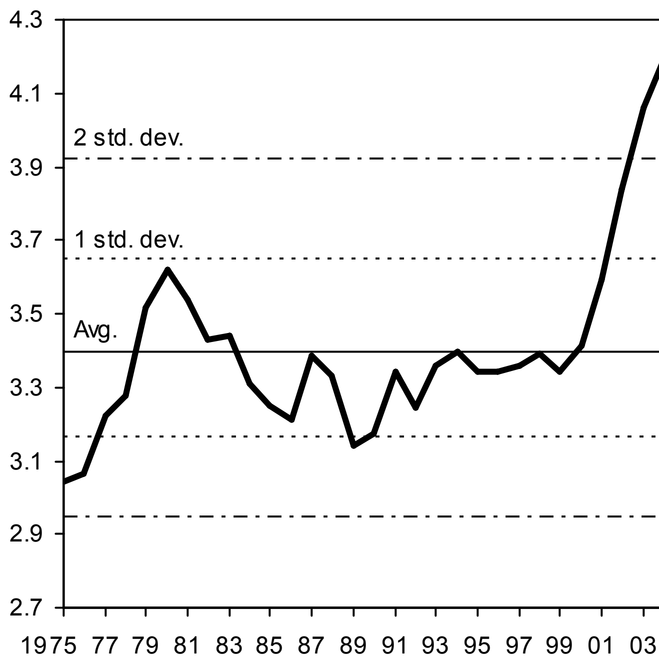
Boston: Median Home Prices as a Multiple of Household Income



Sources: National Association of Realtors, OFHEO, U.S. Census Bureau, GMO

Exhibit 3

United States: Median Home Prices as a Multiple of Household Income



Sources: National Association of Realtors, U.S. Census Bureau, GMO

few years. Another suspicious feature of our Boston data is that the recent trend of house price multiple of income is almost 30% higher than the average for the U.S. Cities usually have higher house prices because they have higher incomes. One wonders if in addition to that factor this higher ratio is reasonable or sustainable or merely a reflection of even more vulnerabilities.

How painful would a correction be? To start with London, we could look at the last bubble that built up in the late '80s and broke in the late '90s. Viewed with hindsight from today's 3 sigma (standard deviation) event, the 1990 event looks like a bona fide member of the GMO bubble club where we draw the boundary at 2 standard deviations, which seems (at least to us) to be reasonable although it is quite arbitrary. A 2 sigma event is the kind that would occur on the upside (i.e., a bubble) every 40 years **if the data were a normal distribution**. Yes, we know the real world actually has more outliers than a normal distribution, that is to say, its distribution is 'fat tailed' and therefore there will be more 2 sigma events than there 'should' be. But like arcane sports rules, these rules although arbitrary are the same for every asset class. In any case, even in our world of fat tailed distributions, we have only found 28 good examples of previous bubbles including: stock markets around the world, currencies, and commodities. As frequent

readers know only too well, I am patiently waiting for the current 28th bubble, the S&P 500, to go all the way back to trend – about 750 versus today's 1150. It fell to within 10% of trend in 2002, but still no cigar. But, as also often mentioned by us, **all** the other 27 identified bubbles did indeed move all the way back to (or below) the trend that existed prior to those bubbles forming.

The U.K. housing data in **Exhibit 1** shows, in addition to the current mega bubble, two prior substantial bubbles that both fully mean reverted. An interesting point, though, is that the 1990 bubble, although held responsible (rightly or wrongly) for considerable damage to the U.K. economy as it broke, did not involve as much pain getting back to trend as you might think because the trend line average income was also rising rapidly. It rose for two reasons. First, inflation was high by today's standard, averaging 4% a year for the 5-year decline, and despite GNP problems, average real incomes did surprisingly well. Nominal income gains for the 5 years totaled about 30% – about twice what you could expect today in the U.S. under recent conditions. So although the U.K. house price to income ratio had to fall by 24% to get to trend from a peak of 4.7 times to a trend line of 3.6 times, the typical home owner's house was more or less the same **nominal** price **at trend** as it had been at the peak! ($4.7 \times 1 = 4.7$, $3.6 \times 1.30 = 4.7$)

All the real pain from the decline of house prices then came not from the move to trend, but from the typically disturbing tendency for down cycles to over correct. Prices bottomed at 2.9 times income, or another 20% below trend. Today, though, in the U.K., the price/income ratio would have to fall by 37% to merely get to trend, and today's lower inflation and lower income growth will cushion far less of the decline, perhaps only half. Once again any overrun would inflict additional pain. And any unexpected help from accelerating inflation in reducing the ratio would in the U.K. come with an equally unexpected sting in the tail: their floating mortgage rates would of course rise with inflation, leaving most people worse off, all things considered, than if inflation stayed low. A damned if you do, damned if you don't situation if ever there was one. This point is more relevant now in the U.S. than it has been before because of the sudden recent rise towards 40% in the use of floating rates.

Australia and New Zealand would both be in the same boat as the U.K., but the U.S. will obviously be less bad. Even if the ratio here were to over correct by 10%, that would only be a drop of 25%; if the decline took 5 years, all but a few percent would be offset by even modest rises in family income. In contrast, for the Bostons of the country, of course, the outcome could be a much more painful decline of 25% even after allowing for any offsetting income gains. Unfortunately it must also be admitted that the badly overpriced cities of the East and West Coasts do have a disproportionate share of both the media and the financial industry, so that their pain will probably be misrepresented as more significant than it really is in GNP terms, which might exaggerate the depressing effect on "animal spirits". The key point in the U.S., though, is that in the recent 3-year stock market decline all the stock market wealth lost by the median family holding stocks was more than offset by a 21% advance in house prices. This favorable circumstance seems extremely unlikely to reoccur this time. The inevitable 30% to 40% decline in stock assets necessary to get to fair value, accompanied by flat to down housing prices, will pose substantially greater risks for consumer spending than last time. And leveraging housing debt was such an easy, effective, and unthreatening way to allow consumption to keep growing despite the quite modest gains in household incomes in all our three Anglo-Saxon markets. There is likely to be very little increase of this debt if prices stop rising and rates are even modestly higher, and there might be some modest, but painful, reversal. The **best** reasonably likely outcome in the U.S. is that a moderate stock market decline in the next 2 years – my 'dreary' forecast – could be accompanied by up to 1 more year of average house prices rising, for the U.S. housing market has lagged the other countries and has some good potential for catch-up in certain regional markets. This lag might be expected because our house prices have risen less and our rates rose later. But, by this time next year, time would really seem to be running out for our U.S. housing semi-bubble. It also seems very likely that by then the housing markets in the other two countries will have completely run out of steam.

Another Small Canary with Apologies for a Late Warning

There has been a small cap effect in the past in the sense that an annually rebalanced portfolio of small stocks has beaten large stocks by a wide margin since 1925 (2½% a year ±). A less well known factor is that over 100% of this outperformance has been concentrated (on average) in the month of January. Even less well known is that when small caps have a bad January, it is a very bad sign for their performance for the year. (Now he tells us.) Since 1965, poor Januaries for small cap are followed by average underperformance of 7.2%, and they have outperformed only 15% of the time!

Germany to the Rescue!?

Germany has looked like a basket case for so long now that it is only fair to point out that several things have improved. First, through lower inflation they have become more competitive and largely worked their way out of a badly and painfully overpriced currency position at the start of the euro. Second, although their economic reforms have been disappointingly slow, there has been progress and it continues. Third, and relevant to our topic, their debt leverage at all levels has not been increased like the English speaking Anglo-Saxons; they have not increased their housing debt, and house prices themselves have not increased. Indeed, German house prices are where they were in the late 1970s in real terms! This relative strength in both debt and housing may give Germany an unexpected substantial reprieve relative to us should we get into a credit crisis any time in the next few years, which seems quite likely – I would think at least a one in three shot. It is probably worth adding that while some other European countries have had some house price escalation – Holland and more recently France – and some debt expansion, none come close to the potential risk of the three Anglo-Saxon countries.

Edward Chancellor and Credit Cycles

On my 35-day trip around the world I read a new book by Edward Chancellor (whose *Devil Take the Hindmost: A History of Financial Speculation* was a great success) that analyzes credit expansion, its past role in market and economic breaks, and the current credit expansion's potential for making trouble. Chancellor's book, titled "*Crunch Time for Credit*," reviews the major competing schools of thought on the dangers of asset class inflation, the power of monetary measures to balance them, and the possible role of animal spirits; in short, the Monetarists, 'Austrians', and Keynesians. I must say I thought it was excellent – dense and informative and continuously summarized. (I even read a few pages on the beach at Huahine off Tahiti, a considerable hurdle to clear in terms of distractions.) What impressed me was that nothing was agreed on, certainly not the causes of the 1929 crash or the following depression. And some views were as hard to understand as the Efficient Market Hypothesis of French, Fama, Malkiel, et al. For example, Chancellor reports that Milton Friedman and the Monetarists basically maintain that 1929 was not a bubble, just the market's reflection of good times, just as Irving Fisher maintained in early 1930. The depression they argue was **entirely** caused by lack of monetary stimulus and had nothing to do with the run-up in debt, speculation, and asset prices. While still shaking my head in disbelief, I came across Chancellor's use of GMO's "All Bubbles Break" exhibit of the 12 great bubbles that form some of the bedrock of our belief in mean reversion, followed by our Exhibit 1 from this letter on U.K. real estate bubbles. I must say, amongst the Austrian-Monetarist squabbles, our data did seem clear cut. We and other believers in mean reversion would have seen 1929 as an asset class bubble for it looked at the time like a 2½ sigma event. Roger Babson famously did predict a severe decline, but of course 2 years too early, to which I can only say, "Been there, done that!" The contrast between their theoretical arguments (Monetarists, Austrian, etc.) and our simple data driven 2 sigma analysis led me to think about the few points that we believe are beyond reasonable argument.

What Do We Really Know?

- Data is data, and **all** bubbles defined as 2 sigma events have indeed broken. They broke **regardless** of the steps that were taken during and after the bubble. Bad monetarist policy may have caused the Great Depression and good policy may have let us down gently after 2000 (we shall see), but both were clear asset bubbles and both broke. The economic and monetary environment was different for all 28 bubbles, but all of them broke.
- A breaking bubble in an important asset class will **definitely** affect animal spirits, investing intentions, and consumption. This effect **may** or may not be offset or postponed by monetary or fiscal moves.
- The increase in housing prices in several countries this cycle has definitely facilitated easy credit expansion and allowed total household credit to go to new highs.
- Housing prices **will** eventually retreat to trend, and this will cause this part of the credit expansion to stop and quite possibly to reverse.
- Higher average asset class prices since 1995, led by stocks and followed by bonds and real estate, definitely made people feel richer, spend more, and **save** less.
- We have in the U.S., U.K., Australia, and a few other countries definitely saved less at the household and corporate pension level than is necessary for good personal retirement plans.
- This shortfall **will** be revealed when asset classes revert to normal, and a great majority of savers will be forced to realize that their nest eggs are inadequate.
- When this is revealed there will be a lot of broken hearts.
- And finally, **nothing** that Greenspan and his successor do will prevent this reversion to the mean of asset prices, although their actions may have a very substantial and beneficial effect on how badly the economy fares in an environment of falling asset prices –

although they have **probably** run out of asset classes to inflate (except for a potential catch-up leg in some real estate markets) and **may** be approaching some maximums in debt leverage.

GMO and the First Quarter

My first quarter letter predicted a "dreary" rather than very painful year, and so far global markets have been trying exceptionally hard to please. In dollar terms, the S&P was -2.1%, EAFE -0.2%, U.S. bonds -0.4%, non U.S. bonds -3.0%, and emerging debt -1.3%. Only good old emerging equity was up at 1.9%. Now that's what I call dreary!

GMO fund alphas had a slight average lead in fixed income and a respectable start in our hedge funds. On balance, we were nicely up in U.S. equities, and on a weighted basis slightly up in foreign equities, thanks to an over 2% lead in emerging. GMO asset allocation also had a good quarter. I would certainly settle for three more quarters like this in all respects.

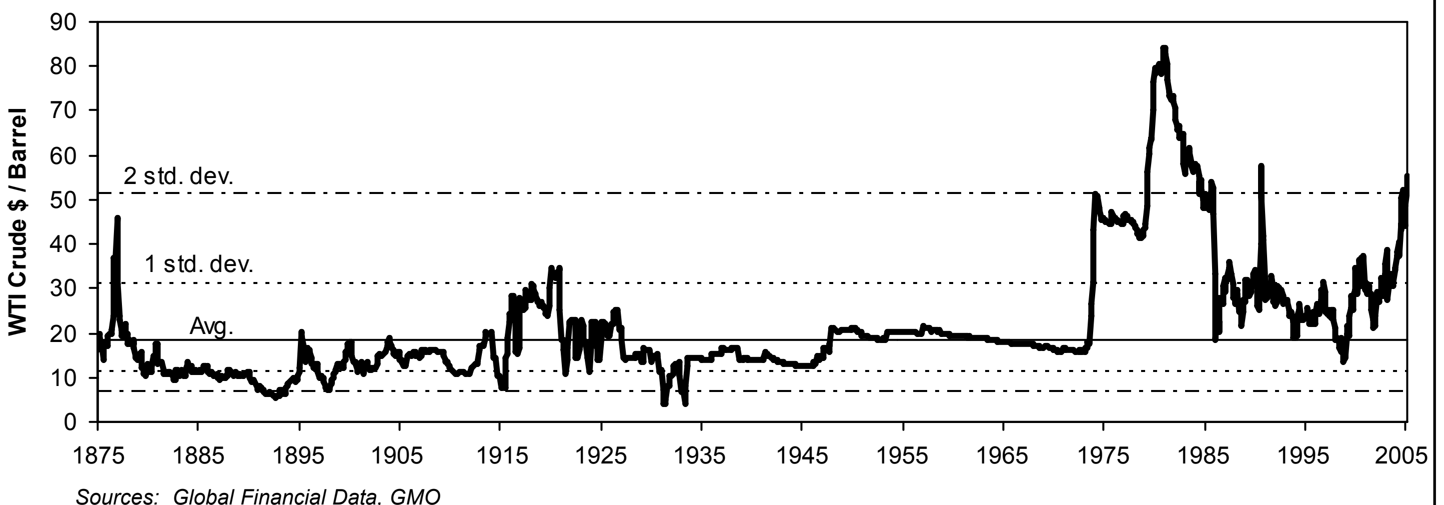
So far oil prices have been worryingly strong and European growth worryingly weak, but the U.S., China, and emerging have kept going nicely and the dollar has rallied. All in all, no major land mines, and without one or two I believe we will struggle through this year about okay.

Oil

The closest we are to a serious land mine is the oil price and I am happy to have been quoted in the January 3 *Barron's* as advising, "not to assume because it is at $50 per barrel it will come down." The December 2010 future was then $37 and it's now $50. I must also admit that I have no confidence that it will stay over $50, and my view is that we should be extra careful as oil could burn us badly either way. China has probably changed the commodities world for decades, and the world may be very close to pumping as much oil as we ever can, just as the U.S. itself is long past its own maximum production. If that is so, then we must substitute and economize, or bust, and that would make for exciting times. Oil may be that very rare bird – a paradigm shift. Over the years we have asked over 2000 professionals for an exception to our claim that every asset class move of 2 sigmas away from trend had broken, and not one of the 2000 has ever offered an exception! This should be scarier than the fact that GMO has tried so hard to find one and failed. But we have always said that intellectually you can imagine a paradigm shift in an asset class price, even if we have been unable to document one yet in history. **Exhibit 5** shows the price of oil and 1 and 2 standard deviation bands. If the new price averages $50 and above, it will look suspiciously like the real McCoy. Chinese growth and supply problems **could** do it. It's the best **possibility** I've seen in my career. But the investment desert is littered with the bones of those who bet on new paradigms.

Exhibit 5

Oil Price in 2005 Dollars



Sources: Global Financial Data, GMO

Disclaimer: The foregoing does not constitute an offer of any securities for sale. Past performance is not indicative of future results. The views expressed herein are those of Jeremy Grantham and GMO and are not intended as investment advice.

Jeremy Grantham, Chairman

Letters to the Investment Committee III

6 Kinds of Bull

It is surprising to me that as the years go by the type and quality of market analysis in terms of the market's value has been so consistently bullish that it is misleading about half the time. This negative comment is not aimed at the substantial and influential number of academics and financial experts who believe in market efficiency, for they of course can have nothing to say on this topic. What I'm really getting at here is the analysis of market value you read in the stock market columns of daily papers and magazines and 'strategy reports' from brokerage houses. The reasons for the bullish bias form a complicated issue that I hope to cover next quarter. Here I would like to look at results: the six kinds of sloppy bullishness. There is of course a seventh completely kosher kind of bullishness, and that is when the market is cheap: when it is selling below its trend line price to earnings of 16, and better yet, on a profit margin level that is also below normal. 1982 is the perfect example. The market sold at 8 times badly depressed profit margins: it was simply very cheap and a bullish outlook was entirely justified.

Sloppy and therefore dangerous bull market approaches can, I believe, be divided into six types:

1. *Dow 36,000*: the purely 'PR' driven nonsense
2. Jeremy Siegel: price doesn't matter, 7% real returns by divine right
3. Sloppy or no earnings adjustments to market P/E
4. Sloppy growth forecasts
5. The Abby Cohen and Alan Greenspan Show: the economy is great and therefore the market will do fine
6. The 'Fed Model Effect': yes P/E ratios are quite high but the market is still cheap because interest rates are so low.

1. The *Dow 36,000* book that came out in 1999 was typical of several similar books and articles published in 1929 such as Raskob's famous *"Everyone Ought to be Rich."* Only at the height of bubbles are people credulous enough to buy them, but when the time is right they sell like hot cakes because they reinforce our worst impulses of wishful thinking, overconfidence, and just plain greed. The Dow at 36,000 would have been close to five times replacement value! Every new $100 million factory would instantly become worth $500 million, and the whole U.S. would have eventually drowned not just in fiber optic cable – one area that actually got close to five times replacement value – but virtually everything else as well, as excess capital spending would have produced overcapacity which in turn would have led to low profits and eventually many more bankruptcies than we actually had.

2. Jeremy Siegel and his *"Stocks for the Long Run"* is a much more serious threat to sensible thinking because as a Finance Professor who was obviously smart and persuasive and who had produced useful and extensive stock market data, he seemed like someone who should be listened to, and in the 1998 to 1999 run-up his thinking influenced many investment committees. His argument was that stocks had always beaten bonds and had delivered 7% after inflation, and therefore the safe bet was to assume the same for the future. I debated him several times and used to summarize his argument as "price doesn't matter" – stocks always win by divine right. Curiously Jeremy agrees that investors get the "earning yield" – the inverse of the P/E – so that at 10 P/E you get 10% real a year, and at 20 P/E you get 5%. But there is a serious inconsistency in his argument. His data showed that the historical 7% real stock return had come from an earnings yield

of 7%. That is to say a historical average P/E of 14 times. What a coincidence! What he never answered in our debates is why in March 2000 at 33 times earnings the S&P 500 should not return 3.0% in perpetuity! Price of course is everything, or almost everything, for diversification also matters. And concerning diversification, the idea that stocks always win was giving fits to Jeremy's old PhD teacher, Paul Samuelson, who was quoted in *Forbes* as saying, "I have students of mine – PhDs – going around the country telling people it's a sure thing to be 100% invested in equities, if only you will sit out the declines. It makes me cringe!" Me too. The occasional very bad markets are capable of panicking any committee that would be 100% invested in stocks.

3. **Sloppy or no adjustments to P/E** make evaluations of the aggregate market misleading. At the extreme – which is fairly common – you can read that "the market is selling at 15 times next year's estimated operating earnings, which does not seem unreasonable." This misses the mark on every issue. The analysis fails to make several necessary adjustments:

   a. You cannot compare next year's P/E with historical P/E ratios that are always based on trailing earnings. And given the optimistic bias (and self interest) of brokerage firms, next year's estimates have averaged 11% higher than will actually be recorded.

   b. The earnings used are 'operating earnings' not 'net earnings'. For the market as a whole this should make no difference since in theory there should be as many pleasant surprise write-ups to assets and earnings as there are write-downs. But in a world where corporations are desperate to beat earnings by a penny, accounting weasels are everywhere and write-downs net of any write-ups have averaged 14% for the last 10 years! (Et tu AIG?) At GMO we take aggregate operating earnings and mark them down by 14% – rough justice, but on average much better than no adjustment.

   c. Most importantly, you cannot compare boom economies with slumps since profit margins are so highly mean reverting. Strong economies should have lower than normal P/E ratios applied, and vice versa. At GMO we normalize by regressing current profit margins to the long-term average over a sedate 7 years.

4. **Sloppy growth forecasts** form probably the widest shared optimistic factor. About twice a year I get to talk to investment professionals attending 1-week seminar sessions, and I have often asked them to estimate the past long-term growth rate for the S&P 500's earnings per share and sales per share. The estimates have always been very high relative to history. Their estimates average in the 4% to 5% range after inflation, and Lord knows it was hard to find any analyst's estimates as low as 5% in 1999. The data shows that the actual growth is only 1.8% real per year, and Rob Arnott and others come up with even lower numbers.

5. **Abby Cohen and Alan Greenspan** belong to the school that if recent productivity, profit margins, and GNP have been strong then: a) they will continue to be strong; and therefore b) the market will continue to go up. Trying to debate these bulls (and most strategists at brokerage houses fell into this camp in the late 1990s) was like talking Swahili to a Russian. We believers in value and mean reversion talked exclusively about adjustments and fair value and they talked about productivity and GNP growth. When I got to speak second I could attempt to trash their case, but speaking first was a problem so we attempted to come up with a simple pre-emptive strike. **Exhibit 1** shows the three most commonly used important fundamental factors for the economy. The middle column shows the correlation that these three factors have with the same factors in the following 2 years. For example, we are asking if above average profit margins predict falling or rising margins and does above average GNP growth predict acceleration or deceleration? All three factors are in fact **negatively**

Exhibit 1

Current Economic Factor	Correlation: Economic Factor Over Next 2 Years	Correlation: Stock Market Returns Over Next 2 Years
Profit Margins	-49.0%*	-4.1%
GNP Growth	-9.4%	-5.2%
Productivity Growth	-1.5%	-10.3%

Data: 1950-2003

** Correlation between current level of profit margins with future change in profit margins.*

Sources: GMO, Federal Reserve

correlated with the next 2 years of data. The last column shows the correlation of the three factors with stock market moves (above or below the past average of about 7% real). Nor surprisingly, since the economic factors themselves are negatively correlated, the market returns are also negatively correlated, spectacularly so for profit margins. This means that when Abby, Jeff Applegate, and the rest finish their presentation of how good the fundamentals are they should add … "and therefore we expect **below** average performance from the market." Trust me, this is not what they say.

Alan Greenspan is of course more convoluted but delivers the same implications. In January 2000 he said famously that, "the American economy was experiencing a once-in-a-century acceleration of innovation, which propelled forward productivity, output, corporate profits, and stock prices at a pace not seen in generations, if ever." The internet, which had "pushed back the fog of uncertainty" for corporations, was his particular pet. "Lofty equity prices," he said a few weeks later, "have reduced the cost of capital. The result has been a veritable explosion of spending on high-tech equipment … And I see nothing to suggest that these opportunities will peter out anytime soon … especially in the business to business arena," i.e., the lofty equity prices would continue. All this within 1 week of the Nasdaq reaching a level from which it would decline 75%, the business to business sub index 95%, and even the S&P 500 falling by 50%! The Fed Reserve Boss seemed to believe that there was a virtuous cycle in which high stock prices helped fundamentals, which justified even higher stock prices: about as far from regression to the mean as you could get.

6. **The So-Called Fed Model** maintains that the fair P/E level depends on the level of inflation and interest rates. This really is the vampire theory that refuses to die. Modigliani years ago made the point that stocks are real assets that should sell at real replacement value and that earnings pass through inflation. If that was not the case, Brazil would be way under 1 times earnings by now given its historical inflation.

Analyzing the data, though, is a very muddy job because inflation and P/E ratios are coincident. They do move together for behavioral reasons: shifts in inflation disturb investors. To make matters worse, since there is often some short-term momentum in inflation, i.e., rising inflation tends to predict rising inflation, it will also appear to predict rising P/E ratios and stock moves, and over a horizon of months this does seem to uphold the Fed Model. But it really is an illusion as both series are mean reverting so that throughout history the great market peaks – 1929, 1965, and 2000 – from which point medium-term returns have been poor, have all had low inflation and low rates. Conversely, the market lows like 1982 that resulted in magnificent intermediate-term results had very high inflation and interest rates (13% and 16%, respectively). This medium-term mean reversion is reflected in the **average** 5-year holding periods for buying stocks in the highest 10% inflation and rates compared to the lowest 10% since 1925. High rate and high inflation periods beat the other end by 2.5% and 2.4% a year, respectively. Not bad.

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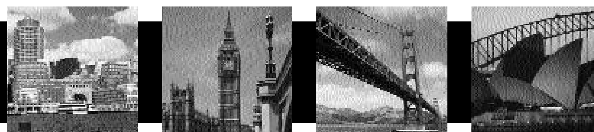
GMO

Quarterly Letter



July 2005

Jeremy Grantham, Chairman

Ho Hum

plus

Letters to the Investment Committee IV

and

Ben Inker on The Trouble with Value

All Quiet on the (Market) Front[1]

It has always seemed to me that although portfolio managers often suggest that the market will go flat – either because they feel nothing much is happening fundamentally or because the market seems fairly priced – it almost never seems to happen. If it's fair priced, it is far more likely to over run one way or the other. But for over a year now, the U.S. stock market has been about as dead flat as it ever gets: the S&P 500 has risen at an annualized rate of +1.3% real for the last 18 months, at +1.7% real for 12 months, and at -6.5% annualized for the last 6 months. Within the flat market the risk takers and the risk avoiders have also been battling to a draw, but one side or the other has clearly won each alternate quarter. Speculative stocks were in steady retreat in the first and third quarters of last year and the first quarter this year, but broadly advanced in the second and fourth quarters last year and this last quarter. The net effect has been broadly unsatisfactory to everyone – bulls and bears alike.

Let's put some numbers on this struggle.

Table 1	3Q04	4Q04	1Q05	2Q05
Hi volatile 25% (relative)	-5.3	+4.3	-2.4	+3.5
Technology (relative)	-7.1	+3.7	-4.3	+0.5
S&P 500 (absolute)	-2.0	+8.3	-3.1	+0.8

Why has this unusual stalemate developed? We could argue that keeping the market from breaking out on the upside are: its high pricing; the existing very high profit margins that make it hard for them to keep rising; steadily rising short-term interest rates; employment growth that is weaker than average, but not too bad; oil prices that have rocketed up and other commodities that have risen more than they have fallen; a massive and rising trade deficit; a rising government deficit; real wages that have also been poor for years (dealt with later); and intractable problems in Iraq. Phew!

Factors that look like they might be holding the market up, on the other hand, include the sustained rise in house prices and the easy borrowing power this represents when joined by low long-term interest rates of recent years, which steadfastly refuse to rise. Together they prop up consumer confidence and consumption, which continue to sustain the economy here and around the world. U.S. GNP growth is not just very acceptable on an absolute basis, but is also relatively better than in Japan and Europe. Inflation is remarkably low given commodity prices, and it is stable, which the market loves. Perhaps most importantly, corporate profit margins are at record levels.

Both sides of the ledger look impressive and in the short term perhaps equal, but I suspect that this type of analysis, despite seeming reasonable enough, is in fact of limited use. Simple behavioral inputs – investor comfort factors – that are reviewed in this quarter's "Letters to the Investment Committee IV" are what really explain most of the change in P/E most of the time.

Our model, developed several years ago, does a very good statistical job of "explaining" moves in P/E, and it calls currently for a high P/E in the range that we actually have today. The model is good at explaining current levels of P/E, but useless at predictions. This is because the inputs change continuously in ways that are unpredictable except in one respect: they are long-term mean

[1] The journalistic term "All Quiet" was used in World War I to describe the periods of routine, terrible attrition on the Western Front in which neither side gained or attempted anything spectacular.

reverting. The key factor today is profit margins. As long as they stay high, the market P/E is likely to stay high. Moving up, however, from current peak levels, particularly into the face of rising short and (probably) long rates is very difficult. A fall back towards normal margins is sooner or later inevitable, but as with all mean-reverting series, who can say precisely when? So when margins decline so will the market, but as long as they can hang in for another quarter and another quarter, then the frustrating stalemate will continue. However, as a bear on U.S. equities, I do view this equation as a heads we win/tails we draw situation, moderated only by the painfully acquired knowledge that the market has a big hat and many rabbits.

So we know why the P/E is high; investors feel comfortable because profit margins are high and volatility of both inflation and GNP growth is low. Without a major crisis to increase volatility, the most likely mover of investor confidence is the level of profit margins. Why are current margins so high and what is sustaining them? There is a cyclical component to margins: they rise and fall with the economic cycle and we are in an up cycle. That accounts for some of it, but current margins are exceptional. There is also an unusual drop in the share of total income going to labor as opposed to capital. But why? Outsourcing and imports combined with the availability of cheap labor, notably in China and India, may have something to do with it, for outsourcing tends to increase the profits of the outsourcer (at least until all his competitors also outsource) and simultaneously puts pressure on wages. I believe another likely candidate is that the debt leverage in the system, particularly at the consumer level, is steadily increasing, which, other things being equal, seems likely to tilt the balance to strong corporate profits as it directly increases corporate sales and only indirectly increases consumer incomes. The bad news is that to prove why such complicated economic relationships exist is hard enough to earn Nobel Prizes. The very good news is that we only have to observe and measure the relationships and try to anticipate the consequences a **little** better than average. Our best informed guess now is that the stalemate may continue for some time, but will more likely be broken on the downside than the upside, and most likely by a decline in profit margins.

Conundrums

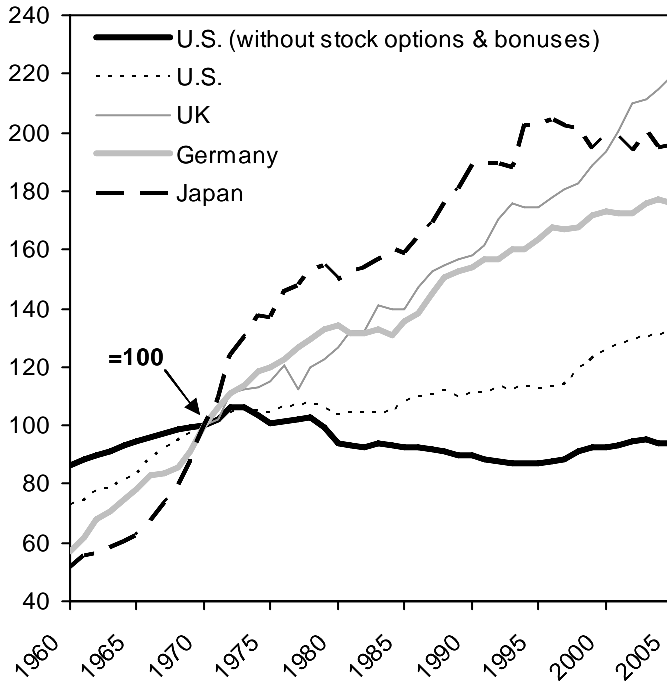
As we all know, long-term rates have fallen, despite the rise in short rates, which is very unusual and has been famously referred to as a "conundrum" by Greenspan. Several theories have been offered, including the one that argues for a global (ex U.S.) excess of savings, especially in China and the Far East. A sustained excess of savings would be completely compatible with a lower than normal return on all fixed income. It would also be compatible with a lower return to stock holding, which would require a higher than average P/E precisely such as we have today. So far, so good. An excess of capital and lower returns on stocks and bonds would also require a lower return on capital investments at the corporate level so that everything would be in equilibrium at the new lower level. Corporate profit margins, however, are not just above average, they are at record levels. (For the record, they are also excellent in Europe and much improved in Japan.) This is completely incompatible with the theory of excess savings turning into excess investments and forcing down returns.

One of the other explanations for the low interest rate conundrum must be true, for this one almost certainly is not.

Counterintuitive Exhibits of the Month

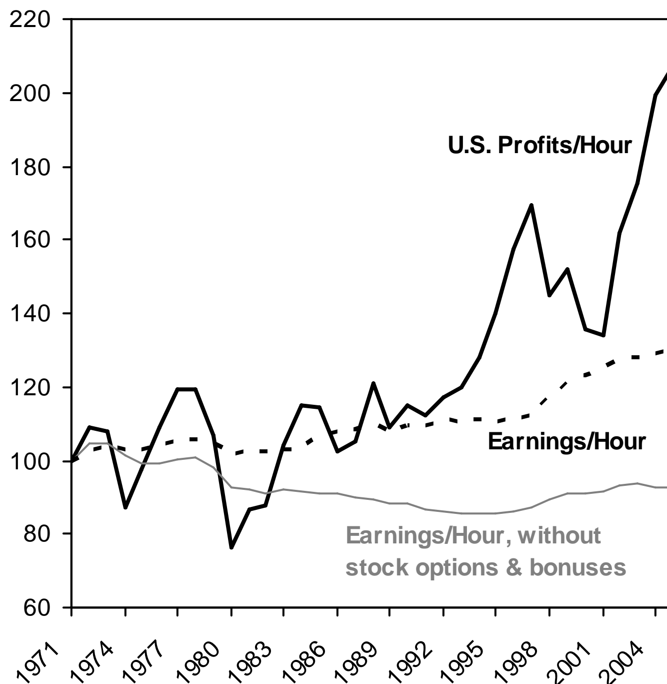
If we keep kicking their tails, how come they keep gaining on us? When I graduated from business school, I was offered exactly three times the salary here in the U.S. that I could get back in the U.K. Six years ago my nephew was offered 1.3 times the U.K. salary here. I mentioned this troubling anecdotal evidence several times at conferences where investors were waxing eloquent about sustained U.S. outperformance in all matters economic and financial. Finally we pushed the numbers. **Exhibit 1** shows a sustained and shocking outperformance of the U.S. since 1970 by the U.K., Germany, and Japan in income per hour worked. Two measures are used for the U.S., with the higher one including stock options and bonuses (or the fat cat series) and the other reflecting the fate of the mass of less privileged folk. They are all indexed to 100 in 1970 when the U.K. data starts. Between 1960 and 1970, incomes in Japan and Germany spectacularly outperformed the U.S. and no doubt the U.K. too in its pre-Thatcher comatose state. **Exhibit 2** shows the very interesting development since 1993 when profits per hour here dramatically diverge from both the fat cat and the thin cat hourly series: great for corporations and tough for workers. Does this divergence pose a long-term problem? The share going to labor is now almost at its low point of 1929. Until about 20 years ago, economic thinking had it that income/profit maldistribution was a contributing factor to the Great Depression. Let's hope the economists then were wrong! In any case, surely labor has to get back in the game soon and push margins back towards normal. **Exhibit 3** shows that such divergences are not routine. The U.K. has become amazingly Americanized, but not at least in this way, as the two series – income and profits – have risen in sync for them, and both rose faster than U.S. profits (by a little) and wages (by a lot).

Exhibit 1
Real Growth in Profits and Wages per Hour



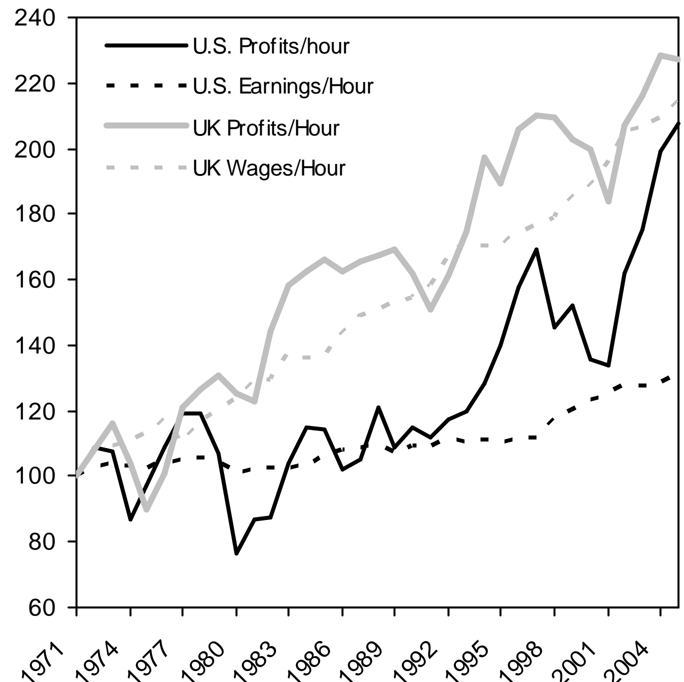
Source: Datastream, GMO As of June 30, 2005

Exhibit 2
United States:
Real Growth in Profits and Earnings per Hour



Source: Datastream, GMO As of June 30, 2005

Exhibit 3
Real Growth in Profits and Earnings per Hour



Source: Datastream, GMO As of June 30, 2005

Recent Predictions

In the January 3, 2005 *Barron's* article (attached to the first quarter letter) I did give a heads-up on oil. I said I had no confidence that this was a standard mean-reverting bubble or that it would fall below $50 and stay there. I said that it was dangerously unpredictable and could move either way and should be treated gingerly. Since then, the 2010 oil futures have gone from the high $30s to over $50 a barrel. We have developed our idea since then that oil may be the exception to the rule that we have hitherto looked for in vain: a true paradigm shift. (See 'At Last, a Paradigm Shift: Oil,' page 4.) GMO has had a slight bet in favor of oil for the last year. My view on oil is unchanged – it is a dangerous area to make big bets.

The same article named a dollar rally as my worst fear since we still had a significant bet against it. Our bet has been reduced from its peak, but is still a substantial one, so my fear remains today. I said that the dollar seemed fundamentally a little cheap, unlike 3 years ago, and that the anti-dollar argument, although appealing, seemed intellectually unproven and based on a solitary factor – the trade deficit. I pointed out that **even if** the long-term anti-dollar case was correct, a rapid 15% counter-move was absolutely normal. No sooner did *Barron's* hit the stands than … ta da … the dollar moved straight up 12%. And it hurt our asset allocation and took 6% or 7% straight off our assets under management. Ouch! We would love the

case against the dollar to be stronger than it is, given our asset allocation bets, but we are willing to live with the case we've got and hold our bet: at least the dollar is 12% more vulnerable than it was 6 months ago. And if a dollar crisis or meltdown comes, we are well protected.

My January 1 prediction for the U.S. market was for -6% real (and the January 31 estimate in honor of a down January was -11%). The basic point spelled out in the last two quarters was that the market would be "dreary" rather than drastic. At -2% real year-to-date it has certainly had two very dreary quarters. We came into the year expecting small caps to do badly, but because of their big rally in June it is so far a draw. We expected quality stocks to outperform for several reasons, particularly their relative cheapness, and they have underperformed by 2%. We expected value stocks (see attached "The Trouble With Value" by Ben Inker) to have a tough year, and the Russell 1000 Value squeezed out another year-to-date gain of 1.8%, although international value stocks are very slightly behind. In asset allocation accounts, though, we had by far our biggest bets on foreign and emerging stocks beating the S&P 500. They had to absorb a 12% hit from dollar appreciation in the first half, but did so well prior to currency adjustments that the EAFE index finished almost level with the S&P year-to-date and the emerging markets index finished with yet another solid gain over the S&P, returning +6%. All in all, perhaps slightly better than a draw and, critically, no knock-out blows.

GMO Performance

Given the mixed record of our top-down bets, our performance was quite good due to the blocking and tackling at the level of individual strategy engineering. Over two-thirds of our assets and two-thirds of our individual strategies beat their benchmarks, both for the quarter and the year-to-date. This two-thirds ratio is a workable description of our longer-term outperformance goals. Notable for the quarter were our U.S. large cap value, U.S. small cap value, and international small cap strategies, all ahead of their benchmarks by over 1.5%, and the redoubtable emerging debt strategy ahead by over 2 points. No strategies lost by similar amounts. For the half year, U.S. small cap growth was ahead of its benchmark by almost 5%; emerging debt and U.S. small cap value were ahead by over 2%; and U.S. core, U.S. growth, and global balanced were ahead by over 1.5%. Again, no important strategies were behind by as much as 1.5%.

Small Caps' Last Hurrah?

Small cap stocks, after 5 consecutive wonderfully strong years of relative performance, got off to a bad start this year and underperformed in each of the first 5 months. In my first quarter letter, I belatedly mentioned the remarkably consistent record of January's small cap performance to predict the balance of the year. Given the -4.2% return in January, the outlook for the year was very bad. But just as we were beginning to feel smug, having finally eliminated our almost permanent overweighting in small caps, they struck back. In June the small cap stocks busted out all over and went from -4.0% year-to-date relative to the S&P 500 to almost breakeven (and pulled ahead year-to-date in the first few days of July). In general they look overpriced and overleveraged. This recovery in small caps may be a good, and possibly last, opportunity to reduce weights, and they are still roaring ahead in July. It is seductively easy to hold well past their sell-by date any stock group that has had over 120 percentage points of outperformance relative to the S&P 500 in 5 years.

GMO Recommendations

Nothing much has changed. We still recommend being short the dollar and U.S. equities and treating oil carefully. For those of us who have to own a lot of equities, we continue to push for a tilt to non-U.S. stocks, particularly emerging equities. I increasingly like emerging equities despite their good performance because they have become a wonderful hedge for otherwise conservative investors like us. If, for example, our forecast for the S&P is quite wrong and we come back in a year or so and it's up by 20%, then the probabilities are very high, in our opinion, that emerging will be much better as was the case in 2003. If the U.S. does very badly, emerging is still likely to go down less by the time the market hits its low. We also recommend some commodity exposure for the same reason – commodities are a great diversifier. Being tilted to quality stocks globally is even more attractive than on January 1 since, in general, they have moderately underperformed. In our opinion, a quality tilt is somewhere between a good bet and a very good one. We continue to advise moving away from low quality and long duration bonds and increasing the use of cash and conservative cash plus hedge funds.

At Last, a Paradigm Shift: Oil

Including some new research on real estate, we now have 30 completed bubbles (2 standard deviation upside breakouts above trend line), **all** of which came back to the preexisting trend. Of these, we now believe 29 were genuine bubbles, and one – oil – was a paradigm shift that nevertheless managed to just retouch its old trend 3 years ago. Statistically, there is not enough data to know for sure if oil today is a paradigm shift or a 4 standard deviation (sigma) event, but that's what makes our business so interesting. We now believe, however, that in 1973, when the relatively new oil cartel was presented with a golden opportunity

to flex its muscles, that a shift occurred. **Exhibit 4** shows that for the 100 years or so before that, the trend line price was about $15 a barrel in today's currency. After 1974, the new trend seems to be about $35 a barrel.

If we believe the old trend is still intact, then the 1980 peak was a 5.2 sigma event or a 1 in 11 million occurrence, and the price today at $60 would be back to a **4.2** sigma event and a wonderful shorting opportunity. If you believe our paradigm shift argument, however, the 1980 high was just an 'ordinary' 2 sigma, 1 in 40 year event above the new higher trend; the low in 1998 was also a 2 sigma event below the new trend; and the price today is merely a very normal 1.3 sigma, 1 in 10 year event, where mean-reverting players are interested, but not frothing at the mouth. One very interesting fact revealed by this data is that those who shorted oil in 1980, expecting a return to the $16 trend, just made their money in 1998, but not, we believe, because it returned to the old trend, but because they got lucky and the price fell to a 2 sigma low below trend. At least it is a fitting commentary on what a huge safety margin there can be, as discussed in earlier quarterly letters, for a strategy of selling at over 2 sigma and covering at trend. Even here, in the solitary paradigm shift, the strategy still paid off. But for those unwilling to recognize that oil is the exception to the rule, then of course they have been busy shorting oil since the mid $30s. Oil does not hit a seriously playable 2 sigma on the new trend until about $80 a barrel. Even at that price, given the unique features of oil, we cannot be sure it has not ratcheted up again with another trend shift.

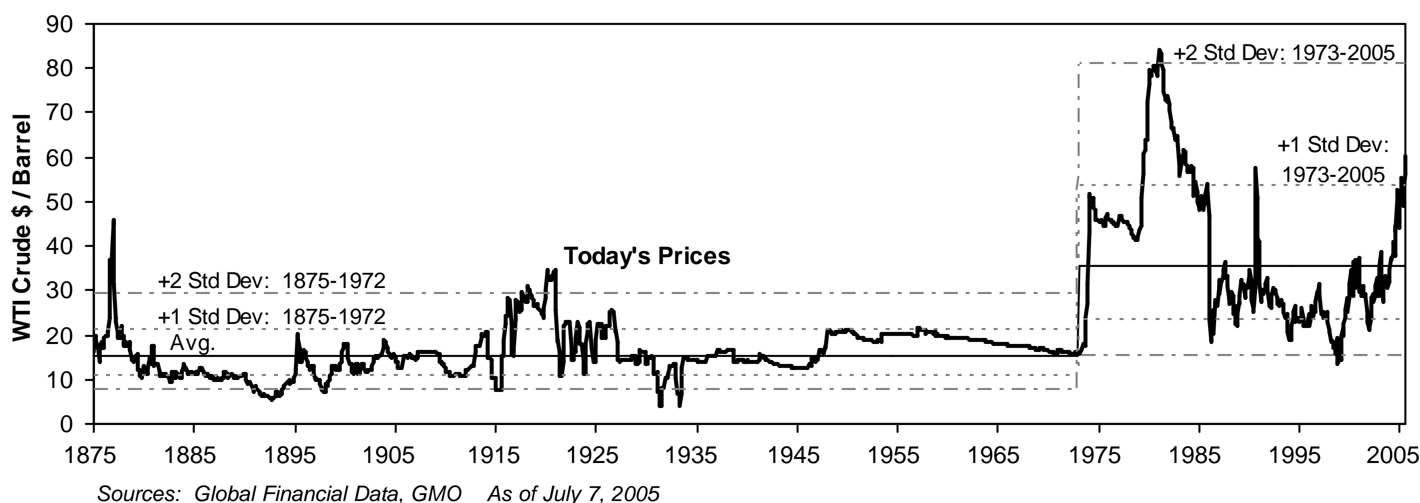
There are several unique features of oil that make it a likely candidate for a paradigm shift. Key is the conflict between strong global demand – buttressed by the growth in China and India – and a **finite** oil reserve. Countries have had equally rapid growth before, but they were Japan, then with a 100 million people, and South Korea with 30 million. Now we are going to find out what happens when two 1.2 billion pound gorillas try to do it together. This increased demand creates a situation that requires solid long-term thinking by governments, which almost everywhere deliver short-term political expediencies. This is true nowhere more so than in the U.S. – the only country where average consumption per mile has risen for the last 20 years on the back of SUVs, and where there is by far the lowest gas tax in the developed world. Yes, there is plenty of oil shale and numerous tar sands, but they are messy, extractive industries like coal. Oil from shale does not bubble conveniently to the surface like regular oil, but requires at least scores of billions of dollars and decades of work to produce enough oil to bridge any potential shortfalls. So, watch out.

In the meantime, we are thrilled to meet our first **probable** paradigm shift or "new era" and are grateful to have been lucky enough as dedicated mean reverters to have been totally unscathed by it so far.

More on Capacity to Manage Money

Fixing capacity limits to money management is definitely an art form. The limit really stems from transaction costs. If you seldom if ever had to sell – Warren Buffett-style – capacity would be very high. Similarly, if you traded heavily, but at no cost, your capacity would be high. Our current quantitative style is to have a substantial turnover of 60% to 80% a year. In today's very liquid markets, this is currently producing transaction costs per trade, including push and commissions, of about 25 basis points in the U.S., and about 30 for trades in major foreign countries. Costs of trading of course rise with average size of position, and the task is to estimate a

Exhibit 4
At Last, a Paradigm Shift: Oil in 1974



Sources: Global Financial Data, GMO As of July 7, 2005

schedule for further rises so that you can limit your transaction costs to a size that can be absorbed by your outperformance and still leave enough to pay your management fees and leave the client feeling that they are getting a valuable service. One problem is that there are no constants. On one hand, liquidity may drop as it did in the 1930s and 1970s and in Japan in the early 90s. These drops followed stock bubbles breaking, but there are no signs yet of liquidity dropping in the U.S. But with another market decline, liquidity could drop, and this would reduce everyone's capacity. More importantly, we cannot reliably estimate our future alpha (or outperformance) prior to costs, and if our alpha drops, then it will of course lower our effective capacity. On the other hand, we are working hard to redesign more liquidity into our models, looking at techniques and modifications that we simply did not have to worry about a few years ago. We are also putting resources into trading and are optimistic about the potential to lower our transaction costs for any **constant** level of market trading volume.

Given all these uncertainties, it seems more and more suitable to close down by degrees than it does to snap shut. In the future, we are going to create buffer zones of deliberately slow growth in assets so that we can both use the time to improve capacity and get to know gradually, on a touchy-feely basis, how much money we can handle well. So we are proposing a 'medium hard' closing policy in which we will deliberately select a very conservative size limit, given our current costs, from which level most products not already closed will be limited to a 5% net annual increase (compared to the 20% to 40% growth of recent years). A small minority of strategies may choose an even more conservative size limit and have an allowed growth of 10% a year.

My colleagues are not in favor of carving hard numbers in stone and their points are well made, for whatever caveats we make will not necessarily be remembered by all clients and consultants. For example, manageable asset size should adjust for changes in the market level. The S&P at 2400 obviously offers twice the capacity than at 1200. This said, let me say that **(heavily caveated) 1% of the market capitalization as a median position in a strategy** seems like a lot of money to manage and it seems unlikely that we will be able to achieve satisfactory performance in many of our funds much beyond that limit. To this end, it is our current tentative plan to adopt a 'medium hard' close for most, if not all, of our funds that are still open, as they approach the level of median position at 1% of market cap. With that target in mind, the next likely strategy to be affected in the U.S. is our small cap growth strategy, where the median position is currently about 0.5% of market cap. In international quantitative strategies, we are in general at about 0.45%.

Anything more precise than these targets would be aimed more at simplicity and good PR than real life, and much as I like both simplicity and good PR, it just seems impracticable to be more precise. Our heart is in the right place, I believe. We are dedicated to outperforming, and we will try to do the right thing. I think our record to date in hard closing or semi-hard closing 45% of our book of business demonstrates this. For example, strategies that we have already hard closed include some of our historically best performing ones that were most in demand: for long only – emerging equities, emerging debt, and small cap international; for hedge funds – mean reversion and emerging debt. Several asset allocation strategies that depend on these funds have also been closed.

In this regard, our commitment to manage money for John Hancock is probably unique in that it comes with pre-arranged limits as to the number of assets we can manage for each strategy. The capacity limits would leave us with approximately 25% of our business with several retail fund groups – a level that seems like good diversification for us and one that recognizes that several of our strategies probably have a much stronger appeal to retail markets or individuals than they appear to have for institutions.

Inker on Value

In my opinion, one of the biggest deals in institutional investing for the next several years is the strong possibility that traditional value investing will deliver disappointing, even below market, performance for several years. In March 1984 I gave a talk to the Boston Society of Financial Analysts titled, pugnaciously, "The Death of Value" in which I argued that traditional book and P/E was overdone after the spectacular 1973-83 value rally (up well over 100 percentage points versus the S&P). I've certainly always considered that to be my best call, since 16 years later value stocks were well behind their '83 relative high. Well, "plus ça change," or if you prefer, "here we go again." My colleague, Ben Inker, who among other things is our commander in chief of asset allocation, has done a more definitive job on this topic than I did then and it forms the second half of this letter.

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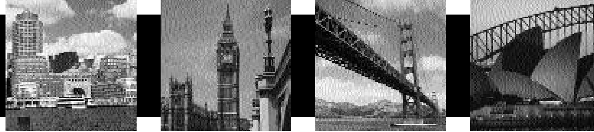
Special Topic  July 2005

Jeremy Grantham, Chairman

Letters to the Investment Committee IV

Explaining P/E

Reading the financial press would have us believe that there is usually a reason that is knowable to experts on a day-to-day basis why the market moves up or down. In the infinitely complex world of daily market moves, there are of course dozens, perhaps hundreds, of cross currents, some very short term and some very slow burning, so that the final balance is unknowable. Over a number of months, however, there are forces that emerge that have persistent power to move the market P/E.

At this point, it would be convenient to bring out a formula – the definitive inputs into P/E from Finance 101. It would presumably deal with changes in growth rates and changes in discount rates that would neatly explain changes in P/E. Happily for investors like us, though, the market has not read the basic textbooks and resolutely refuses to be accommodating. The factors that most professionals would consider the most important "fundamentals" have no explanatory power for P/E changes. In fact changes in the discount rate, as expressed by changes in both the nominal interest rate and the real (imputed) interest rate, have a very slightly **positive** correlation with P/E shifts over the last 50 years. That is to say, a fall in rates on average coincides with a very slight fall in P/Es. Of course it famously had a powerful positive correlation in recent years when the S&P 500 fell by 50% from March 2000 to September 2002, and real and nominal rates both also fell substantially. It would be more statistically accurate, however, to think of that relationship as a complete wash, with falling rates sometimes associated with falling P/Es and sometimes with rising P/Es.

What **does** have a positive correlation with P/E shifts is any behavioral factor having to do with investor psychological **comfort** – the consumer confidence index for example. The three best investor comfort factors for explaining P/E are, in increasing order of significance: stability of GNP growth; stability of inflation around its sweet spot of 2.5% a year; and, in first place, profit margins. Note what is not on this list: acceleration in GNP growth or sales growth. They are sexy, but they are also destabilizing. It is also not increases in profit margin, but the level of margins. For example, a fat margin year followed by exactly the same fat margins in the following year still calls for and gets the same high P/E. If you view the world through the eyes of an old pro portfolio manager, it begins to make sense. Most, for example, do not worry about the volatility of the market, but if GNP growth is unstable, they feel they live in an uncertain world where they can not make meaningful company-to-company comparisons. In short, they feel uncomfortable.

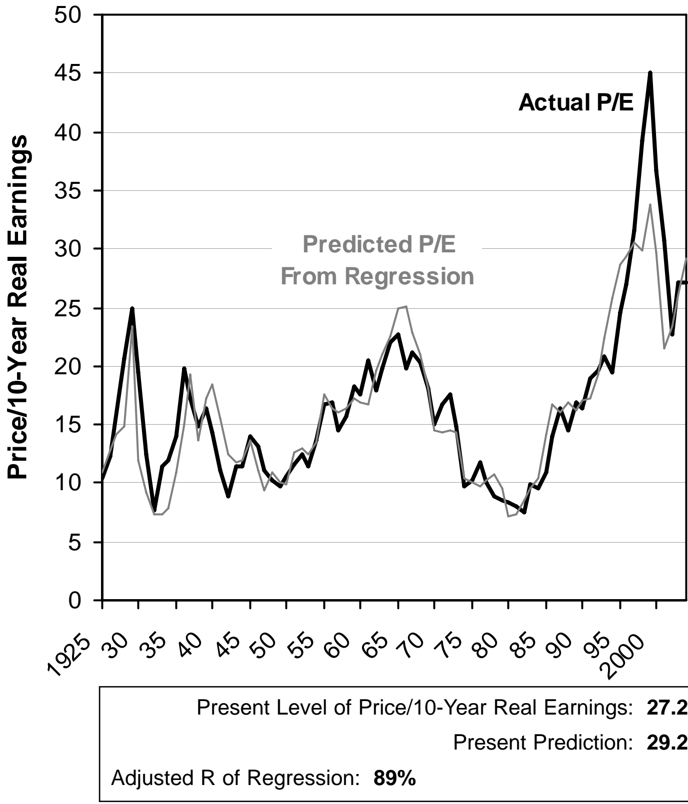
Inflation stability is even more obviously a comfort factor for portfolio managers: nothing rattles investment cages more than sharp moves in inflation. For the last 30 years after the terrible inflation of the 1974-83 period, inflation volatility is seen as the prime indicator of an economic world out of control, and Alan Greenspan has got this point so profoundly that it has unfortunately drowned out all his other possible job responsibilities such as the prevention or moderation of major stock and housing bubbles. The most interesting of the three factors is profit margins because most of us would have expected an input more related to growth. And here is the paradox: in explaining individual stock P/Es on a relative basis, sex appeal factors such as rapid growth and, particularly, more **acceleration** in growth and margins do indeed play a big role. The perfect world for investors is growth, volatility, and sex appeal at the stock level and solid comfort at the market level.

Exhibit 1 shows our model, developed by Ben Inker and me about 8 years ago. The fit is almost preposterously good and I would distrust it if I hadn't seen the data early and often. Notice that this behavioral model called for the highest P/Es in history-to-date in 1929, 1965, and

Exhibit 1

Explaining the P/E Ratio of the S&P 500

Using independent variables of volatility of corporate growth, corporate profitability, and inflation



Present Level of Price/10-Year Real Earnings:	**27.2**
Present Prediction:	**29.2**
Adjusted R of Regression:	**89%**

Source: GMO, Standard & Poor's. As of 12/31/04.

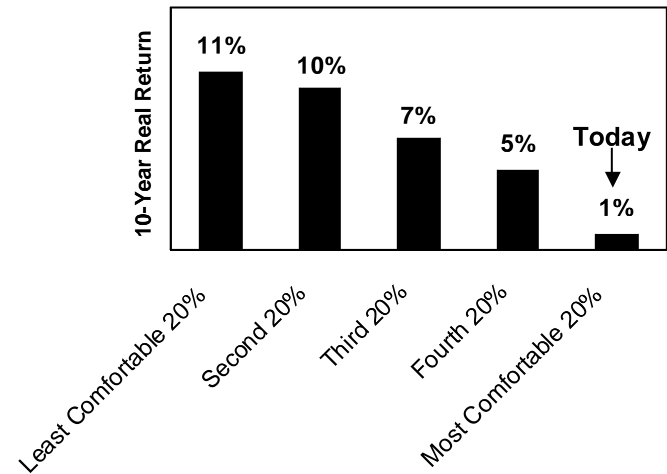
much the highest ever in early 2000. Notice also that the actual market P/E in 2000 over ran the high predicted P/E by an unprecedented 40%.

The dramatic market decline since March 2000 was **not** accompanied by a material deterioration in the volatility of either GNP or inflation. It was accompanied, though, by a very precipitous decline in profit margins. But this in turn was followed by a steep recovery to record levels today. Unsurprisingly, this leaves our model today calling for high P/Es once again, and this time the actual market P/E is slightly below the model's target. This is a very substantial improvement from where we were in March 2000, and it took a 22% decline in the S&P 500 in 5½ years in nominal dollars and a 32% decline in real terms to get here. So the market has paid a very high price for the **exceptional** overpricing in March of 2000 that was so much higher than even the typical investor response to a very comfortable market. But all of the three factors that go into the model are still far above normal, and all three are provably mean reverting; that is to say they **will** go back to normal and below sooner or later. When all three factors are at average, the model will call for a P/E of 16. Moving to average for the most important factor – profit margins – will involve as much market pain as will the decline in P/Es. If both P/E and profit margins were at normal levels tomorrow, the S&P 500 would be at about 780, versus today's level of 1200 plus.

Exhibit 1 always gives rise to the point that if the model calls for a high P/E and has a good record, both of which are true, why don't we relax and enjoy it? This is because our model only **explains** high prices, it does not **justify** them. Since all the inputs mean revert, investors should be wary of comfortable markets and attracted to nervous markets. **Exhibit 2** shows the 10-year returns from investing at all monthly starting points sorted into five quintiles by comfort since 1925. Not surprisingly, investors have made about 10% a year compounded after deducting inflation when comfort was low, and only 2% when comfort was at its highest. This may all seem very counterintuitive, but it is the logical outcome of living in a mean-reverting world. As mentioned in other letters, economic trends mean revert because there is a powerful and persistent normal return toward which capitalist competition strives, competing down handsome margins and P/Es and avoiding low returns until shortages develop.

Exhibit 2

Quintiles of Comfort to Predict 10-Year Returns



Source: GMO, Standard & Poor's. As of 12/31/00.

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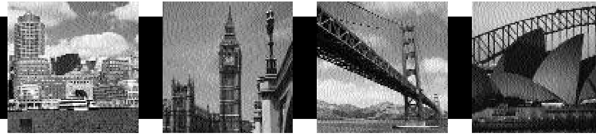


July 2005

The Trouble with Value
or *Please Stop Listening to Your Value Managers*

Ben Inker

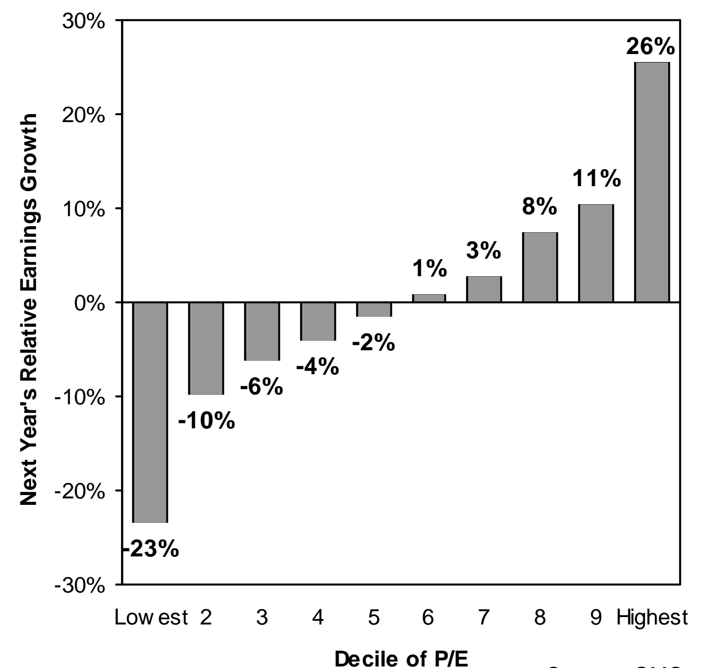
We value investors tend to be a fairly smug lot, particularly these days. Firmly convinced of our innate superiority over growth managers – with their endless chasing of the latest fad – we talk confidently about investing for the long run, behavioral inefficiencies, and the recycling of opportunities. The historical data is handily in our favor. The Russell 1000 Value index has outperformed the Russell 1000 Growth index by 2.2% per year since their inception in 1979. Splitting the S&P 500 into cheap and expensive halves on price/book shows an advantage for value over growth of 2.1% per year since 1960. The data for other markets is, if anything, stronger, with the cheapest 50% of stocks on price/book beating the most expensive by 4.9% per year in the EAFE markets since 1975. With data like that in your favor, it's hard not to want to shout it from the rooftops. The trouble is, one of the worst things that can happen to value managers is to have investors actually listen to them, and by the looks of things, investors are all ears at the moment.

The story behind value investing is beguilingly simple. Investors systematically overpay for growth, which turns out to be much more difficult to forecast than they think, and they underestimate the power of reversion to the mean to bring back some of even the more hopeless looking companies to moderate respectability (not to mention profitability). This has meant that simply buying companies with low price/book or price/earnings ratios has given substantially better returns than the overall market, with the added benefit of lower absolute volatility. What could be better or more straightforward? The trouble is, as comforting as it is to believe that investors have it all wrong, they in fact have it mostly right. They don't have it completely right, for which active managers should be grateful, but they do get it right often enough to keep a smart value manager up at night, particularly today.

So what does it mean to say that investors get things mostly right? The basic reason why companies should trade at different levels of valuation is due to differential forecasts of growth and/or profitability. In an efficient market, low P/E stocks are trading at that low P/E because investors estimate that their earnings growth will be sub-par, whereas high P/E companies have better than average prospective earnings. This can be seen in Exhibit 1, which shows prospective one year earnings growth for companies decilized by P/E.

The lowest P/E companies have earnings growth 23% lower than the average, and the highest P/E companies have earnings growth 26% higher. Obviously, the market knows quite a lot about earnings growth – it turns out that

Exhibit 1
Decile of P/E to Predict Earnings Growth



Source: GMO

P/E is as good a predictor of earnings growth as you will find. But you wouldn't want to blindly invest in the high P/E stocks just because they are going to grow the fastest. Since the market knows that the growth is going to occur, it doesn't actually do you any good, as can be seen in Exhibit 2, which shows the next year's return for the same deciles of P/E.

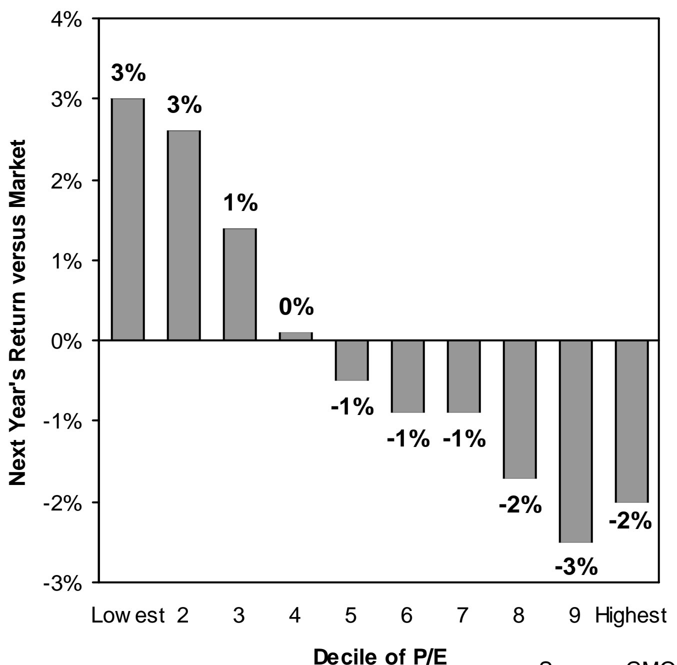
Despite the fact that the lowest P/E stocks are going to have their earnings shrink over the next year, they have still historically been the ones to own. The market is not entirely wrong in its estimates of future growth, but it does tend to overreact a bit, which is what value managers exploit.

But at the risk of sounding insane, there is more to life than returns. If we want to know how a group of stocks is going to perform in the future, it would be helpful to know not just how they did in the past, but where those returns came from. Exhibit 3 shows the historical performance of the Russell 1000 Value index versus the Russell 1000 Growth index.

While the overall outperformance by value is indeed 2.2% per year, there are some features of the return pattern that are a bit worrying. As recently as 2000, value had actually *underperformed* growth over the whole time period. Over their 26-year history, more than 100% of the outperformance of the Russell 1000 Value index over the Russell 1000 Growth index has occurred in the last five years.

Exhibit 2

Decile of P/E to Predict Next Year's Return



Source: GMO

Exhibit 3

Performance of Russell 1000 Value vs. Russell 1000 Growth

As of 4/30/05. Source: Frank Russell

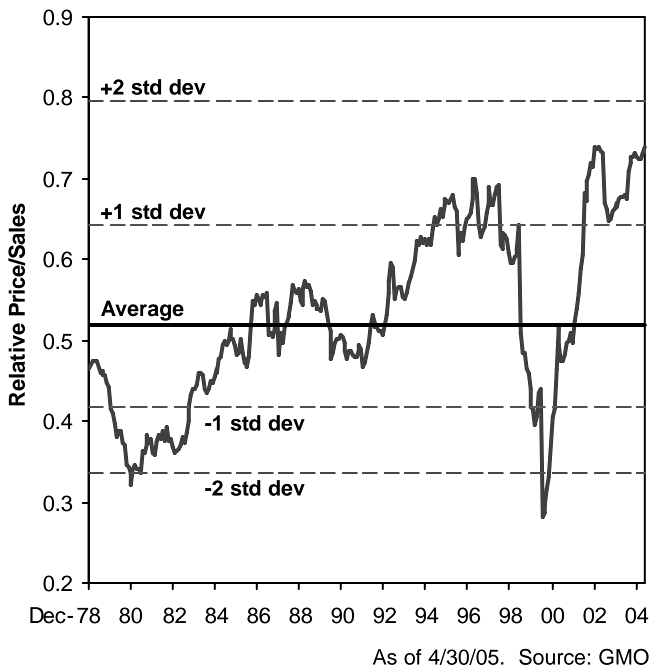
Students of recent history might reply that the underperformance was only because of the enormity of the technology bubble of 1998-2000, and they would have an excellent point. But it is instructive to ask the question of why their point is such a good one. Implicit in the excusing of value for the technology bubble is the idea that the bubble 'set up' value for its run since then. The way this setting up would have occurred is to have had the discount at which value stocks traded be particularly wide in that period. Exhibit 4 shows the relative valuation of the Russell 1000 Value index versus the Russell 1000 Growth index on price/sales.

The graph shows the relative price/sales of value stocks compared to the average. Dashed lines show 1 and 2 standard deviations from average, as labeled. The most striking feature of the graph is the 1998 to 2000 chasm where the price/sales of value dropped as low as 28% of the price/sales of growth.

Armed with this data, we can learn not only that the technology bubble did indeed set up the value rally which followed, but also that the 'value effect' was actually alive and well even at the nadir of value, if you looked at things the right way. From 1979 to June of 2000, the

Exhibit 4

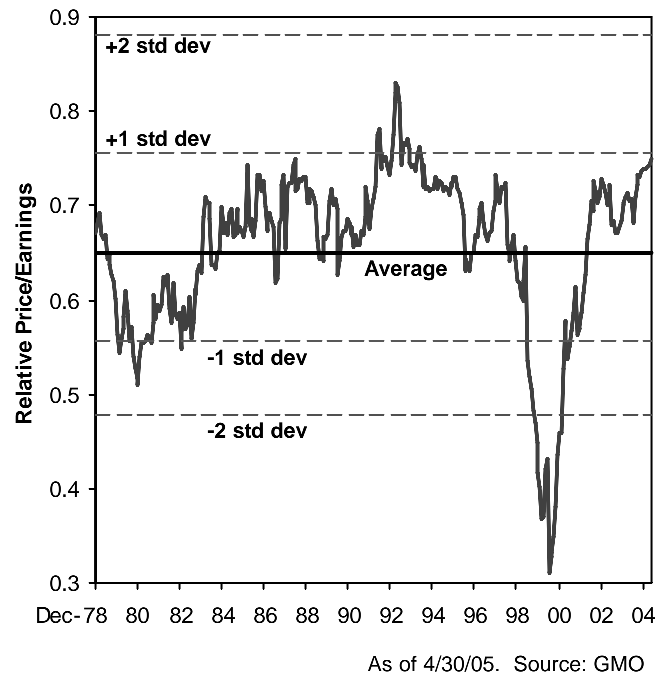
Relative Price/Sales of Russell 1000 Value and Growth



As of 4/30/05. Source: GMO

Exhibit 5

Relative Price/Earnings of Russell 1000 Value and Growth



As of 4/30/05. Source: GMO

Russell 1000 Value index underperformed the Russell 1000 Growth index by a cumulative 25%, but its relative price/sales dropped from 0.46 to 0.28. Adjusted for that valuation shift, value actually outperformed growth by 1% over the period! That is to say, had value stocks started and ended the period at 0.46 times the price/sales of growth stocks, their relative performance wouldn't have been -25% (-1%/year), but +24% (1%/year).

The period since then – in which value stocks have outperformed by 138% – has seen valuations move up from 0.28 to 0.74, which is a 162% increase. This means that 100% of the outperformance has been due to valuation shift. The outperformance of value over the entire period net of valuation shift is now a somewhat disheartening 0.44%/year, which is not particularly impressive.

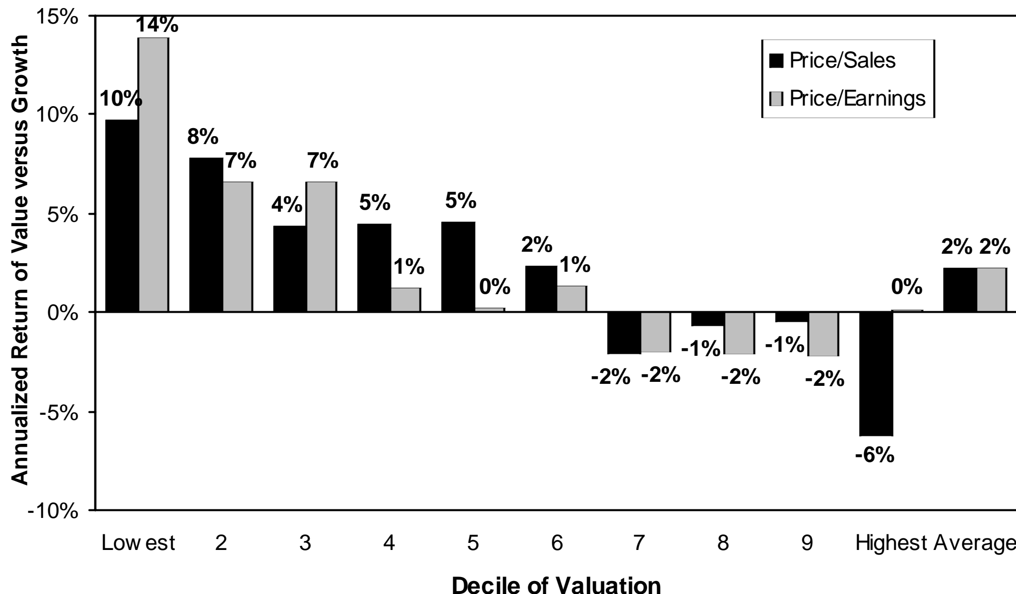
This analysis assumes that price/sales is the right way to value stocks, which is certainly open to debate. But the general picture doesn't change much if we use a different valuation metric. On price/earnings, for example, the valuation chart looks like Exhibit 5.

This metric makes value look a bit better. Over the history of the Russell indices, the outperformance of value, adjusted for P/E shift, has been 1.8%/year. A big reason for this better result is that value stocks are currently closer to their long-term average P/E relationship with growth stocks than they are to their long-term price/sales relationship. They are 1.0 standard deviation expensive on price/earnings, and 1.7 standard deviations expensive on price/sales.

But in either case, we are left with a worrying development. While value has indeed outperformed growth over this period adjusted for valuation shifts, that outperformance occurred at an average valuation noticeably lower than today. Value stocks trade at 0.74 times the price/sales and 0.75 times the price/earnings of growth stocks, versus averages of 0.52 and 0.65, respectively. The question we therefore have to ask ourselves is whether it makes sense to assume that value stocks will outperform starting from these levels. One way to check that is to look at a decile run of the performance of value stocks on price/sales and price/earnings, which we can see in Exhibit 6.

The valuation of value stocks turns out to say quite a bit about how well you should expect them to do over the next three years. If you bought value stocks in the cheapest 10% of their historical range, they outperformed growth by 10%/year and 14%/year for the next three years on price/sales and price/earnings, respectively. And if you bought them in the most expensive 10% of their range, they actually underperformed by 6%/year for three years if the decile run was on prices/sales, and outperformed by only 0.1%/year if it was on price/earnings.

Exhibit 6
Decile of Valuation to Predict Three-Year Outperformance of Value



Source: GMO

movement of money towards managers with strong recent performance. Our guess is that the latter is more likely. The very existence and magnitude of the recent bubbles in growth stocks strongly suggests that investors are not growing any more rational with time. It would be shocking to us if they have been permanently 'scared straight' when it comes to value and growth, given that there is no reason to believe that there has been any change in human nature, and investor memories are notoriously short.

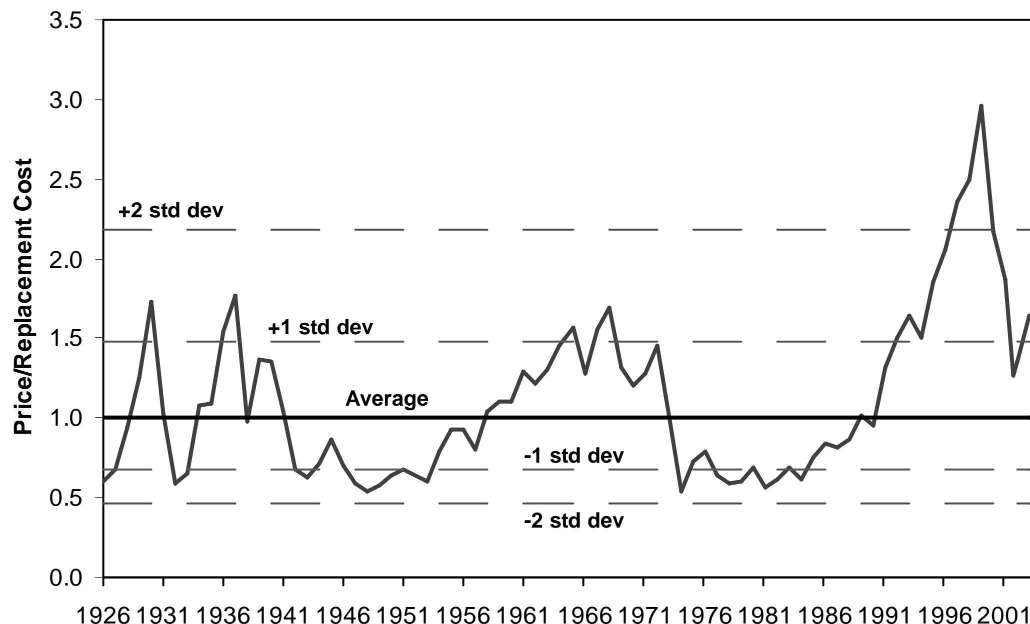
But even if the narrow spread and potentially tough times for value are a temporary rather than permanent phenomenon, it still leaves the question of what investors should do with their portfolios. Is now the time to move heavily into growth? Possibly, but we are somewhat worried about taking on a strong growth bias right now, due to the high level of overall valuations. Exhibit 7 shows the valuation of the

And unfortunately for fans of value, on either parameter, value stocks are in their worst 10% of history. In the case of price/sales they are actually at their worst valuation level ever. If history is to be our guide, therefore, we shouldn't expect any outperformance by value over the next few years, and it may very well underperform.

So what can we expect from value and growth in the future?

It strikes us that there are two possibilities. The first is that the market has truly 'wised up' about the value effect, and the pricing of value stocks will permanently stay in a range in which we should not expect them to outperform. The second is that the currently narrow spread is a temporary phenomenon, driven by reaction to the technology/TMT bubbles and the natural

Exhibit 7
Tobin's Q of U.S. Corporations



As of 12/31/04. Sources: Smithers & Co., Federal Reserve

U.S. stock market on one of our favorite valuation measures, Tobin's Q.

While the valuation of the overall stock market is substantially lower than it was in 2000, it is as high as the peaks of previous bull markets, and this makes us worry about growth portfolios. Growth stocks have a couple of unsettling characteristics if there is a significant chance of a bear market. First, they are more volatile than value stocks, with an annual volatility since 1960 of 18.9% versus 15.7% for value (defined on price/book). Second, they are higher beta, with a beta of around 1.1 to the overall market, versus about 0.9 for value. The combination of these two factors has led growth stocks to underperform the market significantly in down quarters. If such quarters are more likely than average to occur these days, it may be tough for growth to win despite its good relative positioning. If growth stocks do not outperform as the market reverts to fair value, they are very likely to outperform in the eventual market rebound, with both relative and absolute value on their side. But this will not be of much comfort on the way down for investors who shifted to growth too soon.

At GMO, we have chosen to respond to the value/growth dilemma in several ways. In asset allocation accounts, we have gone to a 50/50 weighting between value and growth, which is actually more pro-growth than we would normally be, but we have not actually moved to overweight growth portfolios versus client benchmarks. In lieu of a growth bias, we have moved to a 'quality' bias. Higher quality companies (companies with high and stable profitability and low debt) are very cheap right now.

While the opportunity in high quality stocks is not as extreme as it was for value stocks in 2000, high quality stocks are trading cheaper, relative to the market, than we have ever seen them. And, compared to growth stocks, high quality stocks have several substantial advantages. First, they have significantly lower volatility and beta than growth stocks. Second, they do not have the long history of underperformance that we have seen from growth stocks. High quality stocks have actually outperformed the market in the long run, despite the fact that they are, on average, 'growthy.' They have also outperformed in bear markets, doing at least as well in down quarters as value stocks have.

Within our non-asset allocation equity portfolios, we have tried to prepare as well. This is really accomplished directly through our valuation models. While traditional value models tend to pick the same group of favorite stocks no matter what the spread of value is, our models are more eclectic, moving from traditional value stocks to growthier and higher quality names as relative valuations shift.

We believe that this flexibility on the part of our value models should allow us to weather a period of underperformance by traditional value without increasing our vulnerability to a potential bear market. But there is no question that life is easier when traditional value is trading at very cheap levels. We will certainly see such times again, but, unfortunately, we are unlikely to see them until investors stop listening to their value managers.

Please note this is a shorter version of the paper with the same title, published on our website on July 1, 2005.

The views expressed herein are those of GMO and are not intended as investment advice.

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GMO

Quarterly Letter

October 2005

Jeremy Grantham, Chairman

The Day of Reckoning or Ready or Not, Here Comes the Risk Premium

plus

Letters to the Investment Committee V

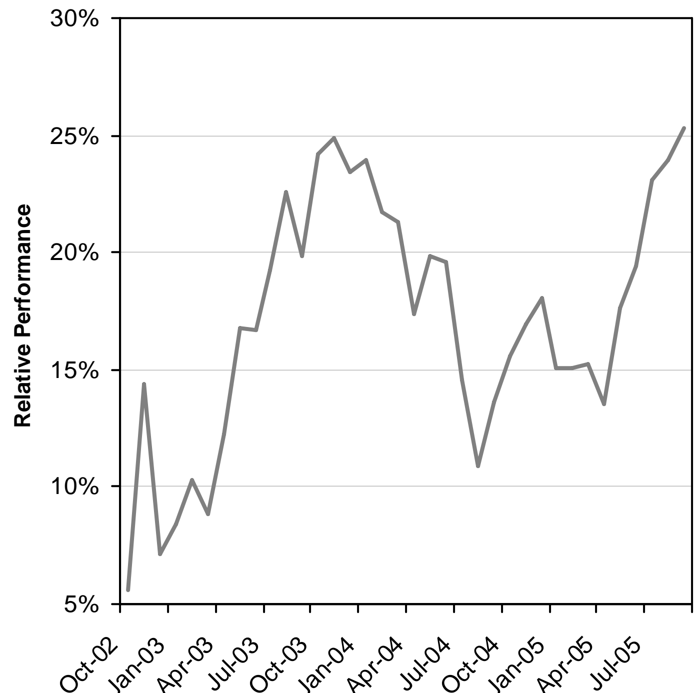
You Have Nothing to Fear but the Lack of Fear Itself

We are nearing the end of the first year of the Presidential Cycle which, along with year 2, is typically when house cleaning gets done, and moral hazard is reduced. The normal stock market response to this is to struggle, which is exactly what it is doing. Risky assets typically do particularly badly in these first 2 years, before doing very well with the stimulus of year 3. Through May this year, risky stocks were underperforming steadily, especially small cap and volatile stocks. Then, just as we were feeling cocky – since this is what we had predicted and positioned for – there was a vicious rally in everything risky. This continued the ebb and flow of battle between risk and caution that was described in last quarter's letter. This time, though, it hurt us badly in the U.S. and left riskier assets ahead of conservative assets for the year.

The record of this third quarter rally in risk was impressive, given that it came on top of the already extreme 2003-04 strength in risky assets. Exhibits 1 and 2 highlight the last 3 years' performance in the most volatile quarter of the market by market cap and also in the Russell 2000, both relative to the S&P 500. Many risk measures in fact have now reached record levels, resulting in probably the lowest risk premium on average recorded in modern times.

Even Mr. Greenspan was shocked and awed. "History," he said, "cautions that extended periods of low concern about credit risk have been invariably followed by reversal, with an attendant fall in the prices of risky assets." Well it took him awhile, but mean reversion lives! How embarrassing to finally be on the same side of this argument with the Chairman himself. Since, in my opinion, he produced most of the fuel for this move and threw it on the fire himself, this expressed concern gets him both the Chutzpah Award for 2005 and his fifth consecutive Career Positioning Award. When a more normal risk premium returns, its consequences will be borne by his successor (lucky fellow – it would almost be easier following Jack Meyer at Harvard Management, but not quite). And Greenspan can be the elder statesman who warned him (or her) of the risks of a sustained low risk premium.

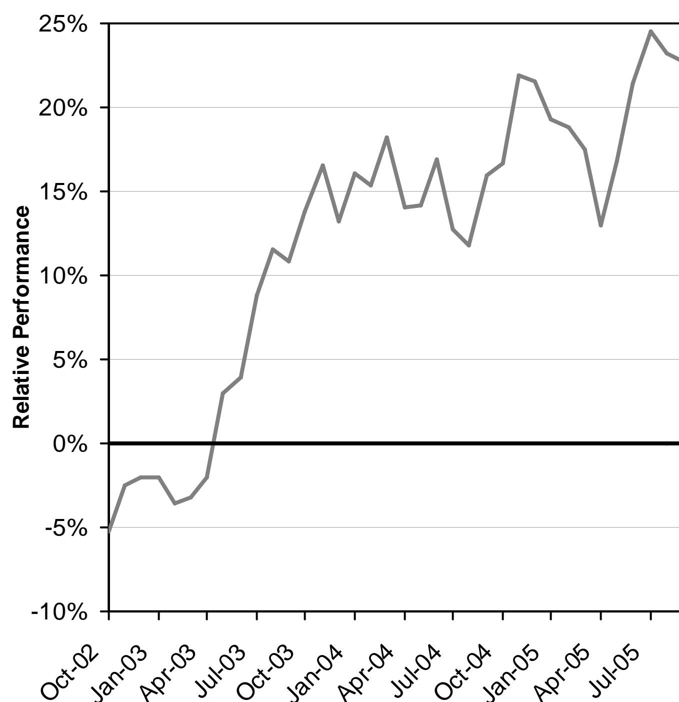
Exhibit 1
Performance of High Volatility Stocks Relative to S&P 500



Source: GMO, Standard & Poors. As of September 30, 2005

Exhibit 2

Performance of Russell 2000 Relative to S&P 500



Source: GMO, Standard & Poors. As of September 30, 2005

Let's Do the Numbers:

Asset Category (in percentages)	**15-Yr Peak**	**Current**	**15-Yr Low**
Emerging Debt Spread*	15.5	2.4	2.4
Junk Bonds Spread*	12.9	3.6	2.4
High Quality Stock Premium vs. Low Quality**	+8	-23	-26

** Emerging Country Debt and Junk Bonds yields over 10-yr U.S. Treasury yields.*

*** High quality stocks compared to low quality on our broad-based value model.*

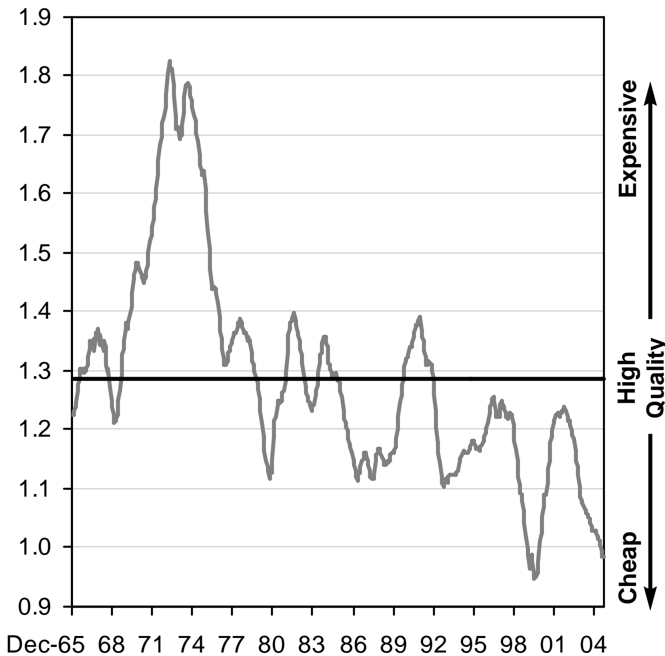
One of the reasons Greenspan was surprised at the risk-taking rally was of course that he had continued to raise the rates, despite New Orleans, to 3.75 and left the world with the impression that two more raises to 4.25 are in the bag in the next few months. This will leave us for the first time in several years close to 'normal' real return at the short-end.

An interesting question is why the risk premium is so low and, indeed, why does it move around so much in general and what factors move it? We will address this question and hopefully have some partial answers at our conference in November. For the time being, we have a strong hunch that the predominant input is extrapolation. That is to say, today's conditions, whatever they are, are assumed to be permanent. Today's much improved financial condition of the emerging countries – for example, in terms of GNP growth and improved reserves, currency strength, modest local inflation, and lack of financial crisis – is assumed to be a permanent condition, despite a long and painful history to the contrary. Similarly, with junk bonds and equity quality spreads the difference in profitability between high quality companies and low quality has narrowed materially, as it did back in 1980 in the oil crisis. If such a narrowing were indeed to be permanent, it would justify the narrowing in P/E differentials and yield spread that has taken place. It is possible that high quality companies have permanently lost their profitability premium and that the market is right. It is of course far more likely that this ratio ebbs and flows in a largely unpredictable way and that extrapolating the current point, particularly when it is at an extreme, like now, will produce a painfully wrong conclusion.

Everyone agrees that there are extreme imbalances in the U.S. and the global economy, in part due to our extreme lack of savings and associated accumulated personal debt, and our extreme trade deficit, now at 6% of GNP. The bulls believe that all will work out, and certainly so far is so good. The bears believe that sooner or later these imbalances will come home to roost. Historians have to believe that financial conditions, and confidence at all levels, ebb and flow over time and that we have extremely favorable levels of confidence now, despite potential problems. The probable winning bet is not to extrapolate, but to expect a very mean reversal. This shift in the risk premium, back to normal levels, will dominate the ins and outs of investing, I believe, for the next few years.

As always, though, the problem is timing. What can we offer on this topic? First, the first 2 years of the Presidential Cycle are typically very risk averse and on average show poor relative equity markets and **very** poor returns to risky stocks. Minus 2% real in the first year and minus 4½% real in the second year is the average return since 1964 to the riskiest quarter of the market cap, with risk defined as volatility. (And I don't mean minus 2% and minus 4% relative to the market. I mean an honest-to-goodness negative absolute return!) Second, value matters in the first 2 years (unlike year 3), and the market is expensive now with the risky quarter of the market more expensive than the market. The low quality versus high quality spread (**see Exhibit 3**), after a very strong return to risk in the third quarter, is now close to its low-

Exhibit 3
Valuation of High Quality vs. Low Quality Stocks



Source: GMO As of September 30, 2005

est point ever. Third, Greenspan is retiring and his desire to get out intact may have something to do with the unusual speculative strength this year. Moral hazard (or the Greenspan put) plays a critical role in the level of speculation, and this last year for him is more like the fourth and last year of a Presidential Cycle when the overwhelming desire is to coast up to the election and not rock the boat. For Greenspan there is only one quarter left of coasting. Fourth, short rates are rising and are squeezing the level of comfortable leverage for speculation. Fifth, profit margins, so critical to sustaining confidence (see our last quarter's letter), are unsustainably high and exposed to many pressures – oil prices, rising rates, and just the plain increased competition that goes with record margins. These pressures on profit margins suggest to me that they have probably already peaked and will be revised down later, as they were in 1998 and 1999.

This is a long list of problems and leaves me feeling that the period from now to late next fall is very vulnerable to a widening risk premium, with all that portends for equity prices in general and risky assets in particular. Even this fourth quarter looks vulnerable to me, for Greenspan is engaged in a tricky balancing act between encouraging overconfidence (moral hazard) and overtly warning against it. I believe his several warnings will probably tilt the scale too much and indeed rock the boat. Long-term believers in mean reversion like us try to stay in "sooner or later" land, but this long list makes it irresistible to say that the **odds of the risk premium widening in the next 12 months are at least 2 to 1 and probably 3 to 1.**

Potential for a Downward Spiral in Risky Assets

Today the most accepted definition of risk is volatility. We can all agree that the degree to which a stock or asset class bounces around its long-term trend is an important **part** of risk. Some of us, though, can agree that it is an incomplete definition as it ignores value and liquidity. The most popular technique for measuring risk is known as VAR, or value at risk. It is used to estimate the probability of portfolio losses based on the analysis of historical price trends and volatilities. But those using VAR will consider two markets having the same volatility as having the same risk, even if one is selling at 8x P/E (1982), and the other at 33x (2000). In real life, the probability and extent of loss has directly varied historically with value, or the price you pay, and it is hard, if not impossible, to imagine that this will not continue. For example, since 1925 if you bought the S&P when it was in the cheapest quintile by price to trailing 10-year earnings and held it for 10 years, you made an average of 10.6% real per year. In the most expensive quintile, you made a measly 0.6%. Statistically it certainly seems that value had a lot to do with the risk of receiving a disappointing return.

The problem with using volatility as a complete measure of risk is exaggerated by the market's usual tendency to extrapolate present conditions rather than to assume today's conditions will tend to regress to normal. Thus, extremely low volatility today is seen as predicting that the market will have low risk into the indefinite future. When volatility becomes high, that too will be extrapolated. Using VAR thus results in very large changes in the 'appropriate' portfolio as volatility changes. Today, for example, volatility is very low and portfolios that at normal volatility would be considered very risky are now considered acceptable.

The second important missing ingredient in today's definition of risk is liquidity. The market always demands a big risk premium for illiquidity to reflect the extra cost and delay in changing investment positions quickly and cheaply as data changes. A strong case can be made that the liquidity premium is unreasonably large, for no institution ever has to be 100% in cash by Thursday afternoon. But in a behavioral world where career risk is important and investors value their ability to stay with the pack, a large liquidity premium exists. In U.S. stocks, for example, the most illiquid quarter of the market by market capitalization has outperformed the broad market by over 1% a year over at least the last 40 years.

From time to time, the market has had liquidity crises in which the need to sell illiquid positions has caused extreme price weakness, which in turn has precipitated more selling. We now exist in a world of a 1 trillion dollar hedge fund industry (without counting their huge leverage) that has risen to at least 25% or 30% of total daily stock trading. Hedge funds are fairly reliably claimed to be longer less liquid holdings than they are short, since they attempt to benefit from the risk premium. The Long Term Capital crisis was an example of what can happen as a wave of selling illiquid issues snowballs.

VAR runs the risk that illiquidity and volatility can interact. Any major liquidity crisis will show up as a spike in market volatility, causing VAR portfolios to lower their aggregate risk by selling into weakness, creating a dangerous self-reinforcing cycle of a kind that hedge funds are paid to anticipate and exploit.

As if this were not enough, rising interest rates are also involved. Low rates justify more leverage, just as low volatility does. As rates rise, the justifiable level of leverage contracts, and selling of leveraged hedge fund portfolios begins. An equal reduction of long and short portfolios, if hedge funds are long illiquid issues, will then result in less liquid issues underperforming and may start the turtles running down the beach.

High leverage and rising rates, plus rising volatility and VAR, combined with a liquidity premium and asymmetrically illiquid hedge fund portfolios is a heady brew, and a dangerous one. The usual brake on a market decline is value: as stocks and assets decline, they become cheaper and hence more attractive. In our new world that seemingly ignores value as a risk component, falling assets are more likely to merely become more volatile and hence be seen as riskier and less attractive.

Success and Failure of Recent Calls

We warned this year of a bearish, but not disastrous, outlook for U.S. equities and at zero real return for 9 months, this looks close enough. We positioned for outperformance of the stocks of foreign developed countries, and they are ahead of the S&P by 6% in dollar terms despite a decline in their weighted currency of just over 10%. In small cap we largely went to neutral, and they have drawn with large cap this year after 5 years of consecutive crushing wins. We also warned of problems with old fashioned value and reduced our value bets in U.S. Core, for example, to a level where we now have a slight overweight in growth stocks for the first year since 1991. Year-to-date, value has modestly won in the U.S. and drawn internationally. Our biggest bet was overweighting emerging market equities. We argued that a big rally was probable for emerging if the U.S. market merely hung in; the emerging index is 22% ahead of the S&P year-to-date. Our big mistake, of course, was warning of a weakness in speculative, low quality issues.

GMO Strategy Performance

We had a very bad third quarter mainly due to the rally in low quality. Our U.S. strategies lost by 2 to 3 percent for the quarter and went from modest year-to-date gains to substantial year-to-date losses, mainly in the range of -1% to -2%. In international we were about level with the market in the quarter with most strategies still ahead for the year. Our emerging equities strategies squeezed out a gain for the quarter and are up about 2% year-to-date over the benchmark. In U.S. and international bond strategies, we were slightly better than even for the quarter except for emerging debt, which once again won by over 1% and is up 4% for the year. Asset allocation was also up nicely in general with its flagship global balanced strategy up over 1% for the quarter and 3% for the year – its sixth consecutive yearly gain. Hedge strategies' returns were mixed. For example, Market Neutral had a bad quarter and is down over 2½% for the year. Mean Reversion and Emerging Debt were up over 3% and 6%, respectively, for the quarter and over 8% and 11%, respectively, for the year, while Multi-Strategy was up just ¼% for the quarter and 3¼% year-to-date.

In general, it was a tough quarter with poor results, although we are still close enough to be bailed out in relative terms by a fourth quarter rally in quality, which I believe is quite possible.

Update on the Real Estate Market

In April the quarterly letter covered the near-global land bubble. Using Australia and the U.K. as leading indicators, I suggested that the U.S. probably had at least another year, but that some of the bubbliest markets, like Boston, should peak out sooner, just as London and Sydney had led other cities. It is now clear that several U.S. cities that had appreciated the most on the way up are now flat to down on a rolling month-to-month basis. And more cities are showing rising inventories of unsold houses. My best guess now (6 months later), is that average U.S. house prices will peak after 6 months or so. For the record, as U.K. house prices flattened, growth in consumption did indeed drop rapidly from almost +10% a year ago towards zero. There was a similar but less dramatic effect in Australia. The odds are that this cooling effect will kick in sometime next year for the U.S. All the more reason to be careful.

"Double Double; Oil & Trouble"*

On the bright side, there is indeed almost endless potential supply of gasoline from coal, oil shale, and tar sands, and all from politically safe regions, except for those tricky Canadians. The problem is that it would take about 7 years for a new incremental barrel to flow and 20 to 30 years to get a serious job done **even** with a full court press.

Even with the uncertainties of long-term oil prices, though, enormous courage along with enormous capital will be required – in the hundreds of billions – to tap these new sources. It will be hard to commit billions into a 7-year horizon knowing you need, say, $42 per barrel to make a return. Even if today's oil is $65, you know it **may** be half of that or less in 7 years.

As for environmental issues … fuhget about it … they will be massive. We will all be lucky if enough of these new sources can be brought in at under $50 a barrel. In the meantime, traditional sources of supply will no doubt cause spikes and troughs in the price. A good guess, based on history, would be that the price range will be far wider than we care to think about: say $20 to $100 a barrel. And, as usual, horribly unpredictable!

It's an Ill Wind

Immediately after 9/11 I wrote in a quarterly letter that it would have a negligible immediate economic cost in terms of the GNP, and probably even a positive longer-term effect as it would encourage stimulus. This prediction was a good call on the economic fallout. What it badly missed was the much more important shift in political fortunes: without 9/11, President Bush would probably not have been re-elected. His re-election had important effects for the economy, the financial system (notably including the level of government debt), and the stock market.

Hurricane Katrina will have much more short-term economic effect than 9/11, particularly in the energy area. Its total economic effect in a year will be negligible once again. Its political effect, in contrast, runs a real chance, once again, of being immense. New Orleans could well prove to be a political watershed event that could change the relative strength of the two parties for years, including the outcome of the next presidential election. If that were to be the case, then the economic consequences of Katrina could be immense and long lasting.

Forecasts

I've already heavily committed myself to an anti-market, anti-speculation forecast. Beyond that, the biggest question is: can emerging equities at least hang in if we have a general increase in the risk premium? It is probably wishful thinking, but I believe their fundamentals and relative value are so advantageous that they have a 50/50 shot at outperforming the S&P in anything up to a 10% decline for the index. I still believe that if the market surprises me and goes up, emerging equities will bury everything once again.

Summary of Advice

Once again, but with even more enthusiasm: **reduce risk-taking everywhere and do it now.**

* With apologies to Macbeth's prescient witches.

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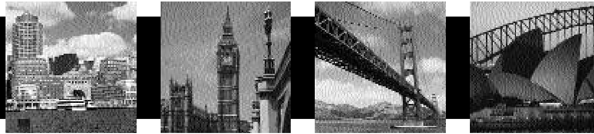
Special Topic October 2005



Jeremy Grantham, Chairman

Letters to the Investment Committee V*

The Bullish Bias in the Investment Industry

When President Bush listed as an achievement the increase in jobs in his first term, although it was in fact the lowest percentage increment in a 4-year term since President Hoover in 1932, he was demonstrating one of the most important aspects of the U.S. economy and the stock market: an enormous bullish bias. Bearing bad news is not rewarded in politics any more than it is in stock broking or investment management. Relentless optimism, in contrast, is not only good for business and politics, but it may even be one of America's important and often admirable features. For investors, however, it is a particularly dangerous characteristic and one worth understanding. To this end, a few characteristics of bullish bias are listed below.

Brokerage Houses

Particularly as a bull market builds up, it would be nice to have an even-handed presentation from the major firms. Unfortunately, the structure of the brokerage business has resulted in an almost ludicrous bullish bias. The typical advertisement for the largest brokerage house in the last couple of years of the bull market consisted of a bull so large it could barely squeeze on the page. There was only room left for two large words at the bottom: "Be Bullish." The same firm had trouble living with the periodically bearish outlook of its experienced economist, whose views were particularly respected precisely for this reason. His replacement quickly proved where his heart lay (or that he simply got the point) by writing a piece for *The New York Times* in which he argued, among other things, that the '90s was the best decade economically of the 20th Century and that was why the market deserved to do so well. Being quants, it took us about 2 minutes to list the hard data for the 10 decades. The 1990s were in fact **mediocre**, 6th out of 10 decades in GNP growth and 5th in productivity, about the same as the dreaded 1970s. Suffice it to say the '90s fighting the '70s to a draw did not make the article's intended point. It made the unintended point that if you wanted to be in good standing in a sell side firm in 1999, you had better put a bullish spin on the data. It also made the point that you could readily get a bullish article published with easily provable bad data, even in *The New York Times*.

Analysts

So at the top level, the overall spin of the major firms is bullish. Their stock analysts reflect this in a now well-known way: buy recommendations outnumber sells by 20:1. The need to stay friendly with management in order to get information has been underlined in the period since 1995 by more aggressive behavior on the part of many corporations. They became overtly hostile to any critical comments, sometimes going far beyond the curtailment of access to top management. Direct complaints about critical reports were sometimes made to the senior management of investment banks, accompanied by not so veiled threats to reduce the amount of investment banking business. Not even a star analyst welcomes an irate call from S*nd* W**ll! Several analysts making negative comments were in fact fired and the investment banking business was sometimes realigned. Perhaps not surprisingly those companies whose hands have now been caught in the cookie jar were some of the worst bullies. Analysts' remuneration became sometimes very much more a function of their usefulness to the investment banking division than their usefulness to clients. It is hardly surprising that there was, by the market peak, so little serious negative criticism or warnings of severe overpricing, despite the clearest proof of general overpricing ever presented by a U.S. bull market.

More basically, what happened to the broad use of rigorous value models in the analysts' work? Recommendations increasingly became based on the immediate outlook for earnings growth, where earnings were available. For the many cases where there were no earnings, they had to make do with sales growth and

* The Letters to the Investment Committee series is designed for a very focused market: members of institutional committees who are well informed but non-investment professionals.

growth in 'earnings before almost everything'. Enron proved a telling example of this lack of statistical rigor. It is tough when you are lied to, although a few hedge fund analysts with a real incentive to find the truth indeed nosed out some truth. Jim Chanos, a hedge fund manager, sent out a warning on Enron based on footnotes and unanswered questions. But that required real ferreting out of data and real research, the lack of which is a pity but not the point. We in our quantitative division at GMO believed every lie that Enron delivered. We entered the violently overstated earnings data into our dividend discount model – which has a good long-term record at getting more right than wrong – and the answer came back in March 2000 that Enron was priced at **over 5 times the average value of the top 1000 blue chips.** (This average was itself well over twice fair value.) Listening to analysts defend their Enron recommendations to the Senate Sub Committee on the grounds they were lied to was therefore a teeth-grinding experience. Value had simply not entered the equation. By the top of the market, almost every industry analyst, benchmarked by his industry stocks, was almost always expected to come up with positive recommendations regardless of the general level of overpricing in that industry. Predominantly, this was done on momentum. Stock prices, earnings margins, or sales that were rising were all good, regardless of the price of the stock.

The same principles of momentum and extrapolation also dominated general market advice. If GNP and productivity looked likely to rise, then the market was described as attractive and likely to go up. This could have been merely seen as typical institutional momentum except that these strategists also described the U.S. stock market as 'cheap' – clearly a statement of value. The market was claimed to be 'reasonable', even at 33x overstated earnings. As a postscript, in early 2003, not backing off an inch, the leading strategist added, "My record speaks for itself." That time I think she got it right!

Bearish Belief of Analysts, but not Bosses

Back at the hive, what did the worker bees – the rank and file analysts and fund managers for the great firms – actually believe? On this topic, I have some unusual and revealing data. Over the 4 years from 1997 to 2001, I asked over 1000 full time professional equity analysts and fund managers some simple survey questions. The key question was to determine how many of them believed that the P/E ratio of the S&P 500 would return to below 17.5x earnings sometime in the following 10 years. The 100-year history was just below 14.5x so 17.5x was a friendly number. In response to the question all but 7 of the 1070 voted that the P/E would pass downward through 17.5x. When the question was asked, the market multiple, never previously above 21x, even in 1929, was rising to the new peak of 33x. This question was always asked **before** the presentation began and to an audience who were far away from their bosses, typically at 1-week training programs. All participants also agreed that a decline in P/E to below 17.5x would **guarantee** a substantially disappointing market.

This is a straightforward story so far; 99% of full-time professionals in 1999 believed in data that guaranteed a bear market. The straightness of the story becomes less straight (I hesitate to say crooked) if we ask how many clients were aware of the general bearish belief that existed in these firms in 1999! Widely publicized views of major firms often do not represent the views of the "engineers" doing the real work, and this divergence seems to constitute one of the larger betrayals of trust in our industry.

Investment Managers

Keynes's advice was to never, ever be wrong on your own if you valued your investment job. This particularly applies, apparently, to giving bearish advice in a bubble that grows and grows. Gary Brinson, whose advice in 1998 and 1999 was excellent (i.e., agreed with mine), was shot by UBS less than a month from the market peak. He was a tough nut and, if anyone could get away with unpopular advice, he could. His failure makes me believe that no large, public enterprise with quarterly responsibilities to shareholders can stand the pain of substantial short-term loss of business in these situations. When majority opinion is strongly bullish, these firms must avoid clear separation from the pack by being bullish themselves.

GMO had the great advantage of being an independent, private firm, but we also paid a high price, although at least I was not fired. We lost 45% of our book of business in 2½ years. We made the right bets to reduce risk for the right reasons and won them, but lost more business than any competitor. Given these responses to bearishness, who would want to volunteer to oppose a strong bullish consensus?

Human Nature: Go with the Flow

Homo sapiens learned to cooperate in the hunt. Individuals going off on their own more easily starved or were killed. The cooperative groups survived better and multiplied. The species learned to respect group opinion. This solidarity can emerge for good in times of war, but

for bad in times of investment bubbles.

Recent research suggests that we are also fairly remorselessly overoptimistic and overconfident in our views and that our confidence rises with each piece of additional data, even though the quality of our decisions peaks with only three pieces of data. All of which makes us peculiarly vulnerable to getting carried away with serial bombardments of bullish data.

The Bullish Bias of Corporate Officers

Stock options have been used excessively and have seldom been adjusted for market or peer performance, so that they often become licenses to raise even leaky boats with the market tide. Their excessive use does not just moderately increment senior management's total income; it sometimes results in multiples of the income. A second important reason to want a higher stock price is that it facilitates take-overs – the fastest way for a corporation to grow. Size, in turn, is highly correlated with the incomes of corporate officers. With these rewards, manipulation and overstatement of earnings – effected by pushing accountants as well as pushing accounting standards – stand to be hugely rewarded and are therefore very common.

The bullish bias was particularly evident in the assumptions used by corporate defined benefit pension plans. By the '99 bubble their return assumptions had risen to an average of over 9½% even as the bond market had fallen to 5% and P/Es had risen to 33x, implying an earnings yield to stocks of 3%. (Stocks would have a 3% yield, for example, if corporations paid out all their earnings at 33x earnings.) Using unrealistically optimistic assumptions allowed pensions to take a 'holiday' from contributions that they would later desperately need, and resulted in earnings being about 10% overstated for several years. Even today, with long bonds at 4½% and the earnings yield at under 5½%, the assumption for long-term pension returns is still showing its bullish bias at over 8%!

As a bottom line measure of all their bullish biases, we can look at the gap between net earnings and operating earnings after 'special effects'. In an unbiased world, when you sell a division, for example, you will have a pleasant write-up from selling overdepreciated asset values as often as you will have an unpleasant write-down. In the '50s and '60s this was the case. But by the '90s, special adjustments were overwhelmingly negative and the 10-year average net write-down **had risen to 14%!** This means that 14% of what is claimed as earnings today will turn out to have been overstated and will eventually be written off.

The Media

The great 2000 bubble was unlike the 1929 and 1965 bull markets in the degree of stock ownership. In 1929, just 10% of families owned stock and only 25% did in 1965. By 2000, in contrast, half of all families owned stock, so that almost the entire readership of serious magazines was stock holders. At the same time, the potential television audience interested in stock programs became large enough to justify much expanded programming, making it impossible to eat lunch in the local greasy spoon without being surrounded by stock prices instead of the usual football games.

The print diet, with some honorable exceptions, was overwhelmingly bullish, and the breadth of stock ownership allowed a critical mass of bullish propaganda to be formed. But it is not fair to blame the media for their generally bullish bias, for they are not paid to educate or warn. Their job description is primarily to sell magazines or attract viewers, and it was increasingly obvious from 1996 to 2000 what the audience wanted to read and hear: "10 Great Telecom Stocks," "How to retire at 55 richer than you thought," "Dow 36,000." Bullish covers provably increase sales. That's their excuse and it's a good one. But the investment industry, in contrast, is paid to give its best fiduciary advice, and its bullish bias clearly interferes with doing that.

Summary

The commercial or political imperative to deliver relentlessly bullish opinion is extreme, even when insiders may actually feel more bearish. To make matters worse, it seems that most of us are hard wired to be gullible; to believe that authorities know what they are doing, and that a large consensus view should probably be adopted. We also tend to exaggerate the importance of often repeated advice, and once a view is accepted as our own opinion we are overconfident in it and reluctant to change it. Before taking advice, particularly in bull markets, you should always remind yourselves of the industry's bullish slant and vested interest and always ask yourselves who are the foxes and who are the chickens.

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GMO

QUARTERLY LETTER

Jeremy Grantham, Chairman

January 2006

The End of an Era

plus

Letters to the Investment Committee VI

Happy Days Were Here Again

It will probably be revealed in 10 or 20 years exactly how remarkable and abnormal these last 20 years or so have been. Above all they have allowed for an unprecedented increment of wealth, some real and some on paper. Since the market low of July 1982, we have never had it so good; average stock market returns have been 10.5% real against a long-term average of 6.5%. The bond market, relative to its lower risk, has been even more remarkable with an average yearly return of 7% real for the 10-year bond against a 100-year average of just 1.7%. Even residential housing has appreciated by 1.8% real (do you know anyone who made just 1.8%?) compared to a long-term average of just 0.6%. Given the leverage typical in housing with an 80% mortgage in 1982 – how quaint by today's standards – the returns to householders were important. It really is an amazing confluence of good fortune, but it owes an enormous amount, as all great rallies do, to starting cheap. In 1982, the U.S. stock market was 8 times very depressed earnings – the 10-year government bond was 14% despite the consensus forecast of economists of long-term inflation of just under 5%. Similarly, the wonderful returns owe a lot to finishing the period expensive. U.S. stocks are at an above average p/e (19x compared to 16x), and on sensationally high profit margins, which will of course prove just as mean reverting as the very depressed margins of 1982 were. The 10-year bond is down to a 4.4% yield, and the housing market sells at a national average of 4.5 times income with some dizzying peaks like Boston and San Francisco at over 6 times.

"This Time it Really Was Different."

How quickly we get used to major changes. We all complain, for example, at how dangerous the world is because of terrorism and yes, sooner or later, there will almost certainly be some even worse event in loss of lives than 9/11, probably worse even than the accumulated loss in Iraq. But how on earth can we compare this risk with the Cold War in which most of us grew up? Thousands of nuclear warheads faced each other and nearly, we know now, got loosed in the Cuban Missile Crisis. That Russia has rejoined the world market – at least for a while – and released over a dozen countries to full-blown market democracies is clearly one of the great beneficial historical events. That China ceased being a doctrinaire basket case and has become by far the largest and most important of all the great economic break-outs is remarkable, as is India giving up socialist paralysis for a more pragmatic and infinitely more profitable approach. These three events, in turn, have encouraged greater economic efforts in many other developing countries. Collectively these countries have never come close to the breadth of economic success that now can be seen on the back page of *The Economist* every week. For example, it was recently reported that the **lowest** single GDP growth for the year ended in September of the 22 emerging countries listed was way over the growth rate of the European Union! The usual changing handful of GDP collapses that had been associated with emerging countries were all completely missing for over 2 years. The remarkable advantages of adding over 2.5 billion people to the capitalist system and the unprecedented strong and consistent global growth that resulted can be added to the unprecedented low inflation, low interest rates, and asset price rises already discussed. The world really has been different. Some of these benign differences will regress away, but many, if we're lucky, will be permanent. Will the world ever be so successful in the broadest sense as it has been in the last two decades?

Yet most of these positives affect economies more than investors and, remarkably, as we shall discuss later, the U.S. economy, in contrast to the global economy, has

proven to be remarkably phlegmatic in the face of all these histrionics, refusing to budge materially from its long-term GDP trend, and to the extent it has budged at all, it has slipped a little.

For investors, however, the most important factors have **not** changed. Asset classes in the longer run must still revert to sell around replacement value. Profit margins will still move around normal levels. The cost of capital must still, more or less, equal the return to capital. The markets will still be made up of ordinary humans and they will still be full of behavioral twitches, not the least of which are greed and fear, and we would add, career risk avoidance, and the tendency to extrapolate. The last two decades may have been very different, and in an important way, better than usual, but looking forward for U.S. investors, **this time it's the same**, as it always is.

Exhibit of the Quarter

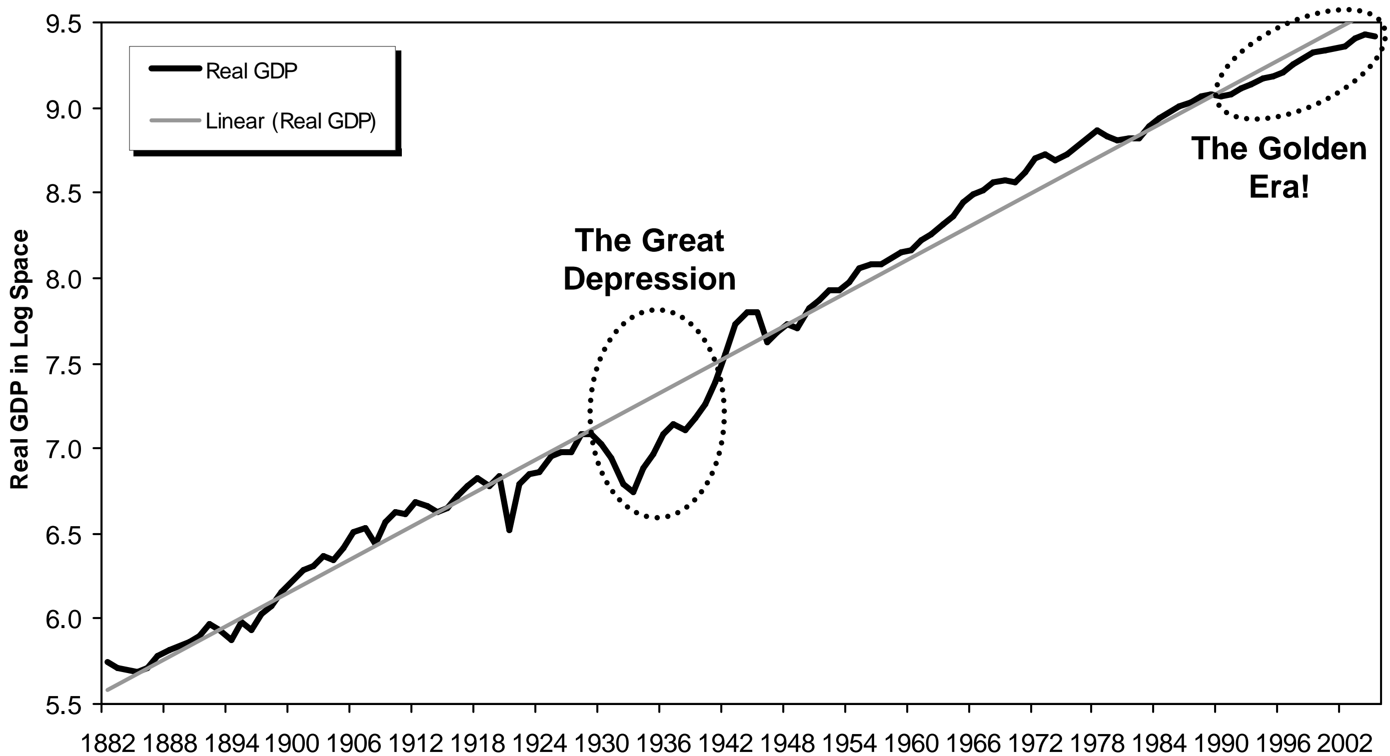
Exhibit 1 was used at our recent conference to show two things. First, how stable the battleship "U.S. GDP" is, and second, how risk reduces with time. If you have a long horizon you can, more or less, count on getting back to trend even if you hit the Great Depression. Note that the U.S. did not just get back to the old growth rate, it got back exactly to the old trend, making up all the lost ground as if the depression had never occurred. Mean reversion for this series really lives! What I noticed though, as we presented this exhibit, was a second point: how the growth tails off from 1995 and slowly falls below trend. To find a place equally below trend, you would have to go all the way back to 1943! Remember, this is the time period that brought us a *New York Times* article by the Merrill Lynch economist claiming the 1990s as the greatest economic decade of the 20th Century. It also brought us Alan Greenspan's cheerleading comments on the new golden era that we will come to later. The bullish bias baked into everything as always seems quite remarkable. As a note on this last point, a leading newspaper opened its reporting on November housing data with "home prices continued to surge **last month**," a month in which the median house price declined. The comment was justified presumably by the fact that November prices were still above 12 months earlier. Really!

End of an Era in Profit Margins…

The perfect environment for fat corporate profit margins is to have corporations stay conservative and nervous so that their capital spending and capacity additions are held back. The combination of 9/11, the recession of 2001,

Exhibit 1

GDP Recovered from the Depression as if it Had Never Occurred



Source: GMO, Federal Reserve   As of 6/30/05

and the shock of the stock market break combined to do this admirably. Their caution was justified in some ways because job growth was less than normal on a sustained basis, and real earnings per hour continued flat, which together would normally guarantee anemic growth in consumption and some pressure on profits. This time, however, because of the unique, sustained drop in personal savings from 10% of income to -1% that had been caused by asset price increases and easy borrowing, consumption held up and supported U.S. corporate sales plus foreign exports. 2005 was, in fact, the first year since 1933 in which Americans spent more than they earned. There is nothing better for profits than sales that are consistently a little better than are budgeted for, and this was just what the sustained increase in personal debt had delivered.

Profits have also benefited from the U.S. being in a phase of rapid outsourcing. Initially, outsourcing has a large positive effect on margins as the first outsourcer to, say, China, pockets some of the gains as extra profits and the displaced workers help keep labor costs down. Most importantly, the last 20 years have been uniquely favorable to financial profits, which have grown thanks to decreasing rates, a stable economy, easy money, and moral hazard. This environment gave the twin benefits to banks of increased leverage, especially for housing related loans, and close to zero write-downs for bad debts. In total, the financial sector's share of corporate profits has risen from about 15% in 1980 to over 30% in recent years. Not bad for a sector that makes not a single widget, and in the case of our own sub-sector – money management – is provably what is generously called a zero sum game, which is to say, zero before management fees and transaction costs.

…and in House Prices

As discussed in earlier letters, U.S. house prices have played an important role in sustaining global demand, and we have kept a sharp eye out for a weakness. Well, 2 of the last 3 months, September and November, showed a decline in the month to month prices of the median home, seasonally adjusted. This possible peaking is 6 months earlier than I guessed at the beginning of last year – using the British example as a guide – and it may be a head fake, but I guess it's not, given the broad-based increase in the inventory of unsold houses. In the U.K., the flattening of house prices was followed quickly by a material slowdown in the growth of consumption and in the GDP, but it was not followed by a recession. To make a simple story more complicated, the U.K. house prices have now ticked up for a few months, showing, at least temporarily, a determination not to collapse. My bet is that even flat house prices will slow the U.S. economy and send the savings rate up, and it will happen very soon, but it will not necessarily cause any more than a mild disappointment in economic growth rates. Even a mild slowdown, however, will make for a tougher earnings environment than we have seen for a few years.

The Beginning of a New Era: Diversify or Bust

One of the characteristics of the next several years will be a let down in expectations for investors, either quite quickly or painfully slowly, and after 23 years of generally high levels of confidence and expectations, this will be hard to swallow. The p/e in 23 years went from 8 to 20, inflation from 13 to 3, 10-year bonds from 14% to 4.4%, and profit margins on sales more than doubled. It must be obvious to everyone that this increment cannot be repeated, and that some give back is inevitable, but we seem collectively reluctant to accept it, and Lord knows inertia always keeps the game going longer than we think.

A growing influence in the next era will be the rapid move – almost a stampede – to greater diversification via non-traditional and more marginal asset classes. The remarkable success of the early movers, mainly the leading endowments and a few others, has led to a great desire to emulate them, for there has never been such a large and persistent performance gap between leading endowments and the institutional average as there has been in the last 10 years. In the last 5 years the gap is over 10% a year. If the leading, outperforming institutions own much less U.S. equity and U.S. bonds than "normal," and own much more hedge funds, private equity, timber, and other peripheral investment categories, then so shall we, goes the argument. The probability that the average pension fund in 10 years does not have a more diversified portfolio is probably as close to nil as things ever get in investing, assuming of course that there still are pension funds around then.

This tidal wave of diversification is having, and will continue to have, a powerful effect on the pricing of these newer, smaller asset classes – it is pushing them up. It will be very easy to underestimate this pressure in the next few years, and consequently, it will be easy to sell out of forestry, emerging equities, and the rest far too soon in terms of relative performance.

Imagine a world of only two asset classes. One asset class, U.S. equity, has 19 managers each with $100 billion, and the other, forestry, has 1 manager with $100 billion. Both groups have owned nothing but their own asset class, which, let us assume, conveniently, have iden-

tical long-term returns and similar volatility, but as in the real world, they have very different flight paths in that forestry tends to do well when U.S. stocks do poorly. Both groups have been to a Jack Meyer class at Harvard Management on optimization and realize that both assets are more valuable because they are less risky when owned jointly. All 20 investors have worked out that the ideal portfolio using these two assets is 50/50. The 19 equity investors all bid for half of the timber portfolio and the timber investor bids for a small piece of each of their 19 portfolios. Who is the beneficiary of the increased value, lower risk, and higher efficiency (Sharpe Ratio) of the combined portfolio? It is my belief that in the intermediate term, almost all the extra value (say 19/20) will accrue to the original timber investor as the 19 bid against each other and only stop when the price of timber has risen so much, and the returns fallen so low, that the Sharpe Ratio is bid down to a level **just** above where it was in an equity-only portfolio. Do your own optimizing, but I think you can depend on the fact that the return of forestry will often be **below** the return on stocks, perhaps quite a bit below. Where managed timber used to be 7% to 9% real return – kept up by investors' dislike of illiquidity and non-traditionality (or career risk) – my guess is that it will often fall well below our assumed equilibrium return for stocks of 5.7%.

And what about emerging equity? This asset is still interestingly **different** from U.S. equity and with a similar average return profile. Will its merit as a diversifier, combined with its small size, not guarantee that sooner or later it will sell, at least from time to time, at a **premium** to U.S. equities? Over the next 10 years or so, as the diversification example is followed, will there not be a nearly guaranteed outperformance of all the relatively smaller, peripheral categories to the benefit of the early and second generation movers? There are also likely to be recurrent waves of overvaluation of the smaller categories, probably followed by sharp corrections. Conversely, there should be intermittent selling pressure on the large traditional asset classes. It should make for interesting times and easy miscalculations!

The effect on the pricing of hedge funds, venture capital, and private equity of this steady flow of new money is harder to calculate, but probably very different. These categories are not true asset classes, but really just a repackaging of existing asset classes: stocks, bonds, currencies, commodities, and others. The near certain pressure of new money here seems likely, therefore, to be easily passed through to the underlying liquid assets. For the intermediaries – the funds themselves – the flow of new money seems likely to facilitate high fees in the short term, as good managers will be in short supply. But rapid growth and higher fees will attract much greater talent than was ever the case 20 years ago. Hedge funds, in particular, clearly offer the new hot-shot MBA graduate the best daydream of near instant wealth, perhaps even the best real chance. This surge of talent will not only make it increasingly hard for hedge funds to add steady, strong returns above their benchmarks, it will also inevitably toughen the job in 'long only' as well. Oh, for the good old days, when little talent came into our industry, and when good MBAs still believed the market was efficient and therefore boring and went into consulting.

Morals Are Hazardous or "Stability Is Unstable"

Hyman Minsky, the economist, said famously that "stability is unstable" and meant that long periods of stability cause all types of leverage and other risk taking to grow until they use up all the risk units freed up by the greater stability. This process can go on and on until **finally** something goes badly wrong. The boss of a Midwestern pension fund echoed this attitude when he was recently quoted in *The Wall Street Journal* as saying that he was reaching for risk because it was getting hard for him to use up all his available risk units in what he saw as a decreasingly risky environment.

Twenty three years of anything is a lifetime, and will do a lot of conditioning or brain washing. Every time anyone reached to take more risk in this time period it paid off as asset prices rose and interest costs dropped. After several episodes of this, any decline is greeted like Pavlov's bell; investors salivate and buy more, on greater leverage, and at greater risk. To add to the attractiveness of risk taking, the global environment became more stable and more appealing with generally declining inflation world wide – significant regional spikes were not maintained – and declining interest rates. Global GDP also became less volatile. Perhaps macro economic management became better around the world, but I believe it was far more a favorable environment than a broad-based spike in the talent of central bankers. Greenspan's decision to go with the flow and emphasize stability may have come at the cost of longer-term problems. His unwillingness to move against asset class bubbles, but to announce clearly his intentions to mitigate the economic downside of bubbles breaking, introduced an asymmetry to risk: heads you win, tails you might lose a bit, but I will be trying to bail you out. The net effects of this moral hazard combined with other favorable factors are not surprising: the emergence of a $1.3 trillion, highly leveraged hedge fund business; and increased personal debt to a substantial new high (over 110% of personal income), facilitated

by new borrowing tools, especially easier and more generous mortgages, designed to tap into rising home equity. There has also been a dramatic increase in investments in other formerly fringe areas such as direct investment, venture capital, emerging markets, and commodities including forestry and oil and gas drilling. You can easily add to this list, but the net effect is that risk aversion on average drops and risk premia fall. Since we have never had such a long, drawn-out period of falling inflation, falling interest rates, rising market prices in all three great asset classes, and above all, **explicit** moral hazard delivered in person by the Fed's boss, we are looking at possibly the greatest opportunity to test Hyman Minsky's theory: we have had an unprecedented long period of good and stable times and we have responded by taking out unprecedented levels of debt leverage. The good news is we are engaged in an exciting real-life experiment for which there is no clear precedent. Guinea pigs of the world, unite! We have nothing to lose but our shirts!

End of an Era at the Fed: Greenspan Finally Mellows, but Then Leaves

It truly is the end of an era when I find myself agreeing with Mr. Moral Hazard himself – the man who encouraged the biggest bubble in U.S. history – but increasingly in late 2005 that has been the case. "History cautions," he said in July last year, "that long periods of relative stability often engender unrealistic expectations of its permanence and, at times, may lead to financial excess and economic stress." Greenspan also echoed our warnings on the low risk premia last August. "Vast increases in the market value of assets are in part the result of investors accepting lower compensation for risk… History has not dealt kindly with the aftermath of protracted periods of low risk premiums." And by October he could have been writing my quarterly letter: "Extended periods of low concern about risk have **invariably** been followed by reversal in asset prices." Even more explicitly, in September he added, "The irony is that economic stability produces its own risk." Pure Hyman Minsky!

Greenspan, despite his concern over potential "irrational exuberance," in 1996 had backed off from any attempt to interfere with the rising market, probably influenced by his personal political concerns. As his time ran out last year, however, with less need to worry about politics, his comments on the housing bubble showed much less timidity. He started quite conservatively in April saying, "For the nation as a whole, I do not believe that a 'bubble' has developed, but the extraordinary gains in some local markets may not be sustainable." By July he was escalating to, "Some regional markets have been charged with speculative fervor," and by September he had reached, "this **enormous** increase in housing prices." This is getting close to sustained jaw-boning against an asset class bubble, and jaw-boning from the Fed Chairman can be a powerful tool. Greenspan's mellowing even included the possibility of error in his bedrock policy of non-intervention against the 1999 equity bubble: "Whether that judgment [to not intervene in the equity bubble] holds up through time has yet to be revealed." This is a far cry from the certainty he showed in the rightness of his action until very recently.

As perhaps my last ever (sigh!) dig at pinball Alan, I can't resist digressing into his changing view on market efficiency. In the teeth of the bubble (now there's a metaphor) in 2000 he maintained a ludicrous, but still standard enough view, of market efficiency. "To spot a bubble in advance requires a judgment that hundreds of thousands of well informed investors have it all wrong." That all those worthy investors could be wrong – inconceivable! But by late 2005, he had become a believer, like most of us, in the market as a behavioral jungle: "Human psychology being what it is, bubbles tend to feed on themselves and booms in later stages are often supported by projections of potential demand." Wow! I believe that this later opinion is much closer to his natural (honest) view of markets than the earlier quote, for surely no one's real views change that much, that quickly. Let me end my Greenspan Era with my favorite quote of his in his role as the Great Cheerleader from January 2000. "The American economy was experiencing a once-in-a-century acceleration of innovation, which propelled forward productivity, output, corporate profits, and stock prices at a pace not seen in generations, if ever." He believed that the Internet had "pushed back the fog of uncertainty" for corporations and that "lofty equity prices have reduced the cost of capital. The result has been a veritable explosion of spending on high-tech equipment…**And I see nothing to suggest that these opportunities will peter out any time soon**." All this within 1 week of the peak from which the NASDAQ declined by over 75%, the Internet sub-index by over 90%, followed by the U.S. entering a recession and a capital spending bust! All in all, I shall miss him!

The King Is Dead, Long Live the King

So what about Ben Bernanke? For those of us who fear the long-term consequences of moral hazard and believe that a greater degree of concern with major asset class bubbles is warranted, the news is entirely bleak. Bernanke sounds like an unreconstructed Greenspan, perhaps in spades. Helicopter Ben, named for his comment

about dropping money by helicopter if necessary, did not get his nickname by sounding like he would remove all traces of moral hazard. "For the Fed to interfere with security speculation," he said in 2004, "is neither desirable nor feasible," but "if a sudden correction in asset prices does occur the Fed's first responsibility is to protect…to provide ample liquidity until the crisis has passed." As pure a statement of moral hazard as you could have. As for new housing bubbles, in complete contrast to Greenspan, he sounded utterly complacent late last year. Housing prices, he said, merely "reflect strong economic fundamentals." This in the face of a price series that shows the average U.S. house prices are over 2 standard deviations overpriced (a 40-year event randomly) when viewed as a multiple of family income. Nor is Bernanke any more sympathetic to the view that we share with Greenspan on the dangers of a low risk premium, commenting in September last year that "Risk premiums [in U.S. stocks] look quite normal." So, if you will forgive me:

The Bernanke put is alive and well
And where it leads no one can tell.

The Nature of 2005: the Revenge of the Risk Takers

The year came in conservatively and for 5 months the market went slightly down, and low volatile, high quality stocks did what you would expect in that kind of year – they outperformed. However, for the next 7 months, the market drifted up, accompanied by unexpected strength in volatile and low quality stocks – the kind of difference you might expect in a very strong year, not a nearly flat one. The year ended with a +9% spread in favor of the highest 25% of the market by volatility against the lowest 25%, a spread that had been -7% in May, so a 16% swing. Ouch! The gap in favor of the lowest 30% quality compared to the highest 30% was in a range of +6% to +11% depending on precise definitions of quality. The Russell 2000, which had been immense for 5 years, quickly fell 7% to the S&P by May and then recovered to dead flat, leaving the running to the Russell 2500 or mid cap, which ended 3% ahead of the S&P. Most measures of value versus growth gave a couple of points of outperformance to value in large cap and a draw in small cap, a very far cry from the over 15% a year spread for the last 5 years. The most irritating characteristic for GMO was that the best 25% of price/book, an antique, crude measure of value, and one that we believe is badly distorted by 'modern' accounting, beat the S&P 500 by 5.2%, where our sexy, quality-and-everything-else adjusted dividend discount model lost by 2.9%. The quantitative model we used 30 years ago would have had an easy year outperforming. To be fair, we have had more years in which our broad based value model beat price/book, and, on average, our approach has a 2% a year edge over book. But it is this year that counts. It is, in fact, the most profoundly disturbing aspect of quantery that simple, old-fashioned models regularly clean our clock.

Lessons of the Last Year

The two main lessons for me are simple: never underestimate inertia (or what investors typically refer to as momentum). Things are reluctant to change. Once moving, for example, they keep moving much longer than seems reasonable. This is a lesson I must have learned 27 times! We have done asset allocation now for well over 15 years, and we really have learned to let things run, and it has helped a lot. But, once again, we pulled the trigger too soon to play against low quality stocks that a year ago had already had 2 wonderful years. Despite being expensive, they had a third strong year, and hurt our performance. On the other hand, we did not reduce our very large bets on emerging market equities, an asset class that many strategists said a year ago had gone too far, too fast. In fact, helped by their being **relatively** cheap on our numbers, we didn't sell a share. Our strategy, led admirably by Arjun Divecha in Berkeley, was up 70%, 27%, and 40% in the last 3 years and is up 7% this year in 7 trading days. That turns a dollar into three and a quarter! Now, finally, we have to do some modest selling, but the moral once again is inertia lives; do not overmanage and let things run.

Hits and Misses in 2005

We predicted a -6% real return for U.S. equity and we had a plus 1%. We bears were unhappy, but so were the bulls with the 'normal' +5% to +10% estimates. As mentioned, we bet on high quality and this was a painful loss. On the positive side, though, we got asset class ranking about right. Emerging equity, our favorite, was far and away the best. Foreign developed, our second choice, also beat the S&P handsomely by 8.5% in dollar terms, or 24% in local terms, and these two winning bets were big enough to carry multiple errors. I believed in January that oil prices might easily stay over $50 and they did. And I feared a 15% rally in the dollar, because even if the long-term story against the dollar were to turn out to be correct, as we believe it will, a 15% counter-trend rally after the 2004 dollar weakness would have been standard operating procedure. I said it was my worst fear, and it was exactly what we got, but foreign market strength in local currency much more than offset their deficit in currency returns.

In implementation, emerging markets outperformed by 5%, and fixed income was generally up nicely, led by our emerging debt strategy, which curiously also outper-

formed by precisely 5%. Asset allocation, where we have 27% of our assets, had its sixth consecutive strong year, and our $3 billion of small cap U.S. was strong. Our very large foreign developed funds were collectively about a draw, and our U.S. large cap funds and our hedge funds were poor, but not disastrous, except in the case of our new quality strategy that underperformed the S&P 500 by 5.8%, but, for the record, was almost exactly flat against our index of high quality blue chips. All in all, perhaps adequate, since more of our assets won significantly than lost, but still disappointing.

Forecast for 2006

The past couple of years, the January editions of the quarterly letter have included a 1-year forecast for the S&P, based primarily on the Presidential Cycle. In keeping with tradition, we're going to make our predictions for 2006, but before we get into forecasting, I'd like to add the appropriate caveats. These 1-year forecasts are interesting and inform us on the margin, but our 7-year asset class forecasts are what drive our asset allocation bets. That being said, the 1-year forecasting methodology has captured the spirit of the exercise over the last 2 years when we have made these forecasts, so we're going to try again. (To remind you, the forecasts for the last 2 years were +10.5% and -3.5% nominal, or +8% and -6% real.)

2006 is the second year of the Presidential Cycle, which has typically been a weak year for stocks. The average real return for year 2s of the election cycle since 1932 has been +3.2%, with a little more than half of the years having a negative real return. Now, the +3.2% real return points to a weak year for the market, but it fails to pick up on something very interesting that happens within the course of the average year 2. As it turns out, the "year 2 effect" only lasts through the first 3 quarters of the year, at which point, year 3 begins. (The third year of the Presidential Cycle is the strongest of the 4 years, with no down years since 1950.) Take a look at the following table:

Year 2	Jan - Sep	Oct - Dec
Return	-4.1%	7.6%
% of up years	44%	83%

As you can tell from the average returns and hit rates above, the last quarter of year 2 is a much better time to be in the market than the first 3 quarters. If that's not enough data mining for you, let's split the January – September portion of the second years into cheap and expensive halves based on value. Slicing the data in this manner, 2006 ends up in the expensive half of year 2s where only 1 of the 9 years being studied ended in positive territory, and had an average real return of -14%. Given that most of our sample lies in the pre-Greenspan and Helicopter Ben era, where there was a lot less moral hazard flowing around the markets, **let's settle for a -8% return for the first 3 quarters of 2006**.

Recommendations for (the first 9 months of) 2006

Cash and more cash! Better yet, good cash substitutes like a conservative mix of hedge funds. We would suggest holding as much cash as your career risk will allow you to, which usually is not very much.

We run a variety of asset allocation products with varying degrees of aggressiveness. The absolute return accounts where we manage portfolios to make real money, i.e., beat inflation by the widest margin possible, are moving towards a 50% total weight in hedge funds and cash plus strategies. Within equities, emerging is still our favorite asset class, followed by high quality U.S. stocks, which are starting to look pretty exciting on a relative basis following another year of poor performance. Actually, avoiding stocks of junky U.S. companies, or shorting them where possible, is probably an even better bet than buying U.S. high quality stocks. At the high quality end, our interest is substantial, but our enthusiasm is moderated by the large element of specific risk: the stocks are so large, and industry concentration so high, that there is substantial risk for something going badly wrong with, say, a large drug company or the drug industry itself. The junky portfolio, in contrast, is made up of smaller and more diversified bets. Within fixed income, our second favorite category after cash is the 10 year TIPS with a real yield of 2%. All in all, we are cutting risk across our portfolios and concentrating most of the available risk units on emerging equities.

Taking as little risk as possible and living to fight another day seems to be the mantra for at least the next 9 months.

Ben Inker and Letters to the Committee

This quarter and next our Letters to the Committee series will cover the nature of risk in investing. Ben Inker is covering the state of the art, admittedly with a GMO twist. Next quarter, I will do Part 2, the fun part, which will cover the limitations and drawbacks I see with the state of the art.

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GMO

SPECIAL TOPIC

Ben Inker, Director of Asset Allocation

January 2006

Letters to the Investment Committee VI*

Risk Management in Investing

Part I: The Theory

You are probably used to hearing GMO lambaste conventional wisdom and the academics when it comes to investing. While being an effective investor almost by definition means ignoring or even defying convention, when it comes to risk control, the academic view and conventional wisdom are definitely useful. While we believe that neither tell the whole story when it comes to risk and risk control, they actually make an excellent starting point.

Conventional Recommendations for Risk Control

a) **Diversify across all asset classes, insofar as is possible.** The conventional view on this can be summed up basically as 'don't put all your eggs in one basket.' The academic view comes to the same conclusion, albeit with a lot more math. The argument is basically that, since asset classes are not perfectly correlated, a well diversified portfolio will have an expected return equal to the weighted average of the expected returns of the underlying assets, but a volatility which is significantly lower than the weighted average of the assets' volatilities.

   We come to the same conclusion ourselves, although we would tack on an additional rationale for diversification. In our view, one of the biggest risks an investor faces is the risk of overpaying for an asset. For an investor with a long time horizon, the volatility of an asset may not be of overwhelming concern, as long as the pricing of the asset is such that the investor is being compensated for taking that risk. Recessions, inflation, war, pestilence and other calamities generally do not have all that much impact over a 10- to 20-year time horizon, but buying the asset when it is expensive can be devastating. Diversifying broadly reduces this threat because it reduces the odds of having a large percentage of the portfolio in an overvalued asset class. Because of this, diversification not only reduces the volatility of the portfolio, but also the important risk of a multi-year disappointing return.

b) **Rebalance back to your long-term targets in a disciplined fashion.** Conventional wisdom and the academics like this for the same basic reason – if the original targets made sense from a risk/return perspective, there is no reason to let your portfolio drift away. In fact, almost everyone but the most extreme efficient market believers is in favor of rebalancing, since the only real argument against it is to assert that the capitalization weighted global securities portfolio is the only efficient portfolio, and that market movements merely reflect a well-reasoned change to that portfolio. This assumption is sufficiently heroic that even the academics who firmly believe that the stock market is efficient are happy to concede that one might want to second-guess the global markets in this fashion, for the sake of maintaining a consistent risk level.

   Our belief, again, adds a nuance to this idea that makes it even more important from our point of view than the conventional one. Given that the risk of overpaying for an asset is so deadly and the benefits of underpaying can be so material, rebalancing has the substantial benefit of automatically moving your portfolio away from asset classes that have done well, and are therefore at more risk of being overvalued, and towards asset classes that have done poorly, and are therefore more likely to be undervalued. While the academics view rebalancing as a pure risk-control exercise, to our minds it also improves long-term returns, since asset class returns are mean reverting.

c) Use an optimizer to build an efficient portfolio. This probably can't yet be called conventional wisdom, although it is old hat from the academic perspective, with Markowitz's paper on mean variance optimization for portfolios now over 50 years old.

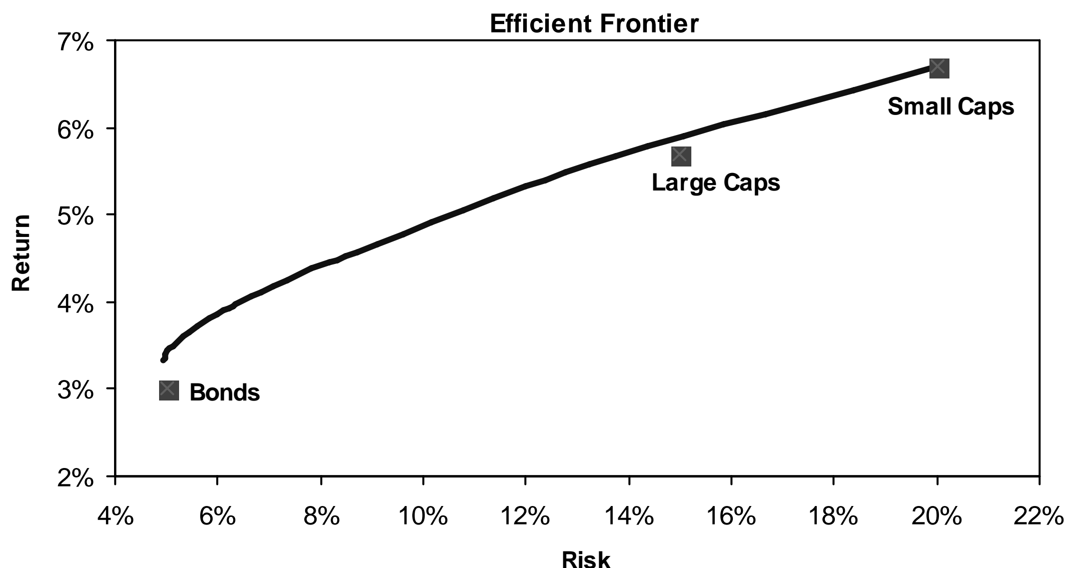
* The Letters to the Investment Committee series is designed for a very focused market: members of institutional committees who are well informed but non-investment professionals.

The academic argument is mathematically complicated but conceptually fairly simple. As a risk-averse investor, your goal in putting together a portfolio is to get the highest possible expected return for a given level of risk, or equivalently, put together the lowest risk portfolio that meets your return requirement. Mean variance optimization provides a way to do this, taking into account your beliefs as to the expected returns, volatilities, and correlations of the available assets. The result of this exercise is an 'efficient frontier' of portfolios, which are efficient in that they have the highest expected return possible for any given level of volatility. A simple version follows below, with three assets – large cap stocks, small cap stocks, and bonds.

The line is the frontier of portfolios made up of large caps, small caps, and bonds that provide the highest return for each level of risk. The important thing to note, particularly from the academic perspective, is that the squares for large caps and bonds are **below** the frontier. This means that at the risk level that each of these asset classes embodies, some particular portfolio made up of all three portfolios is superior to holding that one asset class in isolation.[1] The academics love optimization because it adds an element of mathematical rigor to the portfolio construction process.

Practitioners are somewhat more lukewarm to optimization, because it has significant practical drawbacks. First, it requires you to actually have beliefs with regard to the expected returns, volatilities, and correlations of the assets, which is not a trivial exercise. Second, it can be quite sensitive to those beliefs, so that apparently small changes to expected returns or volatilities can lead to wildly different portfolios. And third, the resulting portfolios are often so different from conventional portfolios that investors cannot stomach the career or reputational risk involved in moving over to them, choosing instead to ensure that their allocations mirror those of their peers.[2]

We believe that optimization is quite often a useful tool for investors despite these drawbacks, since the practical solutions to the problems seem more likely to improve portfolios than the reverse. First, while coming up with expected returns, etc., is not a trivial task, it can be quite helpful to undertake, since it can cause the investor to think critically about **why** an investment has the characteristics it does, and what kind of expected return is 'fair' given the characteristics of that investment. It is hard to see this type of analysis as a bad thing.[3] Second, the resulting portfolios will tend to be more diversified than the



[1] Small caps wind up on the efficient frontier for the simple reason that, as the riskiest and highest returning asset class, it is impossible to put together a portfolio as risky or with as high an expected return including the other two assets, barring leverage.

[2] There are more mathematical drawbacks to optimization as well. Mean variance optimization assumes that the variance of an asset is an acceptable definition of its riskiness, which is not true insofar as the distribution of returns is not 'normal.' And even further, the variance that should be used is not really the unconditional variance of the returns to the asset, but the expected error around the forecast, which is somewhat different, and many techniques for determining the expected returns are not even capable of coming up with the necessary standard error, let alone the relationship between those errors, which is required for determining the correlations. There are some ways around these problems, but they come with their own baggage.

[3] At least it is very unlikely to be a bad thing if any material thought is put into it. If an investor chooses to plug in trailing 10-year returns to each asset, for example, as his expected returns going forward, the optimization will have the probably disastrous result of encouraging the investor to pile into whatever assets have been doing well recently – the exact opposite of rebalancing.

conventional portfolio, with smaller allocations to the conventional choices and a smaller 'home bias' than exists in most investors' portfolios. And third, even though investors are unlikely to take the outcome of the optimization at face value and put 30% of their portfolio into, say, timber, seeing that the optimal portfolios contain large amounts of timber will tend to make an investor seriously consider at least a small investment in such niche asset classes, which is all to the good.

d) **Pay attention to the beta of your portfolio, and any assets you consider adding.** Beta is the sensitivity of an asset or portfolio to movements in the stock market. The conventional wisdom and the academics are really on the same page here, although the academics take it a bit further. The conventional wisdom says that beta is **the** primary source of risk to your portfolio and you should keep a close eye on it, avoiding increasing beta unnecessarily. Some academics suggest that beta is the risk in portfolios, and the expected return to an asset or strategy is determined by how much beta it delivers. In the extreme, this could argue against diversification, which would be a negative. But most academics are less dogmatic on the topic, arguing instead that low beta assets with reasonably high expected returns are a real benefit to a portfolio, just as an optimizer would suggest. Our own view is quite similar to the conventional one. While it is the case that asset pricing is quite inefficient and high beta assets can easily have lower expected returns than low beta assets, beta is extremely important from a risk perspective, and knowing how sensitive your portfolio is to the stock market is extremely useful, even though there are other dimensions of risk that are very important as well.

e) **Calculate the value at risk of your portfolio.** It's probably too soon to say that this is conventional wisdom unless you are an investment bank, but it is a measure that is growing in popularity. Value at risk (VAR) is an attempt to calculate the risk of a portfolio in terms of the amount of loss to expect the portfolio could be subject to over a certain period of time at a particular confidence level.[4] There are a number of different ways to calculate this measure, but the details are not necessarily that important for our purpose here.[5] The academic merit of VAR is that it is potentially a more flexible way of measuring risk than variance, and the practical merit is that most investors are capable of understanding what it means to say that a portfolio has a 1% chance of losing 5% over a 10-day period.

Our view is that VAR can be a useful way to think of the risk of levered portfolios (and indeed the hedge funds and investment banks who are the most fervent users are quite levered) with great flexibility to build into your risk model any idiosyncratic view of the world you have. But the quality of the data coming out is no better than that of the data going in, so VAR can easily give a false sense of security. If your VAR calculation underestimates risk, it may encourage taking on excessive leverage and lead you into serious trouble, à la Long-Term Capital Management. VAR can also lead to rather frustrating ex-post analysis, since if your portfolio actually loses 30% when its VAR was 10%, you don't know if the calculation was wrong or if it was actually a 6 standard deviation event.

Summary

Much of the conventional wisdom when it comes to risk control actually is wisdom. Paying attention to portfolio diversification, rebalancing, and beta are basic requirements for thoughtful portfolio management. While optimization and value at risk have more pitfalls in their use than the first three, they can also be helpful in constructing and analyzing investment portfolios. As long as their limitations are understood, they can be exceptionally flexible and useful tools.

[4] For example, an investment bank might want to calculate the 10-day VAR of its holding at a 99% confidence level. The result would be a loss on its portfolio, which would be expected to occur once in every 100 10-day periods.

[5] There are probably almost as many ways to calculate VAR as there are firms using it, but three common ones follow: 1) a covariance-based VAR calculation turns the variance of a portfolio using the same methods as mean-variance optimization and turns it into a value at risk; 2) a historically-based VAR calculates how a portfolio would have done if held through some period of past history - for example the past year - looking at the worst 1%, 5%, or 10% of events; and 3) a Monte Carlo simulation VAR would determine the loss in a similar way to the historical-based VAR, while using some other method of generating the returns besides a simple covariance matrix or history.

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GMO

QUARTERLY LETTER

April 2006

Jeremy Grantham

The Wile E. Coyote Market

plus Letters to the Investment Committee VII

For all I know they are still making Road Runner cartoons in which his admirably persistent assailant, Wile E. Coyote, is still racing off the end of the road, over the cliff, and half way out across the chasm as Road Runner hides behind the tree. But however narrow the chasm, coyote never makes it more than half way across before he looks down and realizes the ugly truth and, losing heart, falls like a stone. This is what today's market feels like to me, although it lacks Wile E.'s frenzy. It's as if the coyote this time is strolling out across the bottomless pit without a care in the world, whistling and looking up at the birds.

To a degree I have never seen before, today's U.S. equity market appears completely unimpressed with the growing list of negatives. There have been plenty of overpriced markets where everything appears to be just fine and you can just about sympathize with that main group of bulls – "The Extrapolaters!" – saying everything is great and therefore the market should keep going up. But, this time, one by one, the negatives have fallen into place, and Wile E. Market couldn't care less.

Let Us Count the Negatives

Interest rates have steadily risen at the short end, and the conundrum of low longer rates is disappearing as they also rise steadily, now to within 0.5% or so of long-term fair value on consensus inflation estimates. And for inflation fearers, the TIPS look even better. It is already easy to hold some cash, and it is becoming easier all the time to overweight bonds over stocks.

Oil and commodities prices have surged under the pressure of global demand. Recently they have also felt some effect from the increasingly socialist and nationalistic policies in South America and from terrorists in Nigeria. These rising prices must put pressure on inflation, consumption, and profits.

Global liquidity, without too much fanfare, has moved slowly and steadily from massive, and seemingly excessive, to increasingly moderate. This decreasing liquidity is an arrow aimed at what had become a global liquidity bubble that was driving global asset prices higher.

Anglo-Saxon housing markets are apparently topping out after having played a strong role in over stimulating consumption. Yet the U.K. market, particularly London, has made a teasing several-month recovery partly under the impetus in London of a large 'city' financial bonus year. But market declines, just like rallies, do not run smoothly. What is remarkable, though, is the complete faith expressed in the press that the tiny little weakness is over and a new bull market rules. Importantly, though, it is noted that last year had the lowest percentage of first time buyers for 25 years. That is what breaks all housing markets. The idle rich can keep markets going for a while on second homes and buying to 'let,' or rent, but in the end, you need new buyers. Inventories of unsold houses in general have been rising in the U.S., and sales in general have been declining. Prices in bubble cities are off a little. If it is not the beginning of the end, then at least we can see it from here.

The **dollar** looks increasingly suspect as the future for rate increases looks stronger abroad than here. Given the past rise in rates here, and the average U.S. rate advantage last year, indeed, the 10% to 15% dollar rally does not seem that impressive in hindsight. As relative rates look less attractive here, the dollar might well fall and make investing in the U.S. market less attractive. (Not to mention – almost – the trade deficit going on $900 billion a year and, what is really shocking, that our total imports are almost 60% bigger than our total exports.)

The **Epic 23-Year Credit Cycle from 1982** is still the backdrop. Inflation and rates cannot decline much;

increases in debt, especially mortgage debt, cannot continue at the recent rates; credit cannot stay so available; and risk premiums cannot narrow much further, unless you want Brazilian debt trading through U.S. governments. But the long, favorable cycle has done a great job in producing a state of permanent confidence in which risk is barely seen to exist.

Very, very high profit margins around the world, but particularly in the U.S., absolutely cannot continue. Exhibit 1 shows the U.S. picture. If global high profit margins cannot produce offsetting increased investment and competition, something very odd must have happened to capitalism. Look at Exhibit 1 and make your own guess about the timing of a decline, but **now** looks good to me.

Chinese labor, cheap and plentiful, has been said to be a reason for high profit margins, but surely Econ 101 would say that any resource equally available to everybody will pass through the usual competitive system that ends with a fair return on capital and no more. Only if cheap Chinese labor helped us and no one else could it be a permanent contributor to our high profit margins.

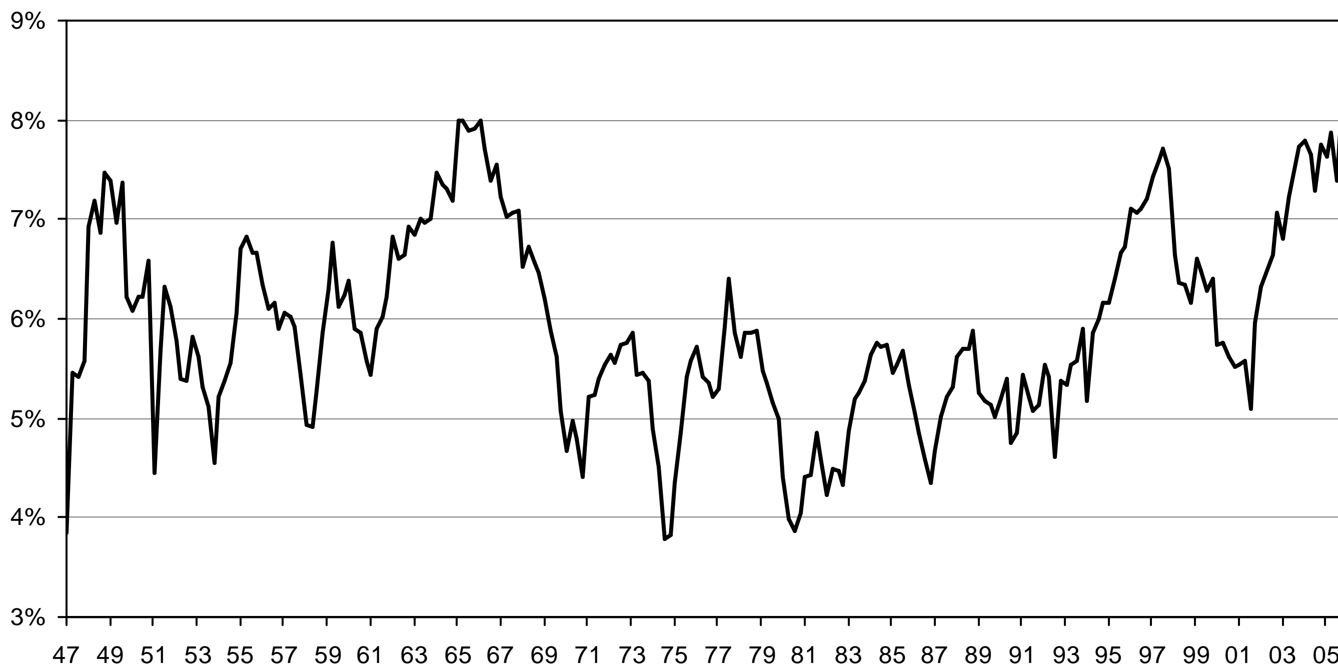
The **Presidential Cycle** effect ain't what it used to be, at least not recently: last year's market was not strong, but unexpectedly up a little rather than down, helped perhaps by Greenspan's retirement. Now, though, Bernanke has an opportunity to behave in a Presidential Cycle way. If I were he, and wanted to stay in good standing with the administration, I would go for one or two extra quarter points this year so I could cut rates more next year. Remember, only increases in employment in the last 2 years move the vote. If he does this, it will help the infamous year 2 market to be weak, and year 3 to recover a bit, as nature intended.

The **savings rate** has declined year by year for a decade, often unexpectedly. This has created an equally unexpected series of strong consumer years that are in turn so good for profit margins. Under the influence of some of the factors discussed above, and particularly rising rates and stalling house prices, surely savings will rise a little, causing consumption and profits to be a little less than expected. Surely then Wile E. Coyote will finally look down.

Recent Forecasts

Absolutely nothing changed last quarter, indeed, the market seems stuck in a groove. So, once again, our forecast of quality stocks outperforming and the U.S. equity market being weak was completely wrong, and, once again, our faith that **should** the U.S. market hang in, then emerging market equity would beat it by a lot, and developed

Exhibit 1
Profit Margins in the U.S.



Profit Margins: *Corporate profits after tax with IVA and CCAdj as a percentage of final sales of domestic product*

Source: GMO, BEA As of 12/31/05

foreign markets (EAFE) would at least beat it was completely justified. Overweighting fixed income was moderately expensive, but lowering duration was right. Other bets like the anti-dollar bet did not really matter.

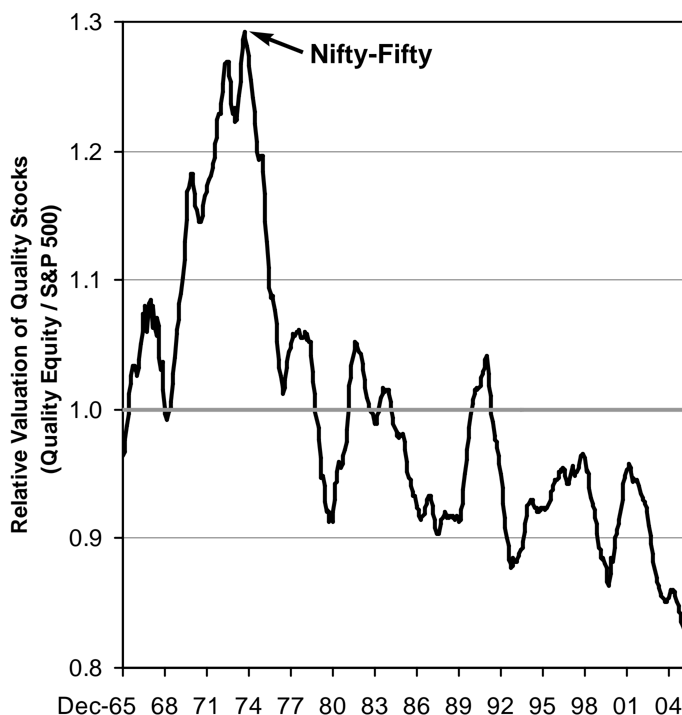
Junk's Revenge

The drain that the outperformance of speculative stocks puts on our performance, particularly in the U.S., is getting tiresome to us and no doubt to clients. I try to console myself by remembering that every big win we have had has been preceded by pain as we increase our weights in factors that are falling and getting cheaper. (That's a complicated way of saying that we always seem to be early.) But high quality versus junk in the U.S. is now almost a bona fide 2-sigma event (a 40-year outlier), and I think high quality could beat the market by 20% or more, depending on what happens to the relative profit of quality companies.

Exhibit 2 shows the relative value of the highest quality 25% of the market cap compared to the S&P 500. Over 40 years it has had one 'blow-off' in the Nifty Fifty era of the late 1960s. The Nifty Fifty, uniquely, was more of a quality, or 'Great Franchise' market, than a growth market. Now junk has had a heyday, not just in U.S. stocks, but everywhere else, and the quality stocks are as cheap as they have ever been. And even this measure does not fully capture the potential for quality stocks that could also benefit from a major swing in favor of their profit margins. Exhibit 3 shows the long-term ebb and flow of relative margins between high and low quality companies. Once before, around 1980, the great companies got outmaneuvered by inflation, and the lower grade, more desperate companies marked their prices up for inflation more rapidly in order to survive, and the profitability gap almost disappeared. Now, although the margins of high quality companies are just fine, those for low quality companies have moved up dramatically, under the impetus of a very strong global economy and the consequent greater need for secondary or marginal capacity. Once again, the gap between the two groups is extremely narrow. The real money will be made by us when high quality companies once again sell at a relatively overpriced level on above average profit margins. Right now, though, I would be happy to settle for a normal relative evaluation on a normal margin premium. Yes, please.

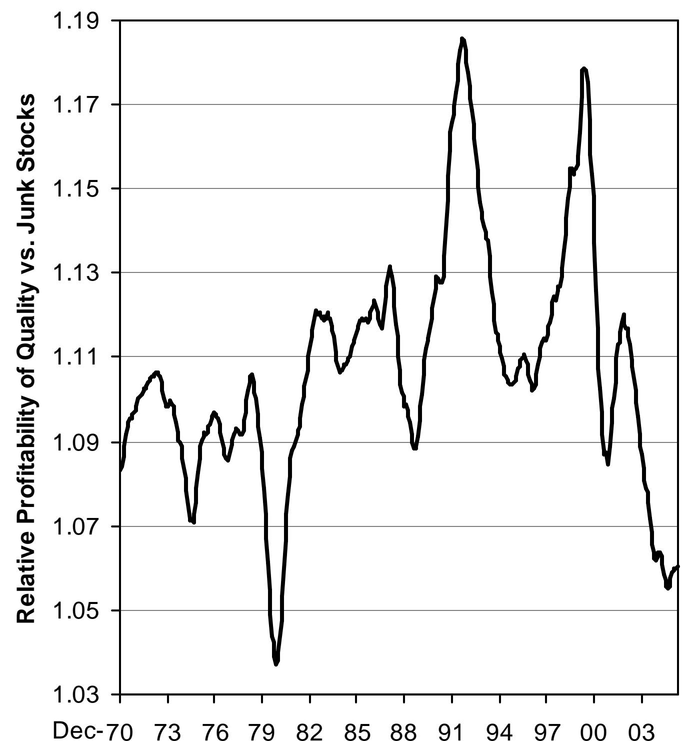
As a footnote, there is a rather unpleasant line of logic I can torture myself with. Small caps were at their second lowest relative level in March 2000, and price/book was actually at its all-time relative low. Being believers in mean reversion, we, not surprisingly, predicted a dramatic

Exhibit 2
Valuation of High Quality Stocks Relative to the S&P 500



Source: GMO, Standard & Poor's   As of 3/31/06

Exhibit 3
Relative Profitability of Quality vs. Junk Stocks



Source: GMO   As of 3/31/06

move in their relative performance that would take them back to normal. This happily worked according to Hoyle, but as historians we also know that dramatically depressed assets always overcorrect through fair value as by then they have developed momentum and crowd pleasing qualities. Small cap stocks and price/book have both done precisely that, and are now substantially overpriced, **but no more so than factors usually over run**, and less than these particular factors over ran on the upside by 1982 after their legendary 1974 low. So if you expect small caps and price/book to over run normally, how could **quality** – not exactly concentrated in small caps and price/book – hope to do well? This is often the mistake of value managers like us: to get out of overpriced sectors like size, value, and quality too soon, and to assume that now that their opposites are cheap they will turn obediently on a dime. However, I believe we are in the ballpark for changes in the relative strength in all these parameters: small, book, and quality. I keep reminding myself, though, how painful it can be when on the wrong side of the last few months of a blow-off.

GMO Performance

The combination of the market rally and exceptional strength in junk in the U.S. has caused a difficult environment for our quality-tilted, slightly bear market oriented approach in the U.S. for over 3 years. The 3 years before that of a falling, high quality dominated market gave us the reverse – strong performance. Foreign (EAFE) markets had a substantially less hostile spin for us in the last 3 years, although somewhat so, and our three very strong bear market years were happily followed by 3 years of modest outperformance. Emerging, also with a dilute version of the U.S. problems, had two strong years, and a weak one in the last 3 years, and is behind in the first quarter. We typically – but unfortunately not always – can really show our paces in a sustained bear market with a high quality bias, and this meshes completely with our current forecast. Now if …

For the quarter, U.S. and emerging performance was poor, and our EAFE accounts were slightly ahead. Our bond strategies were mixed except, once again, emerging debt, which had a strong gain. Our hedge strategies continued to be very low volatile, reflecting the markets with only modest positive return on average. In our asset allocation accounts, our heavy overweight in emerging equity compensated once again for other errors, notably an overweight in high quality, and they managed to pull ahead in the first quarter in a year that, if up, would be our seventh consecutive up year. I hope the emerging equity stone has not lost all its blood, and that our other big bets – pro-quality and anti-U.S. equity – will soon kick in.

Postscript: Silly Bull Case #212

"Let's compare the P/E reciprocal (earnings yield) of stocks to the least attractive, most overpriced fixed income security to prove how cheap stocks are." Recently the *Financial Times* enthusiastically quoted a money manager justifying U.S. stock prices by comparing earnings yield to U.S. 10-year TIPS. This raises a series of interesting points:

1. As always – boring, boring – fair price for equities in aggregate should equal replacement cost (Tobin's Q). However hard this may be to calculate, it is easy to agree with the principle and to realize that replacement cost cannot jump around with rate changes.

2. And what about the principle of using a yardstick that itself is influenced enormously by the usual, flaky behavior of investors? We efficient U.S. investors, for example, recently sent the long TIPS from 4.4% yield in 2000 to 1.5% recently. Some yardstick! A fixed yardstick is surely better, and we prefer the long-term return requirements that investors have for equities and bonds, apparently around 5.7% and 2.9% real, respectively.

3. The use of silly, overpriced fixed income yardsticks brings to mind two extremes. First, in the U.K., why not use their 50-year government TIPS, in some ways a very senior dignified security? It recently hit a low yield of 0.35%. (Fama and French, by the way, no doubt thought this was a perfect reflection of the total lack of all future risk, etc.) Used as a yardstick, the 50-year TIPS would certainly have justified U.K. P/Es of 50 to 100 depending on the technique used. In fact, the extreme argument is that in the long run, stocks are not risky enough to justify any premium over bonds at all (see Dow 36,000) which, therefore, could justify a stock market with an earnings yield of less than 0.35% or a P/E of about 280 times! This would be about 20 times replacement cost. Second, it is fun to remember the hit squad sent out in 1989 by Salomon Brothers that toured U.S. investment houses arguing that with Japanese bond rates so low the Japanese market, then 65 times, was a bargain that should have been 125 times. Cross my heart, it's true!

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GMO

SPECIAL TOPIC

April 2006

Jeremy Grantham

*Letters to the Investment Committee VII**

Risk Management in Investing (Part Two)

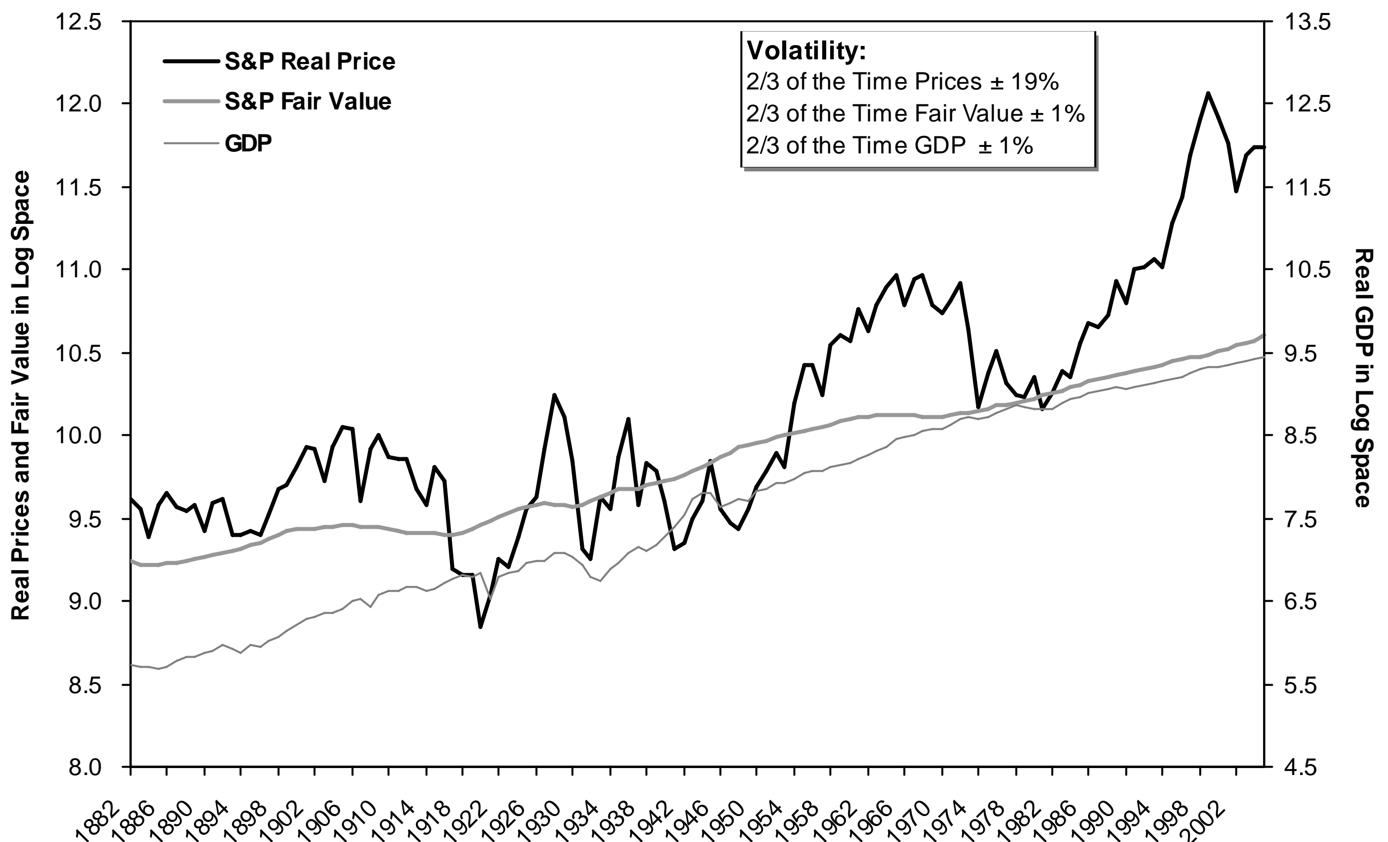
Risk and the Passage of Time: The Extreme Importance of a Long Time Horizon

Huge Behavioral Risk versus Small Fundamental Risk

Exhibit 1, the "Exhibit of the Quarter," shows the incredibly low volatility of the U.S. GDP, which two-thirds of the time has a volatility that is a mere ±1% around its long-term trend of about +3.5% a year real. This trend is stable because the economy is mean reverting, and bad times (like the 1930s) that produce spare capacity in both labor and capital are followed by strong times as the economy works to use up its excess resources. This ultra

Exhibit 1

S&P Prices Relative to Fair Value and GDP



Source: GMO, Standard & Poor's, Federal Reserve *As of 12/31/05*

* The Letters to the Investment Committee series is designed for a very focused market: members of institutional committees who are well informed but non-investment professionals.

stable GDP engine can be thought of as the engine driving corporate profits and dividends. They in turn, although far less stable at a yearly level, follow the GDP in its mean reverting tendency towards a 'normal' level. Because of this, if you were clairvoyant in 1882 about the entire actual stream of corporate earnings and dividends until today, and used your clairvoyance to calculate a fair value, and then did the same for 1883 and so on for every year, it would produce a very stable trend of stock market fair value, as first revealed by Robert Shiller 18 or so years ago. Perhaps, not surprisingly, the volatility of this fair market value also stays within ±1% of its long-term trend two-thirds of the time. But what a contrast these two series are to the actual stock market, which manages to spend two-thirds of its time within only ±19% of fair value. This means that the market is 19 times as volatile as the underlying fundamentals would seem to justify! Understanding this 19 to 1 discrepancy would put us a long way along the road to understanding risk.

The Real Risk in Investing: Career and Business Risk

The key to understanding this unnecessary volatility is behavioralism, a nice academic way of defining inefficient or irrational behavior – at least inefficient and irrational in its approach to profit maximizing. For those interested in a simple story, the main driver in risk management for most investors is, unfortunately, career and business risk. This means that controlling short-term benchmark risk dominates, and not the risk of the actual client – not the committee, but the actual client – losing real money. This problem is now referred to often as 'agency risk' meaning it's the other sucker's money. Our ultimate job description is to keep our jobs, and in 1936 Keynes explained in Chapter 12 of *The General Theory* that you do this by never, ever being wrong on your own. If you stay with the pack, but ideally execute quicker and slicker than the next investor, your career will never be in danger. This attempt by investors and firms to limit career and business risk creates momentum (or herding), which from time to time pushes prices far away from fair price. (See Letters to the Investment Committee I, 3Q 2004.) But how do you deal with an uncertain future? If all managers and firms produce their own estimates, pretty soon you will be in a chaotic world of very different estimates and masses of career risk. Borrowing a little from Keynes, the answer to this conundrum is **extrapolation**. If we all agree to extrapolate the current conditions, all career risk has been removed and we are all betting on the same numbers. (Keynes said that extrapolation was the 'convention' we adopt to deal with an uncertain world, even though we know from personal experience that it is not the case.) But extrapolation causes the extreme market volatility relative to the stable fundamentals that we observe.

Exhibit 2 shows long-term changes in profit margins and P/Es. As mentioned in Letters to the Investment Committee II (1Q 2005), serious bedrock value is replacement cost and this is arrived at by multiplying low profit margins in a depressed economy by high P/Es and vice versa. The perfect correlation would be -1. Exhibit 2 shows the extent of behavioralism. We collectively cannot even get the sign right and the actual correlation is +32%. We actually multiply high margins by high P/Es, particularly at market peaks, and vice versa at market troughs, where exactly the reverse would be particularly helpful! This double counting is a large part of the Shiller effect. There are other behavioral twitches – deviations from the rational behavior of the assumed economic man of Modern Portfolio Theory (MPT) fantasy – but behavior designed to minimize career risk does the heavy lifting in driving prices away from fair value.

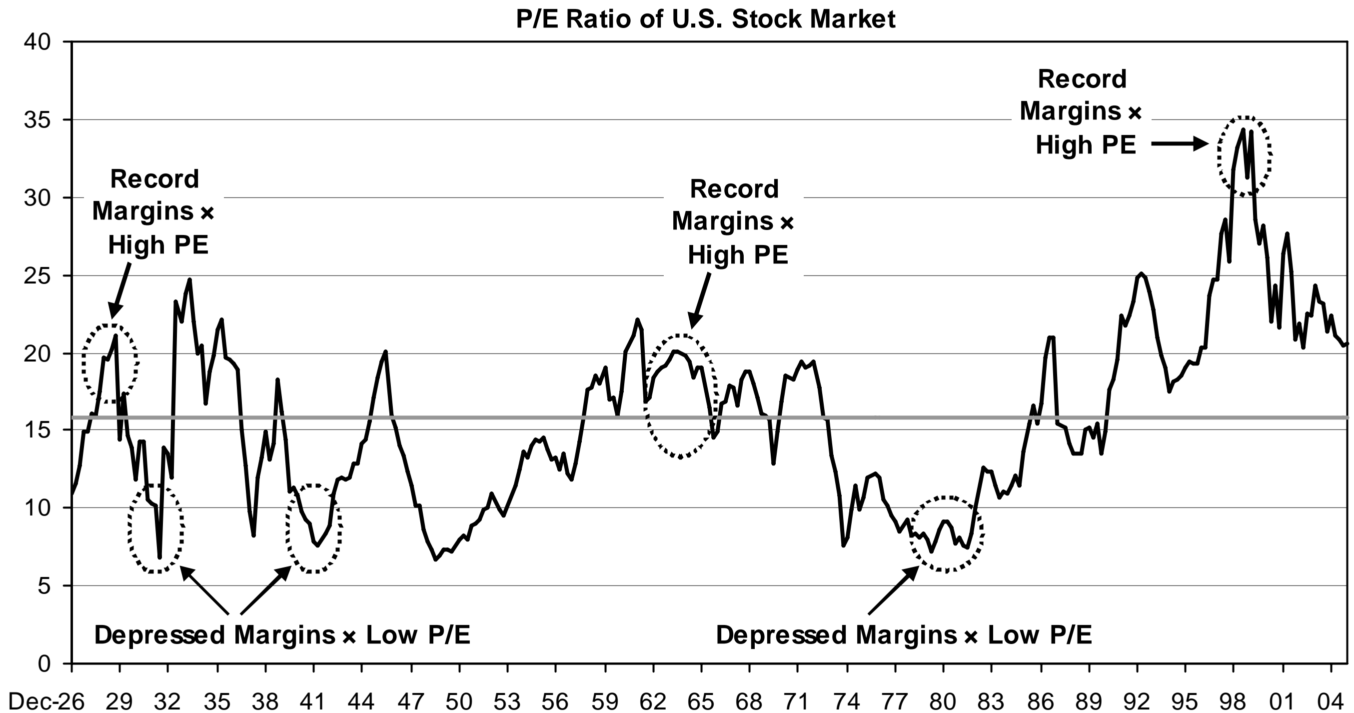
The Market Really Is a Tiny Bit Efficient

Assume for a while that the argument above is correct. What it suggests is that the more you ignore the short-term, career driven, almost hysterical-looking volatility, the closer you will get to the much more stable long-term fundamentals. To help us, the market is not completely inefficient, but is like a stopped clock, efficient every 6 or 7 years as it passes through fair value, usually on its way to another substantial mispricing. **This occasional efficient pricing is necessarily the case, for in the long run, fair value is arbitrageable.** In an overpriced market, corporations will build more plants, sell them in the market at twice price, and finally drive the margins down until we sell once again at replacement cost or fair value. (See Letters to the Investment Committee II.) Value, therefore, is like a mild, but very steady gravitational pull towards fair value or efficiency. Every 1% of the time or so the market is efficiently priced and 99% of the time it is inefficient. This might be thought of as the very, very, very mild form of market efficiency. Of course, the case for calling it the Inefficient Market Hypothesis (IMH) could be argued to be 99 times stronger!

Reducing Volatility in a Mean Reverting World

A major difference between the risk that would be involved in an efficient market and the real mean reverting world is the way volatility changes with time. In an efficient market all mean reverting tendencies in the economy would be recognized and discounted, providing a much lower relative stock price series than actually exists. Only the truly unknowable aspects of the future would be

Exhibit 2
P/Es and Profit Margins



Source: GMO, Standard & Poor's *As of 12/31/05*

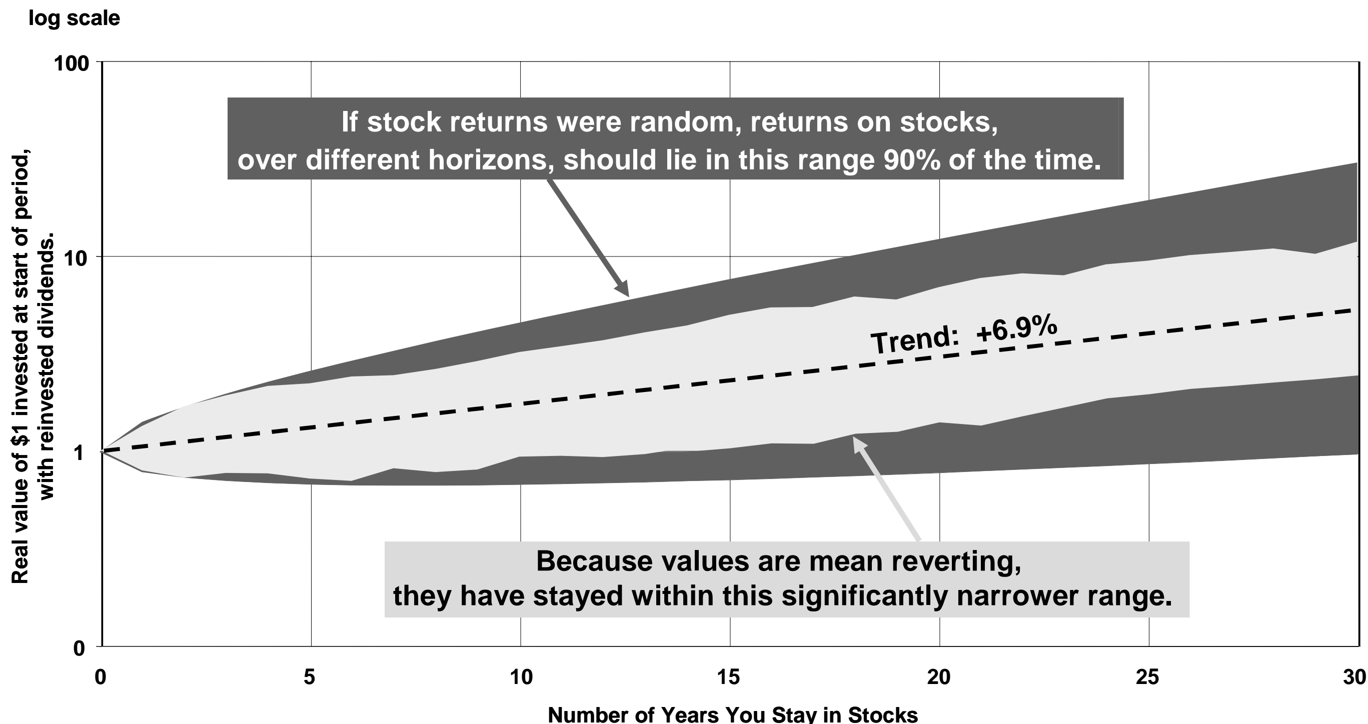
left out of the price, and they would produce a series of truly random effects and a normal distribution of prices (the familiar bell shaped curve). In a random, or 'efficient' series like this, volatility increases with the square root of time, that is to say, the volatility over periods of 16 days (or years) is four times greater than for 1 day (or year). In real life, though, the mean reverting tendency of economies and markets works to reduce the volatility below the random level of the efficient market. The outer band or cone in Exhibit 3 (taken from Andrew Smithers) shows how the level of volatility that would contain 90% of all occurrences grows with time in a normal distribution. The inner cone shows the actual historical increase. As you can see, at 3 years there is no important difference, but at 15 years there is an important difference. It is at 30-year horizons, though, that the differences become truly dramatic: the actual deviations around trend are only **half** in our real mean reverting world of what they would be randomly in an MPT world! (Trend, or approximately 6.9% real ±2.8% compared to 6.9% ±5.8%.) It should also be remembered that a 30-year horizon is purely arbitrary and that beyond 30 years the ratio of real risk to the theoretical risk continues to improve.

So, capitalist instincts – extra returns attract extra investment – cause the economy and profits to always move back to average or mean revert. This is absolutely **not** anticipated efficiently in the stock market, but exaggerated through the working of career risk and extrapolation. This in turn creates a world in which mean reversion in equity prices is so strong that **real risk in equities reduces steadily with time.** The equity risk premium – the reward for holding stocks instead of risk free cash – has always looked high to academics. It is **very** high relative to the risk of the long-term holder, but reasonable for the risks of the short-term holder exposed to extreme and technically unnecessary volatility.

The Importance of Extreme Events

The previous point deals with how the 90% range around trend narrows because of mean reversion. However, the extreme 10% this analysis misses is particularly important. For 90 or 95 percent of the time, all you have to do is show up for work and keep your nose clean. It doesn't really matter what you do since assets are reasonably priced relative to their risk and each other. But once or twice in a career there are major aberrations and it absolutely matters what you do. It is the time to use some of your career risk units and try to make a difference. Mandelbrot has weighed in on this point with his book *The (Mis)Behavior of Markets*, which contains one of my favorite quotes: "Economics … has not truly come to

Exhibit 3
Distribution of Real Returns from Investing in the S&P 500: 1871–2005



Source: Smithers & Co. Ltd.

grips with the main difficulty, which is the **inordinate practical importance of a few extreme events.**"

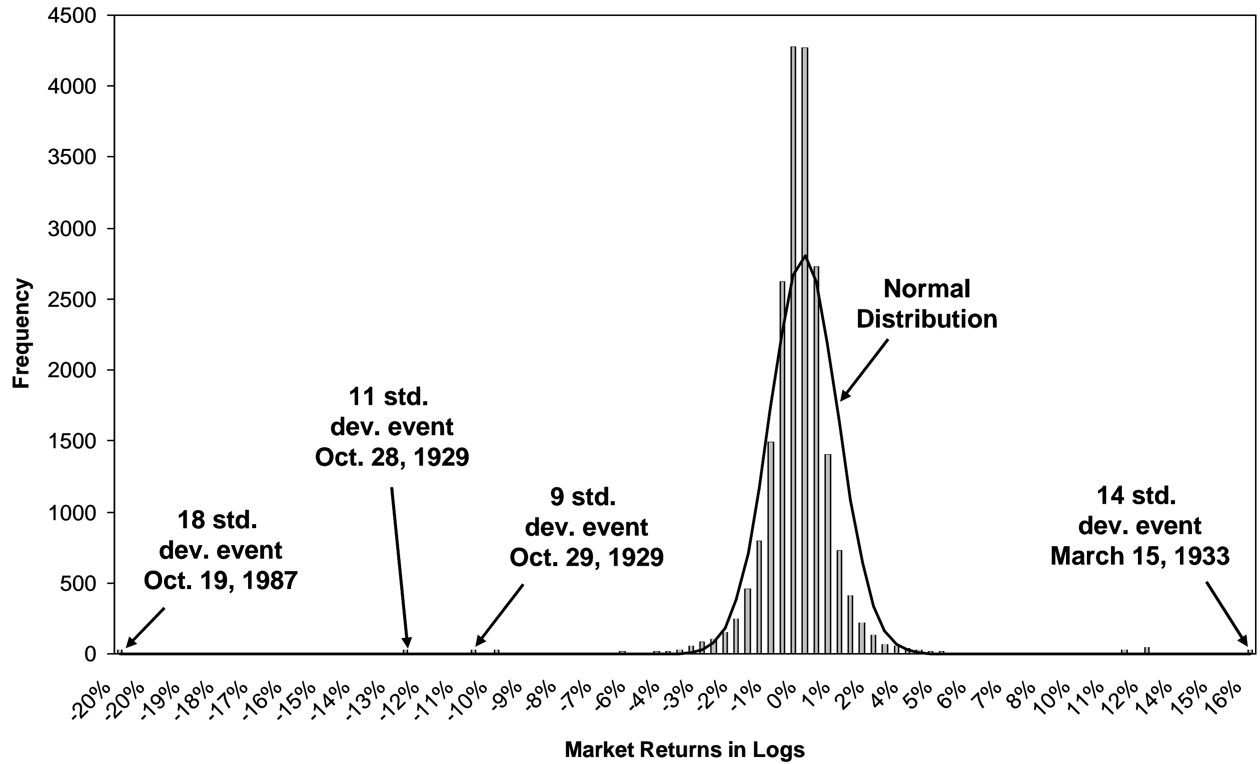
Most financial analysis, which would include MPT, really assumes a normal bell curve distribution (known to academics as a Gaussian distribution), but many aspects of the real world and the stock market are power laws that form what are known as Paretan distributions. Mandelbrot and Taleb recently wrote an excellent article for the *Financial Times* that dealt with these two different types of uncertainty distributions. My favorite tidbit from the article (altered slightly by me) is that a **normal** distribution could be demonstrated by looking at the weight distribution in the Super Bowl and how it is affected by adding a gigantic 500 pound man: the average weight goes up by a tenth of an ounce. If, however, you were studying the distribution of wealth and you added Bill Gates, the average wealth would move from $50,000 to $550,000! That is a power law or Paretan distribution, and much of the market is more like that: the real action is contained in the last few outlying points. In contrast, the dominant academic view of the period between 1975 and 1995 was almost 100% concerned with normal distributions. Perhaps partly in consequence, there has been a strong and painful tendency to underweight the significance and probability of new and potentially terrible outlying events. This, ironically, has been the case at least as much for heavyweight quants as for traditional investors, and the list of sufferers has famously included a couple of Nobel Prize winners in economics.

Time Reduces Even the Risk of Extreme Events

What I'm particularly interested in here though is the effect of **time** on these important outliers. Exhibit 4 shows the distribution of a daily price series compared to a normal distribution. It appears oddly and interestingly to have a very large number of very small changes, more than you would expect. But the real action is with the outliers. 1987 was an 18-sigma event; the sun would have to cool down completely before you would expect to see one of those based randomly on the distribution of the other 99.9% of all days. These outliers have enormous implications for decisions such as leveraging and selling options. You take home a nice profit year after year, and over 10 years it can look 'riskless,' and then, bang – you're dead. Some hedge funds have an element of this selling insurance imbedded in them, so caveat emptor. Exhibit 5 shows a distribution of yearly returns. Now we only have to deal with a measly one in 3,000 year 'random' event in 1931 and note that the other end is 1932 – not a complete accident and enough to materially narrow the distribution of 2-year returns, but space does not allow an extra exhibit. Exhibit 6 shows the 30-year distribution and it **is now a normal distribution!** From the

Exhibit 4

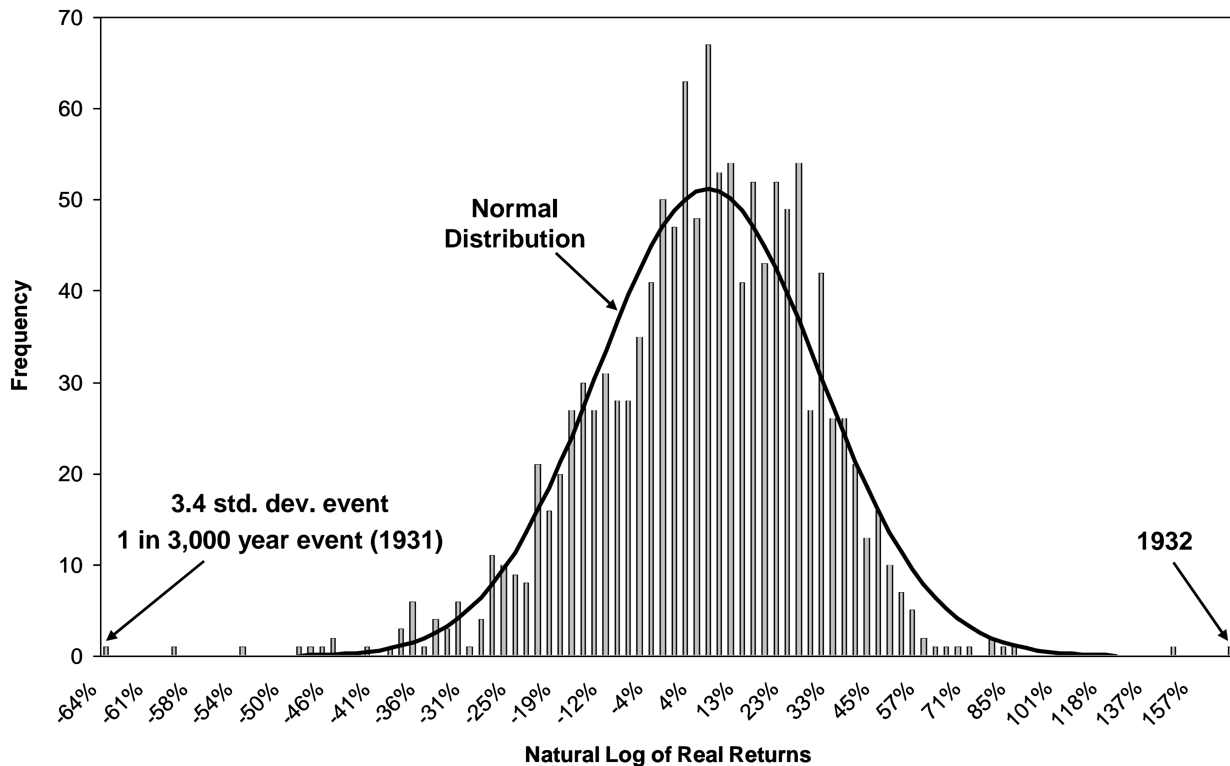
Distribution of Daily S&P 500 Returns (1928 – Present)



Source: Standard & Poor's, Global Financial Data

Exhibit 5

Distribution of Yearly S&P 500 Returns (1900 – Present)



Source: Standard & Poor's, Global Financial Data

last point we covered on mean reversion, we know that it has half the **range** that would have been expected from the daily volatility, but it is still a normal distribution. And one in which **all** the outliers have disappeared.

Our Past May Have Been a Lucky One

It must also be remembered that although all the outlier events disappeared in these 30-year holding periods in the last 80 years, the actual experience may well have been lucky for the U.S., the U.K., Denmark, and a few others. For Czarist Russia the market risk did not work out so well. Germany also took its licks both in hyperinflation in the 1920s and in World War II. We have only one flight path in history to study, and it could have been a much less successful one. The safest procedure is to take all relevant examples, not just the U.S., as a measure of future outliers. Having said that, the overwhelming majority of event risk was reduced by the passage of time and mean reversion. The U.S. recovered from the depression as if it had never occurred. Japan caught up, and Germany recaught up with Europe after the destruction of WWII. Only when irreversible, permanent loss of market value occurs (e.g., 1919 Russia), can mean reversion not work its magic. It is hard to mean revert from zero. This point, importantly I think, always argues for being more conservative than would be justified by historical data only.

Some Implications of Risk Reducing with Time

A) Leverage

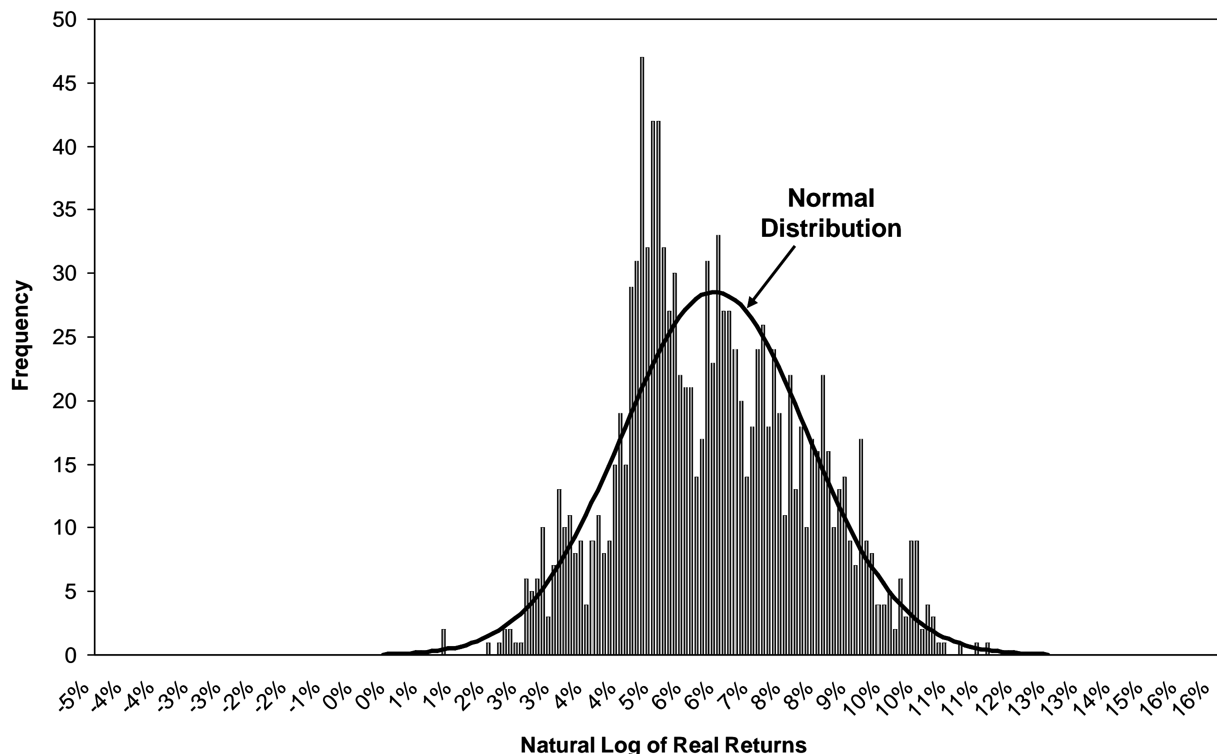
Enough leverage can undo all the best efforts of mean reversion to reduce long-term risk because under the pressure of a severe decline exaggerated by leverage, the investor can be forced by margin calls or pure panic to sell before prices have time to move back up. This is particularly the case since short-term outlier risks are typically underestimated. Such underestimation is a forgivable crime for long-term unleveraged investors, but often a terminal error for short-term leveraged investors. This is especially relevant today when leverage and risk assumption have never been higher.

B) Holding Periods

Ironically, most of the risk to long-term investors in equities comes from panicking in the short term and closing out positions that then mean revert. (Classic examples of this would be institutions firing value managers and hiring growth managers in 1999 because they couldn't stand the underperformance, and a whole generation of investors in the 1930s moving **permanently** out of equities.) Selling in declines throws away the powerful risk reduction effect

Exhibit 6

Distribution of 30-Year S&P 500 Returns (1875 – Present)



Source: Standard & Poor's, Global Financial Data

of mean reversion. Most investors would be better off if they had a hard rule that everything they bought had to be held for 30 years or longer. Even more certainly, they would benefit if the rule only allowed the selling of an asset class at a price well above its long-term trend.

C) Stocks versus Bonds

In my opinion, the risk premium for stocks appears to be set by short horizon investors with their unnecessarily high stock risk. (Equities seem to give a type of illiquidity premium in the form of risk reduction for long-term holders who give up the normal advantages of liquidity – frequent selling.) The long horizon argument for a much lower risk premium is strengthened by two further points. First, bond volatility does not appear to reduce at long horizons as that for stock does, and it may even widen a little. And second, traditional or nominal bonds have the outlier event from hell – the pain from which definitely **never** mean reverts – unexpected, rapid inflation. Hyperinflation knocked 98% off German stock values, but they then bounced back because they were real assets. German bonds lost 92%, but lost it forever. Long U.S. bonds in the 1970s lost an accumulated 50% of their buying power to inflation (from 1967 to 1981). Inflation rates might mean revert, but the real asset value of bond holders during the inflation is eroded permanently.

Conclusions?

A) Long-Term Holders

Does this leave me recommending 100% stocks and 0% bonds? Not quite. In a world in which selling stocks is not allowed for 30 years and you always start at fair value and have volatilities that look like the last 80 years, the optimal return does indeed come from 100% stocks. Even if you rebalance yearly and assume a more modern risk premium of stocks over bonds of only 2.8%, this is still the case.

There are several reasons, though, for owning bonds, especially a mix of nominal and real or inflation protected bonds. An annually rebalanced 80/20 stock/bond portfolio only reduces return by 0.22% from the 100% equity portfolio if the last 80 years of data are adjusted to give a 'modern' 2.8% risk premium, yet it reduces short-term volatility or risk by about 20%. This is a real bargain if we allow for even a small possibility of some outlying catastrophe **specific** to some organization – the college burns down and the treasurer forgot to pay the insurance premium – or more likely some general equity setback of a hitherto unrecorded sort like a 20-year Japanese-type mini depression. But the most potent reason to own bonds, even for 30-year horizon investors, is **mispricing**. If stocks are badly overpriced and bonds are not, the mean reverting nature of mispricing means it is just silly to ride out the considerable, and unnecessary, pain of having the markets move back to fair price. This is the most important topic for next quarter, which covers the risk of mispricing and problems with volatility and value at risk (VAR), even in the short term.

B) The Real World

Very long time horizons are fine in theory, but committees in real life typically have to deal with an investment pain tolerance of about 3 years, far too short to receive the main risk reduction benefits of mean reversion. Committees still generally respond to pain by moving away from it and, that being the case, stocks are much riskier than they have to be and outlier events like the 1929 crash pack their full enormous punch. In the future, time horizons will probably lengthen, and if they do institutions will really benefit. The irony for now is that most institutions have been given the glorious, natural advantage of a long horizon and choose in most cases not to use it. Only a handful of institutions deliberately set out to sell liquidity or be paid for being illiquid, and illiquidity at any horizon is a market characteristic that is irrationally feared and therefore heavily paid for. In the meantime (simplifying the case to a two asset class world of stocks and bonds that are both fairly priced), institutions face the theoretically unnecessary task of optimizing portfolios using much higher 3-year risk or volatility, which calls for optimal portfolios of 35% to 40% in real and nominal bonds **with a consequent substantial reduction in long-term return.**

A Final Caveat

The worst of all possible worlds – but unfortunately one that is common enough – is one in which committees assume they **and their successors** will be able to stand short-term pain and therefore can sensibly have a very equity-heavy portfolio only to find out the hard way that it was simply not the case. Rapidly changing committee membership and a lack of institutional memory – more common than not – make this an easy trap to fall into.

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QUARTERLY LETTER

July 2006

Jeremy Grantham

Way to Go Ben! (In which Ben Bernanke shows his claws – well, long nails anyway – and appears ready to make off with the punch bowl.)

plus **Letters to the Investment Committee VIII**

Ben Bernanke Gets on the Program

For a while it looked as if Ben Bernanke had lost the plot and believed that the Presidential Cycle was a statistical artifact. By prior standards he was simply too friendly in words and deeds for a year two. The suggestion in my last quarterly letter was that if he really knew on which side his political bread was buttered, he would quickly toughen up his language and consider one or two more quarter point rate increases than the market really cared for. By scaring the market a bit he would have more room to lower rates and talk more sweetly next year in the critical third year of the Presidential Cycle (starting in October). That is when the administration needs all the help it can get in stimulating the economy, and usually gets it. Well, the laws of averages were obviously not paying attention and allowed my letter to go on the web in April, shortly before Bernanke began to positively snarl about controlling inflation at all costs. Expectations for the fed fund rates since then have also risen by some 32 basis points. And his tough love did work, serving to remind investors that, after all, risk does exist. With his help, the risk premium moved decisively off its remarkable low.

It was on or around May 8 that the average risk premium for things financial hit a low. Not just a local or provisional low, but a low that I think has a reasonable chance to outlive most readers! The Wile E. Coyote Market, along with almost all its participants, has finally noticed that all is not well, and that something less than solid underpins it. The Bank of England weighed in by noting in its mid year report that with global interest rates rising in the early months of the year, it was extremely unusual for the risk premium to have continued shrinking. Now, almost everywhere, concerns are rising that inflation may pose a danger, and in response interest rates are moving further up. Even the real rates, as revealed by U.S. TIPS (inflation protected bonds), have risen by ¾ of 1%. Simultaneously, concerns about a moderation in global economic growth are also rising, and a Merrill Lynch survey of money managers last week reported that a net 60% of managers expected the global economy to weaken in the next year – the survey's most pessimistic reading ever. This was up from only 5% back in April. Whoops! Global liquidity, although still very substantial, is reducing its rate of growth and seems likely to continue doing so. The carry trade in the hedge fund world has become less attractive and is being reduced. This set of circumstances is never well received by the market. The pain in the recent setback has not been perfectly correlated to risk – some risky assets have been picked on severely, while others have been given a temporary pass, but, in general, the riskiest assets were hammered from the market peak and the safest ones were not, as shown below in Exhibit 1. Inconveniently for us, the dollar in these short declines usually becomes a haven, regardless of its intrinsic value,

Exhibit 1
A Warning Shot on Risk

	May 9, 2006	June 13, 2006	% Change
U.S. Gov't. Bonds[1]	-1.97	-0.81	**+1.2%**
Emerging Debt[2]	+1.29	-0.49	**-1.8%**
Asset Allocation[3]	+6.05	-0.36	**-6.0%**
S&P 500	+6.85	-1.13	**-7.5%**
EAFE (local)	+10.75	-3.46	**-12.8%**
Russell 2000	+16.35	+0.37	**-13.7%**
High Volatility[4]	+9.40	-5.20	**-13.3%**
EAFE ($ terms)	+19.07	+1.55	**-14.7%**
Emerging Markets[5]	+27.53	-2.91	**-23.9%**

[1] *JPMorgan US Govt Bonds*
[2] *JPMorgan EMBI Global*
[3] *GMO Global Balanced Index*
[4] *Most Volatile 25% of stocks (by MCAP) among the largest 600 US stocks*
[5] *S&P/IFC Investable Composite*

deficits, or even its recent price trend. Dollar strength knocked an extra couple of points off EAFE and probably about 5 extra points off emerging equity.

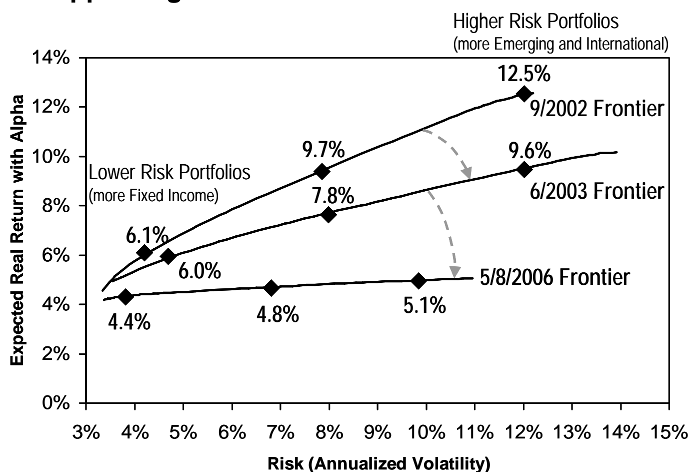
On the other hand, one had to admire the strength of the speculative bounce in the last few days of the quarter following the hammering. After 20 years of Greenspan, moral hazard speculators seem to think they are immortal, and that bullets will bounce off them. Breaking this positive attitude – probably the most profound in investment history – will not be quick or easy. This is why I believed back in the teeth of the 1998-99 bubble that the next bear market would go on for years. The great bear markets always take their time, and coming off the biggest bull market ever, this bear market is likely to be very long. 2010 has always seemed like a reasonable target date for a major bear market low. Such a 10-year bear market would be compatible with other great bear markets following the peaks of 1929 and 1965 in the U.S., and 1989 in Japan. In the end, the usual thing usually happens, but I seem to spend 90% of my life losing hair waiting for the inevitable to happen, and only 10% watching it happen.

The Lowest Risk Premium in History

Exhibit 2 shows the 'efficient frontier' for our long-only global balanced portfolios at three points. September 2002, at the top, followed three bear market years in which risky assets – led by a 78% decline in the NASDAQ – were treated very badly indeed. The middle line shows June 2003, approximately the mid point of this cycle. The bottom line was specially done for me last week by Ben Inker using the prices of May 8, the speculative high. The 2002 exhibit, which was shown at the time to our clients, shows that we felt we could produce a risky portfolio with a 7-year forecast return of 6.4 percentage points a year above our most efficient low risk portfolio. Now that's a risk premium! By June 2003, the risky portfolio was forecast to deliver an extra 3.6 percentage points, which seems like a reasonable risk premium. But by May 8 the risk premium was 0.7 percentage points! 0.7 percentage points is probably the lowest risk premium of modern times. I certainly can't think of another rival. March 2000 was not even close when all assets are considered. For starters, emerging markets and small caps were cheaper than the S&P. 0.7% is so dismally low – far lower than any conceivable long-term equilibrium – that obviously the right response was to be 100% in cash or cash equivalents. Except, that is, for the enormous pressure from traditional ideas of 'normal' investing and the career risk that drives us to invest in a way that other people think other people think is normal and acceptable. To repeat, for the record, our methodology uses our own 7-year forecasts, which typically look unusual because they mark everything to normal values over 7 years, that is to say, normal P/Es times normal profit margins. But other than that, we use pretty standard optimizing techniques to get our efficient portfolios, including standard volatility and standard correlations between asset classes.

Exhibit 2

Efficient Frontiers and the Disappearing Risk Premium



Note: *Based on GMO's 7-year asset class return forecasts.*

Source: GMO As of 5/8/06

Submerging Markets

Here we go again. Emerging country and small cap stocks had been the particular favorites of hedge funds and everyone else for that matter. They had enormous unrealized profits, were no longer absolutely cheap, and have always been considered some of the riskiest assets. That emerging equities have enormously improved in fundamental strength from earlier crises is typically not much help in this kind of knee-jerk, 5-week, risk-reducing decline, but, I believe it will be a great help in a more extended, less panicky decline in which fundamentals, eventually, always matter.

Starting late last year we finally sold some of our emerging equities, but we still carry a big weight for two reasons. First, they were absolutely cheap for several years in an overpriced world, and more recently, while expensive, have been the least expensive of the equity markets. Second, they were a great hedge against being wrong on the U.S. market, in the sense that **if** the S&P went up, we expected emerging to do better. Well, the U.S. did persistently better than we expected for 3 years, and emerging markets provided enough juice to keep our asset allocation products consistently ahead of benchmark, which is a pleasant change for us in an up market. For the last

2 years we had chipped away at our aggregate risk, buying more of our new quality strategy in U.S. equities, selling all of our U.S. small cap (that had been 9%), almost all of our foreign small cap, and, finally, in the last 12 months, overweighting fixed income, especially cash. And despite risky assets outperforming substantially, the heroic performance of emerging kept us in the ball game.

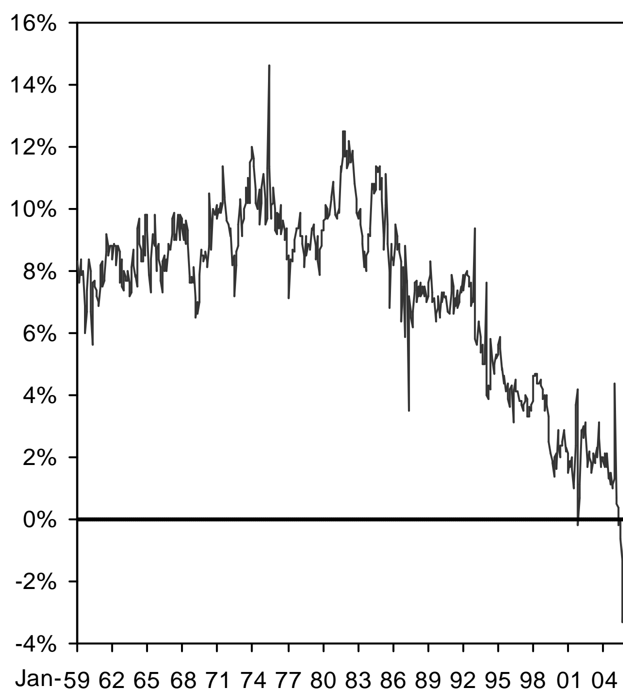
Well, there is no free lunch, but I must confess to being surprised at how expensive this lunch turned out to be for the 5-week decline. After all those shenanigans, most assets ended the quarter with very similar (and very flat) performance, with emerging markets in particular making up before, and after, what it lost in the amazing 24% drop in 5 weeks. I do not expect emerging to decline anything like this ratio to the S&P again (3:1), and I still expect that by the low, it may well decline the same or less.

The May through June shock to the low risk premium caused a rapid response, not surprisingly, from the newly gigantic hedge funds. They moved quickly to reduce their leverage and the carry trade in sensitive areas. Most emerging equity markets, and some of their more vulnerable high yield currencies, were the first targets, and these had been major beneficiaries of the carry trade. Particularly hurt were the highest yielding currencies like the Turkish lira and the Icelandic krona. I would hope that most of the fastest guns have shot by now, but since we have never lived in a $1.2 trillion hedge fund world before, we have to guess. A great majority of all hedge fund money has never known a world that was not dominated by Greenspan moral hazard – heads you win and tails I'll help you out – and this fact has two consequences: first, they should be very slow to entirely give up speculative confidence; and second, there is an awful lot of speculative confidence to finally give up!

Pension Fund Patsies

At first sight, there seems to have been little downside to the Greenspan policy of moral hazard: leave investment bubbles alone, but hurry to the rescue if a breaking bubble seems likely to cause economic problems. The economy in general did indeed do well. Taking a second look in January, we examined the potential downside of sustained moral hazard: that the system could get so used to the asymmetrical risks and so comfortable with long-term easy money and low rates, that it continuously expands its risk-taking until finally something breaks. But this is, admittedly, merely a possible downside. It is not at all certain. At third sight, however, there is a **definite** cost to Greenspan's and Bernanke's asymmetrical approach, and it is borne almost exclusively by **retirees** (see Exhibit 3). For a dozen years now, Americans have saved far less than they used to. The personal savings rate fell from 8% to 3% of a year's income for a cumulative shortfall over 12 years of over 60% of a year's income. In fact, in the last 18 months, the personal savings rate has dropped below zero. In 2005 we spent collectively more than we earned for the first time since 1932. Obviously, 1932 – the depths of the depression – offered a compelling reason to eat up savings. 2005, in remarkable contrast, was a strong economic year. What were we thinking?

Exhibit 3
The Series Formerly Known as the Personal Savings Rate



Source: Bureau of Economic Analysis, GMO As of 5/31/06

"No problem," say the optimists looking at the shortfall in personal savings since they believe foreigners, mainly Chinese, will prevent a capital shortage by saving for us. This Jack Sprat situation where they save dangerously too much, we save dangerously too little, but together we look okay may, or may not, be a sustainable situation. But that is a different topic that is much discussed, and much disagreed upon. What I'd like to focus on here is the group of savers who are due to retire now or in the next 10 to 15 years who are missing their 60% of a year's income plus compounding, and are still horrifically undersaving.

Why did this painful and disappointing situation in savings arise? Simply because savers were seduced by inflated asset prices into thinking they were rich. They felt rich first because their stocks did so well in the 1990s. Then, as Greenspan rode to the rescue of the economy to

offset the effects of the breaking of the technology stock bubble in 2000, they began to feel even richer because of rising house prices, which have a much bigger effect for the average household than rising stock prices. They also felt richer because rates fell and bond values rose. Notably, these increases in wealth were predominantly paper increases. The actual income received from the combination of interest coupons, dividends, and rents did not change dramatically. So, bonds may be worth more, but they pay less, and, in aggregate, stocks are built on the same GNP battleship that they always were – a battleship that never seems to materially change its growth rate for long (see last quarter's letter). In particular, houses might appear to represent three times the wealth they used to, but are, undoubtedly, the very same houses they used to be, neither more, nor less. Housing and housing prices represent the clearest possible comparison between real assets and paper wealth.

Feeling wealthier on all sides of their capital account and under pressure from the curious lack of growth in real hourly wages for the last 30 years (see July 2005 letter), reducing savings, or increasing borrowing (the same thing), was compelling, and was facilitated by improvements in the ease of home refinancing.

The professional optimism of the financial community and the media dangerously encouraged this carefree attitude. (Louis Rukeyser may have had a charming smile, but he certainly did not frighten people into saving. From his reactions, I suspect he broke out in hives if a bear came near his program. Sorry, Lou.)

The insidious part of this con game is that it is so hard to make up for the years of lost ground. Not only does your savings rate have to go back to 8%, which in itself will take years because everyone is so used to saving little and borrowing a lot, but, in addition, you have to make up the 60 points that are missing. If you have 12 years to go to retirement, that would take an extra 5% saving a year, for a total of 13%. Obviously, nothing close to this is going to happen. You will either have to get used to coworkers over 60 – a truly terrifying thought – or you'll have to see me about buying some cheap retirement land in Panama. (Dear SEC, this is a joke. I'm holding all my land in Panama for a rainy day.)

The price that is ultimately paid when all assets finally end up at fair price (or trend) will, unfortunately, be very high or, as Warren Buffett likes to say, when the investment tide goes out, it will be revealed which swimmers are not wearing swimming shorts. Unfortunately, it will also show us who has small pensions.

Exhibit of the Quarter

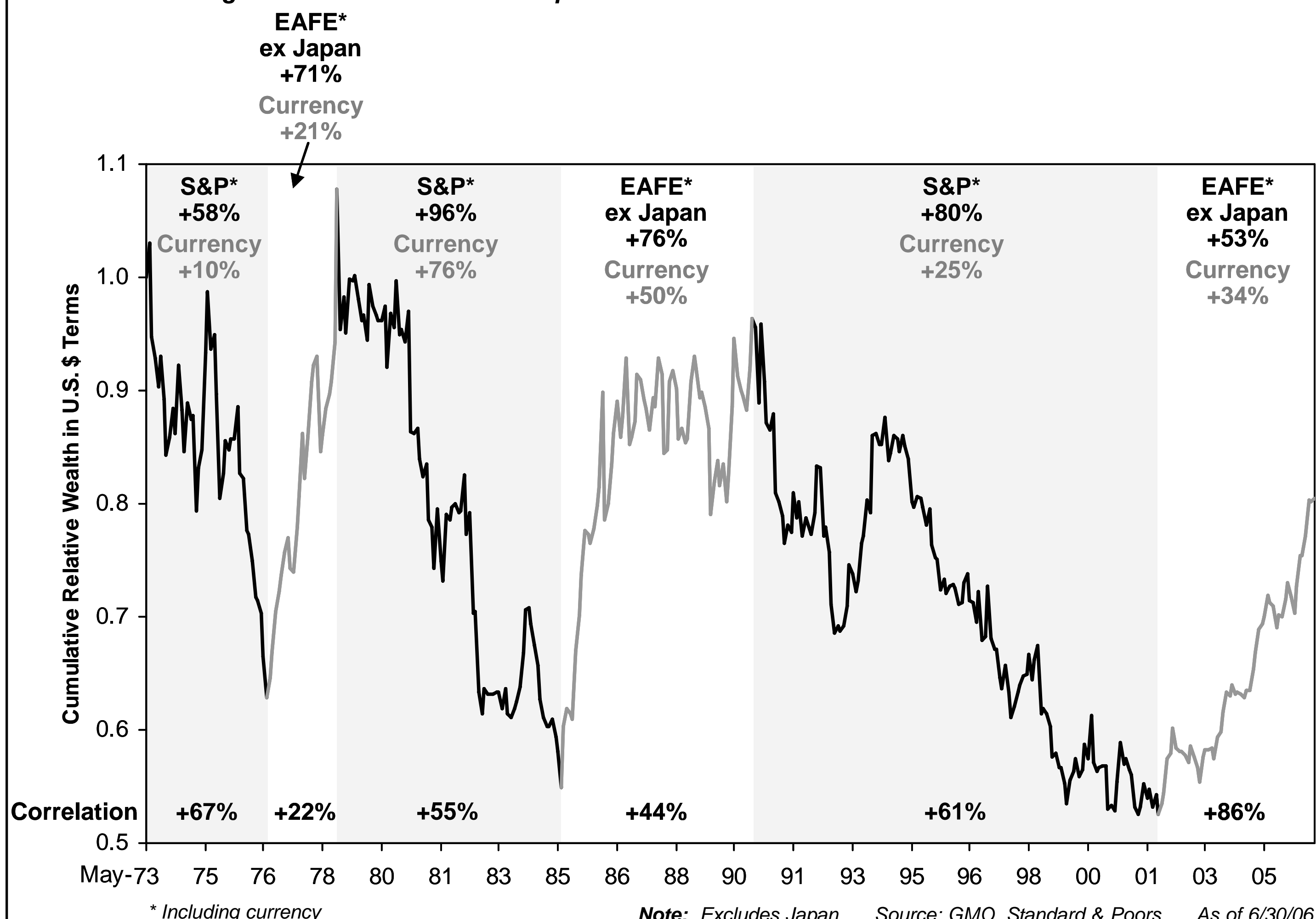
A story that grew and grew in the institutional world in the late 1990s was that foreign equity investing was not necessary because its difference from U.S. equity, that had been traditionally large in the 80s when non-U.S. investing was starting up, had appeared to diminish steadily in the 90s. And, it was indeed true that the correlation between EAFE and the S&P had risen steadily from about .45 to about .80 over 30 years or so. But, what was really going on here was complicated and interesting.

First, EAFE outperformed the S&P in the mid to late 1980s by over 100 percentage points (76% excluding the once in several lifetimes Japanese bubble). Next, this outperformance of EAFE stimulated an enormous amount of interest, and international investing took off rapidly (albeit from a **very** low base), and AIMR (the financial analysts' organization now known as the CFA Institute) staged its first ever conference on international investing at which I can personally attest there was a general enthusiasm that approached ecstasy.* Murphy's Law then ensured that EAFE would immediately start a sustained period of underperformance. It underperformed, of course, for the usual reasons: it had just finished a major run of relative strength, had overrun fair value, and entered 1991 horribly overpriced. The early movers felt substantial performance pain, and the late movers for once got to gloat at the early movers. Both groups though were eagerly seeking a good academic reason why they should either reduce or refrain from EAFE investing. As an industry, we produce such convenient reasons very well indeed!

The argument of increasing correlations sounded academic, and was undeniably based on accurate data, so it was a godsend. It did, however, immediately raise an odd dissonance. If correlations were so high that diversification had become irrelevant, how come EAFE investors were getting hammered? To address this precise point, we designed Exhibit 4 almost 10 years ago and we still happily use it. It was meant to raise the question of why we should be concerned at all with correlations calculated monthly when, as long-term investors attempting to build efficient portfolios, we should be concerned only with the **multi-year cumulative difference** and, Lord knows, that seems to exist here. The exhibit charts the ebb and flow of relative performance of the S&P 500 and EAFE ex-Japan. (The pattern with Japan is similar, but more extreme, and the Japanese bubble was so transcendental it seemed better left out to avoid the dismissive,

* I was of course happy to give a contrarian view in my presentation, "Dirty Secrets of International Investing," available to anyone interested in our website's Library.

Exhibit 4
Exhibit of the Quarter
Markets with "high" correlations can still be powerful diversifiers



** Including currency* ***Note:*** *Excludes Japan Source: GMO, Standard & Poors As of 6/30/06*

"Oh that's just a reflection of the never-to-be repeated Japanese bubble and therefore irrelevant.")

The cycles shown are impressive in scale and size, and, interestingly, they seem to peak and trough at roughly similar levels, which is perhaps not that remarkable because, in the long run, the returns on different markets tend towards pretty similar numbers.

We had some uncomfortable times with this exhibit from about mid 1998 as the cycle dropped below even the 1985 low. We certainly held our breath for a long time, but in the end, it did not drop further, and then in 2001, when most commentators had agreed on the abject uselessness of Japanese and Euro economies (and, therefore, their markets) this particular worm turned. EAFE has now had a handsome 53% outperformance from its low, but is probably not finished because it is still cheaper than the U.S. (at least on GMO data) by about 16%. If EAFE made up this difference, it would take its current indexed value on the exhibit from .80 to .93. Next, EAFE is likely to overrun. The peaks of 1973, 1978, and 1990 were all relatively overpriced for EAFE and the troughs of 1976, 1985, and 2001 were all relatively cheap. That is to say, **every** cycle has overrun fair value in both directions. We estimate the average overrun at 14%, with a range of 7% to 33%. If this cycle overcorrects by its average of 14% this time, it would take this series from .93 to 1.06, which compares favorably with the range of other cycles. There is also the possibility (I would rate it moderately over 50/50) of a further contribution to outperformance from some relative strength in EAFE currencies against the dollar. So, the first major point of this exhibit is that there has been a very important difference in EAFE performance relative to the S&P in multi-year cycles, and this makes EAFE portfolios a real help in diversifying returns.

An interesting secondary point is reflected in the contribution from currency to each cycle of relative performance. A view in international investment, so predominant that it is almost conventional wisdom, is that strong cur-

rency hurts exports, and, hence, profits and the stock market. Accordingly, most commentaries suggest that a strong relative currency effect will be offset by a weak relative market. As can be seen in Exhibit 4, this is absolutely not the case. For six large cycles in a row since 1973, the currency move has reinforced the relative market performance. Currency has averaged 50% of the cycle outperformance ranging from a low of 17% of the market move in the 1975 cycle, to a high of 79% in the late 1980s. My guess – and that's all it is – is that better average stock values, later compounded by strong relative momentum, attract foreign stock buying, which in turn pushes the currency up over a number of years. Any other suggestions certainly would be welcome, as this counter-intuitive effect has not been heavily analyzed as far as we know.

Recent Forecasts

Nine months ago, my quarterly letter featured a warning of an imminent narrowing of the risk premium ("Ready or Not, Here Comes the Risk Premium") and, painfully for us, it widened for the first 7½ months, in particular the gap between junky stocks in the U.S. and quality stocks. For 5 weeks during the market decline, quality stocks moved respectably ahead of junk, although quality did give back half the move, as risky assets recovered sharply in the closing days of the quarter. I have also done a lot of talking and writing about the Presidential Cycle Effect, and these first 2 years of the cycle have not been as weak as normal, but for the U.S. equity market, they came close. Last year it was up only 1.5% real for the S&P, and this year, through June, it was flat in real terms within 1 or 2% of the 40-year average. But risky assets did far better than normal. In fact, this was the second best performance of volatile stocks relative to the market early in the Presidential Cycle since our records began in 1964! (I can't resist a digression here for the very best performance is a true anomaly and very interesting. In the late 1960s, the Nifty Fifty – the then-great franchise companies – became so popular, and nearly unanimously desirable, that they became known as 'one-decision' stocks. Since you should never sell them, you only had the single decision as to when to buy them. In that period of extreme consensus, the volatility of these great companies, with their superbly high fundamental quality, rose to be the highest. This was the supreme dissonance between two major measures of risk. The risk of the Nifty Fifty defined by volatility, or beta, became the highest, and their risk, defined by fundamental quality – high, stable return and low debt – was the lowest. So it is not entirely clear whether their outperformance in years one and two was really affirming or contradicting the general thesis. What a strange world!)

The encouraging news about these poor or certainly premature forecasts that I made on the risk front is that they nearly all moved substantially in the predicted direction in the 5 risk-averse weeks of this last quarter. Hopefully, a sneak preview of major things to come. This speculative market is certainly not eager to throw in the towel. On a more positive note for us, our sustained forecast that U.S. equity markets would underperform other equity markets, which is critical to our asset allocation accounts, is still accurate for this year so far, notwithstanding the 5-week shocker.

GMO's Recent Performance

After three great years (2000-2002) and three generally very good years with a few weak spots (2003-2005), we are having a tough year. The brighter side is that the bulk of our assets under management are in EAFE and global equity strategies, and they remain generally slightly up on their benchmarks for the year, following a flat quarter. Our $15 billion in fixed income is up for the year, having had a decent quarter (and emerging debt is nicely up), and our $11 billion of local money managed out of London and Sydney remains slightly up for the year, having had a mixed quarter. Asset allocation had a weak quarter, but remains flat for the year following six consecutive annual wins.

Our bad news comes from the 20% of our business in U.S. equity, which has underperformed all the way up this 3½ year rally. The rally has been exceptionally speculative, and our pain has been focused on the difference between GMO's value parameter and the traditional value measures such as price to book and P/E. GMO's value model is a long-term dividend discount model that is based on profit margins regressing towards normal at a rate based on stock specific characteristics including quality and growth. Over 22 of the last 30 years, our value model and the traditional ones have been, broadly speaking, the same in performance. For a glorious 5½ years (1993-98) our version persistently outperformed the S&P while book, etc., persistently underperformed. (Internally this era is wistfully referred to as the Microsoft Era since until late in 1998 we continually owned Microsoft in our value stream because our model recognized that its franchise value was **far** higher than book. Correctly, I would say, with hindsight.) Now the second big deviation is the other way. For 3½ long years, price to book and P/E have badly beaten our broad based value measure with the key to this deviation being the market's remarkable confidence about accepting increasing risk during the 3½ years.

Net net, over 30 years there has not been a huge difference in performance – just over 1% a year in our favor – between these two substantially different approaches to value. There is, however, one very significant other difference between the two models that Fama and French would be impressed with (if data on market inefficiency could indeed impress them) and that is that the average fundamental quality of our value stream is equal to the S&P and that of cheap price to book is far, far lower. Exhibit 5 shows these relationships. Fama and French can argue with some justification that **price to book is a risk factor**, if risk is measured by fundamental factors such as stable profitability and low debt and not poor old beta (see "Letters to the Committee" next quarter), and our proprietary research showed that low price to book stocks badly underperformed in the grandmother of all fundamental stock declines – 1929 to 1932. But they could never accuse our value model of being a risk factor, hidden or otherwise.

Well, lowering risk has not sold much business yet for anyone, and raw, unadjusted performance is still the key, and we know it. I also believe Point 30 in the attached "Letters to the Investment Committee VIII," which states, "90% of what passes for brilliance or incompetence in investing is the ebb and flow of investment style." The current ebb in the performance of our type of value parameter certainly makes us look incompetent right now, and I understand the frustration that sustained underperformance always causes. I am confident, though, that led by Sam Wilderman, our director of U.S. Equities, we will get it all back with interest, and sooner would certainly be better.

Asset Allocation Advice

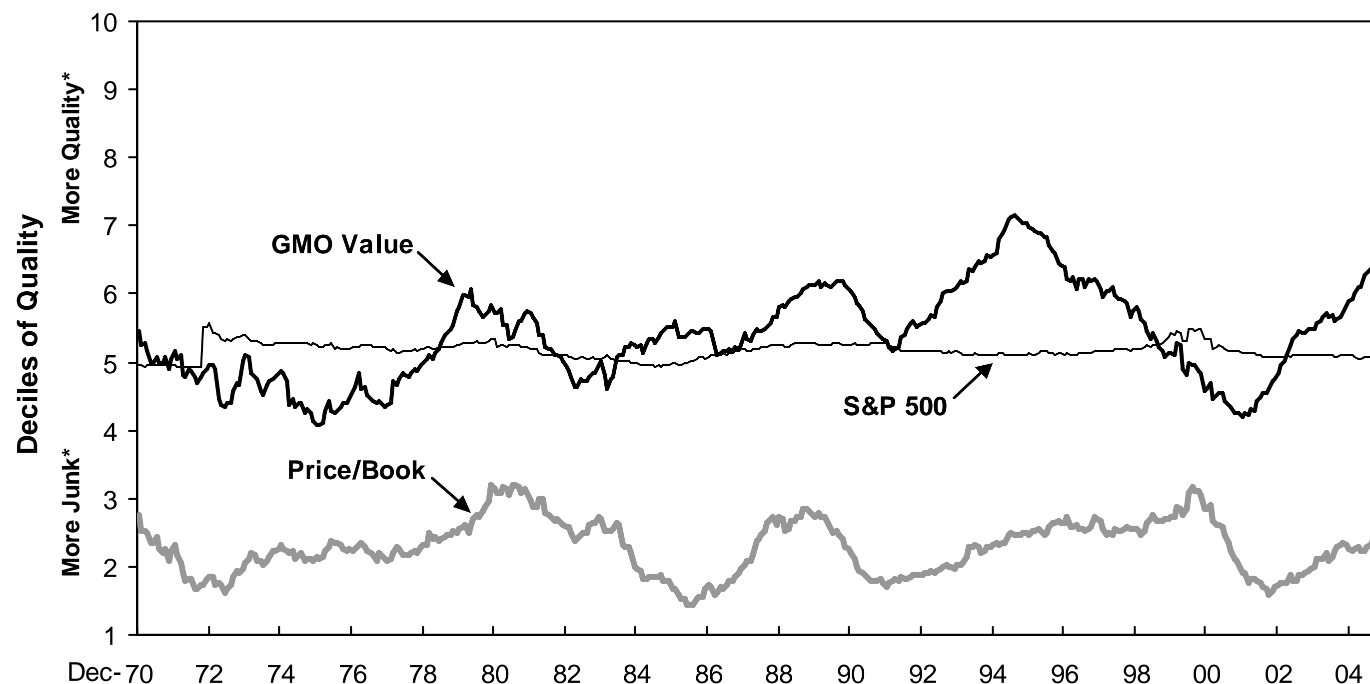
This section is becoming repetitive and redundant. I'm sorry. The sooner P/Es and profit margins of equity markets move down to normal and the risk premium widens, the sooner our recommendations can recycle into something new and interesting. In the meantime, we continue to recommend as much risk avoidance as your career or business risk can tolerate. In particular, we recommend overweighting cash and cash equivalents, which we know is the toughest career risk of all – "Is this what we are paying these guys for?" "Is this the most creative idea they can come up with?" Well, er, yes, it is, unfortunately.

An Academic Aside on Asset Allocation

Recently, the grandfather of the Capital Asset Pricing Model (CAPM), Harry Markowitz, wrote an interesting article in the *Financial Analysts Journal* (Vol. 61, No. 5, September 2005), which is probably inconvenient enough

Exhibit 5

Price/Book Has Persistent Very Low Quality* and Is a Risk Factor, Whereas GMO Value Parameter Equals S&P Quality



Simulated results are achieved by the retroactive application of a model constructed on the basis of historical data and based on assumptions integral to the model which may or may not be capable of testing. Simulated results do not reflect actual trading or the effect of material economic and market factors on the decision-making process. Simulated results include the effect of simulated transaction costs, but not management fees, performance fees or expenses, if any. Simulated results are supplemental to the strategies' AIMR compliant presentations. AIMR compliant presentations of composite performance have preceded this information in the past 12 months or accompany this information, and are also available at www.gmo.com. Performance data quoted represents past or simulated results and is not predictive of future performance.

Source: GMO As of 6/30/06

to the academic financial establishment to be more or less ignored. In it he points out that though his overachieving student, Bill Sharpe, had done an elegant job in polishing up and delivering the CAPM, it all hinged on three clearly spelled out assumptions that Markowitz believes do not apply to the real world. Two of these assumptions, he says, probably do not have much effect, but the third – unlimited access to shorting assets, and unlimited long and short levering at the risk-free rate – have a profound effect. In CAPM there is a **single** optimal asset portfolio mix that everyone should own. If you are relatively risk-averse, you add cash to this efficient portfolio, and if you are a risk taker, you add leverage. Everyone in this way moves smoothly up and down the efficient frontier with the same underlying portfolio. But in real life, says Markowitz, this cannot be done, and risky portfolios will tend to have more risky assets, like emerging and small cap, and low risk portfolios will tend to have more cash and treasuries. He points out that this was exactly what contemporary portfolio management was doing back in the 50s and 60s when he was doing his thinking on the topic. This all seems nicely ironic to us since our optimal portfolios have always responded this way to varying risk levels, and still do today. For example, in 2002 our 'optimized' risky portfolios had masses of emerging equity and debt, and our low risk portfolios had quantities of TIPS, U.S. REITs, and regular bonds. It's unusual and agreeable that Markowitz would make this inconvenient truth available in a form that practitioners can understand, and in a publication that makes it hard to miss. Thank you.

Ben Inker on Earnings Quality

Ben is finishing an exposé on the deterioration of earnings quality, which I warmly recommend. It will be posted later this summer on our website (www.gmo.com).

The Quant Movie Review Section: Inconvenient Truths and Pascal's Paradox

It's not often quants get offered a movie based on statistics, and with good reason – it is not easy to make such a movie watchable. In fact, I would have thought it impossible, but I believe "An Inconvenient Truth" has pulled it off. The statistics are admirably well presented and compelling, and the movie, of what is basically a slide show, works surprisingly well. It is very clever movie-making, although what you make of the 20% that is about Al Gore probably depends more on how red or blue you are, rather than how green. For the record, I am deep, deep green, but reddish, or bluish, depending on circumstances.

Presumably, in answer to the movie's opening, *The Wall Street Journal's* op-ed page ran not one article, but two, by Richard Lindzen from MIT, challenging some of the data. Is this the first time a very similar op-ed piece by the same author has appeared twice in the same month? It no doubt reflects the difficulty in finding plausible scientists to take the other side of the global warming issue. His articles, however, make at least one point that resonates with me: the difficulty in getting heard in academia when a powerful consensus has formed. It reminds me of the great Efficient Market Hypothesis tyranny of the 1975 to 1995 period when anti-articles not only did not get published, but also jeopardized academic careers.

But regardless of the odd good point, the two articles do a grave disservice to the well-being of society by missing perhaps the most important issue on global warming – Pascal's Paradox. What is the expected value in an uncertain situation of acting as if global warming is a hoax when it's deadly serious, compared to the expected cost of treating it seriously when it's benign? We are, by far, the wealthiest population the world has ever seen, measured by however you want to measure it. We can surely afford an insurance premium to protect against even the **possibility** that our house may burn down, leaving us and our descendents with harsh and irreversible consequences. Not paying the insurance premium runs the risk that we have simply missed the boat and are facing irreversible consequences. And even if we get unexpectedly lucky, a serious war on carbon dioxide would surely lead to unexpected beneficial technologies and long-term efficiencies. If we get unlucky, on the other hand, at least my house on Beacon Hill will be ocean front property!

So please, see the movie, and red types, just avert your eyes from the Gorey bits; it will be worth it. My personal view is that he does a very professional job. I have given variants of the same financial talk over 50 times and it is difficult maintaining enthusiasm when you can hear your own words echoing around. The former Vice President has given his talk over 1,000 times, and after that prodigious effort still sounds enthusiastic! And this is the guy I voted* against 6 years ago for sounding so wooden.

* This, admittedly, was a metaphysical vote, for as a Brit, I don't get the real kind. But I suppose in Massachusetts, all votes under the electoral college system might as well be metaphysical.

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GMO

SPECIAL TOPIC

July 2006

Jeremy Grantham

*Letters to the Investment Committee VIII**

Summer Recess

By way of a time-out from Risk (Part III of which is written and will appear in the third quarter letter), it seemed like a good summer idea to reproduce an old chestnut of mine: "Everything I Know About the Market in 15 Minutes." The original was delivered in November 1991 and reproduced by *Barron's*. It was changed a little in the next two years. The minimal changes I have made for this rewrite have asterisks, while shading represents "mini" sections. You will, unfortunately, notice the paucity of changes that 15 years of extra thought has produced!

Everything I Know About the Market in 15 Minutes
Or
One or Two Good Ideas a Year Are Enough

1. The investment management business creates no value, but it costs, in round numbers, 1% a year to play the game. In total, we are the market, and given the costs, we collectively **must** underperform. It is like a poker game in which the good player must inflict his costs and his profits onto a loser. To win by 2%, you must find a volunteer to lose by 4%. Every year.

2.* In a zero sum world, hedge funds in total merely increase investment fees.

3. Most stock markets are approximately efficient at the stock selection level and probably getting more so.

4. Transaction costs and management costs are certain, but anticipated outperformance is problematical.

5. Given the above, within single asset classes **indexing** is hard to beat, and relative passivity is not a vice.

6. Therefore, indexing must surely squeeze out active managers until it represents a substantial majority of the business. Remember, it is the worst players who drop out of the poker game to index. The standard of the remaining players, therefore, rises ... and rises ... but, fortunately, for us, beginners continue to join the game.

7. Indexing is held at bay only by the self interest of the players or agents, as opposed to the real investors. The outside managers want fees, and the hired guns want a job that looks demanding.

8.* More recently much of what passes for outperformance or alpha in hedge funds (and private equity for that matter) is merely leveraged market exposure.

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* The Letters to the Investment Committee series is designed for a very focused market: members of institutional committees who are well informed but non-investment professionals.

9.* Asset allocation is intellectually easy to get right because mean reversion is a reality, and new paradigms almost always an illusion. Asset class mispricing is sometimes so large it simply cannot be missed. (35 P/E in March 2000).

10.* However, in asset allocation **timing uncertainties can be longer than clients' patience**, introducing large career and business risk.

11. Historically, equity investors have overpaid for **excitement** or sex appeal: **growth**, profitability, management skills, technological change, and, most of all, **acceleration** in the above.

12. Bodies in motion tend to stay in motion (Newton's First Law). Earnings, and stock prices with great yearly **momentum**, tend to keep moving in the same direction for a while.

13. Everything concerning markets and economies **regresses** from extremes towards normal **faster than people think**. Factors that regress include sales growth, profitability, management skill, investment styles, and **good fortune**.

14. One of the keys to investment management is reducing risk by balancing Newton (Momentum and Growth) and regression (Value).

15. **Growth** companies seem impressive as well as exciting. They seem so reasonable to own that they carry little career risk. Accordingly, they have underperformed for the last 50 years by about 1½% a year.

16. **Value** stocks, in contrast, belong to either boring, struggling, or sub-average firms. Their continued poor performance **seems**, with hindsight, to have been predictable, and, therefore, when it happens, it carries serious career risk. To compensate for this career risk **and lower fundamental quality**, value stocks have outperformed by 1½% a year.

17. Real risk is **not** accurately measured by beta or volatility, which is compromised by a positive correlation with other characteristics, such as growth, excitement, liquidity, and analyst coverage, which are valued as 'goods' and reduce career risk. The good news is that they don't take Nobel Prizes back.

18.* Real risk is mainly **career** and **business** risk, which together shape our industry. Efforts to reduce career risk – "never, ever be wrong on your own" – create herding, momentum, and extrapolation, which together are the main causes of mispricing.

19. There is no small cap effect, price/book effect, or stock vs. bond effect, only a **cheap** effect. The current price tag is always more important than historical averages. (Stocks don't beat bonds because it is divinely ordained – Jeremy Seigel's *Stocks for the Long Run* – but because they are **usually** priced to outperform. Today, for example, they are not.)

20. The stock market fluctuates many times more than would be suggested by its future stream of earnings and dividends or by the GNP, both of which are historically remarkably stable: i.e., the market is driven by greed, fear, and career risk, not economics.

21. Inflation is the primary influence on P/E levels in the equity markets however illogical that may be for a real asset. The correlation coefficient is -.73 in the U.S.: low inflation 'explains' or is coincident with high P/Es.

22. But since inflation is probably mean reverting, and certainly unstable, buying when inflation and interest rates are low and P/Es are high will mostly be painful.

23. Size of assets under management is the ultimate barrier to successful investing. As assets grow, you are forced **either** to pick increasing numbers of decreasingly good stocks **or** to buy larger, indigestible posi-

tions of your original holdings. The investment business is the perfect example of the Peter Principle: do well with $500 million, and they'll give you $5 billion.

24.* In the good old days, little talent came into the business as belief in efficient markets discouraged serious quants in particular. Now finance professors run quant shops and vastly more talent is drawn into the business, painfully increasing competition.

25. Quantitative investing is to traditional investing as the written word is to the spoken: you believe it more and can march confidently off the cliff.

26. Quants also find it irresistible to put in just one more variable and risk drowning in data mining.

27.* Quants naturally prefer the mathematically neat to the rugged and simple. A sign on every quant's wall should read: **"There are no points for elegance!"**

28. For quants, the advantage lies in their ability to handle complexity with speed and consistency. Quants also **never** fall in love with a stock – just methodologies.

29.* The most critical advantage for quants, though, is that they can build on the past, remember mistakes, and **pass on all their accumulated knowledge**.

30. 90% of what passes for brilliance or incompetence in investing is the ebb and flow of investment style (growth, value, small, quality).

31. Since opportunities by style regress, past performance tends to be negatively correlated with future relative performance.

32. Therefore, managers are harder to pick than stocks. Clients have to choose between **facts** (past performance) and the conflicting marketing **claims** of several potential managers. Practical clients will usually feel they have to go with the past facts. They therefore rotate into previously strong styles that regress, dooming most manager selections to failure.

33. Getting the big picture right is everything. One or two good ideas a year are enough. Very hard work gets in the way of thinking.

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GMO

QUARTERLY LETTER

October 2006

Jeremy Grantham

Oh, Brave New World I

plus **Letters to the Investment Committee IX**

Let's All Look Like Yale

Global markets are being heavily impacted by a tidal wave of diversification, with the cash flow moving predominantly from the traditional areas of U.S. blue chips and U.S. government bonds into more esoteric areas. In fact, the more exotic the better. The causes and effects will be the topic of a future "Letters to the Committee" since I believe the impact is more or less permanent and therefore a suitable topic for that section. But this remarkable shift is also affecting the markets on a daily basis, so here are the **summary findings** to date:

- A sustained period of global liquidity growing faster than global GNP ("Marshallian K") has led to more money than opportunities.
- Instead of flowing to the old stand-bys of local large cap equities and local bonds as excessive funds would have done 15 years ago, the money has flowed into increasingly diversified investments with almost no investment being too exotic to be considered.
- This change has run into the comparative illiquidity of many new areas such as timber, infrastructure, emerging markets, and some specialized hedge fund strategies, and has moved prices up rapidly. This has reduced or eliminated the large gaps between the pricing of alternatives and that of more traditional assets. Indeed, in some cases like private equity, it seems likely to have produced extreme overpricing.
- Since the fee structure of almost all these new areas is far larger than for established investments, the total fees paid to the investment industry have increased as a percentage of capital as have transaction costs since hedge funds in particular have far higher turnover than traditional long-only funds.
- Not surprisingly, the greatly increased flow of fees, particularly in hedge funds and now private equity, has attracted an increased flow of high quality talent so that finding value is harder, and even when found, it is spread thinner over more capital.
- Faced with fewer opportunities, investment managers, anxious to maintain previous performance, feel the need to leverage more.
- Leveraging is facilitated by the brave new world of financing, and is also helped by excessive global liquidity and the current low volatility of asset prices that appear to make risk-taking virtually risk free. The resulting greater leverage increases the pool of money that is aggressively seeking alpha, which further increases competition and reduces opportunities.
- The new flows into diversifying areas show no sign of abating despite higher prices and a ridiculously small risk premium. As such, we must assume that several areas will be pushed deep into bubble territory and will eventually burst. With good luck, this will occur in a manageable series of minor problems. With bad luck, it will help produce a major credit and asset pricing crisis. Bravery will most definitely be called for in our new world. Caution would be a good idea too.

Ben Bernanke and Asset Class Bubbles

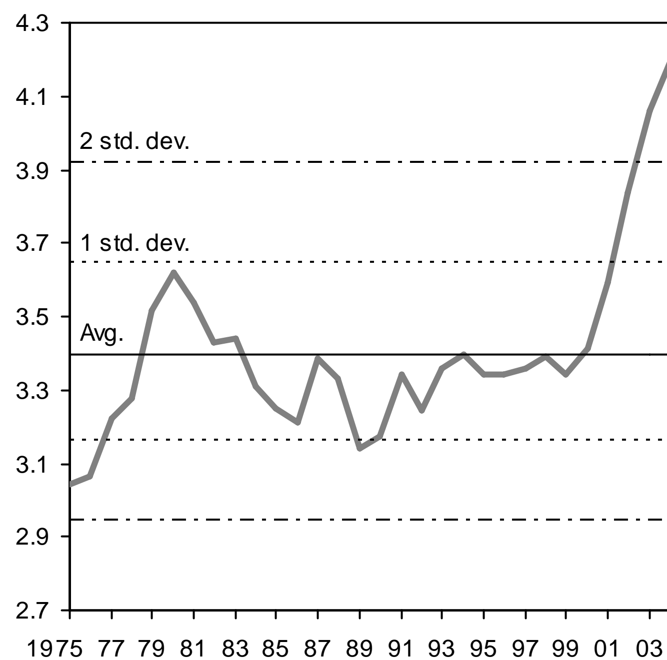
A year ago at our conference I had some fun with the rapid mellowing of Greenspan's views in his last 6 months – with 'mellowing' being a friendly way of describing a strong tendency of his views to veer from the politically convenient to the honestly felt. Critically, Greenspan veered from his view that markets are efficient to concern that "history has not dealt kindly with the aftermath of protracted low risk premiums," (Aug 2005) and that "extended periods of low concern about risk have **invariably** been followed by a reversal in asset prices" (Oct 2005 – emphasis added). Sounds just like GMO! And in an environment ripe for a reversal in house prices, here too he changed his tune, moving from apparent confidence early in 2005 that all was well with the

housing market, to fearing the effects of "speculative fervor" (Jul 2005) and an "enormous increase in prices" (Sep 2005). Mr. Bernanke however would have nothing to do with Greenspan's mellowing on any topic. "Risk premiums," (in U.S. stocks) he said, "look quite normal" (Sep 2005) and house prices merely "reflect strong economic fundamentals" (Oct 2005). What data was he looking at? Or, once again, was this just the politically acceptable line? A look at the data showed that U.S. house prices (see Exhibit 1) were already far above a 2-sigma, 40-year bubble level as a percentage of family income, which is what house prices ultimately depend on.

We speculated back in our July 2005 letter that level or falling house prices and the associated conservative effect on household borrowing would likely knock a percent or so off annual GNP growth depending on the rate of house price declines. No disaster at all, but tough on corporate profit margins. As of last week, Mr. Bernanke has suggested that we are suffering from a rapid weakening of house prices that should knock a point or so off GNP. Given his earlier stated views, he must perceive this decline as a nasty economic surprise since for him, unlike for us, the decline was not justified by excessive house prices and the housing market still had the support

Exhibit 1

United States: Median Home Prices as a Multiple of Household Income



Source: National Association of Realtors, U.S. Census Bureau, GMO
As of 2/28/05

of his 'strong economy.' One really begins to wonder why Fed bosses don't spend more time worrying about asset class overpricing like other central bankers increasingly do. Or is this worrying reflex repressed until their last 6 months in office? (For the record, this is my only gripe with recent Fed bosses – that they don't appear to worry about asset bubbles. And I'm sympathetic. After all, who likes having their face slapped by irate Senators for interfering with a nice bull market as happened to Greenspan back in the "irrational exuberance" days of 1996? For the rest of their responsibilities, I'm sure they are perfectly good at what they do. You can imagine their relief at my saying this!)

But the really bad news is that Mr. B has inherited the unreconstructed Greenspan view that: a) the market may be so efficient that there are no bubbles … who am I to interfere with the views of thousands of well-informed investors, etc., etc.; b) even if there was a bubble, I wouldn't be able to know when it was there; and c) even if I did, intervention would be futile or worse. Even on this near religious creed, Greenspan mellowed at the twelfth hour musing that, "Whether that judgment (to not intervene in the equity bubble) holds up through time has yet to be revealed." On this issue (that is so important to us believers in occasional but extreme bubbles whose forming and breaking dominate the investing scene), Bernanke will not give an inch, and shares none of Greenspan's last minute existential angst. "For the Fed to interfere with security speculation is neither desirable nor feasible," but "if a sudden correction in asset prices does occur the Fed's first responsibility is to protect … to provide ample liquidity until the crisis has passed" (Bernanke, 2004). Well then, he'll just have to live with housing and other bubbles breaking, presumably always to his surprise. And we can certainly expect, based on the above, that he will race to protect the speculators. With enough moral hazard of this type we should eventually have enough expansion of risk taking to test the Hyman Minsky hypothesis that in the end, given the right incentives, every rubber band will be stretched past its breaking point.

Reflections on Recent Quarterly Letters

Well, the tougher attitude from Ben Bernanke that I hailed in last quarter's letter lasted about as long as it took to read the letter. Now, once again, we all expect the Fed cavalry to come over the hill whenever needed, and the next interest rate move is expected to be down. And we are in the friendly third presidential year (which started this month) when an accommodating attitude from the Fed is particularly expected, and usually received,

although I suspect that sooner or later Mr. B will wish he had more rate reductions up his sleeve.

Wile E. Coyote read my April letter that discussed all the obvious reasons for a market decline and a move away from risk taking, and for a few weeks there in May and June he looked a little nervous, but now, with confidence regained, he continues out over the crevasse, sticking his tongue out at us.

Market performance, which we predicted would be weak in several quarterly letters in honor of the first 2 years of the Presidential Cycle, indeed started out pretty weak for the first 19 months of the 2-year period with an annualized return of about 1½% real for the S&P. But all it took was a 6-week rally at the end of the quarter to leave the S&P with a perfectly acceptable return of +6% real for the year.

We have also recommended avoiding risk for several quarters. The year started with a surge in risk taking across the board with volatile, junky, and small cap stocks beating the blue chips, and emerging equities beating everything. This type of speculative surge is quite rare in a second Presidential Cycle year. On May 7, this flurry of speculative buying set up the lowest risk premium ever recorded. Since then, there have been signs that the risk premium, although still ridiculously low, has increased. On Ben Inker's data, the difference between our high and low risk absolute return strategies, which was as high as 6.4% a year for our 7-year horizon in September 2002, and an almost unbelievably low 0.7%, has moved back to 1.2%. This move away from risk has not been evenly distributed across all risky classes, but it leaves me feeling that change is in the air. Large cap U.S. blue chips, neglected for 4 years and relatively very cheap, have made a substantial run and, conversely, the Russell 2000, which was up 10 points on May 7, has lost all its lead (on three separate occasions now) in a rising S&P market. Volatile stocks have underperformed and emerging equities have dropped relatively from a 20 percentage point lead over the S&P to about 5. Collectively, these changes are probably the beginning of a long-term move to more normal risk aversion, which, if I am right, will dominate the investment scene for a few years. I certainly hope so.

My April 2005 letter was titled "The Canary in the Coal Mine" with the idea that weakness then in the Sydney real estate market was a precursor to weakness in London and the U.S. Because the U.S. housing market had such a head of steam and was behind the other markets, I suggested that our house prices would probably rise for another year before "time would run out" for the house price bubble. But when it did run out, because U.S. house prices were (and still are) a genuine 2-sigma (40-year upside) event, it was likely to be the Real McCoy. In this context, the Real McCoy means a return at least to trend. This would take either a price decline of about 20% tomorrow or a flat price for 4 or 5 years to allow incomes to catch up. On this prediction, things have worked out pretty well, as 12 months later the market had flattened. Eighteen months later (Aug 2006) the dramatic gains in house prices have been replaced by losses – about a 6.3% decline in the median price, adjusted for inflation and quality (which is estimated to increase by about 0.7% a year in the form of bigger and better houses). Incidentally, do you remember being told repeatedly that there was no need to worry about a real estate bust because (at least since the Depression) U.S. nominal average house prices had **never** declined over a year? Well they have now, but we are told that this recent decline is merely the first since 1990 so it's quite ordinary and there is no need to worry. Where, one wonders, was the 1990 decline hiding before?

Inconvenient Data #2: U.S. Job Creation

We may have a large trade deficit and troublesome wars, but at least we can generate jobs, which is more than we can say for most Europeans where so-called Euro-sclerosis increases because of old fashioned bureaucratic restraints on business. Or so goes the common claim. Our "Inconvenient Data #1" from our July 2005 letter looked at the much lower growth in hourly remuneration in the U.S. compared to Germans, Japanese, and yes, even Brits, which was a pretty extreme contrast to received wisdom. The current inconvenient data from the O.E.C.D. is almost the opposite of the usual unemployment calculations. It asks simply what percentage of men between 25 and 54 years old actually have a job. If you have been unemployed for a long time and are discouraged enough to no longer register as unemployed, you drop out of the traditional unemployment data, but you are back in this data. If you are not working because you have justified or even faked medical disability, you are back in the data. Even if you sit unproductively in prison, you are in the data. And the data shows that 83% of all American men between 25 and 54 years of age show up for work. This implies a **gross unemployment rate of 17%** compared to the more traditional number of about 4.6%. More inconveniently, the equivalent European number is 82.7%, only 0.3% behind the U.S. despite conventional unemployment rates of double digits for Germany, France, and Spain, for example. And most inconveniently, these darn Europeans are gaining on us.

Ten years ago the gap for men was 2% wider in favor of the U.S. than it is today (83.2% to 80.9%)!

The numbers for women, however, are more spectacular. The work force participation rate for women in the U.S. rose far ahead of that for other countries in the 70s and 80s. Ten years ago there was an 11.1 percentage point gap in favor of the U.S. (72.2% to 61.1%). That gap is now down to 2.2 percentage points as some lagging European countries had spectacular gains: Italy's rate rose by around 10 percentage points, and Spain's by over 20 percentage points from 40% to over 60%! In contrast, for both men and women, the U.S. participation rate fell slightly. Now, to be fair, the U.S. has had to create a mass of jobs to keep up with immigration, but, to be equally fair, the decision to have such high immigration is a choice freely made: what really matters to the general population is what jobs have been created for it. The U.S. has to run to keep up and the Europeans do not.

The Europeans have, in short, created many more jobs **as a percent of the population** than the U.S. has for the last 10 years. The remarkable fact here is not so much the markedly better improvements in Europe. After all, they had been substantially behind. What is amazing to me is the contrast between reality and the constant drumbeat of comments that Europeans do not know how to create jobs. We do seem now to be psychologically more fully invested in hearing and delivering good news than we used to be.

Performance

When it rains, it pours. Our year-to-date performance has been poor and our third quarter performance has been very poor. After 6 generally good years we could not get much right this last quarter. Normally strong fixed income was slightly weak across the board, and even the normally heroic emerging debt strategy lost a little, though it remains nicely up for the year. Our important emerging equity division had a third down quarter, falling 0.65%, and is well off year-to-date, down 3.8%. U.S. growth and value strategies also continued to underperform, although the U.S. core strategy finally had a flat quarter, but all three are badly behind year-to-date. Our international quant strategies also had a bad quarter. Global balanced allocation strategy, after being up through June for the seventh consecutive year, finally had a bad quarter, losing a point (along with its lead for the year) as almost all its bets detracted. On the much shorter positive side, our stalwart international active division eked out a small gain for the quarter and the year-to-date. And, in one bit of very good news, our rapidly growing U.S. quality strategy came leaping to life, rising almost 8% for the quarter, 2.3% ahead of the S&P, almost erasing its 4.5% year-to-date shortfall.

As the wisdom of our industry goes, brains and performance move together. We were formerly smart, and occasionally brilliant. Now we have once again become a bit dopey, although not as entirely stupid as we have been in the past. It is indeed a wonderful business in which your growing egomania is normally nipped savagely in the bud as market fortunes rotate. The good news is that the energy level and research activity move inversely with performance, and we are now a hive of activity, and a hive, I might add, that is full of humble bees. We will do better.

Recommendations

Avoid risk except, that is, for career risk; holding cash will use plenty of career risk units. If you insist on holding stocks, emphasize large, high quality blue chips. Be careful with commodities and especially careful with private equity. Timber is, unfortunately, a ridiculously small asset class, but we still believe it is fairly priced although far from as exciting as it used to be. At GMO we are sufficiently conservative that we can afford to carry some emerging equity partly as the least expensive part of the global equity market and the one with the best fundamentals, and partly to hedge our ultra conservatism. Better yet, hedge both the high quality stocks and emerging equities by shorting low quality stocks for which the Russell 2000 is a reasonable proxy. Above all, stay cool and patient and ignore the rising market, which is doing its usual job of testing character. In the meantime, we wait for profit margins that have defied the laws of gravity to come down (or be revised down). They are almost certainly the key to this overpriced market and their persistence will be the focus of our next quarterly letter.

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GMO

SPECIAL TOPIC

October 2006

Jeremy Grantham

*Letters to the Investment Committee IX**

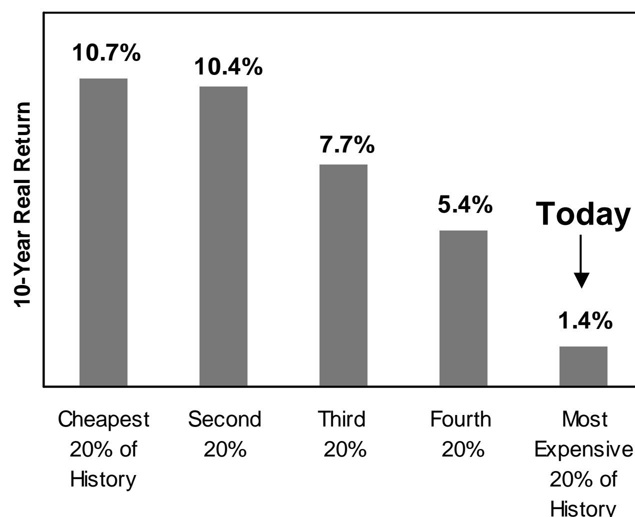
The Nature of Risk III

The Role of Value and the Premium for Excitement or Speculation

Six months ago, we covered two major problems in defining risk as mean variance or volatility. In the **long term**, volatility seriously **overstates** the risk of equity ownership because it ignores the strongly mean-reverting tendencies of both economic fundamentals and the stock market. That is to say, bad times fairly reliably follow very good times, and vice versa. Conversely, in the **short term**, volatility, at least as typically used, tends to **understate** risk by underestimating both the extreme nature of short-term outliers in real life and the occurrences of extreme events not hitherto experienced.

A third deficiency seriously compromises volatility as a complete measure of risk: it ignores aberrant starting values. In an efficient market this would, of course, not be a factor, but I'm happy to say this is not the world we live in. My favorite examples of mispricing are 1982 when severely depressed corporate earnings were multiplied by 8 (8 P/E), and 2000 when spectacularly inflated earnings were cheerfully multiplied by 35! Yet volatility was broadly similar in these two years and, consequently, these two remarkably different years were deemed to have roughly equal risk even though one sold at half replacement cost and the other at almost 3 times. Since 1925, cheap markets on replacement cost or normalized P/E have been handsomely predictive of future returns, and as Professor John H. Cochrane of the University of Chicago's Graduate School of Business has said, "Stock and bond returns turn out to be predictive at long horizons … high prices lead to low returns and low prices lead to high returns," a sentiment that has always seemed reasonable to us ("Portfolio Advice for a Multifactor World," Economic Perspectives, Vol. 23, 1999). Our version of this point is shown in Exhibit 1, which takes the ratio of price to real 10-year trailing earnings for all starting months of the S&P 500 since 1926 and divides them into quintiles by the size of the ratio. It then looks at the ensuing average real return for each quintile. Quintile 1 has a return of over 10% real a year, and quintile 5 (worst) has a real return of a mere 1.4% a year. So for 20% of all the time since 1926, 10-year holding periods identified by a simple value technique have shown returns below that of a T-bill.

Exhibit 1
Quintiles of Price/10-Year Earnings* to Predict 10-Year Returns



** Replacement Cost (Tobin's Q) is even more predictive (see Matthew Harney and Edward Tower, The Journal of Investing, Fall 2003).*

Source: GMO, Standard & Poor's Data: 1926-9/2006

* The Letters to the Investment Committee series is designed for a very focused market: members of institutional committees who are well informed but non-investment professionals.

We should also emphasize a cautionary point on value: unlike the risk of volatility that dramatically reduces with time, the pain that comes from overpaying fades very slowly.

Exhibit 2 shows the yearly total return after inflation if you bought at the top of the two great bull markets in the 20th Century – August 1929 and December 1965. You will notice that it took 9 or 10 years to get three quarters of your money back, and after 17 years in both periods you had averaged 0 return. These starting points both had the highest P/Es ever until the late 1990s. Seventeen years is a long time to have no return at all in a risky asset class. That two such events occurred in a mere 80 years is also food for thought – 34 out of 80 years. These two events also mesh badly with the typical institutional patience of about 3 years. In a world where flinching from pain and being seduced by pleasure on a short horizon are what create most equity risk, 17 years is a lot of flinching!

Exhibit 3 may be considered self-serving and anecdotal, but it is the only information we have of its kind, so we beg indulgence. It looks at the bear market period from March 2000 to September 2002 in which the S&P declined 47% (50% from daily highs to lows). The question that is asked here is how large the declines of other asset classes and sub classes should have been given their starting beta relationships to the S&P. For example, at the top of the exhibit it shows that the Nasdaq had a measured beta of 1.25 to the S&P 500. This implies that the expectation prior to the decline is that the Nasdaq would decline 1.25 times as much as the S&P's 47%. Column 2, though, shows how inefficiently priced these asset classes were at the top of a long bull market according to our standard methodology. Not surprisingly, the aggressive, volatile asset classes were badly overpriced relative to the market, given the huge optimistic bias that existed then. Conversely, the conservative or boring asset classes were underpriced, particularly U.S. REITs. The volatile emerging markets were an exception as they were still cheap as a result of not having fully recovered from a couple of financial crises that seriously hurt their markets and their economies. The important point here is revealed in the right-hand column, which shows the difference between their theoretical, anticipated performance based on volatility (beta) and their actual results. The differences are beautifully lined up in approximate order of their relative cheapness. In this particular event – the third largest setback of the 20th and 21st Centuries – asset class returns were apparently determined approximately 60% by relative starting value and 40% by beta. Ignoring relative value and pretending that the markets were efficiently priced was, in this recent bear market, to have given up rather more than 50% of explanatory power.

The final topic on risk is the fatal flaw in volatility, or beta, at the individual stock level (the general concept for which, of course, Bill Sharpe received the economics Prize awarded by the Bank of Sweden in honor of Alfred Nobel). His theory, known as the Capital Asset Pricing Model (CAPM), argued that risk should be proportionate to return: take twice the risk, and you should get, on average, twice the return above the small risk-free level.

Exhibit 2

Wounds that Never Heal: Buying at a Market Peak

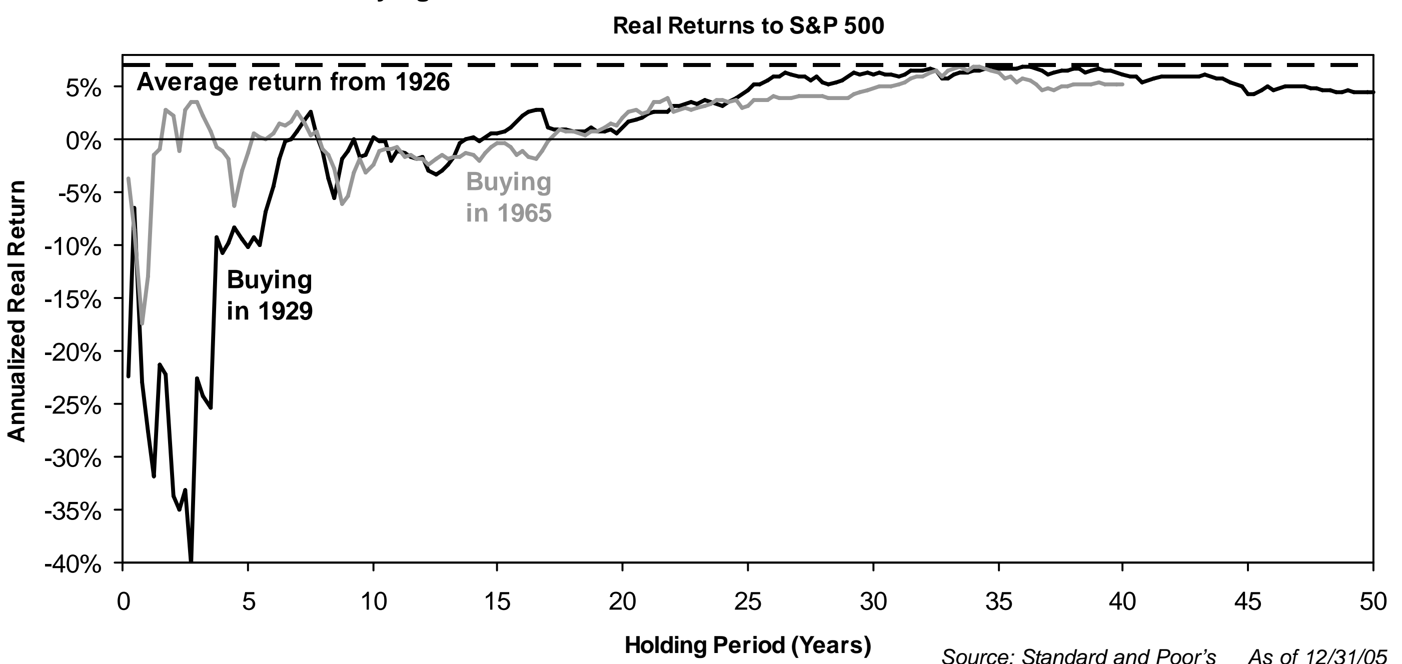


Exhibit 3

Results from the Recent Bear Market

Performance and valuations

Asset Class	Percent Overvalued on GMO Data	Beta	'Expected' Bear Market Return	Actual Return	Difference from Expectation[1]
Nasdaq*	280%	1.25	-59%	-73%	-34%
Russell 1000 Growth	210%	1.15	-54%	-63%	-19%
S&P 500	122%	1	-47%	-47%	0%
Russell 1000 Value	40%	0.85	-40%	-27%	22%
Russell 2000	32%	1.05	-49%	-34%	29%
Int'l Small Value	15%	0.65	-31%	-16%	22%
Russell 2000 Value	8%	0.8	-38%	-1%	60%
IFC Investable	-7%	1.1	-52%	-33%	40%
MS REIT	-30%	0.5	-24%	20%	58%

Value was the key to survival!

[1] *Difference between Actual and Expectation calculated in divided terms*

** If Nasdaq had dropped the expected 59%, a $100 investment would have declined to $41. It actually declined by 73%, leaving $27, which is 34% less than expected.*

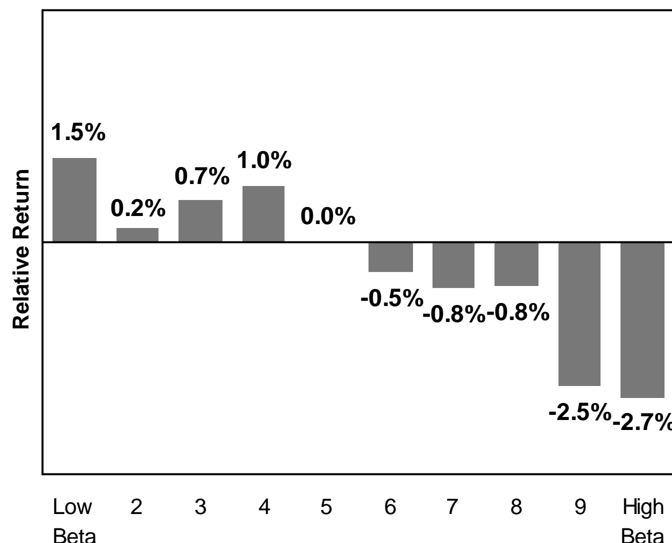
Source: GMO Overvaluation based on September 2000 Asset Class Forecasts

And the proxy for risk he used was beta, which is the part of volatility that cannot be diversified away and is related purely to the market's action. In our messy real world, however, it has always suffered from a modest limitation: it works powerfully in reverse.

Exhibit 4 shows a market cap-weighted decile run of average returns by beta, with the highest beta appearing on the right. The deciles are recalculated at the beginning of each year and the stocks are held for a year. The lowest beta stocks, notionally with the lowest risk, actually outperformed handsomely by an average of 1.5% a year for the last 40 years. The data used here is only for the 600 largest blue chips so it is far from flakey. 1.5% is far above the approximate 0.3% a year transaction costs that would be required for annual redecilizing. Much more spectacular, however, is the behavior of the 'riskiest' 10%, which has underperformed by an incredible 2.7% a year! So, for 40 years the most important part of the global equity market has rewarded risk avoidance, which is not what the CAPM or, more to the point, even common sense, would have expected.

Exhibit 4

Why Is Sharpe Wrong on Beta?



Source: GMO Data: May 1969 – December 2005

This problem is not just a misspecification of beta risk, for most other measures of risk show the same effect, indicating that this phenomenon of overpaying for risk, or speculation, and underpaying for boring conservatism is profoundly behavioral and built deep into the market. Exhibit 5 shows the performance difference since 1964 of the riskiest half against the safest half of several aspects of risk. 'Volatility' is a measure of risk that includes both market risk and all the unique individual stock risk (known as 'specific' risk) that is excluded by beta. Debt leverage and profit margins are, I think, self-explanatory. Our composite 'quality' mechanistically includes level of profit margins, stability of earnings, and debt. All of these measures share with beta the apparently perverse relationship between greater risk and lower return.

Now the question is why. Fifteen years ago I wrote a short piece of 24 single-sentence points called "Everything I Know About the Market in 15 Minutes." Point 2 of the original was that the market overpays for excitement and sex appeal. The enormous amount spent on gambling would certainly support this idea. Growth and volatility are like the 'terrible twins' of excitement and sex appeal. Growth is the longer-term version – rising sales and earnings will eventually carry the stock to glory. Volatility is the short-term version – the market

Exhibit 5

In Fact, All Stock Risk Factors Work Backwards

For 40 years, risk and return have been negatively correlated

Safer Characteristics Tend to Outperform

	Leverage	Profit Margin	Earnings Volatility	Combined Quality*	Volatility
High Quality Stocks	Lo 0.1%	Hi 0.5%	Lo 0.7%	Hi 0.8%	Lo 0.6%
Riskier Stocks	-0.8% Hi	-0.1% Lo	-0.9% Hi	-0.8% Lo	-1.8% Hi

(Baseline: S&P 500)

** Leverage, volatility, and profit*

Source: GMO monthly data from January 1965 – September 2006

makes a sharp 3-week rise and my high volatility stocks way outperform. Whoopee! Let's double up.

There are even some career management reasons that support overpaying for growth and volatility. Growth stocks really carry lower **career risk**, and the market may not handle volatility and beta efficiently, but they certainly handle career risk and business risk efficiently. Growth stocks not only intuitively appeal more to individual investors, they also appeal more to investment committees of institutions. When a contrarian 'value' stock is purchased when the company is experiencing bad times but there is an expectation of some improvement back towards average, the company inconveniently often continues to suffer from its problems. On such occasions, it is usually intuitively obvious to committees that such deterioration would, in fact, occur, and that the investment manager is an idiot, or at least has made an obvious mistake. Conversely, the purchase of a splendid growth company is easier to justify as sensible even after it has stumbled. In our earlier years at Batterymarch, the investment firm that Dick Mayo and I co-founded with Dean LeBaron, we lost 50% in the 1973-74 decline (almost identical to the losses of the big banks with their Nifty Fifty stocks). But we lost far more business and nearly failed because, as one client brilliantly put it, we lost our 50% 'inelegantly.' Great Lakes Dock and Dredge, Hartford Steam Boiler, and Twin Disc Clutch made clients feel much worse, apparently, than losing the same money in Avon, IBM, and Johnson & Johnson. It is my opinion that this is one of the central truths of the investment business. Stocks and assets that make investors feel uncomfortable even if they are less risky will always have to return more than appealing, currently successful, and exciting companies. Owning the latter, and explaining why you do, is simply a better business proposition.

I have wondered if there is an equivalent career advantage for volatility or beta and I have some tentative suggestions:

Beta is slightly correlated with high information flow and extra analyst coverage, which lower career risk and therefore seem logical to pay a bit for. More importantly, beta offers an apparent way of leveraging a perceived great idea without taking the increased risk of actual portfolio leverage and hideous margin calls. High beta, relative to leveraged low beta, has an element of insurance against margin calls in the event of a sudden spectacular 1987 decline, and is, hence, worth paying at least something for.

Adding the modest career risk factors to the very real excitement and sex appeal of volatility creates a perverse behavioral effect that appears to mask and outweigh any tendency of risk and return to be positively related. Adjusted for the behavioral effect, risk may indeed be positively related to return, but at least let's not kid ourselves that it works in its raw, unadjusted form. CAPM and the Efficient Market Hypothesis are elegant and very convenient **theoretical** models, but behavioral factors like career risk management, excitement, and boredom do a much better job of making sense of the real world!

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QUARTERLY LETTER

January 2007

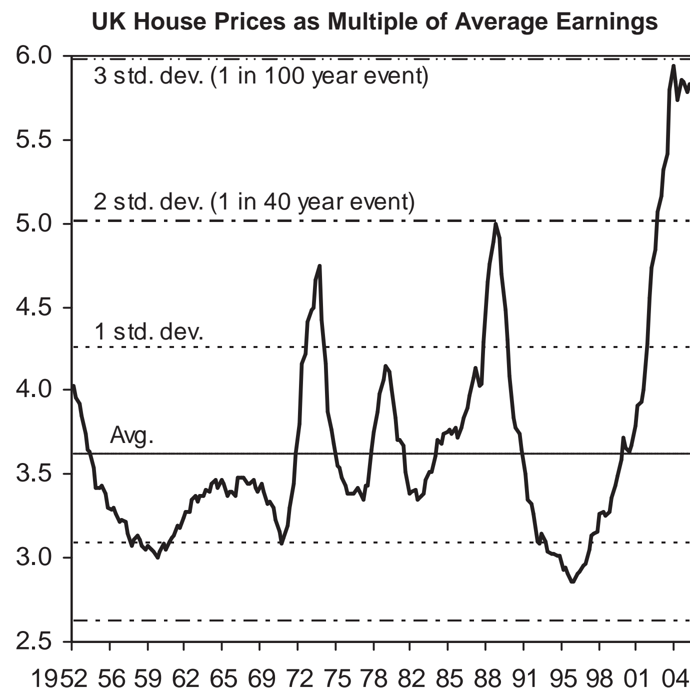
Goldilocks Rules: or Safe as a House in 2007

Jeremy Grantham

with Ben Inker on **Profit Margins**

plus **Letters to the Investment Committee X**

Safe as a House in 2007



Sources: Nationwide, Office of National Statistics (UK) As of 3/31/06

Review of 2006

Against the odds, Goldilocks tiptoed through the perils of the first and second year of the Presidential Cycle when Fed bosses usually cool speculation and the markets. From October 2004 to October 2006, the S&P's performance was only moderately positive, but risk taking steadily prospered, which is very unusual indeed.

In matters economic and financial it was that rarest of rare birds – a perfect year. Global GNP stayed very strong and above expectations. The U.S. economy slowed a little, but was fine. The recalcitrant Japanese and German economies finally showed some improvement, and parts of Germany finally even allowed shops to stay open as long as they wanted (except, of course, on Sundays, which is constitutionally protected). But what did all that matter compared to China, which went from rapid growth to even more rapid, and India, which nearly kept up. **Every** emerging country posted positive annual real GNP growth for the second consecutive year (as did all developed countries for that matter), and 25 out of 26 emerging countries on *The Economist's* back page beat the U.S. for the year – an amazing performance!

Also important for global equity markets, profit margins went from above average to even higher, hitting record highs in the U.S. and even greater highs in EAFE ex-Japan. Japan's profits rose to dizzying heights by their modest standards, and emerging markets went off the scale.

The economic and financial world was blessed with a succession of small but very broad, pleasant surprises, and, unexpectedly, there was nothing really unexpected. In fact, it was a year to remember for everyone except, perhaps, those of us expecting the usual unpleasant interruptions of such rosy settings. And remember, the longer profit margins and growth stay abnormally high, the more they become imbedded in long-term growth assumptions and raise the hurdle for expectations. This raises the hurdles and actually makes further surprises increasingly unlikely.

Risk taking also prospered because global inflation stayed subdued, financial crises were about non-existent, interest rates stayed low, and credit continued to be very, very available. In fact, this was almost certainly the best

year in the entire history of finance for the selling of high credit risks at low premiums. Of particular note, 2006 is estimated to have seen a quadrupling of the Collateralized Debt Obligation (CDO) market to around $2.5 trillion; clearly a record for the growth of any new financial technique. CDOs are a way for investors of all kinds to lay-off or purchase debt, especially risky debt, in packages that really do lower risk through diversification, but are represented and credit rated as if they have a truly magical risk-reducing power. The key factors that gave 2006 its distinctive flavor were the amazing growth in risky debt facilitated by CDOs and the expanded 'carry trade' of borrowing in cheap Japanese and Swiss currencies. It really did feel different, didn't it? Such a tidal wave of easy, cheap borrowing coupled with a Goldilocks economy has created an attitude toward risk unlike anything ever seen before. From this happy, seemingly risk-free level, how easy it must be to have an unpleasant surprise.

GMO's Performance in 2006

2006 was about our third worst year in 28, although most of our assets performed at a level that was just acceptable. Foreign developed and global equities, which make up the bulk of our assets, were well below past outperformance but were, on average, close to the benchmarks with active slightly ahead and quantitative slightly behind. Fixed income was well ahead in emerging debt and slightly ahead elsewhere. Aussie and U.K.-based equities performed on par with the benchmark. Our asset allocation accounts, after six consecutive yearly wins, underperformed a little, which is usual in strong market years, and, for once, all the underperformance (plus 25 basis points, in the global balanced strategy) was due to implementation shortfalls in the underlying funds. Our substantial emerging market equities strategy had a bad year following a good 10-year run. The real performance pain was reserved for our U.S. equities where, as described last quarter, our broad-based value approach, which pays up for growth and quality, was really hammered by simple price-to-book. We at GMO have seldom, if ever, made lots of money against benchmarks without first receiving lots of pain, and we expect, and certainly hope, that this is no exception. It is certain, anyway, that if you designed a parameter to measure the spread of quality to junk (or, to describe it more broadly and accurately, the spread of risk taking to risk aversion), it is wider than at any time since 1960, except for a few months in the 1999 Bubble. This narrowing of the risk spread was certainly the main story of 2006, as it was in the entire September 2002 to December 2006 bull market, and it has certainly hurt us.

Outlook for 2007

Although risk taking is at an extreme, two factors mitigate against a **high probability** of an immediate major reversal in the market or against risk taking. First, since October 1st we have been in the strong third year of the Presidential Cycle when, since 1932, there has not been a single serious decline, although a very lame duck presidency **may** moderate the normal third year optimism. The milder-than-average negative effect of the first two years of this cycle, particularly regarding risky investments, **may** also mitigate the third year effect. Second, as described earlier, conditions are today close to perfect. Although there are probably some deep weaknesses and imbalances in the global financial system – widely distributed over-leverage, low risk premia, savings imbalances, and trade imbalances – there are few signs that any potential cracks in the economic structure are beginning to widen and some substantial time might be needed for any serious unraveling (the first, modest sign of cracking may be in the very recent weakness in low-grade packaged mortgages). For technicians, for the record, there is a third bullish factor: there is hardly a hint of momentum turning against risk-taking and leverage (modest underperformance of small cap equities since last May is the best small hint we can come up with).

No, the best case for caution and bearishness is made by value, which, as we have often emphasized, is a weak predictor of one-year returns, although a dynamite predictor of longer-term returns. The value story, though, is **very** impressive. Goldilocks global conditions, especially cheap and easy credit, have caused the broadest overpricing of financial assets – equities, real estate, and fixed income – ever recorded. The real estate and fixed income overpricing speaks for itself. It is clear, simple, and obvious. The longer-term bond yields are low, and housing is clearly overpriced; house prices have mostly doubled or tripled in 10 years depending on the city, and, clearly, this is all paper pricing – the houses have not increased their productive capacity in any way, but are the same old houses. The equity overpricing is more complicated, but still pretty basic: P/Es are moderately above long-term averages. Certainly no big deal, but profit margins, as addressed by Ben Inker in a piece following this quarter's letter, are at record levels and represent far more potential pain than P/Es do. The **likelihood** of at least a moderation of profit margins might provide the catalyst for a more timid market.

But will a major correction occur before October? Given the above data, I would suggest it is less than a 50/50 bet,

although sheer overpricing may well moderate any gains. Over and over again in investing we are confronted with factors over-running far beyond anything we can rationalize. This was spectacularly demonstrated in the Internet/Tech Bubble and in Japan in 1990. Just because risk taking is off the charts does not mean it can't keep going up for another year. In these situations, we always try to be braced for another year of pain for our major bets. This time, our big bet is in our cautious stance. If caution is indeed penalized again this year, we expect another outpouring of "New Era" logic, especially on the topic of the inevitability of private equity deals driving the market higher. "If you can invest at X% and borrow at half X%, why is this not a license to steal that will go on forever?" etc. (We will respond to this last point, in the Letters to the Investment Committee next quarter.)

One of the problems with forecasting is deciding what you are really trying to forecast. I suppose the **most likely** outcome this year, in my opinion, is for a moderate – say 10% – gain in the S&P 500 with the dollar losing a few percent, and EAFE and emerging, once again, more likely to beat the S&P, but by only a little this time. In this event – a reasonably stable market, driven by illiquidity – the extreme cheapness of high quality blue chips may cause them to win, even in this typically risk-preferring year. This unusual result is quite likely because the profit margins of blue chips are almost normal, whereas those for junkier companies are dangerously above their norm. And it is likely that a shift in profit margins, one way or the other, will determine the outcome of the year, both for the total market and the relative strength of its components.

The problem with this neat 'most likely' forecast is that it ignores the substantial **possibilities** of something going badly wrong, perhaps in the 10% to 20% probability range this year, but rising steadily in the following three years. In such a case, the hidden fragilities of an overpriced, overleveraged world will be revealed, and risk avoidance will be hugely rewarded. For if anything upsets the apple cart, there are a lot of over-ripe apples to be crushed. So prudence this year will probably cost a little, but may just save a whole lot. And as the years pass, the logic of this position strengthens, for given my small, but increasing odds of a major setback over the next four years (15%, 20%, 25%, and 30%), there is not even a one-in-three chance of missing a major setback. (The alternative way of letting off overpricing steam is by a gradual, extended decline, but it almost never happens this way.)

Recent Calls

In the end, the U.S. market in 2006 had a good year despite being overpriced, and risky assets did very well despite being even worse – exactly the reverse of my predictions. And this despite a normally reliable Presidential Cycle effect against risk taking, the failure of which I add to the current administration's long list. It was a big miss. The only possibly mitigating factor is that seen through the eyes of the rest of the world, the U.S. market was mediocre, up less than 5% in euros and pounds for example. I was right, though, in predicting the substantial outperformance of the S&P by emerging equities and EAFE equities, and in the weakness of the dollar. In global asset allocation, these offsetting factors were about equal in effect. I also expected small cap to run out of steam, but it leaped to a 10% lead in May. It did, however, fall back to only +2.5% for the whole year, so this wasn't too bad. I think, however, in the future I will avoid any serious attempts to predict yearly anything and stick to my knitting, which is dealing with the **eventual** and sometimes nearly **inevitable**, but leaving attempts at the **imminent** alone.

Recommendations

Boringly, I'm afraid, as long as the market keeps doing its thing, our recommendations will not change: avoid risk, especially emphasize high fundamental quality in stocks; don't be too proud to hold simple ole cash, and, **if** you want to take risk **or** hedge your conservative bets, continue to hold emerging market equities. They still sell at a P/E discount, despite prospects for future rapid growth, greatly improved financial conditions, and a strong currency forecast relative to the dollar.

While America Slept, 1982-2006*

A Rant on Oil Dependency, Global Warming, and a Love of Feel-Good Data

(A follow-up to our Fall Conference)

Despite two oil crises, early warnings of long-term environmental damage, and a wonderful, early example set by President Ford, all successive U.S. federal governments acted as if it were business as usual, as if all Middle Eastern governments were stable and friendly, and as if the environment were a non-issue.

The U.S. auto fleet fuel efficiency went backwards over 26 years by ingeniously offsetting substantial technological advances with equally substantial increases in weight. In contrast, the average Western European and Japanese cars increased efficiency by almost 50%.

U.S. gasoline taxes fell, on average, to below 30% of the total price from 40% in 1980. In contrast, European and Japanese gas taxes rose to 200% of the underlying gas price. U.S. drivers – the world's richest and some of the best behaved – would, it was said, never accept increased taxes, where Italian drivers would! Even tax-neutral policies, such as taxing high mileage cars at purchase and subsidizing efficient cars, were never seriously considered.

Other users of oil for transportation – truckers and airlines – made steady improvements in efficiency, but with little or no policy encouragement. Home heating efficiency also increased, but perhaps at half the potential rate of improvement that could have been obtained by designing heating and cooling efficiency directly into original construction in a cost-effective way with strong policy encouragement.

No material governmental effort was made to encourage research or development of oil displacing technologies and public transportation.

If a sensible but still only moderately aggressive policy had caused there to be even 10% fewer cars on the road today than there are and each one to drive 10% fewer miles in vehicles that were, on average, 50% more efficient, U.S. oil demand for transportation would have been 28% lower. If, in addition, other transportation had increased efficiency or reduced mileage from today's level by a very modest combined total of 20%, U.S. oil demand for transportation would be 34% lower than it is today. Oil for transportation is 72% of total oil use, and, therefore, this transportation reduction would equal a 24.4% reduction in oil use. However, only 64% of U.S. oil is imported, so that this reduction in oil use would cause a 38% reduction in imported oil. Oil imports from the Middle East are running at about 28% of U.S. oil imports. This means that with the savings in oil use that would have accrued to this reasonable set of increased efficiencies – far from a Manhattan-type Project – not one single barrel would have been needed from the Middle East. Needless to say, our whole attitude and behavior in the Middle East would have been far different, and far less painful and costly. (Oil was clearly not the only issue, or perhaps even the biggest one in Iraq, but it is unlikely that U.S. troops would have fought two wars had it been a non-oil country in, say, Africa or the Far East that was equally badly behaved.)

The lack of policy was not confined to oil use efficiency and oil replacement, but to all energy use. The consequence was that the country with the highest average economic productivity had far from the highest energy productivity. The GDP produced per unit of energy today is a remarkable 60% higher in Japan and over 50% higher in Italy, for example. What were we thinking?

The U.S. policy approach to climate change (and other environmental issues) has been similarly casual in its unwillingness to plan for the long term. There is now nearly universal scientific agreement that fossil fuel use is causing a rise in global temperatures, seldom more obvious than the start of 2007 in the two most important cities in my life, London and Boston, where average temperatures began the year way above anything in the record books. The potential financial costs of cumulative climate change are estimated by the recent Stern report in the U.K. to be several percentage points of GDP greater than the probable costs of heading off serious consequences by appropriate and timely action. The Canadian National Academy of Science and the U.K. Royal Society both recently stated that climate change was the largest single risk to food shortages and food prices. Yet the U.S. is the only country in which environmental data is steadily attacked in a well funded campaign of disinformation (funded mainly by one large oil company). This cam-

* *While England Slept: A Survey of World Affairs*, 1932-1938 by Winston Churchill described the dangers of the great majority of politicians and voters emphasizing Hitler's autobahn virtues and rationalizing re-armament data as alarmist and unproven.

paign has used and reused the solitary, plausible academic they can dig up, out of hundreds working in the field, plus one famous novelist – without qualifications in the field, but, still, for heaven's sake, widely quoted by the administration – and one Danish economist who really doesn't get Pascal's Paradox, but does seem to have shares in the *The Wall Street Journal*.

In response to the threat to our collective future posed by climate change, the U.S. government has not responded by taking a leadership role. Quite to the contrary, it is, along with Australia, one of the only two developed countries not to sign the Kyoto agreement. The argument against signing it is that it is not a perfect agreement and China will not sign anyway, and, if they are going to damage the environment, why should we stop, and that, in any case, lowering CO_2 will lower economic growth. On average, of course, the countries with higher GDP per unit of energy ratios have grown faster than the U.S. over the last 50 years just as Toyota, with a more fuel efficient fleet, has outgrown GM, which would not produce efficient vehicles they believed consumers would not pay for. And, as for China, why would they move without our example? We developed countries, after all, chopped all our trees down and set fire to our polluted rivers long ago when we were developing. Now they, in their turn, feel they should not have to play by rich country standards, and that rich countries should at least lead the way, particularly the U.S., which is by far the biggest total producer of CO_2. But notwithstanding their reluctance, China, ironically, already has auto fuel efficiency standards well ahead of the U.S.!

[And as for poor Australia, they **really** don't get it. Australia has one of the worst increases in temperature in recent decades – a full one degree centigrade, which is a whole lot in climate change. It is now, literally, burning up with unprecedented droughts and temperatures in their Southeast, which is the source of the world's third largest grain exports. The 'good' side of this painful news is that given a couple more years of rising temperature and drought, there will be the sort of short-term crisis to which politicians can finally react. There are signs that this is beginning to happen, but it's a strange way to do business.]

Successive U.S. administrations have taken little interest in either oil substitution or climate change, and the current one has even seemed to have a vested interest in the idea that the science of climate change is uncertain. In fact, we have spent the last large chunk of time in this country with a strong bias to feel-good data at the expense of accurate, hard data in this field. This attitude seems to be reflected in the spin on U.S. economic success, which we've commented on several times, exaggerating, sometimes substantially, the absolute and relative performance of the U.S. economy. It has certainly been reflected in the general desire for environmental issues to be benign and optimistic or to simply go away. There seems even to be a sense of exasperation at the idea that we should have a full analysis of **possible** severe risks. Probabilistic thinking – global warming **may** not have a cost – as opposed to black and white thinking, has never been easy or appealing, but in some areas, like this one, it is vital. We also seem to have developed, in the last 20 years, an even stronger preference for the short term over the long term, and for good news over bad than has been the general rule. Perhaps it has always been the case that even a minimal economic cost is always too much for long horizon projects that will benefit our children and grandchildren rather than us.

The last 26 years have been such a wasted opportunity, as this country had previously shown leadership in this field. President Ford got us off to a running start in energy efficiency, especially in the efficiency of our auto fleet. Adopting sulfur 'cap and trade' in the U.S. resulted in a far greater reduction in sulfur dioxide at far less cost than had been expected. Ingenuity sprung out of the woodwork when it was correctly motivated, and the program was perhaps the greatest success story in environmental planning. With a succession of President Fords, we would have ended up as an environmental leader and a great model. It only needed some luck of the draw in our selection of presidents because up until now environmental attitudes were personal presidential agendas and were never vote getters. The thinkers of happy thoughts are right in one sense – technology can and probably will save our bacon, but only if it is fully turned on by enlightened policy. The good news is that even as I'm rewriting this, large corporations and Congress are showing real signs of life on this issue. You never know.

Investment Effects

What is certain is that oil substitution, energy conservation, and related environmental issues will be the biggest investment issue of at least the next several decades. I am not qualified to talk about most of these opportunities, but as a **practical** green, I do know that solutions need either a nearly miraculous scientific breakthrough or they will have to include much greater use of nuclear energy. Second, shale oil and tar sands will be an immense uphill struggle from an environmental viewpoint since, basical-

ly, they involve using up energy, often natural gas, to produce oil – double jeopardy. But with any luck, other technologies and conservation will keep the price of oil too low for very large scale shale oil production. We would need luck because local politicians are always unlikely to promote the necessary long-term environmental constraints. Third, U.S. corn-based ethanol, as opposed to efficient, Brazilian sugar-based ethanol, is merely another U.S. farmer protection program, made very expensive both directly and indirectly by inflating real agricultural prices. In terms of CO_2 production, corn-based ethanol is more or less a hoax. Fourth, we desperately need to encourage the technology of CO_2 extraction from coal burning utilities. Fifth, it is clear there is no single solution so investment opportunities will be spread very broadly, especially in energy conservation. Finally, there are some real and very practical environmental benefits from forestry. New and protected forests store carbon, protect wildlife and water sources, and even offer good wind resources on occasion. Some of these societal values of forestry are likely to be recognized financially in the next decade, increasing the return to some forestry investors. I certainly hope so.

(I apologize for President Bush and this week's *Economist* apparently getting hold of this rant while it was being edited. I'm sorry too that the President missed the paragraph on ethanol. Still, it's a start.)

The Extraordinary Rise in Corporate Profitability: Is it Sustainable?

Ben Inker

Perhaps the most striking feature of the global economy over the last four years has been the extraordinary rise in corporate profitability. With relatively little fanfare, we have seen a shift in global profit margins from their worst in over a decade to the highest aggregate profitability in history. Never before has the average company made so much money, and the change in fortunes has been astonishingly fast. The two questions that immediately come to mind are: Why did it happen and where will profits go from here?

When looking at the profitability of the corporate sector, it is tempting to think of aggregate profits as simply the sum of the outcomes of a series of individual companies. However, this turns out to be misleading, because aggregate corporate profits are a part of the macroeconomic system, and some of the ways that individual corporations can increase profits – increasing market share, for example – don't have any meaning from the perspective of the entire system. Particularly when we are looking at the global corporate system, as opposed to that for an individual country, it is hard to say that improved profits are due to improved management, or a competitive currency, or a commodity boom, or most other explanations for why a particular country is experiencing strong profits.

So, let us start by looking at some of the arguments put forth to explain the profit margin expansion that do not seem to hold up to scrutiny. The 'China effect,' the post-industrial effect, the financials effect, and the inflation effect have all been put forth as explanations for the profitability boom, and it is our belief that none of them does a particularly good job of explaining the current level of profitability, nor do they help us understand where profitability will go from here.

Perhaps the most widely held of these arguments is the 'China effect.' The argument here is that China's role as workshop to the world has enabled companies to increase their profit margins as their manufacturing costs have fallen, and allowed central banks to keep rates low due to the deflationary effect of the Chinese products.

First, to the direct effect on corporate profits outside of China. Since 2002, China's trade surplus has grown from $27 billion to $207 billion. Since this surplus corresponds to the excess that Chinese entities sell to foreigners over what foreign entities sell to China, it follows that China is currently a net drain on the profits of companies in the rest of the world, since Chinese goods and services are displacing much more revenue from non-Chinese companies than non-Chinese companies earn selling to China.

As for the deflationary effect of China's exports, it is hard to know exactly how important this has been. China's export price index has actually risen since 2002, at a rate of 3.2% annually, which is not, on the face of it, obviously deflationary. Furthermore, while China's exports have ballooned from $360 billion to $840 billion over this period, the larger figure still amounts to only 2% of global GDP. It is possible that even though Chinese export prices have been rising, the net effect on the world has been deflationary, if they are displacing other higher priced goods that were not made in China. Most Chinese exports do not have a lot of Chinese 'value-added' in them, however, so this effect is unlikely to be enormous. If we assume that the net effect of Chinese exports has been the equivalent of a 5% deflation in their export prices, the total effect on global prices would have averaged slightly less than -0.1% per year over the period. Since China's growth has also had an impact on commodity prices, it is far from clear that the net effect on prices has been negative even if we were to assume that impact has been there.

So, it is unlikely that China has either caused profits to be higher or inflation lower for the rest of the world. There is another avenue where it is possible that China has been affecting corporate profits: bond rates. China's investment in U.S. dollar-denominated bonds has been in the hundreds of billions, and it is certainly possible that this has caused U.S. bond yields to be lower than they would otherwise have been. Insofar as this encouraged borrowing on the part of consumers and investors, it may have had an impact on corporate profits, as we will discuss later.

The post-industrial effect is an argument that returns on capital have risen because corporations in the developed world have increasingly moved beyond the industrial stage, becoming 'platform companies,' which do marketing and research and development, leaving the capital-intensive manufacture to factories in the emerging world, where endemic overcapacity limits their market power. If true, this hypothesis should show itself in the pattern of profitability across companies. Specifically, it implies

the returns on equity should be higher in the developed world than in the emerging world, and that within the developed world, those companies that have taken advantage of the opportunity to move to a 'post-industrial' business model should be more profitable than those that have not. As we can see, neither effect seems to be true.

Exhibit 1 shows the ROE of the S&P 500, EAFE ex-Japan, and the S&P/IFC Investable Composite Index.

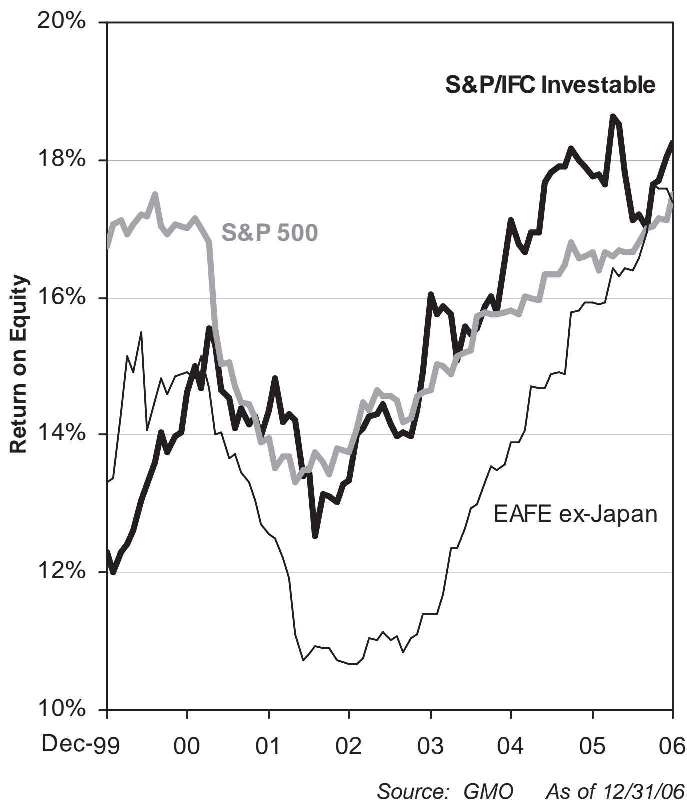
While profitability has improved for all three groups of stocks in the 2002-06 period, it is difficult to chalk this up to the 'post-industrial' effect, since ROEs are actually higher in the emerging world than in developed markets.

Within the developed world, we would also expect to see that rising profitability has been driven by the non-capital intensive 'platform companies' and not the capital intensive old-style corporations. In fact, the reverse has been the case, as we can see in Exhibit 2.

Over the last five years, it has been specifically the most capital intensive companies in the U.S. that have seen the biggest improvement in profitability. The same pattern can be seen in the international markets (see Exhibit 3).

Exhibit 1

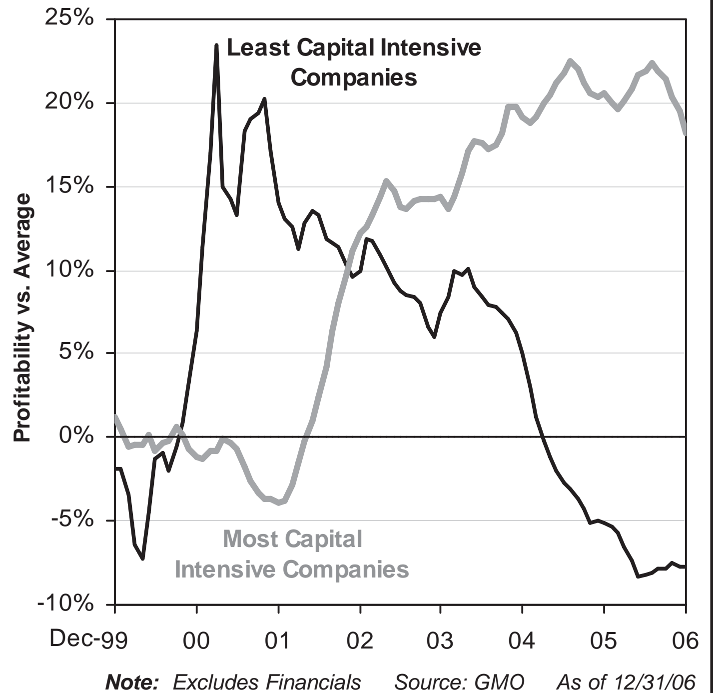
ROE of Emerging and Developed Stocks



Source: GMO As of 12/31/06

Exhibit 2

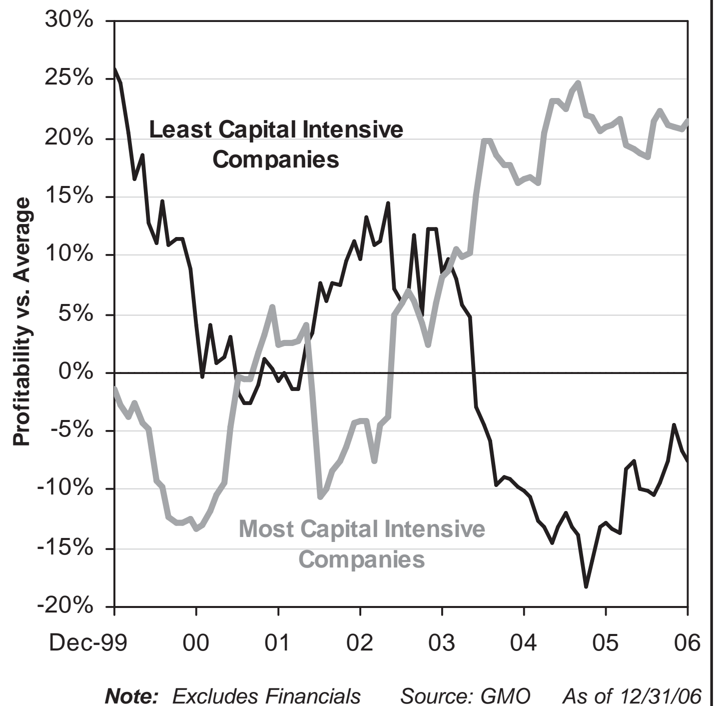
Profitability vs. Capital Intensity in the U.S.



Note: *Excludes Financials Source: GMO As of 12/31/06*

Exhibit 3

Profitability vs. Capital Intensity in EAFE Markets



Note: *Excludes Financials Source: GMO As of 12/31/06*

Another factor that has been put forward to explain the rise in profitability is the rise in profits of financial companies. This explanation has the merit of being clearly

true; the aggregate real profits of financials have risen 190% in the U.S. over the past decade, versus 25% for non-financials. However, the bulk of this growth came before 2002. Since June 2002, the figures are 23% growth for the financials and 70% growth for the non-financials. So while the importance of the financial sector has clearly been on an uptrend, during the particular period 2002-06, they have been, if anything, a drag on the performance of the corporate system.

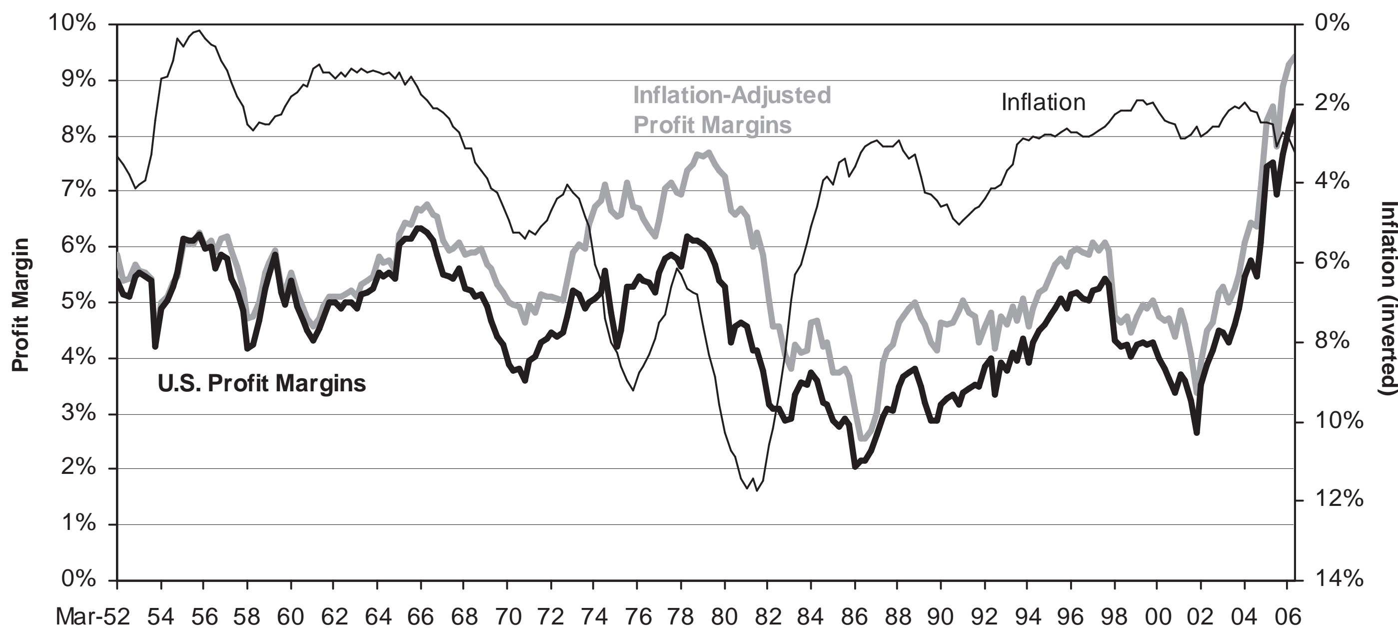
A final argument that fails the test is the inflation argument. This beguilingly simple argument is that inflation is bad for corporate profits and profitability is naturally higher in a low inflation environment than a high inflation environment. While it is not immediately obvious why this should theoretically be the case – after all, corporations create the goods and services that go into inflation and one might reasonably think inflation should be a pass-through for them – this argument has seemed to hold up in the U.S. over the post-WWII period. The effect is entirely dependent on the late 1970s and 1980s, however, and if we adjust for the direct impact of inflation on profits (i.e., the overstatement of the real cost of debt in a high inflation environment), the correlation between the two entirely disappears (see Exhibit 4).

Furthermore, inflation has been quiescent for the last 15 years, and cannot hope to explain the massive recent burst in profitability, even if we were to accept that, in general, profitability is higher in a low inflation environment.

So if none of these factors holds up as an explanation for the profitability boom, what does? The explanations we are left with seem a bit more prosaic, and, unfortunately, almost certainly temporary. The feature that seems to us most likely to have driven the extraordinary growth of profitability is the remarkable strength and stability of global GDP growth. Each of the last three years – the years in which profitability went from normal to extraordinary – has shown stronger global growth than any in the previous 20 years, and the stability of that growth has also been unprecedented (see Exhibit 5).

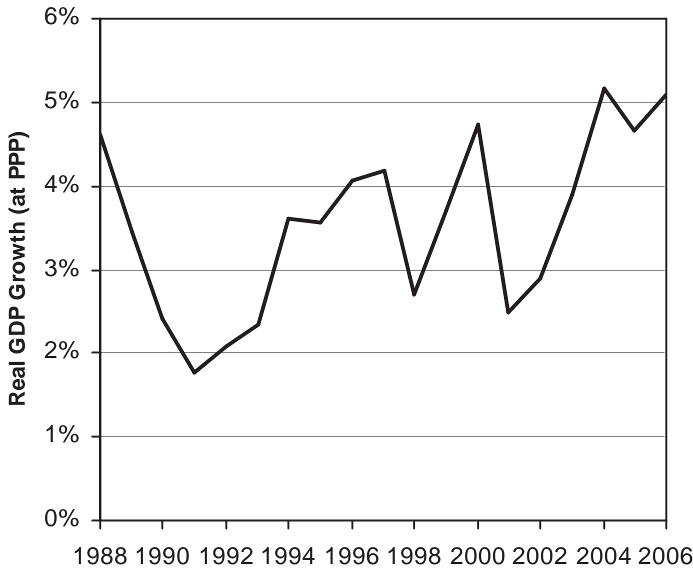
Without looking into the reasons why this has been so, it is enough to say that the last several years have shown a significant, and more or less continual, positive growth surprise. And, in fact, stronger than expected demand is the single factor most clearly correlated with improving profitability. Growth itself is not directly good for profits. One can simply look at the example of the disk drive manufacturing business, which has grown by 20% annually over the past 25 years. Unfortunately for the disk drive makers, capacity has generally grown even faster, leading to lousy aggregate profitability. But when an industry plans for 5% growth and instead gets 10%, this is when profit margins expand. Looking at the global

Exhibit 4
Inflation and Profit Margins



Sources: NIPA, BEA, GMO As of 6/30/06

Exhibit 5
Global GDP Growth



Source: Datastream As of 6/30/06

GDP chart, it seems overwhelmingly likely that companies in aggregate have seen stronger than expected growth for their products.

And along with the unexpected strength, recent growth has been extraordinarily widespread. The percentage of countries undergoing recession over the last three years has been, as near as we can determine, at an all-time low, as has been the percentage of companies experiencing financial distress. This combination has helped credit spreads to narrow, not only reinforcing the profitability of companies facing lower costs of, and easier access to, debt, but also helping demand by decreasing the cost of debt for the household sector, which has been a crucial piece of the profitability puzzle.

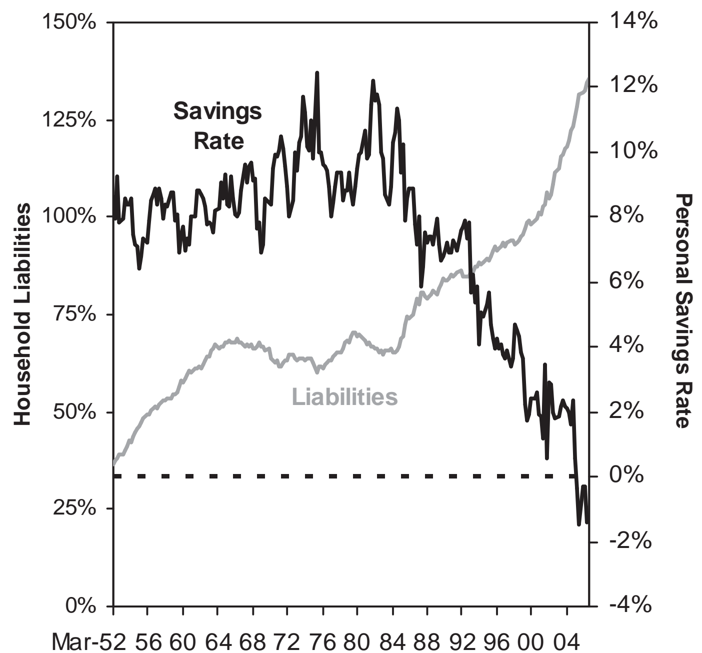
Since aggregate corporate profits are part of the overall macroeconomy, there is usually a natural limiting factor to profit booms: inadequate demand. If more money is going to the corporate sector, less is going to the household sector, all else equal. This usually puts a damper on demand, unless there is a strong burst of corporate investment, which there has not been in this cycle. Why? Normally, consumption rises along with wages, and if wages aren't growing, neither does consumption. Over the last several years, consumption has grown much faster than wage growth.

Aggregate profits of the MSCI All Country World Index are up 150% in U.S. dollar terms since the 2002 low, while global GDP is up 50% (flattered by a falling U.S. dollar). And if profits have risen faster than GDP, some other group must have been made relatively worse off. In this case, the group is clearly workers, who have seen incomes rise noticeably slower than GDP. While global data are hard to come by, in the U.S. labor compensation has dropped by 3% of GDP over the period. This is probably fairly representative of the global situation and is the sharpest fall we can see in the data series, which starts in 1947.

So what has allowed this consumption growth in the absence of wage growth? Consumer access to debt has never been easier, with a combination of low interest rates and product innovation that means more and more consumers are able to take on levels of debt that would not have been possible before. Combined with the worldwide boom in residential real estate, where homes have not only been going up in price rapidly across dozens of markets but also changing hands at spectacularly rapid rates, we have seen a simultaneous boom in the availability of credit and strong demand to spend based on it (see Exhibit 6).

The purchase of a house is associated with significant additional expenditures on furniture, appliances, electronics, and other goods that make the house into a home. And the temptation to think of the cost in terms of month-

Exhibit 6
Household Liabilities and Savings as Percent of Disposable Income



Sources: BEA, Federal Reserve As of 9/30/06

ly payments on a 30-year loan is beguiling. Probably for a combination of these reasons and the widespread ownership of homes, the wealth effect of real estate appreciation is reckoned to be much higher than that for other forms of wealth, such as a bull market in equities.

The globally falling savings rates have led to the rather spectacular phenomenon of savings rates in several countries – the U.S., Australia, and Canada – actually going below zero, something which has never before occurred outside of a depression. In the Great Depression, out of work Americans who needed to eat despite not being able to earn a living were forced to dip into their savings on an aggregate basis. In the current situation, the dissavings is being done by the gainfully employed, who are choosing to live beyond their current income in the belief that either their income will rise rapidly in the future, or asset appreciation will enable their wealth to grow despite their spending more than they earn.

Since this is truly a new phenomenon in the world, it is difficult to say exactly how long it will go on or how severe the eventual retrenchment will be, but one thing is certain. Negative savings rates are simply not compatible with the longer-term needs of workers, and they cannot persist indefinitely.

So what does the future hold for corporate profitability? The very nature of forecasting means that the height of the bar required to qualify as a pleasant surprise continually rises. If the world were to repeat the growth of the last few years, it would probably not be enough to keep profit margins at their current levels because growth expectations have been slowly ratcheted up. Yesterday's pleasant surprise could be tomorrow's disappointment, even if nothing 'goes wrong' with the global economy. Further upside surprises in consumption will entail either yet lower savings rates – which will have to reverse themselves sooner or later – or strong wage growth. And if wages are growing faster than GDP, it is a virtual certainty that profit margins will be lower, since one group cannot increase their share of the pie without another losing some of theirs.

The nightmare scenario for corporate profits would be a drying up of the liquidity cycle, making it more expensive and difficult to get debt for both companies and consumers. It is very easy for such a cycle to build on itself in a negative way. Just as we have seen the high liquidity of recent years reducing the cost of debt and the incidence of financial distress, a shock to the debt markets that causes credit spreads to widen and financing harder to come by could easily feed on itself, leading perhaps to a global recession, which could cut profit margins in half or worse.

But the nightmare is by no means a certainty. A more moderate fall in margins to a level somewhat above their historical averages, driven by a mildly disappointing demand environment is more likely. Will this happen in 2007? It seems to us reasonably likely that it will at least begin this year. The U.S. housing bubble has at the very least stopped inflating, and the disastrous performance of some of the recent sub-prime mortgages seems to be leading to some tightening of lending standards. Since the U.S. consumer has been the buying engine for the entire world (our current account deficit, at $880 billion, would qualify as the ninth largest economy in the world, bigger than such heavyweights as Brazil, India, Russia, Mexico, and South Korea), any drop-off in U.S. consumption will have global implications. At current forecasts of 2% to 3% GDP growth in the U.S., the chances of falling profit margins look high.

Even if the U.S. consumer were to let us down a bit this year (and perhaps for years to come as we rebuild our sadly neglected nest eggs), it is possible we may get a temporary reprieve from falling profit margins. Corporate investment has been solid in this cycle, but it has not really grown as a percent of GDP, which is another way of saying it has not really driven growth. If it were to start to – corporations, after all, are making a lot of money at the moment and could spend more on plant and equipment if they chose – profit margins would likely be able to be maintained and might even rise for a while.

The magical thing about corporate investment is that it all winds up as revenue for some company or other, but on the cost side it is depreciated over a number of years. So a burst of investment, as we saw in the Internet Bubble, is good for corporate profits in the short term **even if the investment was a bad idea**. While many companies found themselves ruing the investment decisions they made in 1999 and 2000, and eventually took huge write-offs due to ill-judged investments, at the time those investments went straight to the bottom line of Lucent, Cisco, or Sun, or whoever they bought from, and had no immediate negative impact on the profitability of the companies doing the investment.

If the global economy is likely to slow moderately from its currently torrid pace, it is not clear that a corporate investment surge this year would earn a good return, but it is clear that if it happens it will be a plus for short-term profitability if nothing else.

Few strategists predicted the current profit surge – certainly we didn't – although presumably a fair number will claim to have done so in retrospect. In our view, this is completely consistent with the 'pleasant surprise' explanation for this profit cycle. Predicting surprises is always tricky, and we are not now forecasting a particularly nasty surprise to corporate profits over the next year or two, although longer term we believe the trend in profit margins will almost certainly be down toward historical averages. But we will go out on a very stout and short limb by saying profit margins are likely to narrow this year and into 2008, barring a strong corporate investment surge, which, if it comes, would only build us more problems in the future.

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GMO

Special Topic

January 2007

*Letters to the Investment Committee X**

The Revolution in Asset Allocation: Let's All Look Like Yale

Jeremy Grantham

History

The good news is that asset diversification is a good idea and was recognized as such by any good trading house in Florence or Antwerp in the late Middle Ages and, for all I know, by Phoenicians and Egyptian traders 2000 years earlier. For most of us, it's a natural reflex not to bet everything we have on a single roll of the dice. With the introduction of the 'other sucker's money' syndrome, however, or agency risk, as the current euphemism goes, the game changed. Career risk ran into the Catch-22 of the prudent man rule, a rule Captain Yossarian himself would have found satisfying: a prudent man only invests as other sensible men would invest, said Judge Samuel Putnum in 1830, in a ruling that became the standard. This amounts to saying that we must all invest the same way, and woe betide an experimenter. Thus, Judge Putnum and his definition of 'prudence' beat even Keynes to his own punchline advice: never, ever be wrong on your own! This tradition of 'prudence' meant that everyone had to herd together – the very essence of true **imprudence** in our opinion. Anyway, the style that emerged as prudent early on was, frankly, juvenile, and would have been sneered at by any Medici banker who invested from Africa to Scandinavia. It was to put almost all your money into conservative U.S. bonds. As decades went by, the pattern slowly evolved to allow first a few railroad bonds, then some railroad stocks, and finally, in the early twentieth century, a minority of blue chip U.S. industrials.

When we at GMO got into international equity investing 26 years ago, not exactly the Middle Ages, almost no U.S.-based institutions had any foreign equities or foreign bonds at all. Just imagine, in 1980 **all** equities of even enlightened large institutions in the U.S. were in one basket!

In the 1980s, the dam started to break and a steady stream of money, led by endowments and foundations, followed by private pensions, and then, finally, by state pensions, flowed into international equities and bonds.

What happened next was unexpected. After years of having major endowment funds outperform other institutions by up to 1% a year (not to be sneezed at), they started 15 years ago to outperform by increasingly large amounts. In the last 10 years this difference reached a revolutionary 5 percentage points a year! And, not surprisingly, it was publicized and created a sensation. The reasons for the difference in performance were complicated and certainly included a willingness to throw far greater resources in time and talent at the task, along with having considerably more independence of decision making. But the key factor that resonated with envious onlookers (who wouldn't be envious?) was their greater diversification. These guys were constantly doing new and different things with their money. Thus the thought became 'if only we could diversify into all these novel and sexy asset classes with enough dollar weight to count, we too could get rich.'

At this point, career risk, and the herding instinct it tends to produce, has an odd effect. If you are the hired gun at a large endowment fund, but not one of the new hot shots, you are likely to be facing some very tough questions as to why you don't look and perform more like Yale and Princeton. Is there anything more irritating to a trustee

* The Letters to the Investment Committee series is designed for a very focused market: members of institutional committees who are well informed but non-investment professionals.

than to be routinely pounded by his old football rival? As the hired guns study the asset mix of their successful peers and move rapidly to increase international exposure and alternative asset exposure, the pressure moves down the line to the next most aspiring institutions. This process is helped by the constant spotlight on the performance of the 'elite.' Both Boston papers, for example, cover Harvard's endowment performance **every** quarter. What other Harvard statistic is so dependably reviewed?

The net effect of this interaction between the performance gap, the obvious differences in asset allocation, and career risk has recently created a stampede that has passed way beyond the large endowments. Today, if you have any pretensions at all to being on the ball, you are diversifying. When you compare the concepts of a well-invested large fund of 15 years ago with those today, the changes are dramatic. It is probably the most important such change recorded and is as good an example of a paradigm shift in investing as you are likely to find. My theory as to why the stampede started when it did is that for the first five years of outperformance the market was rising strongly and many suspected that the 'elite' were winning by taking more risk. I'm happy to say that at our 1999 Fall Conference, I gave my view that they were winning **despite** the bull market. With low U.S. equity exposure, high hedge fund exposure, and generally good alphas, they did of course widen their lead in the 50% decline of the S&P, and it was this second move that broke the competition's hearts.

And there is a nice paradox here. On one hand, this rapid move to greater diversification has all the hallmarks of a fad, but on the other hand, it also feels like a necessary catch-up on a hitherto remarkably backward practice of asset management, particularly in its lack of diversification. So, in the longer run, it is almost certain, in my opinion, that large portfolios will stay much more diversified and, hence, generally more efficient. That is, their extra diversification will give a better mix of risk and return. **The problem is that the current stampede to right old wrongs will cause short-term problems of mispricing, and it is these problems we should be particularly interested in.**

The general drive for more diversification can conveniently be divided into two powerful forces. The first is a much-increased diversification within traditional assets, and the second is a truly massive move to non-traditional assets. But before we move on, Exhibit 1 shows an approximate summary of what has happened to the portfolio mix of leading institutions over the last 20 years. It is plagiarized mainly from conversations with Cambridge Associates over the years. They will have more accurate and detailed numbers. This is only intended to give the general order of magnitudes.

Diversification into Traditional Assets

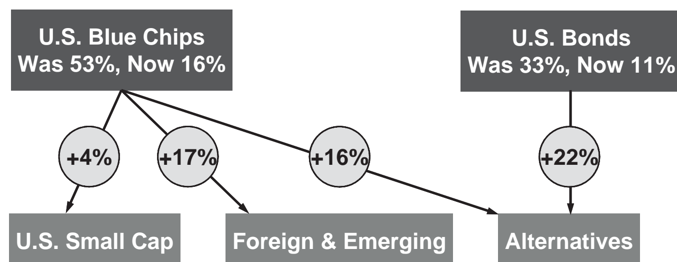
The major effect here has been the steady flow of U.S. equity money into international and emerging equities, which has left the leading edge institutions almost exactly at the 50/50 mix between U.S. and foreign equities. Because the U.S. home market is such a large portion of the global market, the leading institutions here are closer to the global mix than European institutions despite a much slower start into foreign investing. Even the 'second mover' U.S. institutions appear to be about one-third international stocks and two-thirds U.S. today, and it is a rare institution whose benchmark is now less than 20/80. Ten years ago these foreign equity ratios/**allocations** were less than half their current levels and 25 years ago they were essentially non-existent.

Perhaps even more remarkable has been the surge into the emerging markets subset, where the leading institutions reached two years ago what appeared to be an overweight relative to emerging market's weight in international (although they have since reduced their weight in response to emerging's remarkable performance). And in this category, as recently as 10 years ago, the weight was essentially zero. A similar move has occurred into small cap stocks. Historically (up to five years ago), all but a handful of the leading institutions had always been underweight, to very underweight small cap relative to the total market. Today, they are slightly overweight. Even in international equities, allocations to small cap stocks are rising rapidly, and although still underweight, they are probably within a few years of catching up to the benchmark.

This profound shift in traditional and semi-traditional asset classes is by no means over. When surveyed, a

Exhibit 1

The Revolution in Asset Allocation and Asset Pricing



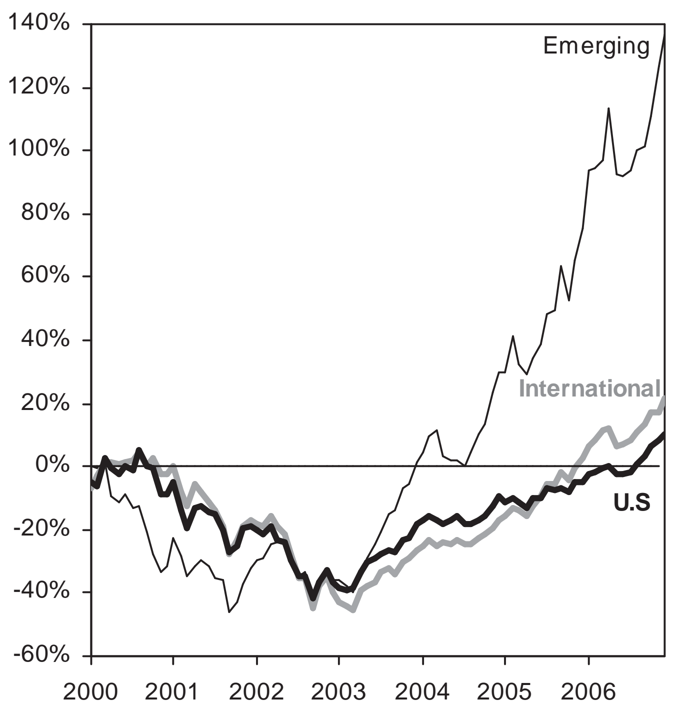
Sources: Here & There *Data: 1988 to present*

majority of large institutions still declare their intentions to increase their percentage of one or more of these categories with almost none intending to retreat.

The consequences of this landslide in the last five years could be easily imagined: the beneficiaries of the U.S. institutional flow have all gained ground and often a lot of ground. No doubt much of this outperformance has been caused simply by the U.S. growth-tech bubble breaking in 2000, but the length and strength of the outperformance in foreign equities, emerging equity and debt, and global small caps suggests that some material contribution has come from asset diversification. The funds for the redeployment of assets have not come from cash flow, for the glory days of positive pension fund cash flow have long gone and cash flow into endowments was never material in the larger scheme of things. The funds to buy more international and emerging equities, and also alternative assets, have mainly come from U.S. blue chips and, to a lesser extent, from U.S. bonds. In this context, it is probably not surprising that the U.S. equity markets have underperformed the rest of the world and, within the U.S., large cap stocks, formerly over-owned, have underperformed small cap stocks. As a result, today large cap stocks are very cheap on a **relative** basis (see Exhibits 2 and 3).

Exhibit 2

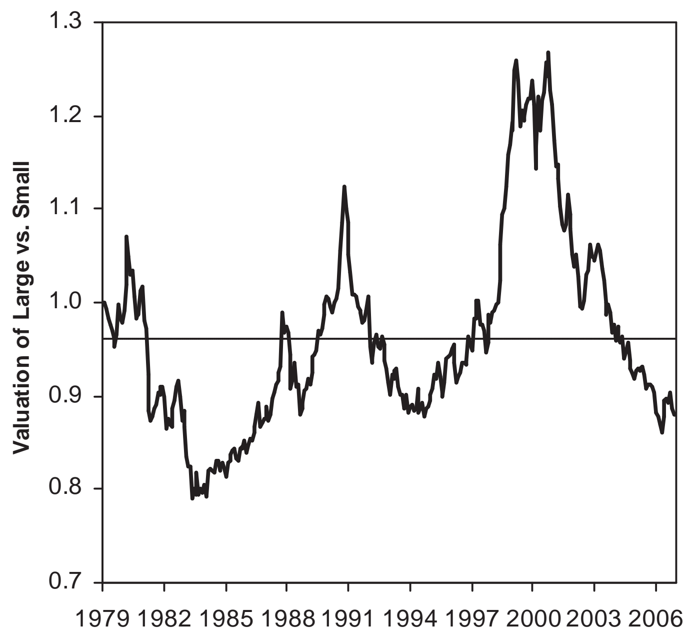
U.S. Underperformance Relative to the Rest of the World



Source: GMO As of 12/31/06

Exhibit 3

U.S. Large Cap Stocks Are Cheap Relative to Small Cap Stocks



Note: *Top 100 vs. Russell 2500 Source: GMO As of 12/31/06*

Diversification into Alternative Assets

The changes in alternative investments have been even greater and, in fact, nothing short of revolutionary. The one exception to this has been **real estate** investments, which grew very little (about 1%) as a percentage of the total over 10 years. For leading endowments, however, the other categories have grown like weeds. 'Marketable alternatives,' mainly hedge funds, almost quadrupled their percentage to over 30% over 10 years up from zero 20 years ago. 'Non marketable' categories, predominantly private equity, also more than doubled in percentage to around 15%.

Money flowing from U.S. equities provided some 16 percentage points of this new money for alternatives. The real money, however, for the new areas came from fixed income, which, over 20 years, dropped from over a third of the entire portfolio to barely 10%! What is an almost frightening thought, though, about this massive shift in weights is that it represents only the elite institutions. The weighted average institutional distribution is less than halfway through this cycle and is traveling very fast and determinedly to close the gap. Already, this is having drastic consequences that investment committees should be aware of. These effects, covered in some detail, will be the topic of next quarter's Letters to the Investment Committee.

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GMO

QUARTERLY LETTER

April 2007

It's Everywhere, In Everything: The First Truly Global Bubble (Observations following a 6-week Round-the-World Trip)

Jeremy Grantham

From Indian antiquities to modern Chinese art; from land in Panama to Mayfair; from forestry, infrastructure, and the junkiest bonds to mundane blue chips; it's bubble time!

The necessary conditions for a bubble to form are quite simple and number only two. First, the fundamental economic conditions must look at least excellent – and near perfect is better. Second, liquidity must be generous in quantity and price: it must be easy and cheap to leverage. If these two conditions have ever been present without causing a bubble it has escaped our attention. Conversely, only one of the conditions without the other may cause an ordinary bull market but this is often not the case. For example, good or even excellent fundamentals with tightening credit often result in a falling market.

That these two conditions have been met now hardly needs statistical support, so widely accepted have they become. Never before have all emerging countries outperformed the U.S. in GDP growth over a 12-month period until now, and this when the U.S. has been doing well. Not a single country anywhere – emerging or developed – out of 42 listed by *The Economist* grew its GDP by less than Switzerland's 2.2%! Amazingly uniform strength, and yet another sign of how globalized and correlated fundamentals have become, as well as the financial markets that reflect them.

Bubbles, of course, are based on human behavior, and the mechanism is surprisingly simple: perfect conditions create very strong "animal spirits," reflected statistically in a low risk premium. Widely available cheap credit offers investors the opportunity to act on their optimism. Sustained strong fundamentals and sustained easy credit go one better; they allow for continued reinforcement: the more leverage you take, the better you do; the better you do, the more leverage you take.

A critical part of a bubble is the reinforcement you get for your very optimistic view from those around you. And of course, as often mentioned, this is helped along by the finance industry, broadly defined, that makes more money when optimism and activity are high. Hence they have every incentive to support rising markets as they do. But geography and culture can weaken the chain. The South Sea bubble was influenced by earlier speculation in France, but was distant and alien to the rest of the world. The great Japanese land and stock bubble was utterly persuasive to everyone in Japan, but completely unpersuasive to almost all of our clients. Seen through our eyes 10,000 miles away, it seemed obviously overdone and dangerous, didn't it? Even the 2000 bubble was really confined to TMT in the developed countries.

But this time, everyone, everywhere is reinforcing one another. Wherever you travel you will hear it confirmed that "they don't make any more land," and that "with these growth rates and low interest rates, equity markets must keep rising," and "private equity will continue to drive the markets." To say the least, there has never ever been anything like the uniformity of this reinforcement.

The results seem quite predictable and consistent. All three major asset classes – real estate, stocks, and bonds – measure expensive compared with their histories and compared with replacement cost where it can be calculated. The risk premium has reached a historic low everywhere: last quarter we showed that by using our 7-year forecasts to create efficient portfolios for high, medium, and low risk levels, the return for taking risk had dropped precipitously from September 2002 until May of last year. To be precise, the gap between our low and high risk portfolios on our 7-year forecast in September 2002 was 6.4% points and by May last year it was a paltry

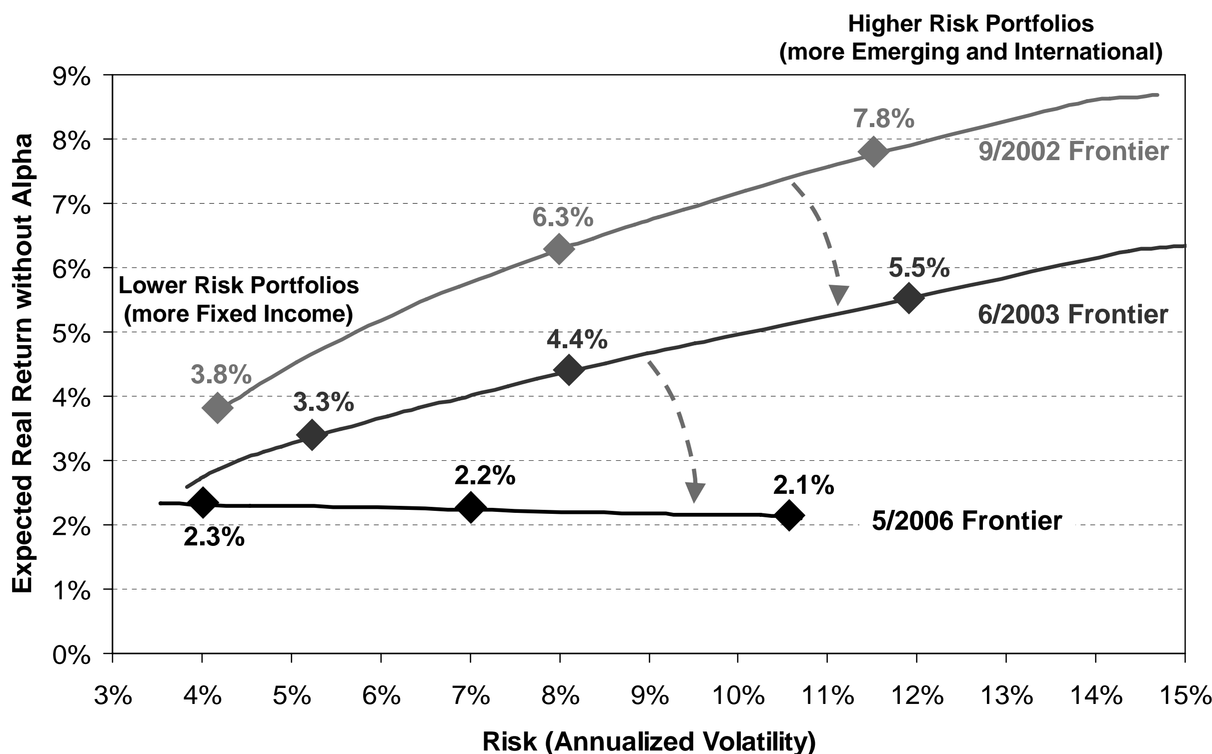
0.8%. But in Australia last month it was pointed out that we had missed the point, that all these portfolios included our expected alpha, which not surprisingly is higher for the risky portfolios (small cap and emerging) than it is for low risk portfolios (cash and TIPS). So Exhibit 1 reproduces the three points in time, using just the asset class forecast. As of May last year we now show – drum roll – the first negative sloping risk return line we have ever seen. Just think about it: if we are correct, the process of moving all asset prices smoothly to fair value over 7 years (which is how we do our 7-year forecasts) will have resulted in a world where investors are paying for the privilege of taking risk! If you believed this data you should, of course, put all your money in cash. In the real world, unfortunately, even if you believed it with every fiber in your body, you could only have a little cash on the margin because the career risk or business risk of moving more would be unsupportable.

So to recap and extend:

1. Global fundamental economic conditions are nearly perfect and have been for some time.
2. Availability of global credit is generous and cheap and has been for some time.
3. Animal spirits and optimism are therefore high and feed on themselves through reinforcing results and through being universally shared.
4. All global assets reflect this and are overpriced and show, probably for the first time, a negative return to risk taking.
5. The correlation in global economic fundamentals is at a new high, reflected in the steadily increasing correlation in asset price movements.
6. Global credit is more extended and more complicated than ever before so that no one is sure where all the increased risk has ended up.
7. <u>Every bubble has always burst.</u>
8. The bursting of the bubble will be across all countries and all assets, with the probable exception of high grade bonds. Risk premiums in particular will widen. Since no similar global event has occurred before, the stresses to the system are likely to be unexpected. All of this is likely to depress confidence and lower economic activity.

Exhibit 1

Absolute Return Portfolios Over Time – *The return to risk is shrinking*



Note: Based on GMO's 7-year asset class return forecasts. These forecasts are forward-looking statements based upon the reasonable beliefs of GMO and are not a guarantee of future performance.

Source: GMO As of 5/2006

9. Naturally the Fed and Fed equivalents overseas will move to contain the economic damage as the Fed did last time after the 2000 break. But the heart of the last bubble, the NASDAQ and internet stocks, still declined by almost 80% and 90%, respectively. (The heart of the bubble this time is probably private equity. In 10 years, it may well be described as the private equity bubble just as 2000 is thought of as the internet bubble. You heard it here first!)

10. What is wrong with this logic? Something I hope.

11. Of course the tricky bit, as always, is timing. Most bubbles, like internet stocks and Japanese land, go through an exponential phase before breaking, usually short in time but dramatic in extent. My colleagues suggest that this global bubble has not yet had this phase and perhaps they are right. (A surge in money flowing into private equity might cause just such a hyperbolic phase.) In which case, pessimists or conservatives will take considerably more pain. Again?!

This Time It's Different

Yes, each bull market reflects its near perfection in a different way, with most accompanied by claims of a golden new era. Today the apparently infinite and cheap supply of Chinese labor, a truly colossal U.S. trade deficit, and the sheer uniformity of easy money and strong economics certainly give this one plenty of differences. But under the surface capitalism eventually grinds pretty fine. The return to capital and the cost of capital sooner or later get into line. Competition bids down returns. Confidence to spend capital finally recovers. Profit margins, at long last, become normal or even drop below normal. The workings of competitive capitalism are, in the end, an irresistible force and that is why everything always trends to normal and every very different bubble has always burst. And hey, if it happened in a smooth and regular way, how boring our business would be.

What Is the Catalyst for a Break?

Everywhere I went on my trip this was the question that followed my gloomy talk. But there usually is no catalyst that can be observed. We haven't agreed yet on a catalyst for 1929, 1987, or 2000, or even the South Sea bubble for that matter. On pondering the reason for the lack of a catalyst I offer a thought experiment (or tortured analogy). A market in equilibrium can be likened to a ping-pong ball sitting on a pool of water. You may have seen the fun fair trick of having ping-pong balls sitting atop jets of water that rise and fall with the power of the jets. The force of the jet can be likened to economic and financial conditions. The more nearly perfect the fundamentals and the more generous the liquidity, the higher the water jet raises the ball. At maximum force the ball is as high as it gets – a bull market peak. Then the jet is turned down a little, so it still represents a nearly perfect set of conditions but just the very slightest bit less perfect than it was – the jet is slightly lower and the ball falls. If bear markets start in nearly perfect conditions, far above average but just a little worse than the day before, what chance do historians have of finding the trigger? It is lost in a second derivative nuance. And, by the time conditions are merely well above average, the most leveraged and aggressive investors have registered the series of declines and are beginning to take evasive action. From here intelligent career and business risk management creates the normal herding or momentum, but in a seamless way as slight reductions in real conditions blend in with gamesmanship. Given all the uncertainties and the fact that conditions do not weaken linearly but in uneven and unpredictable steps, is it any surprise that we always miss market tops?

Having said all this, what are the special vulnerabilities this time that might work over a period of time to reduce the near perfection of today's market conditions? The first is easy: rising inflation. It constrains the Fed's support to any weakening economy, and the U.S. economy is indeed weakening. It directly lowers the traditional bond markets. Stocks may be real assets, but behaviorally it destabilizes stock investors and causes P/Es to fall. In the short term it tends to depress profit margins as corporations relearn how to pass through any cost increases. It wreaks havoc with housing and commercial real estate by lowering the possible leverage and therefore lowering prices. And perhaps most significantly this cycle, it lowers the feasible leverage in private equity deals and places many deals that can be done today out of reach, which in turn has dire effects on the current stock market.

The second possible catalyst is our old friend: profit margins. They are currently far above average globally and they will, of course, come down. A slowing U.S. economy and fewer pleasant global surprises will put pressure on profit margins. Possibly continued house price declines will slow the growth of credit, and consumption will grow less fast. There are leads and lags, and large retroactive changes to the profit margin data, so this factor is not so certain a death knell to the bubble as is inflation, but a couple of years of margin declines should do the job just fine.

The First Quarter's Stress Test

In late February we had a spot of trouble in the subprime market. ("Subprime …" – it already begins to sound familiar. Haven't we always talked about it?) And a Chinese red herring arbitrarily jumped in with a 9% market decline in one day, for no related reason. The combined effect was to create an echo of last May, where the carry trade pulls back for a few days and lets us see where the vulnerabilities are. There is a tendency to say, "Whoopee! We always bounce back! We're armor plated!" This seems like a bad idea. There is probably lots of information in these minor shocks, which may prove useful for a major shock. Last May's lesson, I believe, was not that emerging markets could bounce back, but that they could decline by 25% in three weeks in the face of the best year fundamentally in emerging's entire history. What might the decline have been on bad news? A 50% decline in 3 weeks? It just let us know the potential pain in really bad risk-liquidity events. I suggest taking a close look at one's entire portfolio on each of these shocks and checking for leaks in the boat – unexpected effects.

In May of last year emerging was a big holding for us, but there was no real concern because we believed that in an extended decline the extra value in emerging would materialize as it did in 2002. And if the market recovered, emerging would storm back. This time we took unexpected pain in our fixed income investments, which in many of our asset allocation accounts had risen to 50%. We knew that in general our fixed income portfolios tend to prosper as risk premiums narrow, whereas our equity accounts have a hard time, and vice versa. It was just a question of degree. In asset allocation, in our desire to have more of fixed income's enviable alpha, we had probably reached for a bit too much of it to be compatible with the normal risk avoiding preference of our asset allocation portfolios. On examination it really came down to having accumulated, in the different portfolios, too much currency exposure, which in turn can get in the way of carry trade events. So after long consideration of alternatives, we reduced the currency alpha exposure. It may be an over-reaction, and you can never know for certain at the time (and indeed risk taking in general continued to prosper in the first quarter), but I don't think so.

I urge our clients to take a detailed look at all their portfolios' responses to these two jolts, for sometime sooner or later the shots will not be across the bows.

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GMO

SPECIAL TOPIC

April 2007

*Letters to the Investment Committee XI**

Let's All Look Like Yale
Part II: Yale Meets Goldilocks

Jeremy Grantham

Summary of Part I

Last quarter I made the point that a continuously large flow of funds from the traditional assets – U.S. stocks and U.S. bonds – towards diversifying assets – everything from emerging markets equity to infrastructure and private equity – was almost certain. This quarter it is time to look at the effects of this revolution in asset allocation on individual asset categories.

First of all, it is important to realize that the "let's all look like Yale" effect is not the only important driver of asset allocation. The other extremely important issue is the effect of sustained global liquidity combined with sustained rapid global growth, which has created an unusual Goldilocks effect where the economic and financial world are "just right," which in turn has led to an unprecedentedly low risk premium across all assets (see the first section of the quarterly letter) and broadly overpriced assets.

These two quite separate effects – Yale and Goldilocks – interact. The Yale centrifugal force unfortunately often coincides with the drive towards riskier assets stimulated by Goldilocks. Prime examples of this would be emerging country debt and equity and private equity, all both risky and diversifying. There are, in fact, few examples of intrinsically conservative investments where only the Yale effect holds. The obvious example would be forestry holdings, where even alone the diversifying effect has been enough to dramatically change the pricing. The worst effects, though, should rationally be at the intersection of these drivers to high risk and exotic diversification, and this is where we should expect to see the most extreme relative overpricing in coming years. Certainly in the last five years the outperformance of these categories has been extreme. Here is just a sample.

Cumulative Performance of S&P 500 and Other Assets from 3/31/02 to 3/31/07

S&P 500	35.5%
Russell 2000	68.1%
U.S. Low Quality Stocks	72.7%
Int'l. Small Cap Stocks[1]	191.8%
Emerging Equities[2]	221.4%
Lehman Brothers U.S. Government	28.1%
U.S. Junk Bonds	63.9%
Emerging Country Debt[3]	87.0%

Other than commenting on the broad outperformance of these newly desirable areas, a few categories bear special mention, either for their unexpectedness, such as timber, or for their potential dangers.

Let us start with **timber**. This has gone from an obscure asset favored passionately 10 years ago by a dozen or so institutions thought to be eccentric, to a fashionable new frontier 5 years ago favored by an incremental handful of avant-garde institutions, to a hot asset class today that is at least considered by most larger endowments and foundations. The impact on this small asset class – in 2000 Microsoft's market cap was larger than all the world's forests (what a nice arbitrage that would have been!) – was of course spectacular. The discount rate used in evaluating forest properties was as recently as 3 years ago about 8.5% in the U.S. and over 10% in New Zealand.

* The Letters to the Investment Committee series is designed for a very focused market: members of institutional committees who are well informed but non-investment professionals.

[1] S&P/Citigroup EMI World ex-U.S.
[2] S&P/IFCI Composite
[3] JPMorgan EMBI Global +

This was a ridiculously high real return for an asset whose virtues included that it was exceptionally diversifying – it has had a history of rising in all great equity bear markets – and in the context of a diversified forest portfolio, very safe: if the sun shines and it rains, the trees grow about on schedule. The discount rate today with forestry's new popularity and the general desperation to find high returns has fallen to barely over 5% and 6.5%, respectively, in the two countries. This represents both a wonderful windfall for existing owners (Harvard was rumored to have sold most of its U.S. forestry holdings in one big transaction) and a heart-breaking loss of a great opportunity for asset allocators like us.

Other commodities have changed perhaps even more profoundly. Their attractiveness hinged on great diversification characteristics. Both bonds and stocks are hurt by unexpected inflation – nominal bonds suffer directly and stocks suffer behaviorally – investors are unsettled and P/E ratios fall. In glorious contrast, commodities are positively correlated with inflation, and in a real inflationary crisis their prices are likely to rise far more than the rate of inflation as a scarcity of inflation protecting investments rapidly develops. This attractive case for commodities was formerly held back not only by unfamiliarity (and hence more career risk) but also by the well known dreary track record for price increases. As *The Economist* magazine has periodically reminded us, the 100 year history in just about all commodities has been of falling real prices, in the range of 1% to 1.5% a year as productivity gains have exceeded the naturally rising marginal costs of deeper wells and second-class land, etc. This argument was countered by what we can call the Goldman Sachs case: that there has been, notwithstanding falling commodity prices, a positive return to buying commodity futures. This theory is based on original observations by my usual hero, Keynes, that speculators who bought futures were rewarded by producers who were laying off their risks.

The intellectual case seems a little unconvincing since speculators by no means only go long – I am still personally short copper as we speak – but the historical numbers were not bad. Rolling long positions in the futures seemed historically to have good returns comparable to equities **if** you weighted your positions heavily to oil contracts, say equal to their relative market value, **or** if you only invested in contracts that typically paid you to roll (contracts said to be in "backwardation"). Many contracts however were not **typically** priced this way and cost the speculators to roll (said to be in "contango"). The data was moderately convincing, but not very convincing. But combined with undoubted diversification benefits and the institutional drive to have their portfolios be new and improved, the total package was deemed by some to be attractive. The final straw for breaking down resistance was the surge in growth rates of developing countries led, of course, by the all-time monster growth story – China. Incremental demand **for** commodities from these new sources of major growth has changed the relationship between technology improvements and demand so profoundly that most commodities now probably have price trends that are moderately up – say, 1 to 1.5% real a year. In the long term, this shift from a downward drift to an upward drift is very important. In the short term, recent great strength in most commodities may have already discounted this change for the next 20 years.

The rush of new investors drawn to commodities in the last 3 or 4 years has, in addition, pushed up the prices of the commodity futures in relationship to the commodity itself, perhaps by a lot: it may have permanently changed the shape of the futures curve so that few if any contracts may now routinely pay long investors to roll. In a neat irony the flood of new money attracted by the ability to roll contracts profitably may have ended that condition forever!

Venture capital is a tough market these days that always has plenty of competition, and I'm not going to kick someone when they're down other than to say that the returns have been poor now for quite a few years. In any case the flood of new money is for the time being more or less passing them by, which is a relatively good sign, for it is worth remembering that the size of the yearly cohort of investors is the largest determinant of future returns: small inputs predicting good future returns and vice versa. There is nothing that suppresses the success of a brilliant new idea more completely than having 12 nearly identical start-ups.

Infrastructure is the most recent area to attract rapid increases in capital partly, no doubt, in response to other opportunities becoming overpriced. In some of these pools the fees, both declared and submerged in the complex financial structures, go on and on so that infrastructure has become an extremely appealing proposition to the managers. And the supply of funds is such that infrastructure can appear in odd places, bidding up, for example, the pricing of very large forestry deals (although it's not clear from the early deals if they would know a tree if it bit them on the leg). As always, the effect of the much increased supply

of funds has been to take formerly handsome risk-adjusted returns down quickly to the lean and mean.

Hedge funds are getting to be an old topic, but make for a remarkable story. An esoteric $35 billion enterprise 15 years ago with 800 funds serving rich individuals has turned into a $1.2 trillion enterprise with over 8,000 funds and numerous funds of funds increasingly owned by institutions as well as individuals. The trillion is leveraged several times and turns over far more frequently than 'old-fashioned' money, so that the percentage of trading represented by hedge funds has been said to be closing in on 50% of U.S. equities. The effects of this flood of money are numerous and significant. Hedge fund investing does not change the iron rule of investing: it is a zero sum game minus the fees and the trading friction. The total cost of regular long-only investing has averaged about 1% for institutions (½ fees and ½ transaction costs) and about 2% to individuals (⅓ fees, ⅓ transaction costs, and ⅓ selling costs). Hedge fund fees are of course a tad higher: typically about 1.5% fixed fee plus 1% transaction costs (typically ignored and often much higher) plus at least 20% of all the profits (including the risk-free rate that can usually be had free of charge). Today let's assume a 5% risk-free rate and 4% outperformance for a total performance fee of 1.8%. The total fees thus reach 3.3%, and the total costs including transactions total 4.3% for institutions, or almost twice the 'slippage' for long-only. Thus, the first consequence of increased alternatives, especially hedge funds and private equity, in a world that remains mercilessly a zero sum game **is an incremental drain on total assets**. The second effect is on the availability of alpha (or outperformance) to the winners in the poker game. Increased hedge fund money absolutely does not increase the available inefficiencies. They **at best** stay the same, so the same inefficiency is now exploited by more aggressive alpha-seeking dollars and is therefore **spread thinne**r. This effect of increased competition is also not by any means confined to hedge funds only, but is also affecting long-only investors. There is a nice irony here too: that the institutional drive into these new, more expensive vehicles may also lower the return available to those of their existing long-only managers fortunate enough to have a positive alpha.

But it is not only the case that the dollars chasing alpha increase. The other, closely related but clearly separate effect is, as mentioned last quarter, the enhanced flow of bright and even brilliant people drawn into our industry by the sometimes vast fees, and hence salaries, that until recently was a quiet backwater in terms of talent flow. With an increased inflow of more talented people, the standard of competition rises and rises until … well, to be honest, I'm not quite sure how the story does end. What for sure does not end soon is the flow of money, for a survey released last quarter based on interviews with large institutions said that these institutions expect to triple their hedge fund holdings in 4 years, which would make institutional hedge fund holdings larger even than those of individuals.

Private equity has been growing in the last 3 years even faster than hedge funds with the leading firms leap-frogging each other in the size of new funds raised, with several already well over $10 billion. **The dirty secret here is that their '2 and 20' fees are not justified by any positive alpha (or outperformance of the asset class)** at all. But, unlike traditional equity investing where outperformance is mainly dependent on style, and therefore mean reverting with good performance typically followed by bad, in private equity, returns are in complete contrast very sticky: there is a huge and remarkably consistent difference between the best and the worst of them, so this is an area where endowments and others with the **resources, talent, and pull** have exercised those advantages. Accordingly, the early moving and skillful institutions have picked the better managers that are now largely closed. These better managers have produced wonderful performance in the range of 20% to 30% compounded per year. In stark contrast, the larger, later arrivals have barely averaged a return that is even positive. More to the point perhaps, the cap-weighted average is **at best**, depending on the analysis you read, equal to the S&P 500. It does this, however, by sometimes leveraging over 4 to 1 in today's market. 2 to 1 leverage on the S&P 500, let alone 5 or more would have produced a much higher return, order of magnitude 21% compared to 14% max for private equity (source: Private Equity Performance: Returns, Persistence and Capital Flow by Steven N. Kaplan and Antoinette Schoar, November 2003). However, fees of '2 and 20' charged on 21% could account for this gap, so there may not actually be a negative alpha **pre**-cost – lucky investors! (Although there probably is.) LBOs are thought by several academics, in fact, to be a modest destroyer of real value. But let's be friendly: the case for private equity creating societal or long-term economic value at a company-by-company level is modest, and the case for the average invested dollar returning more than an equivalent leveraged S&P return is non-existent. What the industry on average offers is freedom from the traditional margin calls that on a similarly leveraged equity

portfolio would sooner or later ruin you. As long as you can make your quarterly interest payments in private equity deals, you are okay. There is, however, a little snag. If our 7-year forecast were to turn out right – it just might happen one day – then U.S. equities would return minus 1.4% real per year as P/Es decline modestly over 7 years to their long-term average and profit margins decline substantially to theirs (standard GMO assumptions). The T-bill rate would, in contrast, likely be about +1.5% real, and average borrowing costs about 2.5% higher than that, or about +4% real. The incremental cost of debt at 4 to 1 leverage comes to over 2% a year even after tax deductions. 3.5% a year loss is not normally a disaster, but with only 20% equity, it wipes out all value in 6 years, other things being equal! In real life the losses would be hidden for a while by selling divisions, reducing research and advertising, and, above all, by treating depreciation charges as profit rather than necessary rebuilding costs. So the leveraged deals, even if GMO's forecasts were correct, would last longer than expected before defaulting, but only at the cost of hollowing out the acquired companies. And some managers would exit so fast by unloading their company that the clock ticking against them would have had little time to tick, and any hollowing out would be harder to spot, although usually still there. But for slow movers, default will probably be common. The good news for the managers is that they still get their 2% fixed fees. The good news for the investors is that at least there would be no carry! The effect of the current flood of money riding the wave of diversification and currently cheap and available debt will also serve to push initially high prices even higher. The real shocker here is the asymmetry of returns. The first deal is good: the managers make a fortune and the client does well. The second deal is good: the manager makes a second fortune (usually a bigger one on a larger fund) and the client does well. The third deal is a bust: the manager makes 2% and the client loses a bundle. Total returns: the manager makes two fortunes and 2%; the client probably makes some money but probably not commensurate with the risk. And this is known as alignment of interest, apparently so lacking in public companies. I wonder what this alignment would look like.

Summary

In general, more diversification is better than less. And it is as near a certainty as things get in investing that 10 years from now institutional funds in aggregate will be substantially more diversified than they are today. The flood of institutional money moving into foreign and emerging equity and alternatives will mean that these assets will be looking for excuses to be overpriced for they will, more often than not, be on the right side of supply/demand imbalances. Conversely, the sources of funds – U.S. blue chips and U.S. bonds – will be in the reverse position and will mostly be lower priced relative to fair value than the trendier 'newer asset classes.' An ominous report from Greenwich Associates, an investment research firm, in *The Wall Street Journal* of April 12, 2007 confirms just how powerful this asset movement is. 24% of institutions expect to lower their allocation to U.S. active equity portfolios versus only 4% that intend increases. But for private equity the increase intentions are 34% and the decreases 2%. It almost can't compute, but it will be exciting trying.

Of course in the longer run all assets are worth replacement cost and supply/demand imbalances do not change that. Ben Graham famously said that in the short run the market is a voting machine, but in the long run it is a weighing machine. In this sense replacement cost is Ben Graham's 'weighing machine' and supply/demand his 'voting machine.' Every time the supply/demand imbalance is interrupted, even if only for a short time, prices will trend towards fair value or replacement cost, sometimes quite slowly and sometimes very fast indeed. So we are probably in for an extended period of mispricing, usually in favor of the trendy assets, but with reactions that will sometimes likely be dramatic.

It is also worth remembering that some of these trendy assets are real asset classes like foreign and emerging equities, small cap equities, and timber. Others, like hedge funds and private equity, are merely the existing asset classes repackaged at higher fees, with less regulation and much greater leverage. They are not new asset classes and should be reclassified into their component parts, as I'm sure they will be routinely in a few years. Above all, these fashionable, repackaged assets are still part of a zero sum game and their higher fees are, in the end, your lower returns.

The really difficult task for investment committees is to steer a careful course between increasing beneficial diversification while being aware of the landmines caused by the intersection of the widespread move to risk taking and the trendiness of exotic investments. All in all we should fasten our seat belts. It's likely to be a bumpy ride.

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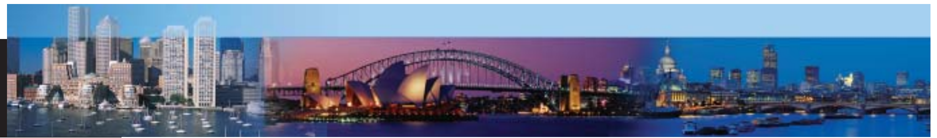


July 2007

The Blackstone Peak and the Turning of the Worms*

(The Slow Motion Train Wreck Continues)

Jeremy Grantham

Last quarter I conceded that no areas of this unprecedented global bubble had yet gone hyperbolic like the internet and tech stocks did in 1999. Well now there is a candidate: the growth rate of leveraged loans. At $545 billion globally for the first half of this year, it is running 60% up on last year! 60% rings a painful bell as that was about the price rise year over year of the aforesaid internet and tech stocks in '99. And just as press coverage in '99 was dominated by news and gossip about internet and tech companies and the leaders who ran them, so today is the news full of stories about private equity heroes and particularly the vast wealth they have acquired and the low taxes they have paid, but also the splendid parties they give. Since mergers and acquisitions, to use a quaint old term, often involve painful layoffs, this talk of vast new wealth has given plenty of ammunition to politicians and union leaders who think their members are paying the price for the wealth accumulation of others. I don't think it would be exaggerating, in fact, to say that the rest of the world, that is the real world, is getting fed up with the financial world. We make more and more money and they in round numbers do not. Where we see clever global deals, they see excessive deal profits and job losses. They see themselves paying full income tax and the billionaires of private equity and some hedge fund managers paying 10% or 15% tax. And they have a point! Just as real estate developers have to pay income tax, as opposed to capital gains tax, on property sales because it is a routine part of their stock-in-trade, surely buying and selling companies is the stock-in-trade of private equity. If it is not, what is?

Remarkably the rest of the world that grows irritated by excesses in the financial world even includes some financial insiders. For example, a recent talk show on National Public Radio featured a successful grand-old-man of private equity criticizing the new guys at Blackstone, stating that they had lost the standards set by earlier deals in private equity. In the good old days, he claimed, private equity managers improved the acquired companies with sound long-term strategies and had real societal value that Blackstone appeared to have lost. Blackstone's focus, it was suggested, had narrowed to simply how much money could be made. Even the mother of a private equity mogul was quoted to the effect that money was the only way her son graded himself. (Whether she said this admiringly or not was not revealed!) A very powerful suggestion was that no real fundamental value was being added by the new guys. Adding to this internecine warfare, a private equity leader in Britain said 2 weeks ago that he could see no reason at all why he paid a lower tax rate than a cleaning lady! When industry leaders speak out like this against the excesses of other leaders, it is easy to believe that all is not entirely well.

We have been reminded by several writers of a prior private equity boom that ended when Saul Steinberg tried to take over the illustrious Chemical Bank of New York, one of the suppliers then of takeover funds. This was not a smart idea, but showed lots of chutzpah. In hindsight, another defining event of that cycle, from the gossip angle, was the $2 million party at the Met for his daughter! And perhaps we have now had our own defining party for this cycle. We are certainly more into gossip, analysis of the new wealthy, and the very idea of wealth itself than we have been for 75 years or so. And the less wealthy have some genuine grievances. As we featured in an earlier quarterly

* "The Worm Turns," from *Henry VI, Part III*, "The smallest worm will turn being trodden on," is an English expression implying that the downtrodden finally snap back. It is closest to "The Revenge of the Nerds" in American.

letter, average real hourly wages in the U.S. have barely budged for 40 years while European and Japanese hourly rates have more than doubled. Income distribution around the world, but particularly in the U.S., has become more skewed toward the rich. In the U.S. it has indeed risen to levels not seen since 1929 and before that in the Gilded Age. And like readers then, we are treated to descriptions of 60,000-square-foot new houses that rival in size, if not sheer splendor, the Newport "cottages" of the Vanderbilts and Astors.

Whatever the reasons for income distribution shifting toward the rich – you've seen the data, it's all about the top 1% and even the top .1% and .01% – it can always be addressed by shifts in the progressiveness of income tax. But, we have addressed it by "piling on": we have reinforced the natural global forces that are moving more wealth to the wealthy by shifting more of the tax load to sales and income taxes of average taxpayers and away from the capital gains and dividend taxes of the wealthy. The argument for not interfering with the steady tilting of income toward the rich is that it is the natural outcome of global economics. This is completely true for the distribution of pre-tax income, but completely irrelevant for the distribution of post-tax income, which has been decided for the last 100 years or so since serious taxes began by more or less deliberate political decision. To allow the natural global drift to income concentration to remain is to cede an important societal and political decision to such vagaries as how many Chinese farmers are willing to move to town and how fast! This would be a strange way to make such an important decision. The unavoidable increase in job insecurity caused by plugging China, the developing world, and the former Communist world into the global system also has been exaggerated by the wave of deals and cost cutting. If the Chinese don't get you, KKR will, is the union leader's nightmare.

Well if you are rich and the natural drift of global economics is on your side, and the administration is oddly pushing in your favor too, and the working stiffs are not doing particularly well, you would be very well advised to keep your head down. And some have, but in general, no such luck! Extravagant houses, flashy parties, well-observed frenzies of art purchasing, ill-advised justifications of low taxes paid, and the nice coincidence of some very visible public offerings that have underlined the immense scale of the new wealth have all served to create an important watershed event, a defining moment perhaps of this global financial bubble. From now on we should count on politicians bearing down on this issue. And they have a lot to get their teeth into.

It is not just that income distribution has become so much less evenly divided in the last 20 years and the tax load for the rich so much lighter than it was. Corporate taxes are also declining almost everywhere as a percentage of total taxes. Now I'm no fan of corporate tax, or sales tax for that matter. Taxes are paid in the end by human beings and corporate entities merely pass taxes on. (In the U.K., for example, Exxon collects, say, $3 a gallon tax for the government and here in the U.S. merely $1, but it has no effect on their return.) Corporations are driven by net returns on capital after tax. But if a society decides, for political reasons, that corporate tax looks and sounds fairer, even if it's in fact regressive, then how odd to allow higher risk taking through higher debt to determine your tax level. It almost makes it a voluntary tax. If you have a portfolio of companies, you can keep increasing your leverage just up to the point, say, where you calculate that a small percentage will go bankrupt in a 50-year economic flood. In aggregate your interest payments increase and increase until little or no corporate tax is paid at all. And this situation is so easily fixed and so temptingly fixable in the more combative environment we have created: phase out over 5 years or so, the deductibility of debt in excess of, say, 50% of total capital. Corporate taxes will rise and overpriced private equity deals will be far less common.

Corporate tax has always been a tax on efficiency – be less efficient, make less money, and you'll pay less tax. But now it has also become a tax on conservatism and prudence. The more reckless you are, the more you borrow, and the more interest you deduct, the less tax you pay. Not a good idea in the long run. (The more economically rational way of removing this tax on prudence, which would appeal to the other side of the political spectrum, is to simply do away with corporate tax entirely and replace it with, say, a mix of sales and income tax, with whatever progressivity is desired. With the tax subsidy on interest removed, excess leverage and silly private equity deals will be much reduced in number even more effectively than by limiting deductibility as suggested above.)

A particularly tempting target for higher taxes is the carried interest of private equity and hedge funds that pay 10% and 15% rates of tax on what is really earned income. The use of offshore funds to postpone even these lower rates is perhaps even more tempting. Given what you can read in the press in the U.S., Germany, and the U.K., these targets

will not be ignored. And what particularly bad timing this issue faces here in the U.S. with the Democrats smarting from the loss of two close elections and the new Chairman of the Financial Services Committee, Barney Frank, saddled up and ready to right as many wrongs as he can get his hands on.

As I write this, more proof that the worms have turned has been presented by the conviction for fraud and obstruction of justice of Lord Black – with a name like that it must have been obvious to the jury that he, like Darth Vader, had gone over to the Dark Side. Notable for conspicuous consumption, he was "not prepared," he said, "to re-enact the French Revolution's renunciation of the rights of nobility." Wow! No wonder the "little people" are getting antsy.

The increased taxes that politicians will aim at the super-rich private equity guys may well turn out to be justified, but the bad news for us other well-heeled-but-fully-income-tax-paying-obviously-innocent bystanders is that we may get thrown out with the bathwater. Oh, what a world! What a world! The point here, in case you've missed it, is that the global financial bubble faces a new negative in the rapidly growing hostility of politicians and the general public. This will probably result in increased taxes on capital gains and dividends as well as redefinitions of what income really is, and may easily include increases in the top rates of ordinary income tax as well. In total this will not be good for the animal spirits of investors, which are in the end the most important input into maintaining a bubble.

To torture analogies, the global financial market seems like a giant suspension bridge with complicated engineering. Thousands of bolts hold it together. Today a few of them have fractures and one or two seem to have failed completely. The bridge, however, with typical redundancy built in, can take a few failed bolts, perhaps quite a few. And only with bad luck will some of them line up in a dangerous enough sequence to bring a major strut down. This global financial structure is far too large and has far too many interlocking pieces for weakening U.S. house prices and a few subprime issues to bring it down. No, what we have to worry about is whether we are reaching a broad-based level of financial metal fatigue in which bolt after bolt will fail with ultimately disastrous consequences. The scary part is that this global financial structure is faith based, held together by unprecedented amounts of animal spirits. If the faith starts to fail it is, "sauve qui peut" (the old cry as a ship foundered), or "every man for himself." The Blackstone Peak argument of growing hostility to the financial world is just the kind of slow burning negative that, with plenty of help from other negatives, can finally bring the bridge down or sink the ship.

The other persistent problem dating back to February is, of course, the slowly increasing trouble with subprime mortgages. In the fixed income markets the disease – best characterized as the questioning of previously blind faith – slowly spreads: a little widening of the junk bond spread here and a little tightening of private equity credit there. But as yet the equity market seems totally unaffected with volatile and risky stocks still making the running. Although the brontosaurus has been bitten on the tail, the message has not yet reached its tiny brain, but is proceeding up the long backbone, one vertebra at a time. The housing market also refuses to cooperate with the bulls and seems highly likely to remain uncooperative for some considerable time. Even with flat prices, mortgages roll over their honeymoon rates and are repriced by up to 2½ points, sometimes for holders who were already stretched. Steadily increasing defaults make it harder for house prices to stabilize. The inventory of unsold houses seems likely to break out above 9 months' supply where 4 months' would be a strong market. Yet we are told on all sides, even by the Secretary of the Treasury, that even for the subprime market all is "contained." We have to wonder if the container, in this case, will turn out to be Pandora's.

Additionally, the strength of the U.S. economy has been, at least temporarily, impacted by the housing weakness: first quarter growth was down to 0.7% annualized and, of the 45 countries covered by *The Economist* magazine in June, the 12-month increase of 1.9% was dead last. Global economic growth remains high but is estimated to be declining this year from the remarkable level of the last 2 years. And concern with inflation is rising: it is persistently a little higher than desired in the U.S. and the U.K. It is a lot higher in India where wages in high tech and other international services are exploding to such an extent that outsourced jobs are either jumping from India to Vietnam or the Philippines (amongst others) for even cheaper wages, or more recently returning to California because wage savings in India are no longer sufficient.

Commodity prices, led by oil at over $73/barrel, and now agricultural prices, boosted recently by ethanol production, have either risen to new highs or stayed on a high plateau, putting further pressure on inflation. Oil and agricultural prices seem likely to be a persistent problem and in general are underestimated like many other negatives in today's feel-good market. It is not surprising that unparalleled

global growth has created substantial pressure on commodity prices and inflation. Quite the reverse. What is surprising is how low aggregate inflation has been. If 50 leading economists had sat down 5 years ago and been told how strong global growth would be, I am sure the estimate for inflation today would have been at least 1.5% or so higher than it has actually been. It should not be at all surprising, therefore, that global inflation should start to rise, for as discussed in earlier letters, the argument that global low inflation was owed directly to millions of new Chinese workers never seemed entirely convincing to us as Chinese imports constituted only 2% of our GNP and what you don't understand should never, perhaps, be relied on. (For the record, the global impact of cheap Chinese labor is felt powerfully as its percentage of global exports rises. If a rising trade surplus causes its share to merely stabilize and not fall, most of its inflation mitigating effect disappears. In fact, if its local labor costs rise faster than productivity, as they have begun to now, then it begins to export inflation.)

And then we come to the curious case of the jump in fixed income rates. In just 3 or 4 weeks in June the 10-year bond rate jumped by 60 basis points. This was not, we are assured on all sides, caused by inflation – although a June survey of investment managers did indeed show a sharp jump where 45% of them were concerned about inflation. No, it was caused by an increase in "growth," whatever that means. What was impressive and surprising, though, was the similar rate increase for 10-year TIPS, which moved rapidly from 2.1% to 2.8%. So we can understand some odd theories coming out. But rising TIPS means that the broad cost of capital or the risk-free rate has risen, and by a lot! This of course should cause an immediate and severe sell-off in all asset class prices as well, for in theory they are affected by changes in the real discount rate more reliably than anything else. But, in practice they did not fall, for as always the real world is merely an inconvenient special case. Indeed, emerging market equities surged in precisely the same 4-week period, gaining almost 10% against other equities. To rub it in, volatile stocks in most markets, but particularly in the U.S., beat the pants off safe stocks, thumbing their noses at any suggestion that they were impressed by the increased appreciation of risk by their fixed income colleagues. We wonder if this will come to seem like the behavior of headless chickens: the equity guys are often the last to know they're dead. But it has always seemed likely that this would be a global equity market that would die hard. (In fact I toyed with the idea, in honor of Bruce Willis's new movie and a true die-hard market, of calling this quarterly letter, "The Live Carefree and Die Very Hard Market.")

The argument offered for the odd strength of equities was that since the increased rates were based on growth expectations rising, and since the growth rate for stocks would rise equally to offset the rising discount rate, there was no need for lower stock prices (see Jeremy Siegel on Yahoo). The bad news here is the data are just incompatible with the conclusion. For real interest rates in a given year have a slightly negative correlation with the following year's GNP growth. Even across broader time periods – 5 and 10-year periods – there is a slightly negative correlation between GNP growth and real rates. Finally, while the interest rate increase is a fact, there is, of course, no guarantee anyway that an offsetting increase in growth will occur!

So two of the three great asset classes are having the wobblies in some of their components. First, real estate is looking rather weak here and very weak in Spain, which moved into first place in the bubble league by building more houses than France, Germany, and the U.K. combined. (And talk about headless chickens! Their stock market continues to go up despite the housing crash and construction having risen to 13% of GNP!) And second, low-grade debt, especially real-estate related but increasingly including corporate loans and private equity funding, is getting nervous. But the third great asset class, stocks, seems bound and determined to make it through this third year of the Presidential Cycle – a year that has never declined materially and should be considered the bane of short sellers everywhere.

In summary, a few more bolts in the bridge may fail, but in the end you have to bet that the bridge will hold, supported by amazing animal spirits. At least until October. Even then the fourth year of the Presidential Cycle (which begins in October) is typically a quiet year. The odds of failure rise but they probably don't become high until October 2008. At that time, a new administration with its new broom and new taxes and new antipathy to the financial world's rich, coupled with tighter credit and credit problems, we will have a very typical time, based on history, to have a bear market, and I for one am betting on it.

Today's Portfolio

In terms of current portfolio positioning, we are certainly grateful in this global drought for cheap assets that U.S. TIPS have dropped in price. Back 7 years ago when they came out yielding 4.2%, we were very heavy buyers, having decided that fair value was at most 2.7%. Now, our

equilibrium model for regular U.S. 10-Year Government Bonds is assumed to be 2.9% real. Inflation risk over 10 years is clearly not insubstantial and the removal of that risk should lower return. We cannot argue for less than a 30-basis-point discount, which would take the equilibrium yield on 10-year TIPS to 2.6%, a little below where they are today. And if pushed, 2.5% or even 2.4% does not seem unreasonable. So in recent weeks with 10-year TIPS selling between 2.6% and 2.8%, we have that rarest of rare birds, a genuinely cheap asset. Needless to say, where appropriate we have been grateful buyers. Other than this we are proposing to cash in the last (or pretty nearly the last) of our anti-risk chips late this year, and once again we urge our clients to do the same. Our last discretionary risk exposure is on emerging market equity, which has been brilliant beyond belief (see Exhibit 1) and seems on course to fulfill my 3-year-old prediction that it would sell at a premium P/E to the S&P before the cycle ends. Unlike our normally premature asset allocation moves, the dazzling fundamentals of emerging market equities have enabled us to hold our overweighting and hold it and hold it. And we still have an overweighting, but the P/E differential is down to 15%. Still, all good things must eventually come to an end.

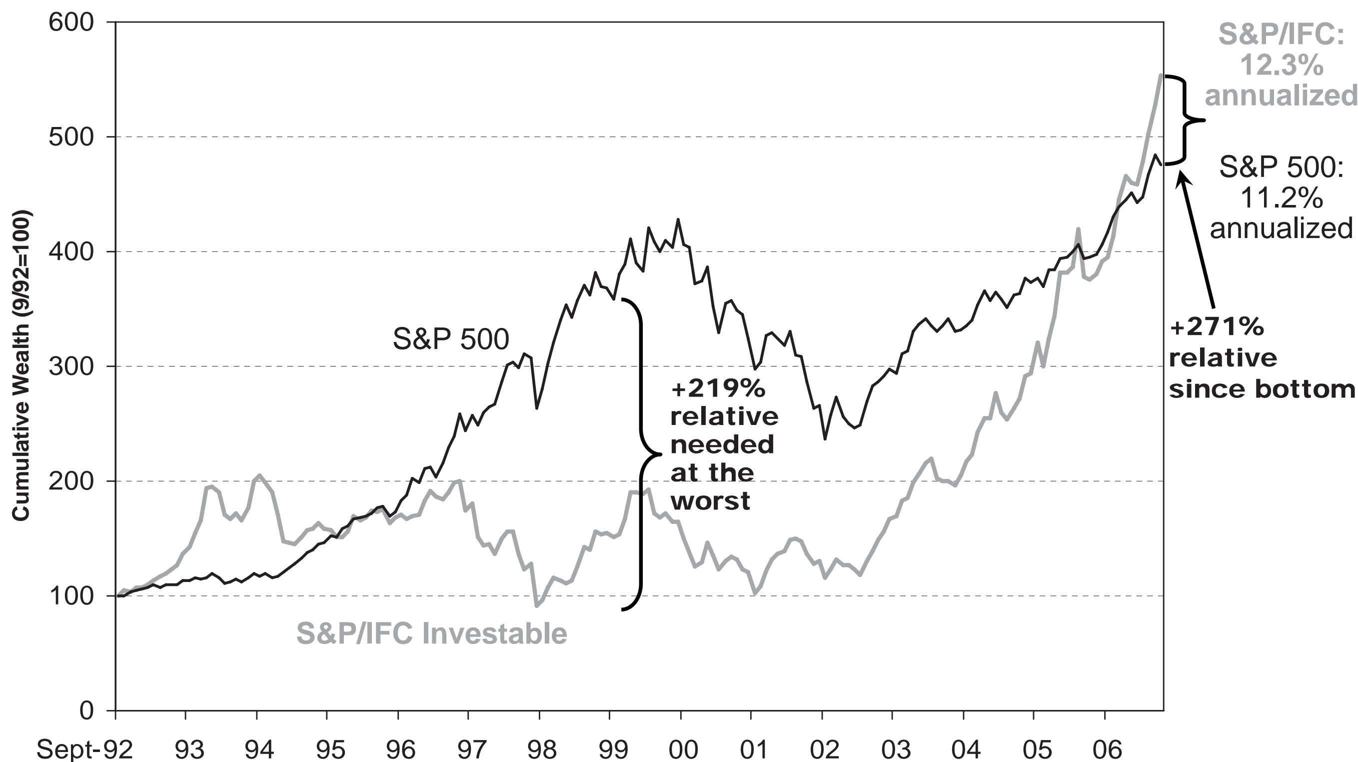
The Anti-risk Bet in Perspective: A Once or Twice in a Career Opportunity

In 40 years I believe I have been offered three obvious and extreme opportunities to make or at least save money. The first in 1974 was presented by the extreme undervaluation of small cap stocks in absolute terms – many were below 5x earnings and even more yielded over 10%. And compared to the Nifty Fifty – the great high quality franchise stocks – they were almost ludicrously underpriced.

The second opportunity was in 1999 and 2000 when the extraordinary overpricing in absolute terms of growth stocks, especially technology and the internet, meant that in round numbers everything else was relatively reasonable and some assets, notably real estate and U.S. TIPS, were simply very cheap, even in absolute terms.

Well the third great opportunity is now upon us in my opinion, and that is anti-risk. It is almost certainly the most important of the three because of its diffusion across assets and countries. That is the good news, for most of the time we have to make do with modest opportunities and this one is the real McCoy. The bad news is that for equity managers the first two opportunities were easy to spot and easy to execute. Anti-risk in comparison is a diffused and

Exhibit 1
Emerging Performance



Source: Standard & Poor's, GMO As of 6/30/07

complicated opportunity, and is as much or more in fixed income with all its new complexities as it is in equities. The ideal way of playing this third great opportunity is perhaps to create a basket of a dozen or more different anti-risk bets, for to speak the truth none of us can know how this unprecedented risk bubble with its new levels of leverage and new instruments will precisely deflate. Some components, like subprime and junk bonds, may go early and some equity risk spreads may go later. Some will prove unexpectedly rewarding and some, no doubt, will be disappointingly modest. Such uncertainties would be moderated by a complicated package approach. It will not be very easy, but some of the best hedge funds will, I'm sure, pull it off even as most of them pay the price for too much risk taking. Where we have the funds, the mandates, and the skill we will also try our very best to capture the spirit of the exercise. To conclude, I have been trying to come up with a simple statement that would capture how serious the situation is for the overstretched, overleveraged financial system, and this is it: In 5 years I expect that at least one major "bank" (broadly defined) will have failed and that up to half the hedge funds and a substantial percentage of the private equity firms in existence today will have simply ceased to exist.

I have often been too bearish about the U.S. equity markets in the last 12 years (although bullish on emerging equity markets), but I think it is fair to say that my language has almost never been this dire. The feeling I have today is that of watching a <u>very</u> slow motion train wreck.*

* An exception was in the last great market aberration. In a late spring issue of *Forbes* in 2000, I debated Henry Blodget on the future of internet stocks. I argued that it was not about losing money, but survival: "80% of these companies will cease to exist."

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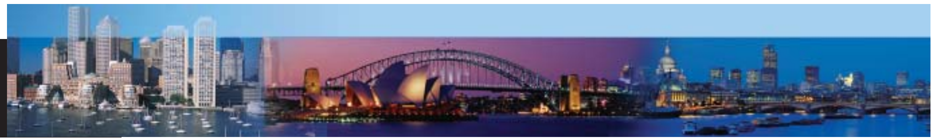
GMO

SPECIAL TOPIC

July 2007



*Letters to the Investment Committee XII**

Evaluating the Usefulness of Private Equity Managers

Jeremy Grantham

It is generally agreed by academic researchers and informed insiders that some managers in private equity deliver real skill that increases the efficiency of companies and therefore their market value. Their skill is a scarce commodity and consequently worth a considerable fraction of the increased value, which they indeed now get. It is also generally agreed that these managers are the exception, perhaps as few as 10% or so of the private equity firms after the extremely rapid growth in the number of players. Ten years ago when the industry was a small fraction of its current size, the excellent managers were considered to be 20% or 25% of the total. Much larger are three other groups of managers: the first group adds a modest increase in efficiency, the second group nothing, and the third leaves the companies at least a little worse off than they were originally.

The disparate talents and usefulness of these managers would all be quickly demonstrated in a leverage-free world. The good managers would still be of real use to society and their clients but, even at 2% and a 20% share of profit, would make a very small fraction of what they make in today's highly leveraged world. The managers with a modest edge would only be able to charge modest fees, and the substantial majority who add approximately nothing would, in a rational world, be able to charge nothing. (But in the real world those with real talent in marketing and persuasion would be able to overcome their lack of talent in investing just as so many are able to do in regular institutional investing, which is of course a zero sum game and yet has losers charging about the same fees as winners.) But, at least to the discerning, the results in private equity would be obvious.

In private equity, the competence of individual managers is mightily confused by two different factors. First, in a world of rising corporate profit margins all managers appear to have talent for they naturally enough represent that they, rather than the broad economy, are the cause of the margin improvement. Few buyers of their services are sophisticated enough to normalize for this effect. The second confusion is caused by leverage, which raises profits and stock gains much more powerfully than real managerial skill does when times are good for credit, profit margins, and P/E multiples. When times are bad, the reverse will be true and losses will be enormous. We are led to believe that no private equity managers build in the assumption that profit margins today are abnormally high and almost certain to decline. Similarly, the probability of a broad and lengthy decline in the market's P/E structure is not discussed. Yet both are very possible and I for one believe probable.

The usefulness of increased debt – the notion that it clearly enormously increases the value of a company – is a new idea in this cycle where the premium for taking risk is either small or, as we believe, has actually gone negative: investors pay to take risk. In such a world, risk in a sense does not exist and, of course, leverage is a free good not burdened by increased risk.

In the bad old days the virtues of leverage were seen as exactly offset by increased risk. Modigliani and others argued that the debt level of a corporation did not change its value, because outside stock investors, it was assumed, could get their own debt and fine-tune it to their particular needs. These assumptions were not quite fair, or at least

* The Letters to the Investment Committee series is designed for a very focused market: members of institutional committees who are well informed but non-investment professionals.

did not accurately reflect the real world, given that the value of the tax deductibility concessions for debt, as contrasted with post-tax dividends, does not apply to tax-free institutions who have become, since Modigliani's work, owners of the majority of stock. Most institutions are also prevented by law from leveraging, while few individuals can leverage equity portfolios as highly as private equity deals are leveraged.

Another important technical advantage for private equity is that it is not vulnerable to margin calls as is a typical leveraged portfolio of traded securities. For tax-free institutions, facilitating legal leverage and capturing the tax advantage of interest deductibility is a very useful service. Obtaining high leverage is also a useful service to those taxable individuals who would like it. Obtaining leverage but avoiding the risk of the margin calls that occur with public securities is a useful service to rich individuals and institutions alike. But the legal framework is straightforward. Obtaining high debt is routine; indeed, lenders have been pressing new levels of debt and increasingly easy terms on the borrowers for the last several years of this global credit bubble. This does not require real talent as would improving the efficiency of the underlying company. It requires mere competent professionalism and as such is not a particularly scarce resource and should be available at a low service fee. One of the growing numbers of dysfunctionalities in global financial markets is that this is not the case. But at least we should not be confused by the difference between scarce talent and routine skill. Easy credit, low to negative risk premiums, rising profit margins, and high P/Es have created the opposite of the perfect storm – the perfect calm – for private equity. Extraordinary talent does not come into play except for the very best. It is the classic case of a rising tide lifting all boats. The unique aspect of this tide is how colossal the fees are and how colossally undeserved they are for the great majority of managers. And even the rare talented managers should not be charging their scarcity fees for the majority of the return that is associated with leverage.

Take-over Premium

The killer for private equity returns is the take-over premium that has to be absorbed by increased efficiency and thereby decimates (or worse) the typical true added value. The cost of the initial premiums can be, however, camouflaged by extensive leverage.

To be extremely friendly, let us assume that all managers, regardless of their talents at improving corporate efficiency, can choose companies that are selling relative to the market at a 10% discount. This is particularly friendly since value companies have just had the longest run of market outperformance in their history and low price/book proxies for value sell at their narrowest-ever range relative to high price/book companies. Selecting cheap companies, in other words, should be much more difficult than normal.

To make matters worse, the discount for perceived inefficiency is doubly overpriced because of the outperformance of low quality, inefficient companies relative to high quality, efficient companies. This quality spread is also at an all-time low. Therefore, relative to the market, inefficient companies are more expensive than normal by at least 10%. This is no doubt partly caused by investors trying to position, with some success, ahead of private equity offers.

Let us call this a draw so far, with the average manager's stock picking talent offset by a market in a mild frenzy for "value" companies and a full fledged frenzy for low quality, inefficient companies. But we still have to deal with a take-over premium to get the deal done, which appears to have averaged about 25% and has to be absorbed one way or another.

Examples of Varying Manager Efficiency in Different Economic and Financial Environments

I could not resist running through a few simplified examples of private equity deals assuming varying degrees of talent and varying degrees of favorableness in the general environment. These examples look particularly at the percent of the gain that goes to the manager relative to the client. They are in an Appendix to this letter at our website, www.gmo.com. Of course in unfavorable market conditions – the type we see as extremely likely – private equity returns will be disastrous. In the simple examples given on our website, we assume the deals must be brought back to market in 5 years even under duress. Happily for clients, this is an unfair assumption.

Caveat on the 5-year Closeout

Private equity deals, of course, do not have to be closed out in 5 years but can hang on and on, just making interest payments, renegotiating terms, selling profitable pieces, and hollowing out the firms by withholding vital long-

term spending in order to buy time. It is indeed a great advantage over the daily mark-to-market situation of public equities. But it has a huge cost: the accumulating 2% a year cost as the company limps on makes it extremely unlikely that the client will get all his money back, let alone a good profit. It is in these potentially dire market conditions that we, to our cost, think it is quite likely that real risk dominates: can these leveraged deals make interest payments in a world of lower profits and possibly higher rates and certainly higher credit standards? If their debt is light on enforcement clauses, the managers can hang on longer, hope for better times, and keep on charging 2%. If their debt has more normal provisions, they will have to hope the banks are overwhelmed with defaults and will prefer restructuring the less ridiculous deals to taking over yet another company themselves. (In that unpleasant situation the role to be played by hedge funds and CDO managers is anyone's guess.)

Manager Fees

Things to remember:

a) The manager charges a 2% fixed fee after commitment but typically before the money is drawn down while you are usually forced to keep your money in low return cash while you wait. This is not typically factored into aggregate performance.

b) The manager charges his full fee on that part of the return that is merely due to the normal market rise. Notably this market rise has in recent years been driven by a rising P/E and rising economy-wide profit margins that have nothing to do with manager skill. There are typically no benchmark hurdles to isolate skill. This is analogous to old-fashioned stock options that similarly flattered public company managers, but is now increasingly addressed.

c) The manager also charges his full (and generous) value-adding fee on the return that is purely due to risky leverage, which should be available for a low service charge.

I assume this egregiously sloppy and manager-favoring fee structure owes a lot to the speed at which the industry has developed and the intensity of the desire to diversify ("look like Yale") that has created a current supply/demand imbalance. Institutions have not had time to work out quite what is going on, and are perhaps carried away by a bull market in which leveraged returns look great.

Recommendations for Dealing with Private Equity

1. Be aware that in almost all cases the combination of the starting take-over premium plus fees wipes out the effect of substantial professional talent in improving the companies, and only leverage hides this fact. Also, their fees are unjustifiably charged on market gains that have nothing to do with them and on the returns due to leverage for which you bear the risk;
2. Ask your potential private equity manager about his assumptions for future economy-wide profit margins and market P/Es, both of which are likely to decline;
3. Ask about the 2% fee in the event of very long-term work-outs, where the manager is paid to wait and pray for profits while you pay;
4. Do not budget on past private equity returns continuing;
5. If you can't get the managers with probable real alpha – it's not that difficult to prove – seriously consider skipping private equity completely; and
6. If you can't resist, then push for lower levels of leverage for future deals.

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Appendix to:

"Evaluating the Usefulness of Private Equity Managers"

Cases A1 and A2 are meant to represent one end of the spectrum: entirely successful deals. The average real return on corporate investing is a little under 7%. (Yes, it really is that low; higher apparent returns reflect current and imbedded inflation and accounting.) But the typical private equity deal would look for sub-average companies that can be improved. So, let us assume the typical acquired company has only a 5% real return on capital. Critically, let us also assume to begin with that there is no change in today's above average market P/E structure and, even more importantly, no change either in the massively above average profit margins that now exist.

Let us also in Case A1 assume a handsome 30% improvement in return over 5 years resulting in a 30% increase in market value from what would otherwise have been the case.

Case A1 (without leverage): The value of the company increases by 30% over 5 years plus delivers the normal market return, assumed to be a normal 6.0% real return plus 2.5% inflation. Fees of 2% a year for 5 years plus 20% of the total profits gives the following split between investors and the manager.

1. Market investment of $100 rises at 8.5% nominal for 5 years to reach $150.4.
2. All deals have to absorb the original 25% of deal premium. The simplest way to do this is to assume that for the original $100 investment the deal only received $80 of original market value – a 25% premium. Therefore, instead of rising to $150.4 with normal market action, it has only risen to $120.3.
3. This particularly efficient manager, though, increases return, earnings, and market value by 30% to reach $156.4. This gives an added value of $6.0 and is pure alpha, well worth paying for.
4. Manager charges fixed fees of 2% a year for 5 years = $10.

   Plus 20% of profits – not just on the value added of $6.0 but also on the total return of $56.4 – hopefully after deducting the $10 base fee, which yields another $9.3 for a total fee of $19.3. (We will generously ignore those 2% fees that are charged before the money is drawn down!)

   Manager's take = $19.3; client's take = $37.1 on original $100 capital.
5. Conclusion: client has made about 37% over 5 years, which looks okay, but is less than the simple market return of 50.4%. All the return to the manager's talent has gone to the manager, and more besides.

Case A2: Same conditions as A1 except the manager now uses 4:1 leverage (80% debt and 20% equity) and the cost of debt, fixed for 5 years, is 5% net of tax (8% pre-tax).

1. The $80 debt rises over 5 years at 5% to $102.1. (In order to keep life simple this approach debits the net interest costs against growing total value.)
2. The total $100 of original investment still rises to $156.4 pre-debt.
3. The net of debt gain is $156.4 – $102.1 or $54.3, all of which accrues to the $20 of capital, representing ($20 → $54.3) an impressive gain of $34.3, or 170%!
4. 10% of the $20 of capital goes to management as a fixed fee = $2.
5. Plus 20% of the profits ($34.3 – $2 or $32.3) = $6.5.
6. Total Manager's fee = $8.5

Client's take = ($34.3 – $8.5) or $25.8

Manager's take = $8.5/$34.3 or 25% (which looks reasonable)

Client makes $25.8 profit on an investment of $20! This is 18% compounded – a handsome return. But: —

Case A3: This assumes that a taxable investor has leveraged the market return by 4:1 on his own. His cost of borrowing is the same as in the previous case, 5% net cost.

1. Normal market growth raises $100 to $150.4 for a gain of $50.4.
2. Minus cost of debt, $80 rises over 5 years to $102.1.
3. Investor puts up $20 for a gain of ($150.4 – $102.1 – $20) = $28.3 (versus $25.8 in A2). The independent investor beats the professional manager This is because the manager's very considerable talent was offset by the initial take-over premium plus excessive fees that are not benchmarked to market returns.

Case B1 (without leverage): Manager here improves efficiency by a substantial 15% over 5 years (compared to an outstanding 30% in Case A1).

1. General market again rises to $150.4 for a profit of $50.4.
2. Again, after absorbing take-over premium of 25% deal value rises to $120.3.
3. Manager's increased efficiency takes margins, profits, and value up by 15% to $138.3.
4. Manager charges fixed fees of $10 over 5 years.

   Plus 20% of profit (less fixed fees) or 20% of $28.3 = $5.7.

   Manager's take = $15.7; client's take = ($38.3 - $15.7) or $22.6, less than half of the ordinary market return of $50.4.

Case B2: 4:1 leverage and 80% debt; same assumptions as A2 on costs and taxes.

1. The $80 debt rises over 5 years at 5% to $102.1.
2. The total $100 original investment rises to $138.3.
3. The net of debt gain is $138.3 – $102.1 = $36.2, all of which accrues to the $20 of capital.
4. 10% of the 20 units of capital goes to management as a fixed fee = $2.
5. Plus 20% of the profits ($16.2 – $2) or $2.8.
6. Total Manager's fee = $4.8

   Client's return is ($16.2 – $4.8) = $11.4

   Manager's take = $4.8/$16.2 or 30% (still apparently very reasonable)

   Client's take = $11.4 profit on an investment of $20, a 57% return for the 5 years, just slightly better than the market return of 50.4%, but: —

Case B3: Taxable investor buys market on 80% leverage on same terms.

1. Investor gains same $28.3 (versus $11.4 for B2). Even if the manager has 15% efficiency, the client is doing far worse than in a do-it-yourself leveraged deal with no efficiency!

Case C: The 8.5% nominal growth in the market assumed so far is the assumed normal growth at equilibrium or fair market prices, which assume normal profit margins. Today's overpriced market return levels would drop, not by assuming regression in P/Es or margins, but simply by recognizing that higher priced equities deliver lower returns and, happily, vice versa. More realistic equilibrium returns at these high prices would be over 2% a year less and therefore the benefits of leverage would be substantially less.

This does not seem worth working through since it's straightforward enough, so let us go straight to the killer cases where regression to more normal conditions is assumed.

Cases D1-2: The market P/E moves down over 5 years to a friendly estimate of long-term trend or 16 P/E on trailing earnings. Similarly and more dangerously the current exceptional profit margins of 7.9% on sales move down to a very friendly 6.0% on sales compared to a long-term average below 5.0. Both of these reductions are to long-term trends and rather friendly ones at that. This implies that every dollar that would have been earned with today's margin assumption has fallen by 25%, and that these reduced earnings are multiplied by a reduced market multiple of 16x, giving a reduced corporate value of 40% from today's assumed levels. This loss of value occurs through no fault at all of the private equity managers, whether they are brilliant or hacks. These assumptions of regression to normal are never in private equity spreadsheets we are assured, despite the historical persistence of their occurrence. However earnings and assets are still compounded over the 5 years, no dividends are assumed paid, and inflation further raises nominal earnings.

Case D1: The manager with even assumed 40% increase in efficiency, unleveraged.

1. Using GMO's standard assumption of regressing P/Es and profit margins to normal, but doing it over 5 years instead of our usual 7 years. The market investment of $100 falls to $79 real or $89.4 nominal.
2. Due to 25% deal premium having been paid, market return would fall to $71.5.
3. Efficient manager would increase this by 40% to $100.1.
4. Manager's fixed fee would reduce this to $90.1 and there would be no carry. This compares to $89.4 for the market return, so no material gain or loss.

Case D2: 40% efficient manager with 80% leverage.

1. First three steps as in Case D1. Market return pre-fee and interest of $100 rises to $100.1.
2. $20 equity pays $2 fee; aggregate value falls to $98.1.
3. $80 debt rises to $102.1.
4. Balance for investors is negative $4 from the original $20. A total loss of $24 and the clients are paid nothing while they wait as it has been assumed that no dividends have been paid and all cash flows reinvested.

Case E: For all less efficient deals, leveraging loses all theoretical value at end of 5 years. Clients and managers must hope for a recovery in later years and clients must hope that the 2% a year does not make recovery of any investment unlikely or that the hole is so big that the manager will wash out the deal so that the carry can be set back to zero for when favorable market conditions return. Even for 10% efficiency the recovery needed to break-even is over 35%. This could be too long a time for hot shots to wait before they get a "carry" as has been shown in the past for some distressed hedge funds.

Case F: We have not looked yet at the possibility that market P/Es or profit margins actually may fall below trend, which is by definition the level below which half the time is spent. Perish the thought!

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GMO

QUARTERLY LETTER

October 2007

Fed Up

Jeremy Grantham

Of course I'm fed up. We had Risk on the ropes. His followers were panicking. They were calling for the ref to stop the fight: "He has absolutely no idea how badly our boy is hurting … he has no idea!" And what does the ref do? Ends the round early, extends the break, and allows a dangerous injection of adrenaline. Risk then leaps out of his corner, apparently rejuvenated, and wins the next couple of rounds. And here we are, wondering whether Risk has taken enough punishment to make him vulnerable to a knockout blow in a later round. Or has he completely recovered?

What a quarter for anyone interested in the workings of the Fed! First they had been rather ostentatiously bullied by Congressional visitors over one provisional month's weak employment data (surely a workable definition of statistical irrelevance), serving to remind us that politics is an occupational hazard for the Fed. But for the record, some Democrat had better get to Senator Dodd (D) soon and explain a basic truth: leaning on the Fed to stimulate the economy in Year 3 is an incumbent party strategy, definitely to be avoided by the challengers! Arthur Burns, for example, was continuously pushed around by Nixon before his 1972 election.[1] This is Nixon exhorting him to be more forceful in pushing his colleagues toward interest rate reductions: "You can lead 'em. You always have. Just kick 'em in the [expletive deleted] rump a little." Nixon understood that the independent Fed needed a little forceful guidance from time to time. Greenspan also had his head metaphorically slapped by senators after his vision of "irrational exuberance" in 1996 as the S&P broke past the old 1929 record of 21 times earnings. The slapping was so effective that by 2000, at 35 times earnings, he had become a cheerleader for the new era. But of course we see only the tip of the iceberg through random Nixon tapes and public Senate meetings. The process must be continuous and hard to resist for any but the very strong of backbone.

The result that we can indeed measure is the very long record of the wonderful third year of the Presidential Cycle, when Presidents and administrations really want to be re-elected and really push for stimulus. Employment and GDP improve a little and the much more sensitive stock market a lot. Seventeen out of 19 Year 3s since 1932 have returned over 11% real versus 6.8% for the average year, and only two have been poor (one in 1946 as World War II ended and investors feared another post-war depression like 1919, and the other in 1979 during the oil embargo), a result that is statistically significant at the level of 1 in 10,000. The main cause of this (discussed in this quarter's Letters to the Investment Committee) is almost certainly more the encouraging tone of the Fed than dramatic monetary action.

This year was heading for the third worst Year 3 in 19 tries, and was only 4.4% real on August 16, with just 6 weeks to go, when the onslaught of liquidity from the ECB and the Fed started. It was still the third worst on September 18 with only 7 business days to go to the end of the presidential year, when the 50 basis points arrived and kicked it up to a 14.1% year. We wuz robbed! Although 14.1% was still far below the remarkable 23.3% average return – a small but welcome mercy.

For a short while I had touching faith that the more "academic" Bernanke would take a tougher line than Greenspan, and he did sound fairly fierce early on, but as

[1] Burton A. Abrams, "How Richard Nixon Pressured Arthur Burns: Evidence from the Nixon Tapes," *Journal of Economic Perspectives* (Fall 2006): 177-188.

the heat turned up he overcame any qualms and threw in the towel quickly enough.

Mervyn King of the Bank of England talked a very much tougher game than Bernanke, positively disdainful of the U.S. and the ECB pandering to the imprudent, over-extended financial community: "The provision of such liquidity support," he said on September 18 referring to the ECB and the Fed, "undermines the efficient pricing of risk … that encourages excessive risk-taking and sows the seeds of a future financial crisis." My kind of guy! But he too buckled under the combined weight of political and financial pressures and, additionally, he endured the public disgrace of the British enjoying an excuse to have a good old queue. The Brits embarrassingly have always showed such solidarity with the U.S. that since 1932 they have a third year U.S. Presidential Cycle effect in their market almost as large as ours: 22% real versus our 23.3%. It is a telling commentary on who calls the shots in the U.K.: it is not their completely independent central bank, but our completely independent central bank.

And why should we care? Because we agree with the Mervyn King of early September 18 and not with the Mervyn King of late September 18. And because, as we've written about before, we are engaged in a dangerous experiment to see how far the elastic band will stretch. The experiment in moral hazard is leading to a series of asset price bubbles, any of which might float out of control. The last bailout produced or at least enabled a housing bubble, and the one before – after LTCM, Russia, and the Asian crisis – produced the real McCoy: the tech bubble of 2000. Each bailout seems to be received with a quicker rally, and negative news is increasingly easily dismissed. The other day it was announced that UBS, Credit Suisse, and the dance champions at Citibank all had to take billions of dollars of write-downs, far more than would have been admissible in polite conversation as little as even 6 weeks earlier. This was celebrated as good news – "it's all behind us" – so the market rallied 2% for the day, back to its high! What will this new burst of liquidity moral hazard bring? Emerging markets would certainly be my preferred choice, and they are indeed shaping up well, having rallied a remarkable 33% since August 15.

So What Happened in the Third Quarter?

There was indeed a genuine severe credit crisis. Either the Fed and others were told some pretty dire things about the state of some major institutions or they are even sillier than I think. *The New York Times*, *The Economist*, and others all gave their opinion that some serious financial failures (worse than Northern Rock) must have been feared by the authorities to justify such early and powerful intervention. One can wonder how Countrywide and Northern Rock would have played out with no interference. Big chunks of the credit system had simply frozen. Risk premiums in fixed income widened very substantially in general, with a few exceptions. Liquidity premiums, not surprisingly, widened in particular. But, give or take a few down days, the equity market continued in denial. Perhaps in the short term they had a brilliant understanding of the lack of strength in the Fed's knees and in those of their European colleagues. Given the developments in the real world, the equity market's ability to close up for the quarter is truly remarkable. In the quarter, the housing market was in ragged disarray; corporate profits were okay, but growing far less than in recent years; the dollar was disturbingly weak; and the credit crisis had raged. So equities rally to a new high. Of course that is because it's a discounting mechanism! Let's consider what it is discounting: presumed continued dollar problems, almost certain housing weakness, slower economic growth in the U.S. and Europe, weaker estimated profit growth in the U.S., higher commodity prices (particularly agriculture), and more global pressures on inflation. Yes, I get it!

Where has the credit crisis left us other than with a carefree stock market? Banks are still not happy lending to other banks, and their rates for this, which surged in the crisis, are still not far from their highs. Mortgages are harder to get and will probably worsen. Leveraged corporate debt is still more costly, harder to get, and contains more careful provisions. On the other hand, credit default swaps, the indices of which doubled in a few days, have backed down 60%. The good news is that very probably the worst part of the crisis – the freezing of all lending – has passed. The bad news is that the reappraising of risk and other economic effects of the credit crisis will play out slowly over the next year or so.

What Would You Have Done, Smarty Pants?

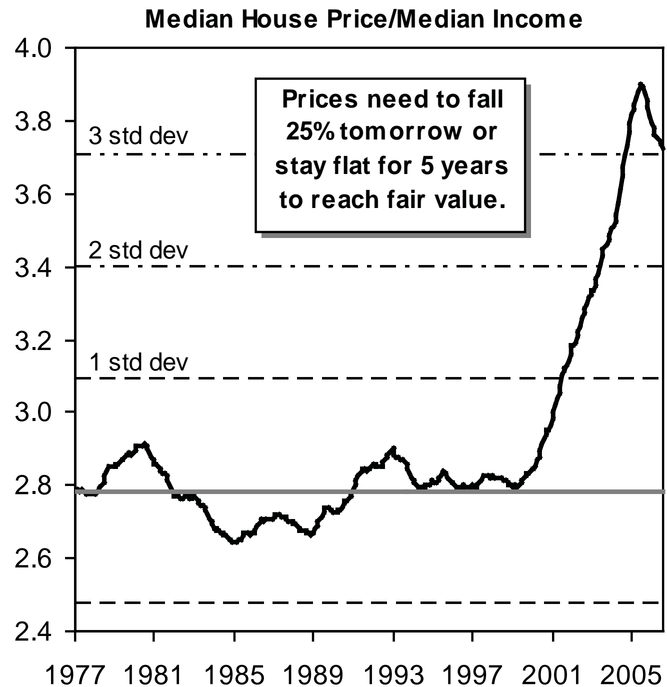
It's a difficult question. You couldn't allow the system to freeze, so even if you wanted to punish the wicked you had to let them off again. And 50 basis points – importantly with a unanimous vote and accompanied by massive liquidity injections from European colleagues – probably had enough positive effect on animal spirits to prevent what

could have been a financial failure unprecedented since World War II. So the real question is: Why were central bankers forced into a corner where they had to reward reckless risk taking once again? The bad behavior goes back a long way. (See my 3Q 2002 diatribe on Greenspan, "Feet of Clay," at www.gmo.com.) It is embedded in how the recent Fed has seen its job description. Echoing earlier comments by Greenspan, Bernanke spelled out the problem in September 2004: "For the Fed to interfere with security speculation is neither desirable nor feasible," but "if a sudden correction in asset prices does occur, the Fed's first responsibility is to protect … to provide ample liquidity until the crisis has passed."

As you can see, they have made no secret about it. To let bubbles form unimpeded and yet to move to cushion the subsequent decline is a simple and workable definition of moral hazard. The fact that they define it as not moving to prop up asset prices, but only to cushion the economic effects of asset prices declining, is sophistry. It amounts to exactly the same thing. In contrast, The Bank of England, my former semi-heroes, have long maintained that it is appropriate for central bankers to be concerned with asset bubbles, knowing as we surely must by now how destabilizing they can be. Recognizing bubbles is held to be hard: "To spot a bubble in advance," said Greenspan, "requires a judgment that hundreds of thousands of investors had it all wrong." Greenspan has since contradicted this ridiculous comment many times when describing investor herding and irrational behavioral markets. And his great 2000 bubble, partly indeed his creation, peaked 65% higher than any previous market. Not only did it look like a Himalayan peak, but statistically it was a 3-standard deviation, 100-year event. Far from being hard to spot, it was impossible to miss. The current housing bubble (Exhibit 1) was also easy to see. The seeing part is easy, but acting is not. It is particularly dangerous to the careers of anyone involved. No Fed Chairman, as Galbraith said, wants to be the one caught holding the pin as the bubble bursts. The pain caused by intervention will be very visible, and the pain avoided by intervention, perhaps much greater, will always be hypothetical. For any normal Fed Chairman (Volcker was clearly abnormal, happily), this will always be an easy choice. But if you don't act to at least moderately restrain major asset bubbles – by all means ignore the medium ones; when in doubt stay out – then you will be backed into ever more corners and be forced to extend moral hazard until its ultimate Minsky moment where no intervention is enough.

Exhibit 1

The Current Housing Bubble: U.S. House Prices Will Decline



Sources: National Association of Realtors, U.S. Census Bureau, GMO
As of 7/31/07

Housing: Where the Trouble Began

I suggested in 2005 after a trip to Australia ("The Canary in the Coal Mine," 1Q 2005) that the U.S. housing market that was still in bubble territory (Exhibit 1) should turn down in a year because it was lagging the U.K. and Australia, and because it is so reliably mean reverting. For once I got this more or less right, and about a year later we had a first down month in some of the data. Multiples of family income are a simple and powerful controlling factor on housing. Exhibit 1 shows that we in the U.S. in the recent decline (in the Shiller series) have come down about a quarter of the way to usual long-term affordability. Just for the record, how does my beloved Fed stand on this issue? Greenspan in 2005 said there was froth in some real estate markets, but basically it was fine, and also infamously exhorted home buyers to use variable rate mortgages rather than fixed at a time when rates were near their lows, definitely his weirdest piece of

advice. As for Bernanke, in October 2005 he claimed that advancing house prices merely "reflected strong economic fundamentals." Also in 2005 and slightly less cavalierly (but only slightly), he said on CNBC, according to *The Economist*, "We've never had a decline in housing prices on a nationwide basis. What I think is more likely is that house prices will slow, maybe stabilize." Look at Exhibit 1 for a second. The market was deep into a 40-year (2-standard deviation) bubble based simply on a long and relatively reliable price series and its volatility. What was he thinking? Do he and his assistants not look at long-term prices, or has the mean-reverting nature of house prices not yet revealed itself? More recently, as yet another example of immoral hazard, his fellow board member Frederic Mishkin argued that since housing prices were likely in his opinion to come down and probably by a lot (20% real), and since he believed the resulting damage to economic growth to be predictable, the Fed should act preemptively – even before any sign of economic trouble. We wonder, when house prices were roaring, why the reverse was not argued and rates raised preemptively to cool housing so that excesses of consumption, extended consumer borrowing, and extended subprime nonsense would not have caused such problems.

Where Are We Now?

Compared with what we might have guessed a quarter ago, today's outlook for the next year or two may be a little worse: the extent of the subprime problems in dollar terms, how broadly it spread its pain, how uncertain the holders of the debt were (and are) as to values, and the shocking lack of responsibility in issuing, assembling, and rating this debt were all worse than most of us feared, and many of us feared a lot. GMO's fear of economic slowdown at least a percent below consensus for 2008 has become more of a mainstream concern. Our general unease with the dollar has now increased and is very broadly shared. And for the first time in 20 years I am slightly worried about inflation. I have never dwelt on this subject in a quarterly letter, but now long-term intractability with commodity prices may be joined by rapid wage increases in India and China. By the way, like many others I have an increasing distrust in the official inflation numbers. For example, we have rising commodity prices and a very large deficit combined with a very weak currency, yet we have a decreasing inflation rate and one that is lower than that of many European countries with strong currencies. Very odd indeed and a good research project for us.

For the next few months, in contrast to the longer term, the general economic outlook may have improved a little because the unanimity and extent of the authorities' response to the credit crisis appears to have created some broadly based, if temporary, economic and financial faith that all issues are finely controllable by the Fed and others. This positive jump in animal spirits may actually help the real world as well as the markets, but probably not for more than a few months. (See Letters to the Investment Committee.)

Lurking beyond these current problems lies an interesting new inflationary problem with a very slow-burning fuse: the age profile of the developed world and China. There will be a steady shift in age cohorts with the cohorts of the new workers beginning to decline and those of older workers and retirees increasing. After the Black Death there were more agricultural and urban "plant and equipment," cleared fields to be planted, etc., than there were workers, and it ushered in by far the best 100 years for workers' pay and income redistribution for hundreds of years on either side. From now on, slowly but surely and with less pain than the Black Death I hope, the generally favorable labor patterns of the post-war period will deteriorate. Workers will carry more retirees, graduating classes will be smaller (Japan, leading this charge, is already running down well over 10% from its peak), and there will be steady upward pressure on wages, other things being approximately equal, which no doubt will be welcomed by new workers whose hourly pay has languished in the U.S. for decades. GMO will be looking at this situation and trying to assess its implications for markets, particularly housing and equities, over the next several years. Provisionally, it looks quite bad for inflation and for the supply-demand position of both real estate and equities.

Some Near Certainties in Uncertain Times

I wrote 800 words for *Fortune* magazine a few weeks ago, before the 50 basis points ("Danger: Steep Drop Ahead," 9/5/07, www.fortune.com). In it I argued that the three things that mattered most to me at the time horizon of 3 to 5 years (the period I'm most interested in) were near certainties and not dependent on whether the credit crisis was stopped in its tracks or was left more or less to run its course. First, U.S. house prices would continue down toward trend over the next 3 years or so, and accordingly mortgage defaults would rise, mortgage re-financings would fall, and all of this would cause a steady drag on consumption, profits, and GDP growth. Second,

profit margins would decline globally with negative consequences for stock pricing. Third, risk would be re-priced on a very broad basis so that some time in the future we would see, once again, a normal or above-normal premium for high quality stocks and bonds. If the crisis were not contained these effects would occur quickly, and if it were contained they would occur slowly. Now, a few weeks later, I would argue that the workings of the credit crisis – it was more savage than I expected but countered more aggressively than expected also – have left us about in the middle ground: the occurrences of the third quarter have worked to moderately speed up the progress of these three nearly inevitable factors.

My view since March was that a crisis was certainly developing and was more clearly flagged than other important financial events I could remember. However, my "very slow motion train wreck" was not a very accurate description. "Train hits end of track at full speed" would have been more like it, perhaps with the sub-heading, "Several killed and hundreds hurt, but survivors showered with government aid."

Recommendations

No surprises here. For any but the very nimble players of musical chairs and the experts at Keynes's beauty contest, of which there are clearly quite a few (lucky people), we recommend continued extreme caution. The best hedge against the career risk of being too conservative remains emerging market equity, overpriced but still attractive on a relative basis.

Forecast for the Next 12 Months

To keep it simple, we will use just two variables: the Presidential Cycle and value. Is the market in the expensive half or the cheap half? For the record, the presidential year just ended was an "expensive" Year 3. (As mentioned, since 1932 these have averaged a remarkable 23% real. The actual return was 14.1% real.) We are now in Year 4, famous for its super normalcy including its remarkable lack of outliers, heroes, or villains. This is an "expensive" Year 4, and the average since 1932 has been 3% real versus 12% for "cheap" Year 4s. I guess I would happily settle for 3% whilst waiting for the more interestingly bearish opportunities of 2009 and especially 2010. In the meantime I believe global equity markets will struggle to resist going down. Animal spirits have had years of reinforcement from great fundamentals and a friendly Fed, and will not readily abandon ship even though the tide of positive fundamentals has clearly turned and is slowly ebbing: global GDP and the U.S. GDP are both slowing, U.S. profit margins are forecast to decline, and inflation is threatening more. A modest up year, with a mixed return to risk-taking but strong emerging market performance, would be my guess. And in the U.S., a small gain might easily be the result of a higher P/E on moderately lower earnings. Any major bearish behavior is likely to wait for another 12 or 18 months, but accidents do happen, and it should be remembered that the value of the U.S. market based on a normal P/E of normal profit margins is over one-third lower than today's price.

P.S.: A Perma Contrarian Uncovers an Archive

Most regrettably we contrarians missed out on our real opportunity to be outrageous bulls in the 1930s, but I for one did at least catch all 13 years of continuous under-pricing of equities in 1973 to 1986 after the fall of the Nifty Fifty. We at GMO did not get to say much in those early days, but I recently rediscovered the only quote in black and white from GMO's entire first 10 years, and I must say it would warm the cockles of any contrarian's heart. The June 28 issue of the *Portfolio Letter* in 1982, the year in which the market hit 8 times depressed earnings and the lowest price to replacement cost in 50 years, quoted me (deep in the issue) as saying, "…that the market was approaching 'a major rally, perhaps the biggest in a decade,' and that our firm's cash position was 'nil.'"

And just to be mean, since I have the yellowing copy out on my desk, it also quoted Leon Cooperman, the predecessor to Abby Cohen as the Goldman Sachs strategist (of course on the front page), as saying, "…now is not the time to make any major commitments to stocks … for the foreseeable future." Sorry Lee, I'm sure you changed your position by August.

Stop the Presses: A Convenient Recognition

I had a rant on the lack of U.S. environmental policy last year (4Q 2006 Letters to the Investment Committee) to discretely tout Al Gore's movie. The movie created a much needed wider awareness of the U.N.'s report and the U.K.'s Stern report, which both followed shortly thereafter. Fortunately for public awareness, there were also some startlingly heavy scientific reports on how much faster northern ice was melting than the consensus of 2,000 scientists had indicated in the U.N. report. (Can

you imagine what it takes to get 2,000 scientists to sign off on anything? The Earth is round, perhaps? So this conclusion that temperature increases were 90% likely to be caused by us actually reflected the 2,000th most conservative view; the median view was almost certainly 99%.) Well, now after an Oscar, he gets the Nobel Prize! An interesting pair of trophies. And the well funded, anti-science, "nothing is certain and the science is bad" faction is finally in ragged disarray. I normally admire contrary thinking, but it is one thing in a herding marketplace. In science, particularly in our world that really doesn't like bad news, contrarians can easily produce a smoking-doesn't-cause-cancer and the-climate-future-can't-possibly-be-that-bad perspective. But it now looks as if we will take climate change seriously. In this case, climate change and energy efficiency will be a giant investment area. And no doubt it will be full of interesting bubbles, of which, perhaps, boondoggle ethanol is the first of this new cycle.

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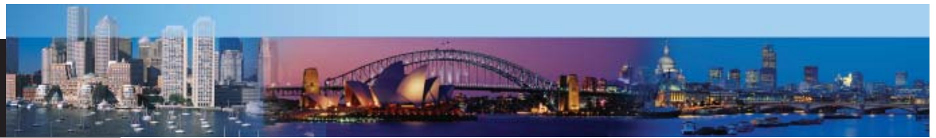
SPECIAL TOPIC

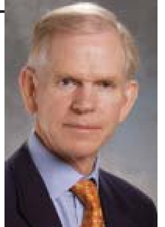


October 2007

*Letters to the Investment Committee XIII**

Troubles with Economics: The Fed and Animal Spirits

Jeremy Grantham



Like the drunk looking for his keys under the street lamp because that's where he can see, economics not surprisingly focuses first on what can be easily measured. As the topic becomes broader and longer and approaches philosophy, human foibles, or personal taste, economics analysis often comes up short, telling us for example that the world that brought us the '87 crash and the internet bubble is efficient, with all data processed quickly and completely and dispassionately. "Dismissing financial crises on the grounds that would imply irrationality is to ignore a condition for the sake of a theory"[1] is how the economic historian Charles Kindleberger dealt with this nonsense, which is no doubt still heading for a Nobel Prize!

Another recent good example of the limits of economics is found in the attempt to do a cost/benefit analysis on climate change and its mitigation. The future pain likely to be incurred by human-induced warming involves trading off the well-being of future generations against our own, for which standard discount rates result in the ludicrous conclusion that the distant future simply doesn't matter (grandchildren are less important than grandfathers).

An even better illustration might be found in attempting to measure the costs to the U.S. of World War II. Standard economic analysis can grapple in minute detail with the prodigious diversion of resources into assets like battleships and planes that are simply destroyed. The costs of training and supporting a large military force and the opportunity cost of not having them work in normal jobs that increase the general welfare were measurable and were waste indeed. But if you take a step back and define the broadest measures of progress, you get a substantially different picture. From 1940 to 1946 U.S. GNP rose substantially faster than normal. The poor were employed, well fed, and housed to a degree never seen before. General health improved and education continued. You might answer that this apparently happy state was arrived at only by War Bonds – passing the costs on to future generations – and indeed the government debt to GNP rose from 0.5 to 1.2. Yet the next 10 years, when theoretically the piper was being paid as the debt was paid back down, the U.S. again grew above averagely fast and continued to do so for another 10 years. When the smoke cleared, the period 1940 to 1965 (and all the 5-year sub-periods within it) could be fairly described as the economic golden age of the 20th Century and perhaps also the golden age for improvements in general well-being. It appears, contrary to the idea of a costly war machine, that World War II increased the wealth and annual wealth-generating capabilities of the U.S. In that sense it had no economic cost, perhaps even the reverse, despite the terrible human cost it had on those directly involved.

This difference between the long-term measurable consequences and the apparent short-term effects set me to thinking about some of our recent financial questions. The most important of these for me is the role played by debt. Debt is seen in general as an economic "good" these days and is widely considered the short-term driver of the rate of economic growth, fine-tuned through interest rates. Interest rate changes would appear to have no effect unless they induce changes in borrowing. Thus it is assumed that lowering the rate encourages increased borrowing that in turn encourages, on the margin, increased economic activity, higher profits, and higher GDP growth. Since the Fed controls the short-term government rates, it can be

* The Letters to the Investment Committee series is designed for a very focused market: members of institutional committees who are well informed but non-investment professionals.

[1] Charles Kindleberger, *Manias, Panics, and Crashes: A History of Financial Crises* (Wiley, 2005).

seen as the driver of this debt fueled vehicle, and such is the power of changes in debt (or so it is believed) that no recession ever has to occur and the economy can proceed with little volatility.

To repeat the World War II experiment, we can step back and look at the total debt to GDP ratio for many years so that all of the short-term optical illusions drop away. There has been a substantial increase in the total of all kinds of debt added together. Exhibit 1 shows that total debt has increased from $1.30 of debt per $1 of GDP in 1980 to over $3.10 of debt per $1 of GDP today, more than a doubling in 25 years. Since most of this debt represents what one American chooses to lend to another, this increase is not necessarily bad. There are obviously no hard and fast rules about how much is too much, although Hyman Minsky has suggested that at some level some borrowers will be borrowing not only to repay principle but also to pay interest, so that occasional credit crises will occur and probably with increasing frequency as debt ratios rise. Each in turn, though, may be cured, it is now believed, by applications of more debt, more liquidity, and more moral hazard. The hair of the dog that bit you certainly applies today where a problem previously caused by too much debt in the wrong hands will apparently be cured by lowering rates to increase marginal borrowing. This is like the alcoholic's "Bloody Mary plus" on Monday morning after the Sunday night bender. It may clear his head for the big meeting, but is not much of a cure for his incipient cirrhosis of the liver!

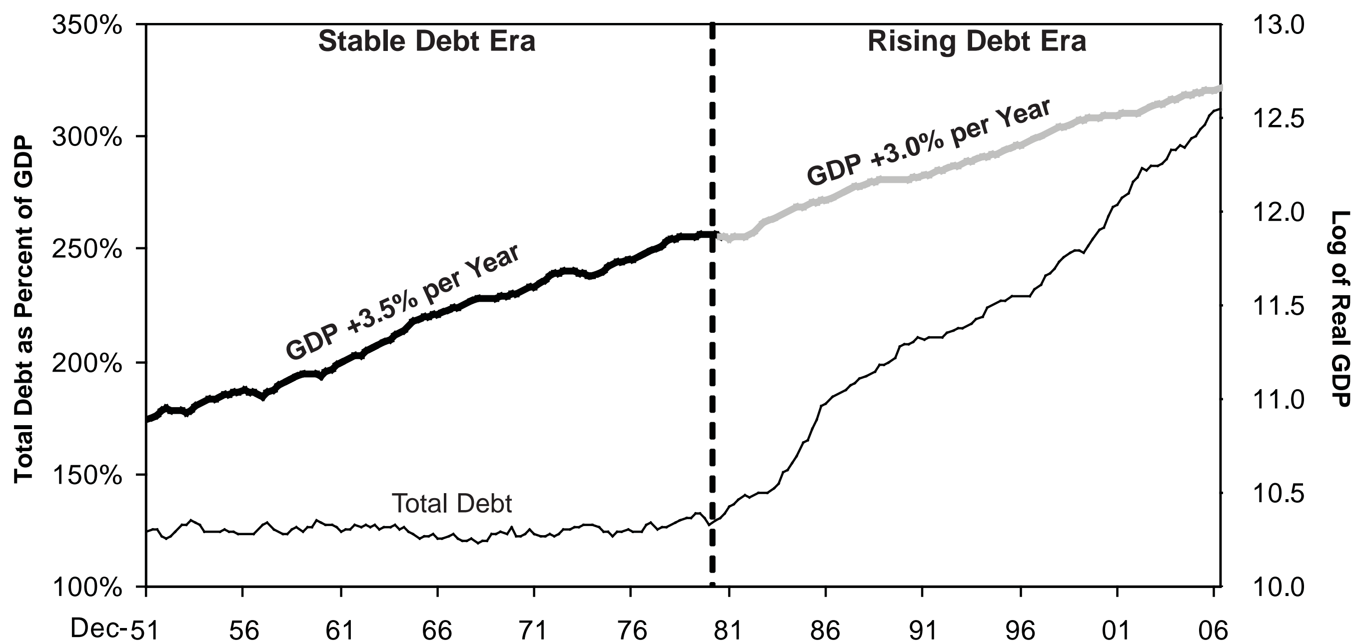
With care the system will probably cope with significantly higher debt/GDP ratios, at least for a while, and I would bet that we are heading in this direction.

But back to business: Exhibit 1 shows the U.S. GDP battleship at full steam, with its remarkable ability to stay close to its over 100-year trend of 3.5% real growth. Check out first what I said about World War II and the debt overhang period following. It is indeed clearly above average. Now look at the period since 1980. Despite a doubling of the debt ratio, there is no acceleration at all in the growth rate. Further, despite an increasing growth rate of debt since 2001, we seem in fact to be tailing off from the GDP trend. This fall-off in GDP growth is happily a very pale shadow of the Depression, but it is now the runner-up for the worst decline below trend. Now if debt is so potent a force, why is its potency missing in aggregate? The data seem to support a view that debt is irrelevant to longer-term growth, which is presumably a function of hours worked and productivity increases, which in turn are a function of capital invested and innovation in how the capital is used and organized. Lending to each other would not seem to measurably change these inputs.

In dazzling contrast to this theory, the market recently rose 5% in 2 weeks following the 50-basis-point rate cut,

Exhibit 1

Debt Growth Has Unusual Effect On Long-Term Fundamentals: None!



Source: BEA As of Q2 2007

and did so unaccompanied by any other surprisingly good news such as employment, profits, or growth rates. If anything, the accompanying news was negative: billion dollar write-offs, a sliding dollar, and reduced profits and GDP estimates for the next 12 months. So presumably the 5% market rise was really a function of the 50-basis-point decline. Now, wait a minute! The market was betting 50/50 on 25 or 50 basis points or so, the futures markets suggested. So we can say fairly enough that the market rose on an unexpected 15 basis points or so. And on this pillar was based a 5% increase in the long-term discounted future value of the entire U.S. corporate sector. Not bad. Looking past the rate reduction, the market move was really based on the incremental borrowing that would be induced by this unexpected 15 basis points, and beyond that on the economic stimulus and increased corporate profits that would result from that tiny incremental debt. Yet historically there is no such effect at all even from a massive increase in debt, or at least none that can be seen in the long-term data.

Perhaps the Fed's foot on the pedal, lighter or harder, can indeed move the short-term, say, quarter-to-quarter economic growth, although it seems odd that by facilitating debt expansion it would move the short-term economy, but not the long-term, since a series of short-term effects would appear to equal a longer-term one. But let's say it can. The trouble is that a rational pricing of the stock market covers its long-term value, not its short-term twitches.

(And this whole argument so far has been based on a supposition that the Fed can indeed drive this machine. Jim Grant, who is given to questioning rather than faith, has argued many times that the Fed's management of the interest rate is simply price fixing, and hasn't the Soviet Union established once and for all that price fixing and government direction in economics is a poor substitute indeed for a free market? He also reminds us that it is normally considered that you can fix the price [the interest rate] or the quantity [liquidity level] of any commodity, but not both. Yet the Fed uniquely is given credit for pulling off this trick.) However, while I suspect Jim Grant is right, even if the Fed does have these remarkable powers and is indeed the driver, my point is that for longer-term results it appears to be irrelevant: debt management and the quantity of debt simply do not affect long-term growth or the fundamental value of the stock market.

We can come to the same point with the Presidential Cycle effect. We know why the administration would like to stimulate the economy and particularly employment numbers in the last 2 years and we know the Fed is the key, but we don't know how they pull it off! How does employment get to rise in Years 3 and 4 and why does the market respond so heroically in Year 3 to this process? The change in the obvious suspect variables of interest rates and money supply does not appear to change enough to move a tugboat, let alone a GDP battleship. No, common to the presidential puzzle and the debt puzzle are animal spirits. What moved the market up 5% in 2 weeks was not the 15 basis points. What appears to move employment a small but critical amount in Year 3 is not textbook financial stimulus. In both cases the Fed plays a key role in improving animal spirits, which are very sensitive to short-term events and short-term statements. It is not so much that the Fed delivers in Year 3 as that it promises. The Fed suggests the market can speculate more in Year 3, and if something goes wrong it will bail us out. And moving the short-term interest rate, accompanied by suitable jaw-boning carefully selected comments – at which Greenspan was so good – is their main weapon in changing animal spirits. As long as the market believes interest rate reductions and favorable body language have a real effect, they will have a short-term effect even if they are irrelevant in the long term. And this effect – animal spirits – will be much more observable in short-term market moves than in tiny changes in short-term fundamentals because in the short term, changes in animal spirits are nearly everything in the market and have certainly washed away better men than me. But in the long term, misplaced faith in the Fed cannot create new technologies, raise educational standards, improve working practices, or accomplish any of the things that really matter.

Meanwhile, for short-term market prices, the touching faith in the Fed blends nicely with Keynes's view of markets and the beauty contest: for heaven's sake don't waste your time trying to work out what the Fed's moves really mean, or corporate write-downs of subprime debt, or changes in employment numbers: work out what other investors, particularly the hair-trigger hedge funds, will make of it and anticipate them if you can. It's not how we manage money, but it sounds like a whole lot of fun!

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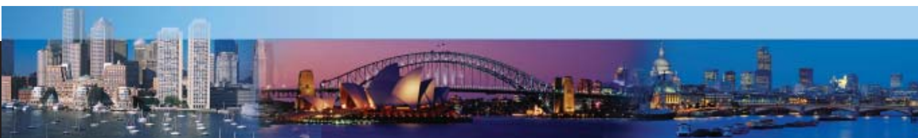
QUARTERLY LETTER



January 2008

The Minsky Meltdown and the Trouble with Quantery

Jeremy Grantham

(Written January 12, 2008. Recent events seem determined to overtake this letter!)

"The periodic triggering of a financial crisis is well nigh certain." (Hyman Minsky, 1977)

"Too many bubbles have been going on too long." (Paul Volcker, January 2008)

I always enjoy the part in the horror movie when they raise your hopes. The last of the dragon scourge has been killed off, for example, and you get a moment's relief. Then the closing shot reveals a large clutch of dragon's eggs hatching. You always want to believe in the reprieves but you know you shouldn't. Similarly, if you believe that the credit crisis is over and the sovereign funds are great vulture investors, you haven't seen enough movies. The current crisis has more than enough dragons' eggs to keep this horror show going for quite a while.

Whatever happens to the rest of the year we can agree it was a remarkable first week. The stock market brontosaurus that had happily ignored the several stings on its tail last year from real estate and structured debt and the sharp bite on its tail in November from collapsing profit margins finally let out a loud 'ouch.' U.S. high quality stocks had fought a losing battle for the first 9 months last year despite the potentially huge help from fixed income spreads widening. They had only closed out a draw for the year against the S&P 500 because of a strong fourth quarter. But in the first week of the New Year, quality stocks leapt into battle. They opened up a 3.5% lead over the S&P (in our Quality Strategy) in the first 5½ days! And our corresponding long/short strategy – long 100% quality/short 100% junk – flashed to a 10% gain for a second or two, in the same tiny time period.

How can the market pull this stunt, where it persistently ignores the obvious and puts a positive spin on rapidly deteriorating fundamentals? "Hitler invades Poland: Huge positive for potato futures." And then suddenly, for no good additional reason they get the point. The easy answer is that we are a strange species. I spent Christmas on the Oaxaca coast of Mexico with my family reading while they surfed. My three books were The Origins of Virtue,[1] Before the Dawn,[2] and The Blind Watchmaker,[3] all of which underline the point that our evolutionary background has hardwired us to be convoluted, complex, and contradictory. What a remarkable idea to treat us like rational machines in a world of normal distributions and linear relationships! In fact we are strange, nonlinear, unpredictable critters.

But there have been few stranger behaviors than that moment in November when it was revealed that U.S. profit margins had collapsed and that 12-month year-over-year earnings that had been running at plus 6% in July were going to be -22% in October, after write-downs. I came excitedly into the office exclaiming that the main prop for the market's gravity-defying run had collapsed. The third of my three near certainties from last year – major weaknesses in U.S. real estate prices, major repricing of risk, and now a serious decline of at least 20% in profit margins – had finally materialized. We will only have perhaps a few hours or at most a day or two to do the last of our short selling and repositioning or so I went on. Yes,

1 Ridley, Matt. The Origins of Virtue: Human Instincts and the Evolution of Cooperation.
2 Wade, Nicholas. Before the Dawn: Recovering the Lost History of Our Ancestors.
3 Dawkins, Richard. The Blind Watchmaker: Why the Evidence of Evolution Reveals a Universe Without Design.

sure! A full month after the F.T. first estimated third quarter earnings, when I went off to Mexico for Christmas, the market was unchanged. As remarkable a Wyle E. Coyote month as I ever expect to see. Confronted with this kind of irrational behavior, only academics prepared to ignore the facts in defense of a theory could support the silly idea of market efficiency. And as for the Capital Asset Pricing Model (CAPM)! There must be as much wishful thinking and ignoring of facts in these two ideas as the U.S. market demonstrated in the second half of last year! Just think of this: even with the subprime meltdown, a fully-fledged credit crisis, and rapid deterioration of almost all fundamentals, the NASDAQ peaked in October, not in June, July, or earlier! It is really hard to see the market as an efficient discounting mechanism.

Now by the way, we can look back at the last year and marvel at all the egg on various important faces. I would like to award three prizes for odd prognostications that I will name in honor of Mr. Greenspan and all his odd prognostications (bubbles cannot be recognized until they pop, highly priced tech stocks in 2000 reflected strong potential profit growth, only a little froth in the real estate market, etc.). My first Greenspan prize goes to Chuck Prince for enthusiastically continuing to 'dance' the expanding credit polka into the summer; a most unfortunately timed demonstration of chutzpah. The second Greenspan prize – for "incomprehensible misreading of obvious data by an apparently well-informed source" – goes appropriately enough to Ben Bernanke for his late 2006 comment that, "U.S. housing prices merely reflect a strong U.S. economy." In humble third place I have to put Hank Paulson for his view in the Spring that the subprime troubles were "contained." My 'Clever Dick' retort in June's letter was, "We have to wonder if the container, in this case, will turn out to be Pandora's." Talk about unfortunately accurate images! Since then, an increasing number of shadowy, half-understood ills continue to fly out into the world!

The Minsky Meltdown

About 2 years ago I was introduced to Hyman Minsky's argument on the development of credit bubbles. Remarkably, 'stability is unstable' really captures his point. Investors, when confronted with an apparent reduction in risk, will seek to return to their normal or desired risk by leveraging up. This attitude becomes contagious and re-enforcing – risk is ignored and debt levels soar until at the peak capital gains are needed to merely pay the carrying costs. Then something, it doesn't really matter what, goes wrong; the risk in the environment is seen to return to more normal levels. Many players are caught with risk levels far above their desired level and are forced to cut back on leverage and risk in general, which puts pressures on the prices of what they own and so on. It has a simple and powerful logic. Well, the Minsky Meltdown has clearly arrived, and one shoe after another of the market centipede drops onto the floor, and we are waiting for many more. This is the most important U.S. financial crisis since World War II: it is of course far more global than previous crises, with tentacles reaching everywhere, and it coincides with broad overpricing of assets.

This crisis is likely to make the S&L crisis look 'contained.' In the end, total financial write-downs this time are likely to be two to three times the S&L crisis, as a share of GDP. (See Ben Inker's recent white paper, "Our Financial House of Cards" at www.gmo.com.) It seems likely to be the defining market event for many years (unless we're incredibly unlucky and something else truly horrible and unexpected occurs). Be particularly alert to potential problems beyond subprime mortgages. If U.S. house prices decline by over 20%, which we believe is likely, and if there is a recession, which we believe is very possible, then there will be painful defaults in regular mortgages. Commercial real estate debt is likely to have some write-downs as office estate prices decline and borrowing terms become more onerous. Write-downs and defaults in other debt will also be plentiful. Private equity deals in particular will probably turn out very badly indeed. In my opinion it is the most underappreciated risk of all and is likely to be the center of another phase of the crisis. The longer-term problem is that all debt standards fell so that losses will accumulate right across the entire credit system. In the end perhaps only government intervention and public funds will stabilize the system. Stocks meanwhile, relative bystanders last year, are overpriced, particularly at the risky end of the spectrum. And profit margins are spectacularly above average precisely for companies at the riskier end of the spectrum. Margins are declining now and the markets are finally getting the point that all risk is dangerous. Markets are well into a massive repricing of both risk and asset prices but it has far to go outside the original subprime area, where repricing may have already run its course. We had reached the lowest risk premium, by far, ever recorded and will no doubt end up at more normal levels, perhaps via above average risk premiums.

This of course will be a painful process and will be a considerable drag on economic activity. Unfortunately, it is likely to take several years. To house clean completely by the end of 2010 would be a reasonable target. (This would mean that 10 years would have elapsed between the highest overvaluation of U.S. equities ever recorded in early 2000 and a likely low of at least a modest discount to fair value in 2010. Ten years from high to low following a great bull market would be quite normal. For reference the highest overvaluation in the previous U.S. equity bubble was 1965 and the following low point of undervaluation was mid 1982, 17 years later. During these 17 years the S&P 500 index lost over one-third in real terms.) By the end of this credit crisis, perhaps better defined as a sloppy-debt-issuing crisis, we will be lucky if the amount of write-downs does not start with a "T."

Recent Predictions

My extreme prejudice has always been that only the relatively rare major events matter. The rest of the time you show up for work, worry about the details, and hold the clients' hands. Well, 2007 was a truly exceptional year. First, housing made its largest decline either ever or for a long time. We had been harping on the extreme overpricing of U.S. housing for some time. More recently the January letter last year started with a snide paragraph heading: "Safe as a House in 2007." It came with our familiar chart showing that U.S. house prices were in a genuine bubble, a 2-sigma 40-year event, that would need either a 30% price decline or 6 years of flat prices allowing for incomes to catch up or some other combination. (Now it is a 25% decline or 5 flat years.) The second giant problem was the bursting of the bubble of sloppy credit and sloppy risk-taking. On this issue we had already been urging clients to reduce risk for 2½ years (yes I know early once again, but at least with increasing fervor). In April we described the situation as the first truly global bubble and argued, as always, that "All bubbles break." At the end of June we described the unraveling that had started in subprime way back in October 2006 as "watching a slow motion train wreck."

In distant third place as a significant event of 2007, but still important, was the sustained fundamental and stock market strength of emerging markets. Unusually for us after an extreme move such as emerging had, we continued to recommend overweighting. Emerging, we argued, would bury the S&P in a neutral or strong U.S. equity market and might well match it or better in a drawn out decline.

So for once we nailed the three major issues in a year and you might well think, therefore, that we had a brilliant year. I regret to say that this was not the case. In general we had a poor year (analyzed later). The investment business is just not that simple, at least it isn't at GMO. At GMO we have distinct divisions, with considerable investment independence. Each has its own traditional investment disciplines or quantitative disciplines or both. Our big picture thinking usually nudges these disciplines and occasionally substantially tilts them, particularly in equity investing, which is the background of most of us. But plenty of our success or failure in any given year not surprisingly depends on the 'small picture,' the effectiveness of both the particular tools of that division and of their individual blocking and tackling. Good investing is ill-suited to committee decisions, but it does raise the issue of how much top-down judgment should intrude into daily investing principles. This thought naturally leads to the next topic...

The Limitations of Investment Discipline and The Trouble with Quantery

> *"Economics… has not truly come to grips with the main difficulty, which is the inordinate practical importance of a few extreme events."*
> (Benoit Mandelbrot)

This was not a good year for quants as a group and an even worse year for hard quants with inflexible models. Ten years ago the investment world was dominated by traditional stock pickers but that is certainly no longer the case. Now multiples of the quant assets and talent of those years (perhaps 20 or 30 times?) fight for an edge. And it has never been easy to find quantitative edges. There are simply not that many. And so quant investors get crowded into this handful of variables with predictable results: outperformance gets tougher. Many of the quants who are structured as hedge funds have responded to these increased difficulties in outperforming by increasing their level of leverage or risk. As long as the risk premiums were narrowing, which they did from September 2002 until July of last year, this was an easy way to make money, but it was not real alpha or real outperformance. It was simply a risk factor. And this painful truth was clearly revealed as risk premiums began to widen into the summer. Since quants measure risk more precisely and continuously than ordinary mortals, they become the

frontline troops in a Minsky Meltdown: volatility rises, their 'risk' – typically entirely (although inappropriately) based on volatility – is seen by them as rising above their target, and they immediately reduce it. Unfortunately all their leveraged competitors do the same. This summer reducing leverage meant that they were all selling some of their longs and covering some of their shorts or selling their heroes and buying their dogs. This had the predictable effect of making their performance awful and making their models appear to malfunction, which in turn caused some further increase in perceived risk. By the end of the summer quants were realizing that many others were playing with the rather small set of similar inputs. Many responded by scratching their heads and renewing their search for the Holy Grail – to be different.

Having started my career with 20 years' experience as a traditional stock picker, I have always felt a creative tension towards quantery. On one hand I feel that the 'very best' stock pickers/portfolio managers can beat the great majority of quant managers. On the other hand, I know the list of the very best stock pickers is extremely short. The great failing of typical hands-on analysis is pretty well understood and was reflected neatly by the fact that it was some large traditional investors who famously owned the great positions in Enron. Even if you believed Enron's own lying inputs for earnings and so on, their stock was still close to five times the average value of an already overpriced market on our particular value model (probably all quant models) and never made it into our value stream. Many traditional investors in contrast not only believed the imaginary data like most gullible quant models did, but also believed much of the hype for the future, none of which was believed by any quant model. Quant models never fall in love. They do not listen to brilliant charismatic company management. They do not have lunch with the CEO and, critically, do not have to protect their relationships with company insiders, which relationships are deemed by many to be so critical to the analyst doing a great job. Furthermore quant models get at least a measure of protection against the typical overconfidence that behavioralists tell us typifies our species, not least the investment branch of it. Quant models tend to have a graceful sliding scale of preferred companies, not a handful of favorites that the analysts or managers are so confident about that they own too few positions that are therefore too large and indigestible. Traditional stock pickers also tend to overtrade: what is a couple of percentage points of transaction costs when your stock is going to win by 20%? Because of these advantages, amongst others quants tend to have better diversification, more careful risk control, and lower transaction costs. Given similar talent, input, and energy, the quants should win as they usually have done for the last 30 years.

But now for the other side of the creative tension. Over the years I have also been impressed by the disadvantages of quant. First the computer output with all its parameters sits there in black and white. It is to the regular portfolio as the written word is to the spoken word: it is simply more confidence inspiring. As are the qualifications of your basic quant team – PhDs in particle physics compared to humble MBAs on the traditional buy side. How can they not win? Quants may not be overconfident in a single stock like a typical analyst; they are simply overconfident in their entire quant edifice. This boils down to an overconfidence in the power and elegance of mathematics. I have said for 20 years that in front of every quant's office there should be a sign that reads, "There are no points for elegance!" Quants share this "physics envy" with econometricians and the CAPM types. Even more dangerously, quant investment models tend to share with modern finance theory a leaning to normal distributions and normal optimizing. They need many data points to feel comfortable and this is the rub: the models cannot deal with rare outliers any more than CAPM can with its over reliance on volatility as a sole measure of risk, especially since its volatility is derived from a short historical series that can never effectively represent the future.

When something clearly new and original is happening there is little alternative to using your brains and more or less ignoring the regular quant rules. If your model has never seen a similar event, how on earth can you expect it to do the right thing? Optimal investing seems likely to be a mix of a few important judgmental overrides interspersed with long periods of cold, disciplined blocking and tackling. But who is to do this? Overriders like to 'use their brains' all the time, even on small issues, which can be a weakness. But quants like to shrug off outliers. The quants argue that overriding their models to deal with outliers sets a bad precedent and that in the long run they would be better off sticking with their disciplines. After all, they've been optimized over 40 years of data and surely something like this … say the current banking crisis … has occurred before? But sometimes it hasn't, and some of those times it's very, very important.

So how do you marry rare but important overrides with steady discipline? Obviously with extreme difficulty to say the least. It has been attempted quite often and almost always has proved to be totally or partly unsuccessful. Very often it has been a marketing veneer. In the old days it was a token quant in an 'active' shop more or less completely ignored by the portfolio managers, but with the 'product' presented as a polished hybrid to the clients. Now sometimes we even see the reverse, a token stock picker, theoretically designed to keep the quants in touch with the real world, but actually also aimed more at consultants and clients. To have a chance of success you must have complete buy-in to the principles of a hybrid approach from top to bottom. Simply stated, you have to aim to have the best data you can get at all times. Approximately right is much better than precisely wrong. <u>Everyone must also believe that important outlier events can wash away disciplined models that may have worked like clockwork for years</u>. And they must be prepared to act. Reluctance to act in this case is of course extreme because the <u>timing</u> can never be certain and the crisis may fizzle out with little problem. ("Yes, but you could have said that last year and it would have cost us.") What worse crime is there than overriding a perfectly good model that turns out to win in the end? Far better it may seem to stay with the good ship 'Discipline' and hope that the iceberg you bounced off only grazed you. The captain who slows down loses the chance for the speed record and irritates both his boss and his passengers. "But I didn't sink the ship," will seem like a pretty lame excuse for being late as avoided disaster is pretty hard to prove. (See N.N. Taleb's *Black Swans*.)

Some good news for potential overriders is that not all the madness of crowds or the grey and black swans arrive totally unannounced. The madness of the U.S. stock market in 1929 and 2000 and that of Japan in the late 1980s all had wonderfully suggestive exhibits with their Himalayan peaks. Even 1987, the quintessential black swan, was preceded by a well known vulnerability to badly implemented portfolio insurance that offered the potential for an accelerating self-reinforcing decline. Dick Mayo and I did comment on that possibility and considered the prospect of an "unprecedented 200-point decline in a day." (That would not actually have been unprecedented given 1929 and, of course, in the event it was over 500 points in the day. Not all our guesses were so prescient, but it was a good guess.) LTCM could have been seen as the classic case of picking up nickels in front of the steamroller and therefore just waiting for an unexpected acceleration of the steamroller. To partially prove this point, the risks LTCM was taking – particularly the risks of the totally unexpected kind – were pointed out well in advance by Seth Klarman of Baupost. The unexpected risk in that case was that when blood could be smelled in the water the sharks – both competitors and 'agents' – would position against LTCM's positions. LTCM had almost exclusively made arbitrage bets that were guaranteed to win but with huge leverage they could be squeezed into covering. Who would ever have thought that those leading investment banks that had done so much profitable business with LTCM and had indeed copied many of their sensible trades, would savagely turn on … just kidding of course.

Hybrid Quantery (Non GMO clients can skip to the next subheading)

GMO has always been a blend of quant and judgment. The firm was started with a single U.S. stock picking strategy run by Dick Mayo and me. It had many quant disciplines by the standards of those days, but we always tried to do what we thought was best and were never prisoners of any quant plans. There was always plenty of trial and error. (For the record, we won the first 9 years in a row against the S&P by an average of 8% a year.) Our international equity division started by Eyk Van Otterloo 28 years ago was then and still is a stock picking effort on a strong quantitative base. Our emerging equity strategy has had a judgmental component in its country picking weighting – the source of most of its outperformance – since the beginning, but the judgmental component has a numerical weighting in a quant system. It is basically "everything else that is not already in the quant model." In the last 5 years they have added first one then a second and third stock picker whose job is just to use their brains, look for opportunities, and critique the quant output.

But perhaps the most important demonstration of our difference from mechanistic quants was what we called our 'once-in-a-lifetime-override' in Japan. Even earlier than normal, three years before the peak in Japan, as it hit 45x earnings never having been above 25x before, we went to a <u>zero weight</u>. This zero weight was in EAFE accounts that had a 65% weighting in Japan at the peak. For a quantitative strategy that's what I call an override! (And for the record it also went to zero, independently, in our active international division.) In the end after 6

years of zero weight this bet both made our clients a lot of money and lowered their risk. But that's not the point. The point is that Japan was a gigantic unmissable bubble that in our opinion meant that owning any Japan was borderline fiduciary irresponsibility. In complete contrast, any quant optimizer focusing on benchmark deviations would have treated such an extreme bet as completely out of the question – as too 'risky' – even though in real life it of course reduced risk. As usual, the main risk to most professionals in an uncertain world was the career and business risk of going short a rapidly rising market too soon.

In second place, a much more recent override concerned our relatively new U.S. Quality Strategy. Any quant model I have heard of would have considered Citicorp on January 1st last year to be a high quality company. Quant models after all only look back 7 years or 10 or 12. What those models do not know and cannot know is that at long and unpredictable intervals, say between 15 and 25 years, banks have a good old fashioned crisis for the old Minsky reason: they respond to good and stable times by assuming risk has diminished and they begin to push debt and become sloppier on their standards. Similar occasional wipe-outs do not occur in, say, the drug and soft drinks industries. And humans know this. So we deemed that no bank could be considered admissible to the U.S. Quality Strategy. But for quant models this is the problem with dealing with the banking industry: if you extend the time period of the model to, say, 25 years you can pick up a lot more of the banking risk. In doing so, however, you risk swamping all the rest of the industries with old-fashioned data, which in a changing world will usually cost the total model more in the performance of all the rest of the universe than you gain in banking! A perfect example of the tension between more specificity versus more data mining. You see the dilemma. In the end, like any judgmental analyst, you must make a decision and take the risk of failure. But, unlike a traditional analyst, a hybrid quant of the type I recommend (and somewhat of the type we have become) has one enormous advantage. A traditional manager is making these one-off judgments all the time on a great variety of issues. Sometimes the issues are extreme but usually they are more modest month-to-month decisions. The hybrid quant would ideally be making these judgmental overrides only when extreme outliers are involved. With extreme outliers, like the Japan bubble, and the recent credit crisis, our experience has been that the success rate is likely to be very much higher than with more mundane decisions.

This concentration on the extreme outliers for the use of judgment combined with as much quantitative discipline as possible is precisely where we try to operate in our $40 billion asset allocation division where we have been gaining experience for 16 years. We have tried to focus our style in this area precisely at the intersection of routine quant discipline and very occasional human judgment at the extreme. It has not freed us, apparently, from extreme timing problems (an average of just over 2 years too early, although there are recent hints of improvement) but in general it has worked well and these products have delivered from 1½ to twice the Sharpe Ratio of their benchmarks.

Now the question is can we introduce more flexibility and judgment into the quant disciplines of U.S. and EAFE equities and perhaps other investment areas and improve them rather than upsetting the applecart? It is obvious to everyone involved that the process should be evolutionary: small changes, carefully and slowly integrated. But in the end, our target is clear: in 10 years, every bit of data should be believed in as absolutely the best input that we could possibly produce, not just reflecting rare generic overrides of the credit crisis variety, but also unique factors of a single company that cannot be known to a model based purely on historical data.

For example, the input of our model, and all other quant models I've heard of, sacrifices some accuracy on individual stock entries in the interest of a single, simple, less data mined model. That this quant virtue of simplicity is also a worthwhile objective, worth some compromises, is what makes this whole issue of quant vs. quality so complex and interesting. Consider the example of Philip Morris 10 years ago. You know it is a high quality company on the historical data, but you also know it has an unquantifiable off balance sheet potential cancer liability that could be very large indeed. And you know the model doesn't know. Only two things are certain. The first is that to debit the value of the firm by $1 is more accurate than making no adjustment. The second is that you will never know what the perfect debit is. It is irretrievably a matter of judgment.

Summary

These are the hybrid quant objectives: first, the unique features of individual firms and individual industries

should not be ignored in the interest of having a simple, uniform model, admirable as that objective is when other things are equal. This process must necessarily be a torturous judgmental struggle with data mining. The good old days of the domination of the first generation quant models, where you simply show up with three concepts – value, momentum, and discipline – are over. But, even more critically and, perhaps like career and business risk, out at the limits of arbitrage, is this need for judgmental overrides on rare macro events. Quants like to show off their discipline by marching off the cliff in rows (it is said, I hope apocryphally, that Shaka, the great Zulu Chief, marched an impi, or regiment, off a cliff to impress European observers and I hope it did). Well, in real life it would be nice to stop at the edge and say "I don't like the look of this, perhaps my model missed something." The extremely difficult objective is to maintain the advantages of quant discipline 95% or so of the time and hand over to a human being when you reach the edge of the cliff. You can imagine the problems in making this kind of phase change. But only by slowly overcoming this problem and integrating this hybrid approach into the DNA of the investment process can one aspire to being very effective investors in the long run.

GMO's Performance in 2007*

GMO's equity strategies hit several headwinds in 2007. First, we are predominantly value managers and 'value' by early 2007 had overrun its normal range, not surprisingly after 7 consecutive strong years. It did this on a global basis and 'growth' and high price/book stocks dually outperformed. Second, there were the difficult shivers that ran through many quant portfolios in the summer caused by the rise in volatility and the overcrowded quant turf already reported on. This affected us, albeit less than most. Third, 'momentum' – a perennial quant tool – worked at the stock price level a little in some variants and failed in others, but it remained far below its average effectiveness of the 30 years prior to the 2000 peak. Fourth, at GMO we measured both 'growth' and 'quality' as underpriced, indeed at the bottom of their long-term ranges, almost exactly as they had been in 1989. Back then we played the 'growth' angle and started our first growth strategy. In that event both growth and quality won by an almost identical 15% to 20% over the market. This time, despite their having the same underpricing, we were more familiar with quality and knew that in the long run, remarkably, quality did not underperform as did growth (by almost 2.5% a year). We also knew that quality really outperforms when the economy gets weak and economic weakness was what we feared. But this time Murphy decided that growth (and high volatility) would outperform handsomely and quality in contrast would barely scrape home by 0.5% with 4.5% of that dependent on avoiding all banks! (Although in recent weeks this quality vs. growth equation has changed powerfully in favor of quality.)

Our foreign and global equity strategies, both active and quant, struggled against these winds and almost held the benchmarks. Our Emerging Markets Strategy underperformed by 3% but at least delivered 37%. The performance of most of our international money was reasonably well placed against competitors, many of whom were experiencing similar problems. Almost all our strategies would have done better avoiding more financials than their disciplines, both traditional and quant, and their risk control mechanisms urged them to own. This was a pity, but still not bad overall.

The U.S. equity strategies, all quantitative, had a very tough year, with only the Quality Strategy surviving as described. Financial holdings in other U.S. quant strategies certainly increased the pain. Only in the fourth quarter did the U.S. strategies start to outperform, and this outperformance accelerated into January, so that as I write the 8th of January, the Quality Strategy is ahead of the S&P by a very encouraging 3.5% and our flagship U.S. Core Strategy by 1.5%. This is about half of last year's U.S. Core underperformance and, we hope, a down payment.

In GMO's fixed income division, Emerging Market Debt had yet another year of outperformance at about +3% against the benchmark. But apart from that we had a truly dreadful year. The models failed in various components and were unfortunately followed off the cliff with considerable discipline. It was a stinging setback from which we hope to learn a lot.

In our Asset Allocation portfolios, allocation itself had its eighth consecutive year of outperformance, but unfortunately the implementation of the underlying funds detracted. Allocation added 1.9% in our flagship Global Balanced strategy, for example, and implementation of the underlying funds subtracted 2.6%. In its 16-year history the underlying funds have added about 1% a year and

* The performance for our strategies is available at www.gmo.com or is contained in the accompanying Quarterly Update.

materially contributed to risk reduction as well. But not this year. The Asset Allocation group sidestepped some of the pain from the credit crisis, but in general we moved too slowly and initially too little. This reflected our lack of technical expertise in fixed income – a weakness we are determined to remedy quickly.

Collectively it was an odd and frustrating year. It might or even should have been an excellent year given some of our insights on impending problems. Yet it wasn't. We are focusing on this issue and expect to capitalize on our ideas better next time. In the meantime, thank you for your patience.

Recommendations for 2008

As for the last 2 years, we feel strongly that any unnecessary risk should be avoided like the plague. Therefore, be very slow to move back into financials. As was the case with Japan's problems in a very severe credit crisis, the issue of which bank survives and which doesn't is more about politics than economic solvency. Many financial companies will approach technical insolvency before this crisis plays out and before they desperately raise new capital. This is not another shot across the bow as March 2007 and April 2006 were; this is the real McCoy. Let the other guys be the heroes.

So what to buy? I'm afraid cash is the ugly answer that no one ever wants to hear. For the first time in many bear markets traditional value stocks are unlikely to help much and may even hurt as they entered the decline badly overpriced. And once again if you literally cannot resist buying some stocks, we recommend a mix of the highest quality U.S. blue chips and emerging markets. The bigger the fundamental problems the more quality stocks are likely to outperform. The more the economy manages to muddle through the better emerging is likely to do. If you can do it, hedging out 100% of these positions with, say, a short on the Russell 2000 or equivalent would be much, much safer and probably more profitable. (This hedge certainly worked extremely well last year and in recent weeks to January 12th.)

Forecasting 2008: Some Presidential and January Rule Teasers

For our first institutional client's portfolio 29 years ago we used the January Rule and the Presidential Cycle as two of its three inputs, in an attempt to predict the S&P on a year by year basis. These two rules had worked well for 50 years before we used them and they have certainly worked well since (although that original client and our simple model only lasted about 2 years). A down January and even just a down first 5 days both materially increase the probability of a down year. On our data, which starts in 1930, we just had the worst 5 days ever! As historians we love to see new records set and this one is both impressive and bearish.

On the presidential front, as members of the Dataminers Guild we have to report that a Year 4 (October 1 to October 1) that has a lame duck President has been followed by years that were on average 11% below normal. For next year, Year 1 of the cycle, returns have averaged 3.5% below normal. But the Guild reports that when the party in power changes the underperformance rises to 8%. For 2010, the next Year 2 and the year I have long believed is a likely low point for the market, the typical underperformance is 5%. However for each of the 3 years if you are in the worst half by the value of the total market, as we are now, then you knock off 4% a year. So to adjust for 2 or 3 years of overpricing (depending on how quickly the market declines) let's knock off another 8% in total. The total 3 years' decline if we did that would put the market close to its long run trend, which by then will be 1100 on the S&P. The 1100 trend number is arrived at by using a normal profit margin on a normal trailing P/E ratio. Since this obviously has nothing much to do with Presidential cycles, we like the coincidence. But as we said, just a teaser.

Disclaimer: The views expressed are the views of Jeremy Grantham through the period ending January 22, 2008, and are subject to change at any time based on market and other conditions. This is not an offer or solicitation for the purchase or sale of any security and should not be construed as such. References to specific securities and issuers are for illustrative purposes only and are not intended to be, and should not be interpreted as, recommendations to purchase or sell such securities.

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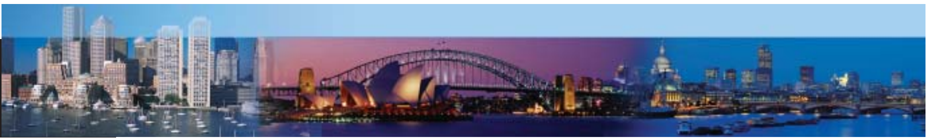
QUARTERLY LETTER



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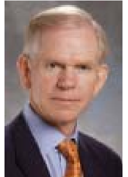


Immoral Hazard

Jeremy Grantham

Greenspan, Bernanke, and Volcker: A Study in Contrasts

It's not that the former Fed boss Greenspan was incompetent that is remarkable. Incompetence is common enough after all, even in important jobs. What's remarkable is that so many people don't seem, even now, to get it. Do people just believe high-quality self-justifying blarney? Or is it that they apparently want to believe that critical jobs in a great country attract great talent by divine right. Sometimes, of course, they do, but sometimes the most important jobs – even that of a presidency or a Fed boss – end up with mediocrities. Let us pause here to regret the absence of Mr. Volcker and wonder what a parallel Volcker universe would have been like. Just as we can wonder how much a few votes in Florida or a vote in the Supreme Court would have changed our world from what it is today.

Paul Volcker inherited about as big a mess as we have today. He worked out what he had to do and did it with unusual lack of concern about what Congress thought of the necessary pain involved and the number of enemies he might make. He paid the price for forthright behavior by being replaced, despite a record for correct and tough behavior that makes for the most invidious comparison today. When Volcker was replaced, by the way, he did not moan and groan but like an old soldier quietly disappeared. There were no high-profile announcements about the economy or any $300,000-an-evening appearances paid for by financial firms.

Greenspan came onto my radar screen in the late sixties as a seller of economic and financial advice to the investment industry. To be brutally honest, he was considered run of the mill by anyone I knew then or have met later who knew his service then. His high point in most memories, certainly mine, was a famous call in January 1973 that, "it is rare that you can be as unqualifiedly bullish as you now can," a few days before a market decline of over 60% in real terms, second only to the Great Crash in a century, accompanied also by a bitter recession. This was one of the first of a long line of terrible prognostications for which he has remarkably not been remembered, except by a handful of us amateur historians. Then in the mid seventies he disappeared into some government job, of which I was barely aware, until he re-emerged with a bang in 1987, without as far as I can find having done anything documentably very well. And we can agree that at least occasionally people can indeed prove their effectiveness beyond doubt. This was obviously not the first or last time such appointments were made where a job crying for proof of character and achievement under pressure is awarded more for what you might call political skills.

This has indeed not been our finest hour in the U.S. Times are bad enough, in fact, to make us mourn the American leadership skills of WWII and the generosity and foresight of the Marshall Plan. We can all wonder at the incredible vision, drive, organizational skill, and willingness to sacrifice resources that were required by the Manhattan Project and compare it to the rudderless or even deliberate avoidance of leadership of the greatest issues today: climate change and energy security. We can only wonder what a Manhattan Project aimed at alternative energy might have accomplished by now, had it been started 15 years ago. What we have had in lieu of vision, leadership, and backbone is a series of easy paths taken.

At the time that Paul Volcker broke the back of inflation in the early 1980s, the recognition that risk and leverage had consequences was baked into the pie: if you were to take excessive risk you had better win the bet. If you missed the target, the expected result would be more or less total failure, and that seemed then and for decades earlier a reasonable law of nature. Now in contrast we get ready to celebrate the 20th anniversary of the era of the Great Moral Hazard. Slowly at first, but with steadily growing traction, the idea was planted that asset bubbles would be tolerated, but consequences of their bursting would be moderated or avoided entirely by increasingly vigorous

actions sometimes, like now, bordering on the hysterical. This is to say that if all went well, enormous profits could be made by speculators – largely the great financial firms, including some formerly conservative blue chip banks – by riding and leveraging the bubbles. If all went badly, then the costs would be passed on to others.

The idea that occasional economic setbacks might benefit the system in the long run was one of the early ideas to disappear. Yet if you prop up weak sisters who would otherwise fail and in failing present their more efficient competitors with extra growth, you must surely weaken the system. Desperation pricing from weak firms who simply should not exist can weaken the profitability of a whole industry, as it has for the airlines. The average efficiency of most industries is reduced with at least some effects on our global competitiveness. With a slightly lower average return on equity, the ability to reinvest drops so that, in this world of moral hazard where recessions are few and mild, GDP growth is a little less than it might have been.

What's worse, those who took on unjustified risk live to prosper and reinforce the existing agency problems. These problems were big enough already: stock options, for example, that encouraged risks by rewarding upside success and not punishing failure. If you win, you take some of the shareholders' company, and if you lose, you lose nothing. In fact, if you lose, you rewrite your options at depressed or crisis prices, just as some financial companies are doing as we write. Similarly some hedge funds and private equity firms can take a level of leverage that might guarantee failure in the long run but with asymmetrical returns they pocket gains and sidestep the worst impacts of a potential terminal loss. To maintain a healthy respect for risk taking, it is surely necessary to punish egregious over-reaching or spectacular misjudgment with the spectacular penalties they deserve and used to get but get no longer. Bear Stearns and others leveraged 20, 30, and 40 times. They simply took too much risk and were too illiquid. They were disasters waiting to happen when a bump in the road was hit. Bear Stearns, ironically, was famous for its risk aversion in the good old days. Their recent excesses were typical of the Ponzi phase, the end of Minsky's speculative cycle where everyone is seduced into dancing to the bitter end. And all managements had a great financial incentive – their take is about half of total profits – to take excessive risks. Such extreme leverage may be fine if you get away with it, but of course failure should have very painful consequences or the leverage will be 50 times next time. But this time the Fed volunteered to transfer the pain from ineffably rich bankers to the taxpayers. No wonder Volcker could hardly control his disgust last week: "The Federal Reserve has judged it necessary to take actions that extend to the very edge of its lawful and implied powers [spit], transcending in the process certain long embedded Central Banking principles and practices." (Hawk and spit!)

The defense of bailouts is that the alternative is ugly. But surely the penalties for excessive risk taking, issuing flaky paper, passing it on – often in its entirety – to others, and not even understanding the consequences of the low grade paper that you yourself issue should be ugly. "Yes, of course, we would like to punish the excessive risk takers" goes the line, but we can't do it without hurting the innocent economy. But we will never know what can be absorbed if the penalties are always removed by a bailout. In more traditional times, say, from 1945 to 1985, the economy could absorb substantial punishment from recessions <u>and still grow faster than it has done in the last 10 years</u>. So in a crisis à la Bear Stearns we now transfer pain from risk takers to innocent tax payers. Worse, even the <u>routine</u> treatment for the bubble breaking disease does the same. By raising the slope of the yield curve, the Fed deliberately benefits its bankers and hedge funds that borrow short and invest long and punishes pensioners and others who are trying to make a safe but still reasonable return at the short end.

Yes, this is a real credit crisis, substantially the worst since the Depression, so it now invites unusual responses, and what we have is a series of harried and hasty responses, perhaps even panicky, but we can at least understand the urgency. The real incompetence here goes back over 20 years: the refusal to deal with investment bubbles as they form, combined with willingness, even eagerness, to rush to the rescue as they break. It's almost as if neither Greenspan nor Bernanke allows himself to see the bubbles. Greenspan was always conflicted and contradictory about whether bubbles could even exist or not. Bernanke, in contrast, has more of the typical academic's certainty that the established belief in market efficiency is correct and therefore investment bubbles must be merely the product of investors' overheated imaginations. It would be convenient to have such an important role as Fed Chairman filled by someone who actually deals with the real world, messy or not, that is given to inconvenient bursts of euphoria and riddled by considerations of career and business risk, which modify behavior far away from economic efficiency.

Back in the real world, major asset bubbles are easy to see. They are nearly impossible to miss, in fact. But we travel in a world with a systemic bias to optimism that typically chooses to avoid the topic of the impending bursting of investment bubbles. Collectively this is done for career or business reasons. As discussed many times in the investment business, pessimism or realism in the face of probable trouble is just plain bad for business and bad for careers. What I am only slowly realizing, though, is how similar the career risk appears to be for the Fed. It doesn't want to move against bubbles because Congress and business do not like it and show their dislike in unmistakable terms. Even Fed chairmen get bullied and have their faces slapped if they stick to their guns, which will, not surprisingly, be rare since everyone values his career or does not want to be replaced à la Volcker. So, be as optimistic as possible, be nice to everyone, bail everyone out, and hope for the best. If all goes well after all, you will have a lot of grateful bailees who will happily hire you for $300,000 a pop. By the way, that such payments to prior Fed officials are in themselves a moral hazard and an obvious conflict of interest that could moderate their prior behavior, is apparently too crude an accusation even to have surfaced yet. Well it should surface. Selling services to financial interests whose fates have been in your hands should simply not be tolerated as acceptable or ethical behavior by a former Fed Chairman.

Time Out for Some More on the Presidential Cycle

Over the last few years we have added quarterly letter by quarterly letter to what we have learned or suspect about the Presidential Cycle in the stock market. We found out that changes in employment in years three and four appear to have the most effect on votes, which would suggest big problems for the Republicans this time. We found that it is hard to find factors in the financial system such as money supply or interest rate changes that are big enough to cause the observed market effect. We concluded that it is likely that it is the whole financial package topped off and dominated by moral hazard that is the key factor: the unspoken promise is that if you speculate in years three and four and things go badly you are likely to receive help because the Administration and its typically co-operative Fed hate things to go badly wrong as the election nears. (Don't judge Fed co-operation by what is said, by the way, but by the strength of the market effect.) In contrast, in years one or two, when financial conditions are typically tightened, if you speculate and lose you will typically be left on your own to rue the errors of your ways. We found that the year three stimulus effect since 1932 is so profound (plus 22% real return for the S&P 500) with no year worse than -2%, that it could not be luck at the 1 in 10,000 level. Years one and two, in remarkable contrast, return an average of less than 1% real. Well to update the story, it turns out that up to 1970 the market followed the general battle plan of two tough first years and two friendly second years almost three-quarters of the time. Sadly, nothing in markets is completely dependable. The other weekend, though, I was staring at the output for the 1970 through 2007 period and I saw that it played ball 28 times and "failed" 10 times. Not too bad. And then I saw it. Five of the 10 "failures" came during one man's 8-year tenure, someone apparently who just refused to play the game and the only Fed boss since 1932 to have a failing grade. Of course there is no prize for guessing who the culprit was: Paul Volcker, of course! He so obviously had no interest in playing ball with the administration on re-election stimulus that replacing him must have been appealing. But what of the other five "failures?" Two came in 1997 and 1998, hard on the heels of Greenspan's vision that the market might be showing "irrational exuberance" late in 1996, and with his face still stinging from a few Senatorial slaps. Encouraged to be a perma-bull, he critically forgot to show a little constraint and dampen the market's animal spirits a little in the first two years of the cycle to buy some space for later stimulus. Quite the reverse, he became, if anything, a tout for the new internet world order of higher productivity, higher profit margins, and higher P/Es. He encouraged two run-away strong years. These were the best back to back years one and two of the Presidential Cycle since the post-war recovery's 1948 and 1949, and only the second since 1932. Come 1999, he was in the critical year three of the election cycle when the Fed almost always stimulates. What was the poor man supposed to do? The problem is that a typical year three does not get the slingshot head start that 1999 had. It accelerated into deep space with the NASDAQ index blowing off by 60% in the last 6 months of 1999.

The trouble with markets is that if you let them get totally out of control, they will likely burst at the most inconvenient of times. That is precisely what happened in 2000, the third of our five "failures." The election year is when above all you want no rocking of the boat, and usually don't have any. It is usually treated with great care, but not this time. With internet stocks selling at large P/Es of unfortunately huge negative earnings and the whole NASDAQ at 65 times earnings, things just

began to pop of their own weight in February and March and nothing that anybody could have done would have been likely to stop it. The S&P blue chips fought a noble rearguard action, peaking in October, but the rot had set in and the year was down with spectacular declines in the internet and tech favorites. It is not that I question Greenspan's willingness to please the administration, which was of course immense, just his effectiveness in doing it. Ironically, by being over-eager to please, he overdid it. In a dead heat election, it is not hard to imagine that Greenspan's miscalculation cost the Democrats the election. Even a fraction of 1% of the voters disgruntled by stock losses pushed into voting against the incumbent party would have been more than enough to change the outcome. If it did move a few votes, shall we say it was not without consequences?

That leaves two more "failures" to account for. Skipping a perfect four for four Presidential Cycles (2001 to 2004), we then arrive at 2005 and 2006, the first two years of the current cycle. Totally undeterred by previous experience, Greenspan over-stimulates years one and two again. So eager to please that, like Ado Annie from *Oklahoma*, he just "cain't say no." But this time it was not just the stock market that was unusually strong. More importantly, the housing market should have met with the Fed's package of constraints in 2005 and 2006. And housing bubbles are both much rarer and more dangerous than stock bubbles for they affect more people. And this time, with a far greater percentage of total housing wealth borrowed (over 50%) and on much less credit-worthy terms, it was very much more dangerous than normal. The quality of mortgages should have been queried. The soundness of the repackaging of mortgages should have been publicly discussed and constrained. Off balance sheet financing by commercial banking should have been discussed and curtailed. All of this is in the Fed's job description, which is more than could be said for touting the new era of the internet back in the late 1990s or the virtues of the new mortgage instruments in the 2000s as Greenspan did. And what did Greenspan do this time? Absolutely nothing except to protest that there was only just a little fizz here and there in the housing market in late 2006. More recently he was quoted on television as saying that "the housing boom will soon simmer down." As Churchill might have said, "Some simmer!" (And by the way, does this mean he can see "booms" but never "bubbles?") His successor, Bernanke, as I never tire of saying, proved what a tough and different successor he would be by saying in late 2006, "The housing market merely reflects a strong U.S. economy." Perhaps it was this promise of continuity that got him hired! (Following the wrong policy might be semi-defensible, but failure to analyze obvious data suggests incompetence or extraordinary faith in efficiency to the point of denial. Take your pick.) But back to the main plot: come 2007 we are back to the stimulate-at-all-cost year three. And let's all agree that as usual that is precisely what happened despite warning bells going off all over that an over-stimulated major asset class was going "hyperbolic" again. Well 2008 could be said to be the year of Santayana: we ignored history and we were condemned to repeat it. The critical election year arrived again as an asset class that had been pushed too far and too fast did its usual, inconvenient thing and started to implode. In all likelihood <u>nothing</u> that has been done would have stopped this housing bubble from deflating fully. It had all gone too far and been left too late. Similarly in 2001 and 2002, the then greatest stimulus package in American history of interest rate cuts and tax cuts could not stop the complete implosion of the internet and the NASDAQ. So in 2000, a Democratic administration had its chances critically hurt and now a Republican administration gets a dose of the same medicine. Well at least these guys are even-handed! It might be an improvement, though, to either learn how to play the re-election stimulus game effectively and safely in the time-honored way or, better yet, to ignore it entirely à la Volcker and run a tight ship.

But it is not just that the Fed of recent years has lost the plot. They apparently don't know it. Greenspan's book and, even more disgraceful, articles in the *Financial Times* (and that's a very high hurdle!), sidestep all blame and admit few errors. His article described housing "as an accident waiting to happen." Actually it's brilliant when you think about it: take a distant, almost academic tone and perhaps people will ignore the facts that: first, you allowed the situation to develop; second, did not apparently see it forming (despite 2½ to 3 standard deviation data for housing that suggested a 1 in 80-year event); and third, obliquely or directly blame others. It really is shameful!

Back to the Point:
It Really Is the Asset Bubbles, Stupid(s)

Long-term economic growth involves labor availability, quality of education, technological change, and capital investment, <u>none</u> of which the Fed has <u>any</u> control over, unless it is in slightly lowering efficiency and growth through an extreme aversion to recessions. The role of

the Fed in influencing this critical factor of growth and hence employment is thus greatly exaggerated. Why indeed should we expect attempts at centralized control – shades of Soviet 5-year plans, as Jim Grant would say – to be effective? Inflation obviously can be strongly influenced by the Fed but, even there, external influences like commodity price surges are in the short term at least totally uncontrollable. More to the point, inflation itself, although undesirable and destabilizing, is not as important a long-term factor as we like to think for there is no easily proven correlation between inflation and economic success. Italy rocketed past England from 1945 to 1985 with much higher inflation, for example.

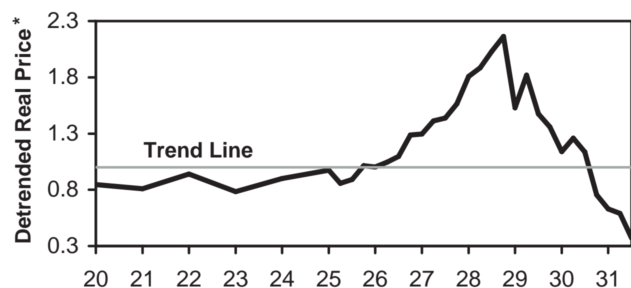
Bubbles bursting in major asset classes are a completely different story. They are extremely dangerous and, ironically, they really are substantially controllable by the Fed. If major asset classes are allowed to bubble away without moving to moderate them, we will all have to deal with the consequences of an excessive number of major asset bubbles breaking. An increasing number of us believe that nothing is a greater threat than this to financial and economic stability. Six years ago as we reeled from round one of this twin bubble show, I wrote in "Feet of Clay" a diatribe against Greenspan's behavior then (attached to this letter on our website); "If everything goes right (as a bubble breaks) there will always be lots of pain. If anything is done wrong there will be even more. It is increasingly impressive and surprising how much we have done wrong this time! The stability of the U.S. economy can only be protected against the very real dangers of (an asset pricing) bubble breaking by the Fed and its Chairman being willing at rare intervals to take some political risk." It's a pity that nothing has changed in six years.

Looking back at the evidence (strong circumstantial evidence is all you can often get in economics), we can see that the two great economic setbacks of the 20th Century – the 1929-34 Depression and the rolling depression in Japan since 1989 – were both preceded by major asset bubbles and speculation. Milton Friedman and his troops can maintain that this suggested relationship between bubbles and troubles is nonsense and that all that was needed was good monetary policy. My response is that this view represents a touching faith in economic and financial theory of which tricky humans make a mockery. I am a Minsky man myself. I believe that occasional financial crises are inevitable and that they are almost always preceded by extreme speculation. Even the other two important U.S. equity bubbles of the 20th Century, by the way – the 1965-72 Nifty Fifty and the 2000 Tech bubble – were both followed by tough and unsettled times. The break of the Nifty Fifty in 1972 led to what is still the worst recession since the Depression and was followed by a miserable decade. In contrast, the unraveling of the 2000 bubble is a tale still being told.

It is very important, perhaps even vital, to our financial and economic well-being that the Fed recognizes a responsibility to move against the formation of major asset class bubbles. Exhibits 1, 2, and 3 review the three most important bubbles. Look at them! They each announced

Exhibit 1

S&P 500: 1920-1932

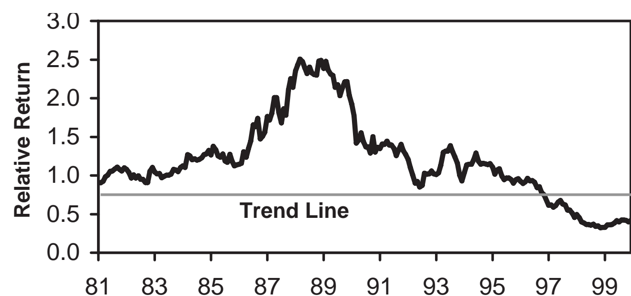


Note: Trend is 2% real price appreciation per year.
** Detrended Real Price is the price index divided by CPI+2%, since the long-term trend increase in the price of the S&P 500 has been on the order of 2% real.*

Source: GMO

Exhibit 2

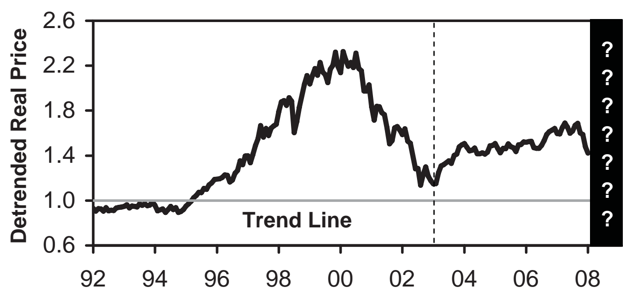
Japan vs. EAFE ex-Japan: 1981-1999



Source: GMO

Exhibit 3

S&P 500: 1992-February 2008



Note: Trend is 2% real price appreciation per year.

Source: GMO As of 2/29/08

their presence unequivocally, breaking well through the two-standard-deviation (40-year events) that we deem to be a reasonable threshold for worrying about bubbles. The Fed's persistent denials of its ability to see the two in America reflects one of two possible causes. One would be a blinkered academic view over-influenced by neat and tidy economic theories aimed at a reasonable world rather than the real one: first, the world of The Efficient Market Hypothesis of French, Fama, Malkiel, and others (but not, of course, Modigliani); and second, the fantasy world described by Andrew Smithers as The Efficient Central Banker Hypothesis where steady increases in money supply à la Friedman are believed to be able to protect us from all evils, including the madness of crowds. This academic faith in efficiency seems to apply more to Bernanke than Greenspan, since Greenspan oscillated between believing in extreme efficiency (who am I to disagree with thousands of informed investors) and talking about "spectacular speculation" and "booms." The second alternative is that moving to contain asset bubbles that the Fed might see appearing is so guaranteed to face broad resistance that it poses career risk as well as lovability issues. This seems to apply more to Greenspan, but both reasons probably apply in some degree to both of them.

The saddest part of this story is of wasted opportunity. Our research into the Presidential Cycle effect in the market has led us to realize that jaw-boning and moral hazard are the largest part of this very strong market effect, not actual changes in money supply or rates. It is fairly clear that had Greenspan moved against the growing bubble in growth stocks in 1997 and 1998, he could have knocked 20% or 30% off the final bubble price and had a correspondingly smaller fallback in the bear market. This in turn would have lowered the need for 3 years of negative rates (2½ of them after the recovery had started!) and thereby moderated the ensuing housing bubble. The tools needed to cool the markets were readily at hand despite protestations to the contrary. The first action needed was a statement delivered with Volcker-like resolve that the Fed intended to discourage bubble pricing, and that where necessary it would increase rates and margin requirements (the latter of which Greenspan suggested in the minutes in 1996 had the power to check equity bubbles). Even more to the point, the Fed should have made it clear that there was to be at least a temporary removal of moral hazard: that anyone hurt in any ensuing crash would receive no help and that in general the punch bowl would be removed until a more normal market returned. For those who ask on the Fed's behalf "precisely at what level is there a bubble?" I would refer them back to the exhibits on page 5, and ask them, for heaven's sake, to use their judgment as they are paid to do, and take some risk of being wrong. The alternative is what we have: declining fiduciary standards and chain-linked bubbles. This is the point at which I wonder why on earth we appoint a particularly academic economist to follow a lightweight commercial economist when an experienced banking background would be more relevant. Would a banker, with even a hint of John Pierpont Morgan in him, have allowed such a sad deterioration of credit and banking standards? But let me end this section with Greenspan's repentance: "I have no regrets on any of the Federal Reserve's policies that we initiated back then."[1] What can you say to that? Chutzpah that even Paul Bremer would have to admire!

What's Been Happening in the Markets?

In fixed income the credit crisis was, not surprisingly, treated as a very serious event with an extreme widening of credit spreads. By March, just before the Bear Stearns "bailout," many credit spreads had flashed through normal and several were so ridiculously wide that in our asset allocation group we were beginning to play the recovery. In a semi freeze-up of credit this is not a surprising outcome. What makes life difficult now, though, is that some credit spreads may be attractive but others still do not reflect likely future problems. In short, you have to be expert in the details and, regrettably, the easy pickings, when broad themes that are sufficient to win on their own are finished.

Equities, though, are the Mr. Hyde to fixed income's Dr. Jekyll. Where poor Dr. Jekyll sees drawn out problems, Mr. Hyde sees opportunities and quick recoveries. The animal spirits of the stock market have been nurtured by strong fundamentals and generous credit globally and fertilized by increasing quantities of moral hazard since 1982. Stocks refuse to worry that this is indeed the end of an era, as we believe, and apparently as much of the fixed income market believes.

Look at the amazing earnings estimates for the S&P 500! On January 1 the first quarter estimate was +12%. It is now -8%. Was the credit crisis still hiding on January 1? Even now the forecast for this year is +15%. Plus 15%! What is going on? With denial skills of this magnitude it is surely not a surprise that subtleties within the equity market such as quality versus junk have been misjudged. But in the end

[1] *Los Angeles Times*, April 2008

reality usually wins out and the outlook for the riskier end of U.S. stocks is ugly indeed. They are vulnerable on three fronts. First, a credit crisis: on corporate accounting there is no vulnerability in the highest quartile of quality and little in the next half. All the vulnerability is concentrated in the bottom quartile by quality. These lower quality companies have used increased leverage and some are very vulnerable, although the largest vulnerability of all is in smaller companies below the S&P 500. Second, profit margins: the profitability of smaller and more marginal companies ebbs and flows relative to the S&P on a multi-year cycle. When you have a long, drawn out economic cycle, particularly one characterized by a sustained series of pleasant surprises like this one, capacity will be tighter and secondary suppliers, the more marginal companies, will especially thrive. (For four consecutive years, global GDP growth was a pleasant surprise every quarter compared with year-earlier consensus estimates, until rudely interrupted in the third quarter last year. Since then estimates for both U.S. GDP growth and global growth have dropped each month.) The third vulnerability is in price/earnings ratios. As discussed in earlier letters, the market has never gotten the need to normalize for good times. Periods of above average margin should be expected to have below average P/E, but not a whisper of this is to be heard. The correlation between margins and P/E is +.32. It doesn't even have the right sign. And this has been a classic case where secondary, low-quality companies that have fundamentally thrived in this extended boom ended up with both peak margins and a premium P/E. Because of this past favorable set of circumstances, the low-quality companies are exposed to a triple threat: their absolute and relative margins decline; their P/Es fall relative to the market, multiplying their pain; and they are far more exposed than average to a severe credit crisis. On our 7-year data, there is a 9.5% a year spread in anticipated total return between high- and low-quality companies. If done in a hedge fund format, 100% long quality stocks and 100% short low-quality stocks, it would on our estimates deliver 9.5% over a T-bill. T plus 9.5% is likely to look handsome in the next 7 years. Although precisely how accurate our 7-year forecast is will be another question and one that certainly comes without any guarantees!

Yet another demonstration of the extraordinary resilience (or denial) in U.S. equity markets is shown in their outperformance of foreign equity markets. Many local economies are hanging tough, and not just in emerging countries. Germany and France for two are both looking resilient, at least for now. But they all have serious stock market concerns about U.S. economic weakness and the U.S. credit crisis. On worries over U.S. problems, their markets have declined more than ours has, although our market sits at the very heart of the problem. Quite remarkable!

First Quarter Performance

Despite a sensational opening week for our relative performance, the Fed's waves of intervention neutralized our U.S. equity performance with the U.S. Quality Strategy ahead by 75 basis points after being up 4.5% in early January and the U.S. Core Strategy being down just over a point relatively. International Active was down a little to EAFE, and International Intrinsic Value and International Disciplined Equity were both up a little. The Emerging Markets Strategy was down 91 basis points. Risk aversion has still not taken hold in global equity markets. GMO fixed income strategies continued to do poorly. Overall, asset allocation strategies were a little ahead. Our hedge strategies were our bright spot for once, with Multi-Strategy up 5.4% absolute where the average competitor was down. A considerable amount of this was earned early in the year from being short risk in fixed income, with the Completion Strategy up nearly 24%. Now if only the equity markets would get the same point!

Recommendations

Look through the fixed income rubble to find some nuggets, if you have the skill set. Otherwise avoid risk, particularly within the U.S. market where low-quality stocks have defied the laws of gravity and relative to high-quality stocks look an even better short sale than 6 months ago. Unfortunately, government bonds globally are now badly over-priced as they become sought after as havens in bad times.

To us, these seem to the best bets for the next year, in rough order. Short UK real estate – it is much more overpriced than the U.S. market was and is just turning down. Sadly, it is very difficult for most of us to play. Short the GBP – it is slightly overpriced on purchasing parity, but extremely vulnerable to many factors that have gone wrong in the U.S. market, but not yet to the same degree in the UK, like the decline in house prices, trouble with high consumer debt levels, high dependence on the financial world, and large internal and external deficits. In general the UK looks to be in big trouble. Land in emerging countries is also generally attractive but that's a long story, best left for next time. Otherwise, though,

just take a deep breath, hunker down with cash, and live to fight another day. It's a difficult task for most of us who easily get ants in our pants. Since I still believe that the U.S. market will not bottom for some time – 2010 still looks good – we must be prepared for plenty of rallies to fill in the time. High animal spirits, fortified for so long by good times and moral hazard, will not give ground easily.

Disclaimer: The views expressed are the views of Jeremy Grantham through the period ending April 24, 2008, and are subject to change at any time based on market and other conditions. This is not an offer or solicitation for the purchase or sale of any security and should not be construed as such. References to specific securities and issuers are for illustrative purposes only and are not intended to be, and should not be interpreted as, recommendations to purchase or sell such securities.

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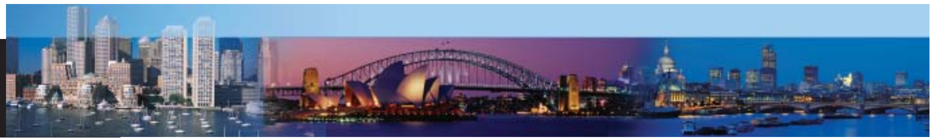
SPECIAL TOPIC

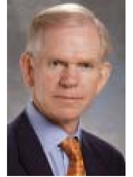


April 2008

*Letters to the Investment Committee XIV**

The Emerging Emerging Bubble

Jeremy Grantham



In asset allocation work at GMO we have always concerned ourselves with one particular event: overpriced asset classes. We have not had to worry about whether they were caused by Black Swans – genuine unpredictable extreme events – or just "normal" behavioral craziness: herding carried to such extremes that most investors believe they have entered a new golden era. We have never attempted to guess when or why asset prices will diverge from trend. We have limited our job to predicting that, when diverged, they will sooner or later return to normal. That much, much easier task has been hard enough. But still, never calling a major divergence does leave a gap in one's résumé. So, perhaps once in a career any self respecting strategist, even a one trick "mean reversion" pony like GMO, should have a go at predicting a major divergence, a true bubble. And this is ours.

It was a long and wonderful run in the stock market to get the trailing 12 months P/E of emerging market equities to overtake that of the S&P 500, but it finally made it this September. From its low in 2002 the emerging index (the IFC Investable Composite) rose by 460% against 98% for the S&P and, as if to rub it in, the emerging index finished its run with a 30% surge in a few weeks from its August low. How could it only have reached parity after such a huge move, you may ask? First, emerging started much cheaper (as I'm happy to say we really hammered on about), and second, their earnings rose substantially faster (22% per year compared to 16%). So in the fall we were suddenly reading about the premium P/E for emerging. But then, riding to the rescue, came the unexpectedly large drop in U.S. earnings. Using trailing actual net earnings, the P/E of the S&P suddenly jumped in November from 18x to 22x, leaping ahead of emerging once again.

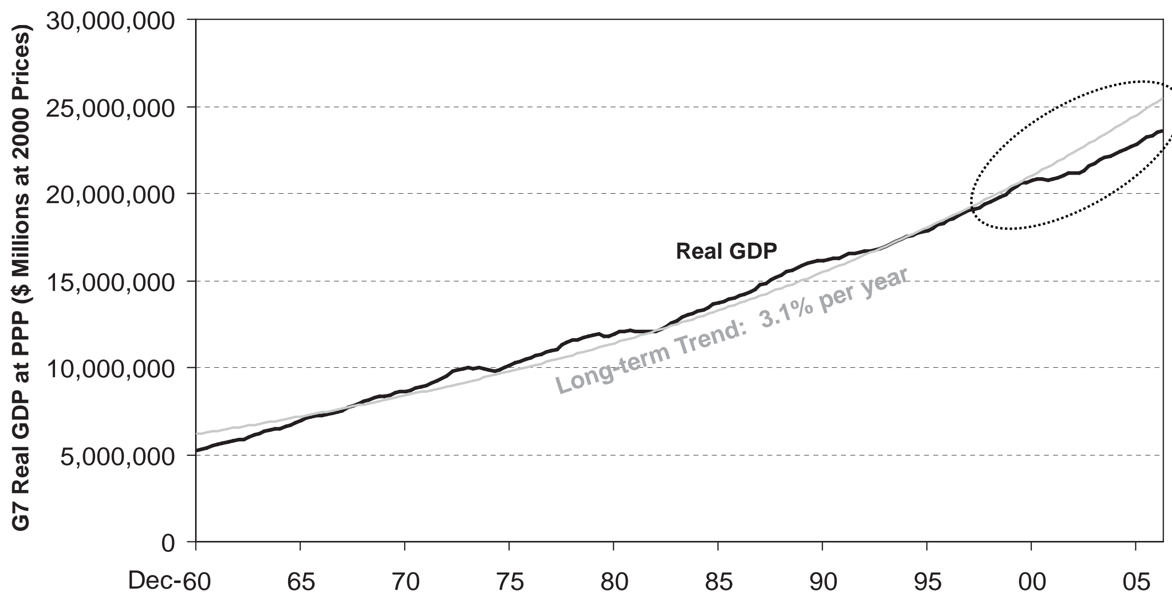
So emerging is still selling at a slight discount. It also has the usual psychological advantage of being the body in motion – everyone loves a winner, and emerging has not just won in the markets; it is also a relative beneficiary of strong commodity prices, the general beneficiary of strong global growth, and an enormous beneficiary of the U.S. trade deficit. Emerging countries have simply become (at least for now) financially strong powerhouses with strong currencies (in complete and utter contrast to their former reputation) and everyone knows it!

Still the thing that interests me most is the potential for further relative gains, perhaps even the emergence of a fully fledged bubble in emerging. Such a bubble will probably need a positive case that is clean and simple and seems much longer term than the case made so far. And I think there is a strong candidate.

We are all used to parts of the developed world growing very slowly. Japan – with the triple punch of declining population, a financial bubble, and poor conservative financial management – has floundered for over 15 years. Americans are also inherently aware of so-called Eurosclerosis – that particular European countries are so limited by their rigid social and economic structures that their growth opportunities are thought to be modest for the indefinite future. But what we are approaching now is the unthinkable: that the U.S. too is past its prime and that the whole developed world is suffering from irreversible middle-aged spread. Exhibit 1 shows the developed world's GDP long-term growth, which could be interpreted

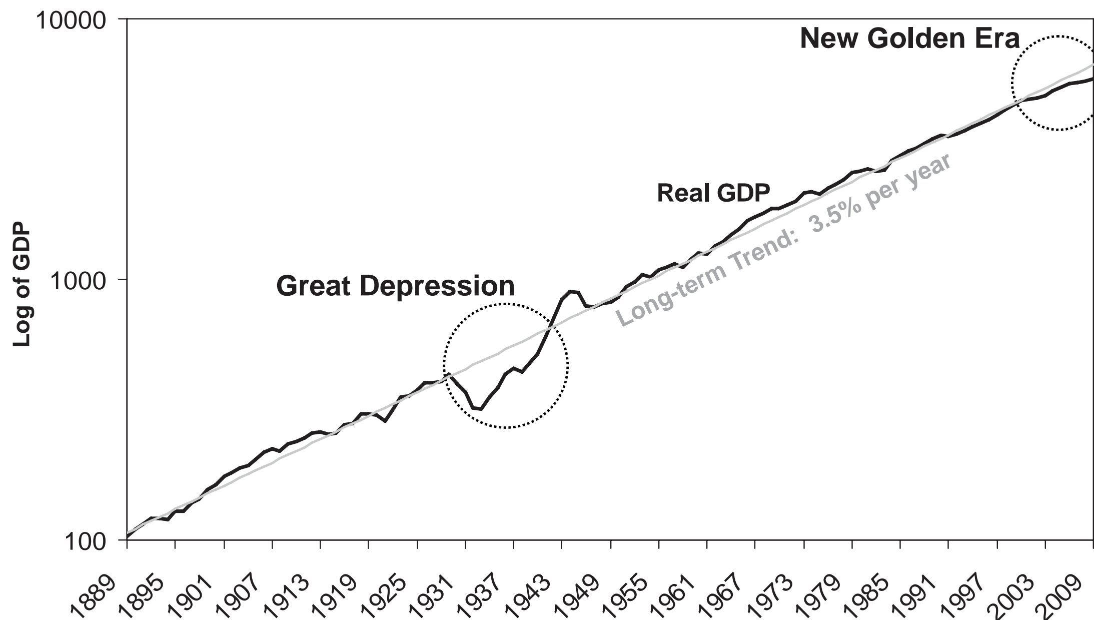
* The Letters to the Investment Committee series is designed for a very focused market: members of institutional committees who are well informed but non-investment professionals.

Exhibit 1
G7 Growth – Not So Golden



G7= U.S., UK, Canada, France, Germany, Japan Source: Datastream As of 3/31/07

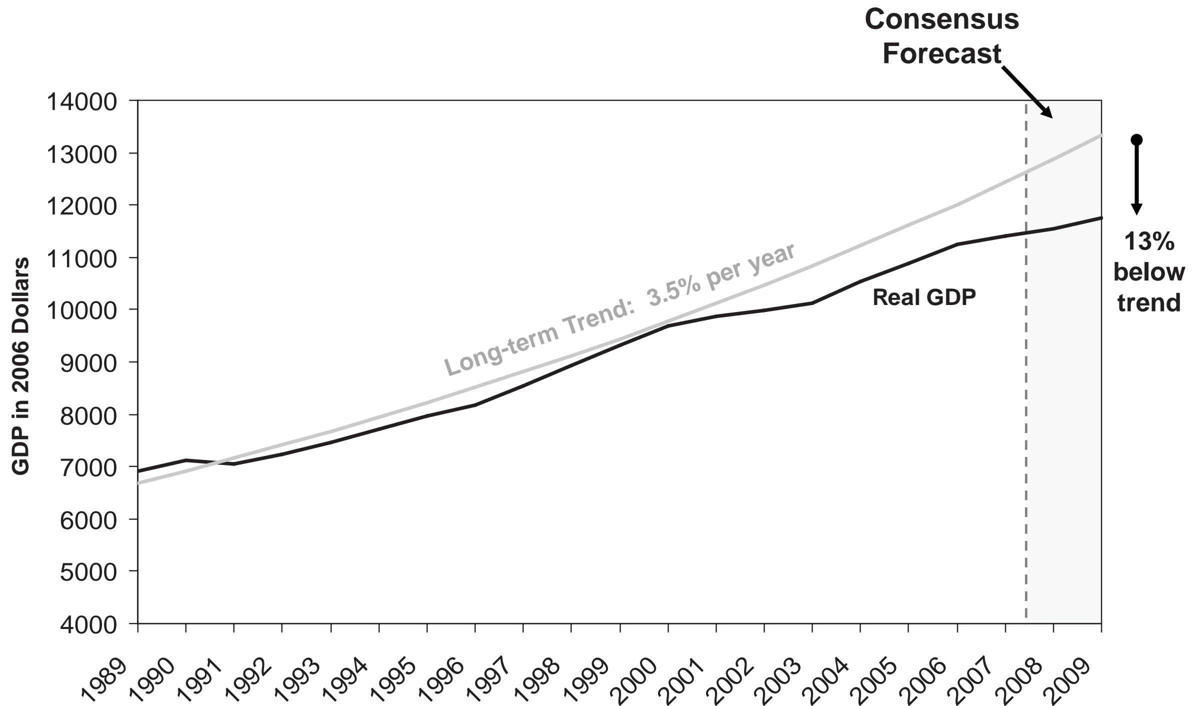
Exhibit 2a
U.S. GDP Growth: 1889-2009



Source: Current BEA since 1929, average of sources before that As of 3/31/08

as modestly but persistently sliding off its former trend line. Exhibit 2a (with blow-up shown in Exhibit 2b) has always been my favorite example of the remorselessness of U.S. growth – the GDP battleship as I call it. But it too has fallen off the pace in recent years. And remember both of these fall-offs have occurred despite an extended period of nearly perfect global economic and financial conditions until recent months and, in the case of the U.S., a tripling of the total debt to GDP ratio in the last 25 years as covered in last quarter's letter.

Exhibit 2b
Blow-up of the "Golden Era" in U.S. GDP

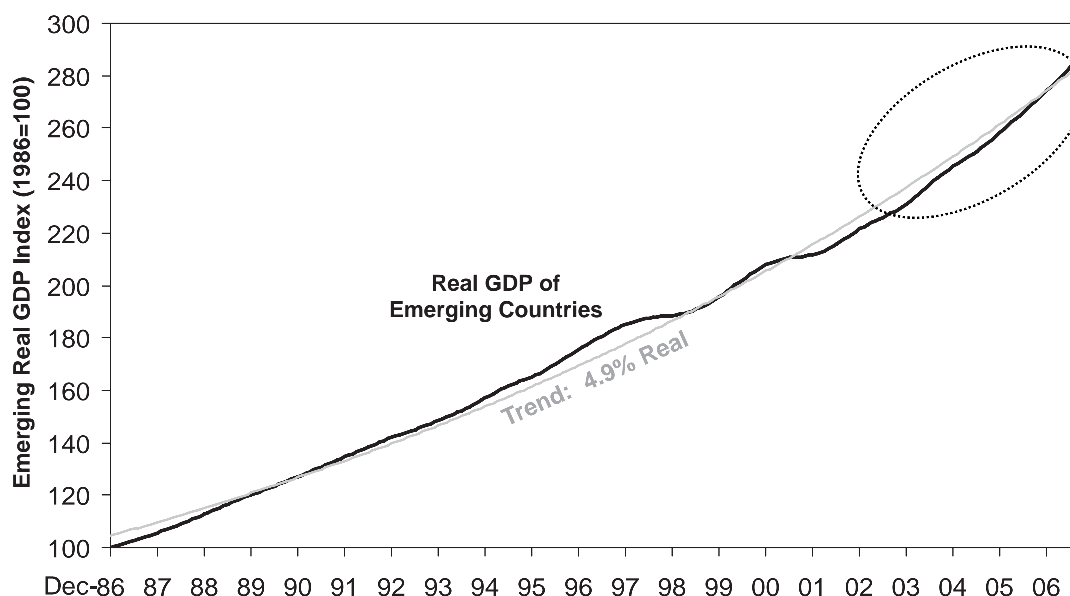


Source: Dept of Commerce, BEA   As of 3/31/08 – Forecast through 2009

Now admittedly much the largest piece of this decline in GDP growth trend is from population and labor force; productivity as measured in the U.S., over the last 10 years of slowing growth, has held up well. All of the U.S. decline in GDP growth has come from a decline in the growth of rate of hours worked, not from a decline in productivity, and most of the decline in other developed countries has also been from work force effects. An increasing number of economists, however (interestingly including Greenspan by the way), are concluding that future productivity in the U.S. and Europe is also likely to decline enough to worry about from the level of the last 10 years. This may indeed be the case, but what is certainly the case is that the growth rate of hours offered to the workforce will: a) continue to decline; and b) decline at an accelerated pace in the next 20 years. But even if 80% of the decline in GDP growth will be explainable by trends in the workforce rather than a more disturbing decline in productivity, will investors care? Will not their focus be, as always, top line growth *über alles* regardless of subtleties?

And think of the comparison that is developing with emerging countries. Exhibit 3 shows the same GDP aggregate growth rate for them. Ta-dah! Not a hint of a slowdown. Economists are also confident that as subsistence farmers move into factories, the productivity in emerging countries will continue stronger than in developed countries. So in addition to the current tactical advantages for emerging that may or may not have legs, we have a plausible and probably accurate long-term case that their GDP growth will stay faster for years, even decades! (A potential spin on the negatives for developed countries by the way is that as Baby Boomers retire, starting now, there would appear to be more sellers of houses and stock portfolios than buyers, and this certainly feels like it would put pressure on prices.) Can't we just see over the next 2 or 3 years this case getting repeated annoyingly often and with varying degrees of hype: "They have the growth. We don't. What's to discuss?" For all bubbles you need an underlying strong fundamental case (or at least one that looks like it for a while). Compare this case for example with, say, the one for Japan in 1989 where a careful reading of the serious data – GDP growth, productivity, and profit margins – revealed weaknesses long before the peak. And how about the TMT bubble? Yes, that was a much less flaky argument than for Japan, but still you would have to be high on Greenspan and the internet pushing back the dark clouds of ignorance to compare it to this case: the

Exhibit 3
Emerging Countries GDP – Still on Trend



Source: EIU, GMO   As of 6/30/07

emerging countries have the savings, the resources, the inclination, the momentum, and, above all, the people and the GDP growth. This case is far harder to argue with than the two other recent spectacular bubbles. And just think what happened in those two bubbles. The entire Japan Inc. sold at 3x the P/E ratio of the rest of the world. 3x! (Okay, 2x if you adjust for cross holdings, but still not bad.) And the NASDAQ also sold at 3x the P/E of the rest of the world. (By the way can you remember back in 2000 that only fuddy duddies followed the S&P? The greasy spoon, lunch-time restaurants that had their TVs showing nothing but CNBC screaming about internet stocks and the NASDAQ have now returned once again to showing baseball highlights, happily for Bostonians at least. Well it's 8 years later and the NASDAQ is still well below 40% of its peak in nominal terms or well below one-third in real terms. So life is not always a bowl of cherries for perma-bulls either!)

Well, if Japan and the NASDAQ bubbles could sell at such premiums, what will happen this time with a better story? A bubble historian would have to conclude that selling at 2x the developed markets is obviously not out of the question, but this is the problem with dealing with bubbles that haven't arrived; reasonable minds gag on the degrees of possible unreasonableness. So let's at least try to accept the idea of a 50% premium. This is far, far less than normal but would still make a lot of money from here. Unfortunately, if we budget for a "modest" 50% premium, it would still allow us at GMO to maintain our unbroken record of selling early.

Now, there are as usual caveats. For one, emerging will increasingly be seen on a country-by-country basis. Nevertheless, the second wave of let's-look-like-Yale money from state plans is still in its early stages and looking to invest overwhelmingly in emerging market funds, not in the specific country funds of the Yales and Princetons. For another caveat, the GDP growth rate of a country does not in the very long term necessarily determine how much money a country's stock market will make. Long-term market return may depend more on profit margins. But investors <u>believe</u> GDP growth really matters, and Japan went to 65x earnings despite average or lower corporate profit margins. But the third caveat is the most serious; this emerging bubble can easily be postponed or even stopped before it really begins by the current financial problems and the slowing growth rates of the developed world that are likely to follow. My own view is that our credit problems <u>will</u> impact and interrupt the recently sustained outperformance of emerging in the intermediate term, say, the next 3 years, even as the acceptance of this emerging bubble case grows. Such interruptions may be quite violent but, despite them, at the next low point for

the U.S. market the emerging markets are quite likely to do no worse and in the recovery they will go to a very large premium. And if, just if, the U.S. gets very lucky indeed and muddles through without serious market and economic problems, then the emerging bubble will of course occur more quickly and smoothly.

Summary

A) The U.S. and all developed countries will have slower GDP growth in the future, finally falling off their very long-term trends; B) This will be mostly due to lower growth in hours offered to the workforce, but is also likely to be hurt incrementally by a small decline in productivity; C) The emerging markets will keep up their strong growth of the last 10 years; D) This comparison will lead to a growing acceptance by investors that developed countries are a tired old story and that those who want to make money should buy emerging; E) That despite probable interruptions caused by problems in the developed world, this will lead to emerging markets selling at least at a 50% premium, either quite soon if developed countries hang in, or within 5 years or so if the current problems worsen; F) This bubble, like all bubbles, will not be justified by long-term value but at least will be one of the least flaky bubble cases ever; G) You heard it here first; H) Despite all our efforts, GMO will still probably sell too soon!

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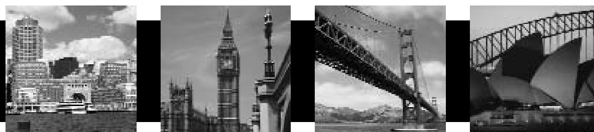


Jeremy Grantham, Chairman

Feet of Clay

Alan Greenspan's Contribution to the Great American Equity Bubble

—Part 1 in a Series on The Great American Equity Bubble—

Introduction: What Is the Fed Chairman's Job Description?

In its earlier years, the Fed's emphasis seems to have been on economic activity, a reasonable response to the high unemployment of the 1930s and the fears of a post World War II depression. By the nineties, the heavy emphasis had transferred to inflation control following the pain of the high inflation years from 1973 to 1983. Both of these factors were emphasized when they seemed to be critical to stability, and I believe that the underlying job of the Fed probably is, and certainly should be, the maintenance of general economic stability.

Nothing threatens economic stability more than the deflating of a major stock market bubble, particularly this time when there was a chance of global deflations even before the bubble broke. This severe risk brushes aside the argument that bubbles are hard to detect, for the stakes are just too high not to try; great bubbles are, in any case, like mountains sticking out of the plain of normal stock prices. Comparing 36 times earnings to a previous 1929 high of 21 and a 75-year average of 14 times would not seem to take particularly sharp analytical skills. The potential dangers overwhelm Greenspan's defense that the techniques to resist bubbles are not certain, for what in economics is certain? The stability of the US economy can only be protected against the real dangers of a bubble breaking by the Fed and its Chairman being willing, at rare intervals, to take some substantial political risks. They must attempt to identify and moderate major stock bubbles and be prepared to bear some consequences. If they are not prepared to do this, then the risk level of the economy will rise substantially.

Setting the Scene

Major stock market bubbles are indeed about the most dangerous thing that can happen to an economy. They cause wasteful over investment in hot areas. Through the vast paper wealth they create, they substantially increase the amount of greed that is in any case in plentiful supply in a vigorous capitalist system. This in turn increases corruption a little and unethical behavior a lot. Bubbles also redistribute wealth. Much of it goes temporarily to stockholders and is later given back. But while it is there, the unexpected wealth changes behavior. It increases consumption that further boosts the economic side of the bubble and hence corporate profits and share prices. By the same token, it will reduce saving and the flow of funds into retirement plans, which seem in the bubble to be doing so well from capital gains that they need no further help from incremental savings. When the market tide recedes, the retirement funds will be revealed as inadequate and will be several years of low savings behind the game. The loss of this fools' paradise will cause resentment.

Most of the redistribution of wealth these days will end up in the hands of corporate managers, particularly in this cycle where they have been the beneficiaries of stock options to a remarkable degree. Stock options in this cycle have not been effectively tied to good performance, and most stock option wealth has been awarded at precisely those companies where shareholders have been most hurt. Under the influence of the great wealth created by options, some managers and their accountants crossed from the grey area into outright illegality. All of this will be resented in the aftermath of the bubble. In general, the size of the 'bezzle' – as Galbraith called the weasel factor – will increase in a bubble, and investors, workers, and of course belated politicians, who had done little proactively, will jump to correct or over correct the problems.

The downside of the great bull markets will in fact always prove to be a paradise for Murphy's Law: whatever can go wrong will pick this time to do it. The over investment caused by excessive stock prices and excessive lending will be followed by a capital spending bust. An investing

public who feels to some extent betrayed will lose confidence in investing. The excessive lending that was facilitated by high stock prices will tend to dry up as will foreign investment that was encouraged by both rising stock prices and a booming economy in the US. Many of these factors will interact and it will always be impossible to know how badly things will work out. Certainly, stock prices themselves have always over corrected below their trend-line value. For all these reasons bubbles should be avoided at any reasonable cost. It will be worth taking some risks with the economy and some career risk to decrease the chances of a major bubble forming. The person in the best position to take effective action is the Fed Reserve Boss, Alan Greenspan. The purpose of this article is to ask how he did and give him a scorecard.

Did He See the Bubble Coming and What Could He Do?

There were many contributory factors to the building and bursting of the 1995-2000 bubble, by far the largest and most important in American history. Many things were done badly or left undone, but I believe the facts and common sense indicate that the single largest contributor to our present problem was indeed Alan Greenspan, for only he had the power to head off or reduce the equity bubble.

Greenspan could have raised rates a little back in 1996 and added a lot of jawboning about determination to prevent an asset price bubble. Most obviously, perhaps, he could have increased margin requirements. Had Greenspan been prepared to use all the tools available and shown his determination, it almost certainly would have worked and cut the last substantial piece off the upswing and offsetting downswing in the US equity market. In addition, it would have reduced the over investment, greed, and corruption that go with a truly major bubble.

While I've been trying to marshal my thoughts on the Greenspan fiasco, he has overtaken my efforts with his breathtakingly shameless and complete denial of responsibility for the bubble at Jackson Hole in late August this year.

According to Greenspan, jawboning the market "would have been ineffective unless backed by action." We can agree on that one. He claimed that the belief that "well-timed incremental tightening" of rates could have succeeded against "the late 1990s bubble is almost surely an illusion." Even more controversially, he argued that increasing the margin requirement would also have had little effect. He further asked whether even the size of the bubble could be limited by policy and replied: "From the evidence to date, the answer appears to be no." But what evidence did he offer? Since he did not try any of the above, there is precious little evidence that his case was valid. But the circumstantial evidence that strong action would have indeed been effective is quite substantial.

When he was not the one dodging bullets, Greenspan himself had a very different view as to the responsibilities of the Federal Reserve and what it could achieve. In 1966 he had written scathingly of the consequences of weak-kneed behavior by the Fed in 1928 and the dire consequences of delayed and weak action for everyone in the ensuing crash. He wrote in his chapter in Ayn Rand's *Capitalism: The Unknown Ideal*: "When business in the United States underwent a mild contraction in 1927, the Federal Reserve created more paper reserves in the hope of forestalling any possible bank reserve shortage. The excess credit which the Fed pumped into the economy spilled over into the stock market - triggering a fantastic speculative boom. Belatedly, Federal Reserve officials attempted to sop up the excess reserves and finally succeeded in breaking the boom. But it was too late: by 1929 the speculative imbalances had become so overwhelming that the attempt precipitated a sharp retrenching and a consequent demoralizing of business confidence. As a result, the American economy collapsed…" He is clearly blaming the Fed for both the boom and the resulting crash.

J.K. Galbraith, with presumably no axe to grind, having studied the last great equity bubble of the late twenties for his book *The Great Crash* (John Kenneth Galbraith, *The Great Crash*, 1929, pp. 189-194, New York, Mariner, 1997), concluded his analysis with a resounding vote that the Federal Reserve did indeed have the tools to prevent a major bubble but argued presciently it seems that such tools would never be used! He argued "that the chance for recurrence of a speculative orgy (like that leading up to 1929) remains good. No one can doubt that the American people remain susceptible to the speculative mood … The government preventatives and controls are ready. In the hands of a determined government their efficacy cannot be doubted. There are, however, a hundred reasons why a government will determine not to use them … Action to break up a boom must always be weighed against the chance that it will cause unemployment at a politically inopportune moment. It will always look, as it did to the frightened men on the Federal Reserve Board in February 1929, like a decision in favor of immediate as against ultimate death. As we have seen, the immediate death not only has the disadvantage of being immediate but of

identifying the executioner … One might expect that … The Federal Reserve would be asked by bankers and brokers to lift margins to the limit … The public would be warned sharply and often of the risks inherent in buying stocks for the rise … all this might logically be expected. However, it did not happen in the go-go years of the late sixties … nor will it ever come to pass … Long-run salvation by men of business has never been highly regarded if it means disturbance of orderly life and convenience in the present. So inaction will be advocated in the present even though it means deep trouble in the future … It is what causes men who know that things are going quite wrong to say that things are fundamentally sound." This unfortunately for everyone sounds all too like the present Fed Reserve Boss.

Greenspan himself back in 1996, when the market at under half its final price was already irrational in his eyes, lets on that a bubble can indeed be broken. Paul Krugman recently pointed out Greenspan's remarkable September 1996 statement to fellow Open Market Committee colleagues, "I recognize that there is a stock market bubble problem at this point. We do have the possibility of increasing margin requirements. I guarantee that if you want to get rid of the bubble, whatever it is, that will do it." This is only one of several smoking guns.

So despite believing that bubbles were dangerous and delay potentially ruinous, despite knowing that he had the tools to break it, and despite sensing back in 1996 - probably with perfect timing the time to act - he did not act, leaving us to face the painful consequences, one of the worst of which is being forced to listen to his excuses and to see the willingness of so many acolytes to nod agreement.

Why did Greenspan not follow through after "irrational exuberance?" Galbraith probably had it nailed. No one wants to be the one caught "holding the pin." No one looks forward to taking a lot of political heat and we know that Greenspan took a good deal because of "irrational exuberance." Hesitating under that pressure is reasonable, and hesitation in dealing with a bubble has been likened to jumping off a London bus as it accelerates. It is at first an unpleasant proposition, but as soon as you delay it becomes just plain dangerous. At such times, wishful thinking becomes an appealing proposition, and Greenspan seems genuinely to have been deep into wishful thinking. As a believer in the new era, only a few sell-side strategists such as Goldman Sachs' Abbey Cohen and Lehman Brothers' Jeff Applegate ran him a close second for relentless and increasing enthusiasm for the new economy, its new high plateau of productivity, profitability and growth, and its justification for higher stock prices. Greenspan, though, was not selling shares and yet he seems to have believed more completely in this new era nonsense by March 2000 than anyone else. (What an unfortunate coincidence that the title of 'most credulous' and the title of Federal Reserve Chairman belong to the same man.)

Some elements of the conflict between his earlier views and later wishful thinking can be seen in the carefully hedged use of language in the great Jackson Hole Denial of Responsibility. "It is very difficult to definitely identify a bubble until after the fact." Of course it is difficult to definitely identify a bubble, although he himself had claimed in September 1996 to have identified one, and even now he confesses to "strongly suspecting" that one existed then. "No monetary tightening … can reliably deflate a bubble," he went on. No, of course monetary tightening would not have 'reliably' worked, but together with jawboning and increased margin requirements (which he claimed to know would work), it very probably would have worked. The consequences of a bubble breaking are also not definitively or reliably known, but are typically severe. In any responsible job dealing with the soft sciences of economics and finance, certainty is too high a hurdle. His job is to do the best he can with uncertainties, and in this he failed and failed badly.

What Was in His Head?

Greenspan's vacillation and change of heart may have involved some woolly thinking, although it is hard to separate woolly thinking from a tendency to change arguments to fit the politically convenient position. There are two prime examples. First, his view of market efficiency. His 1966 view is that excesses or bubbles do indeed exist and can be identified and acted on. After having his head slapped by congressmen for his 'irrational exuberance' miscalculation, he hurriedly moves to cover his tail by adopting a view that the market is efficient: "to spot a bubble in advance requires a judgment that hundreds of thousands of investors have it all wrong." Yet his suspicions in his earlier 1996 statement did sound like flat-out belief in an inefficient market. Now in the summer of 2002 he returns to his earlier view: "history attests, investors too often exaggerate the extent of the improvement in economic fundamentals. Human psychology being what it is, bubbles tend to feed on themselves and booms in later stages are often supported by implausible projections of potential demand." "Implausible projections!" Here he

sounds like a behavioralist who believes the market is a dangerous jungle of psychological impulse!

His other remarkable intellectual woolliness regards the cost of capital. His new defense includes an apparent belief that productivity improvements might permit corporate profits to rise at a rate that would have justified the new high stock price. This is a common enough error, but an oddly amateurish one for Greenspan. If indeed profit margins, and hence return to corporations, had improved in a permanent way, then return to stockholders must also improve - and this only occurs with lower stock prices and higher yields, not higher prices. This counter-intuitive result is only the same as saying that the cost of capital must be in balance with the return to capital. Without this balance, there is set up a classic capitalist arbitrage. If the return to stocks is higher than the return to corporate investment, then no company will invest but simply buy cheaper assets in the stock market until a shortage of new assets drives up corporate returns. Conversely, if it is less, then corporations will raise new capital by selling expensive shares and invest in new plant (shades of the telecom boom), bidding down the returns on new investment until the system is in balance. Greenspan's logic would fail a Finance 101 final!

Greenspan: the Great Promoter

With Galbraith's help, it is easy to understand how a politically minded Federal Reserve Chairman would avoid taking decisive action against an asset class bubble. We can even understand that his muddled thinking on several issues would not have helped him be decisive. Much harder to understand, though, are his statements of bullishness about the economy. Given his stated misgivings and "suspicions" on the probability of a bubble, why would he frequently make the most extravagantly optimistic statements about the new economy to a broad public? Given his status, did he not expect this to be used as fuel for the fire? Did he not realize it would encourage precisely the "exaggeration" of economic progress he now blames for the bubble? Did he really see this as being in his job description whereas controlling an asset class bubble was not?

It is worth reminding ourselves of the extravagance of some of his statements. In January 2000, for example, he claimed that "the American economy was experiencing a once-in-a-century acceleration of innovation, which propelled forward productivity, output, corporate profits and stock prices at a pace not seen in generations, if ever." Phew! The internet, which had "pushed back the fog of uncertainty" for corporations, was his particular pet. "Lofty equity prices," he said, "have reduced the cost of capital. The result has been a veritable explosion of spending on high-tech equipment … And I see nothing to suggest that these opportunities will peter out anytime soon … Indeed many argue that the pace of innovation will continue to quicken … to exploit the still largely untapped potential for e-commerce, especially the business-to-business arena." All this within one week of the peak from which the Nasdaq's "lofty prices" declined by 75% and the business-to-business sub index fell by over 95%!

The economic basis for his enthusiasm always looked shaky. Not that the economy and productivity were not doing well. They were much better than the seventies, eighties, and early nineties. It simply did not seem to be as good as Greenspan believed. Skeptics argued, for example, that hedonic inflation adjustment, which argued that four times the speed in a computer was equivalent to a 75% reduction in real prices, was unrealistic. It added some ½% a year to productivity and was not used by many perfectly serious countries. Too much of the productivity gains came from an unsustainable boom in capital equipment for technology. Productivity was calculated per person, not per hour, and Americans and Brits were alone in working longer in the nineties as they got richer. The rest of the developed world quite sensibly worked less. This list of earlier challenges to the validity of the new economy is just a sample. In short, for many of us, the case for a permanent and significant improvement was possible but absolutely not proven, and the degree of improvement was seen as entirely unlikely to rival Greenspan's vision.

Whatever Greenspan's motives for voicing his enthusiasm for the new economy, we know what its effect was. It removed reasonable doubt for most investors. The *Financial Times*, who incidentally get the award for least boot-licking of the major papers regarding Greenspan over the last 5 years, pointed out that his "increasingly bullish observations … may well have contributed to the explosion of exuberance in the late 1990s." Morgan Stanley's economist, Stephen Roach went further, arguing that Greenspan's outspoken belief in the unique features of this cycle – rapid growth yet low inflationary pressure – removed the need to raise interest rates. "That was the buy signal every investor and speculator dreamed of."

Summary

In the end, what Greenspan faced was not a moral dilemma. The morality was clear. He had the knowledge, experience, and belief and failed to act. What he had was

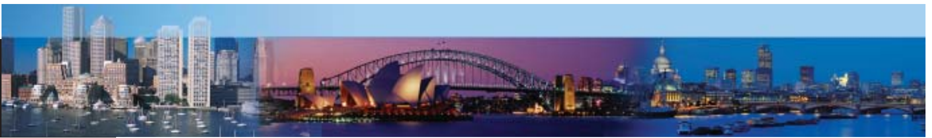
a career dilemma. If he jumped off the moving bus early, he would have taken some considerable grief. If the economy had slowed, he would have been blamed. The timing of occasional ordinary recessions is not of vital importance to society. Indeed, an occasional moderate recession may be necessary for a healthy economy in the long run, although you could find economists who would argue the other side. The real cost to society comes from the corruption, disappointments, reduced savings, and the wasted investments brought on by a bubble. The timing of recessions is, however, of real importance to politicians who want to be re-elected and who face an electorate whose view of their political platforms is often a simple, "It's the Economy, Stupid!" In Greenspan's defense, we can agree he would have received little or no thanks for preventing the evils of a boom and bust for it could never be proved. What we do know is the world's willingness to believe that things would work out well despite the bubble. So if he had acted, his reputation and career would have suffered at least temporarily. If he had engaged in wishful thinking, he could believe that there would be either a chance that things would muddle through or a chance that his denials of responsibility, muddled and contradictory as they are, would suffice. For a Federal Reserve boss to have volunteered to have taken a lot of political heat and certain short-term damage to his reputation without a realistic hope of offsetting rewards simply because it was the right thing to do would have taken very high ethical standards and considerable strength of character. Paul Volker perhaps might have made that choice.

As for Greenpan's recent defense, in the end what did we expect? That he would repent his lack of character? That he would admit even partial fault? His complete denial on this regard brings to mind an incident in the Profumo sex scandal of the 1960s in England. One of the women involved, Mandy Rice Davis, on hearing that the government minister had denied having sex with her, replied with the immortal words, "Well he would say that, wouldn't he?" Sometimes the blindingly obvious is funny. This time the equally predictable denial of responsibility and the apparent credulousness of many opinion makers (but encouragingly not all of them) in accepting his argument are merely irritating.

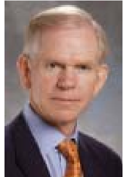
Irritating or not, it must be conceded that in terms of avoiding blame he appears to have mostly gotten away with it. You can indeed 'fool most of the people all of the time.' 'Most of the people' this time probably included Her Majesty who recently knighted him for his global services. My secret hope though is that she justified it by having had a good short position for the last 3 years.

GMO

QUARTERLY LETTER



July 2008



Meltdown! The Global Competence Crisis

Jeremy Grantham

"Nobody up there understands American capitalism." Hyman Minsky[1]

The Confessions of an Optimist

I thought things would be bad enough but they turned out to be a lot worse. I thought a year ago we were looking at the "first truly global bubble" in asset prices. The credit crisis looked to be so predictably powerful and unstoppable then that I likened the experience to "watching a slow motion train wreck," and I predicted that "one major bank (broadly defined) will fail within 5 years," for which I got considerable grief as a doomsayer, as the less optimistic strategists usually do. Well a year later one bank failure looks positively quaint as a prediction. Ironically for a "perma bear," I underestimated in almost every way how badly economic and financial fundamentals would turn out. Events must now be disturbing to everyone, and I for one am officially scared!

A lot of this worsening situation was unpredictable, but some of our optimism I fear was caused by that old bugaboo, career risk, because our asset forecasts were more pessimistic than others and only half-believed by clients. Our low return forecasts only required that above average profit margins and P/E ratios revert to normal. The forecasts did not need any help from a very weak economy other than a slow unraveling of the credit boom. In our experience, the U.S. economy usually stepped around the land mines, but this time it has not been so lucky. These are some of the unexpected surprises:

1. The Fed has lost more credibility and lost it faster than expected. Misreading or not seeing bubbles at all was a key. It is becoming increasingly clear that extreme asset price surges are too dangerous to ignore. Greenspan's self-serving drivel also did not help. Nor did over-zealous bailouts or Bernanke's underestimation – in world opinion – of inflation. The risk of international loss of confidence in the dollar has arisen as a consequence. The Fed's primary job is really quite simple: <u>Protect the integrity of the U.S. financial system</u>. In this they have sadly failed.

   The Fed and the Treasury have moved to bail out large financial corporations under the smoke screen of a liquidity crisis. As is increasingly realized, it was not a liquidity crisis primarily, but a solvency crisis. Marked to market 6 months ago, Bear Stearns and Lehman were bankrupt as are Fannie and Freddie today. The bailouts are really providing what amounts to capital to insolvent firms as opposed to preventing the classic run on a bank as occurred in "It's a Wonderful Life," where a bank goes bust through no fault of its own. These bailouts permit a shameful lack of accountability for reckless behavior.

2. Other central bankers and financial authorities also underperformed. The British dithered in crisis and, together with the European Central Bank (ECB), failed to move early against housing prices in the U.K., Spain, and Ireland that rose far higher than those in the U.S.

3. China and several other emerging countries, by allowing currency underpricing and huge trade surpluses, almost guaranteed eventual inflation, which is now exported.

4. I had offered the price of oil as a probable paradigm shift and suggested not going seriously short until $100 in the January 2005 *Barron's* when oil had just broken $50. Well, there is a big gap between "might" reach $100 and actually reaching $150. Such high and <u>sustained</u> prices act as a dangerously high tax on consumers, particularly in the U.S., which is shamefully only half as energy efficient per unit of

[1] Hyman P. Minsky, "Can 'It' Happen Again?" *Essays on Instability and Finance* (Armonk, NY: M.E. Sharpe, 1982) 202.

GDP as Europe and Japan. The growing surpluses of oil countries must be recycled, and this can be destabilizing.

5. Almost all other commodities have also soared in price, transferring income to farmers and miners and taking more buying power from consumers.

6. Congress behaved at the lower end of its range of effectiveness. It overestimated corn-based ethanol, which is a minuscule help to gasoline but a strong push on corn and other grain prices. Since ethanol creates more carbon dioxide than pumping oil, the ethanol program is mainly another testimonial to the agribusiness lobby.

7. China's ability to sustain rapid growth and avoid a serious stumble has become an article of faith that I was buying into without much skepticism. But why? No sooner do we finish wallowing in the idea of Soviet incompetence than we start to believe that Chinese central planners can wonderfully manage a complicated economy, growing unprecedentedly fast and transforming overnight from a rural society to a capital-intensive industrial wonder using half of some of the world's resources. Economic logic and history suggest that their governmental interferences will be sub-optimal, and that China's current level of investment will turn out to be dangerously high, encouraging waste. They continue to build basic capacity on automatic pilot even as they encounter dangerous times for their export-led economy, since we are all facing the rising probability of a global slowdown in economic growth and trade. China also has to deal with rising energy costs in their particularly energy inefficient economy. Surely they will stumble. And if we are all unlucky, they will stumble right into the global credit crisis.

8. Didn't we all expect at least modest <u>competence from most of our financial companies</u>? I always thought it was the Bear Stearns of the world who knew what was going on, and that when the music stopped, the financial junk would be safely (from our point of view) in the hands of, say, Taiwanese banks. How did the guys who put some dead rats in the pot end up eating some of their own stew? (To be charitable, perhaps the head chefs did not realize that the kitchen staff was throwing in the odd rat to increase their Christmas bonus!) I never realized how far it would reach: into municipal bonds, SIVs, insurance companies, instruments represented as cash-like, and former stalwarts of prudence such as Citibank, UBS, and The Royal Bank of Scotland.

9. The emergence of Iran as a latent military target has become a potentially destabilizing factor, especially for oil prices (or even oil availability) and the U.S.'s image globally.

10. A year ago I thought that the credit crisis would drastically reduce the availability of "soft" loans with few lender rights. I expected this to be a major threat to silly overleveraged deals such as 2006-07 vintage private equity. But second quarter loan growth did not merely slow; it declined at an annualized rate of over 6%, the worst since consistent records started in the early 1970s. This threatens the well-being of not just flaky companies but also more ordinary companies, in fact the whole economy.

11. It is quite well known that much of the world has been <u>living beyond its means</u> in a short-term financial sense by increasing its consumer debt and by benefiting from excessive global money supply. Less well known is that we have been collectively living beyond the planet's means by over-consuming finite resources. The disappointment here in the U.S. has been the chronic inability of government to get this point and, in particular, to develop a serious long-term energy policy. (See the attached *Letters to the Investment Committee XV.*)

12. Most dangerously, all of these factors <u>interact</u>, creating a broad based – even global – vulnerability in the financial system. Given the growing perception of incompetence that is broadly distributed throughout the system, <u>we run a serious risk of a meltdown in confidence in leadership totally unlike anything we have seen since World War II</u>. And with substantial justification! Why should we trust the financial system the way we used to? We should distrust the general competence of financial management: of governments and of corporations and of all bankers, whether commercial, investment, or central bankers.

<u>Global asset prices</u>, in complete contrast to these unpleasant surprises in fundamentals, have been more or less predictable. Some, like Chinese equities, have come down much faster than I expected, and some, like U.K. house prices, have really taken their time. Also, junky, risky stocks have toughed it out far better than I believed

likely or than the rest of the financial picture would have suggested – they have held their own with the blue chips – but this is, after all, the stock market and some surprises are expected.

Where does this leave me? Believing that asset prices will come down to fair price and below by about 2010, a belief I have held since 1999. This means about a 10% to 15% decline in the S&P by then (to about 1100) and a similar percentage decline for EAFE; about another 10% decline in U.S. housing and perhaps a 40% decline in U.K. housing, which is likely to take quite a while longer than 2010 to bottom out. Critically, overruns on the downside for all asset prices after a bubble breaks are much more the rule than the exception!

So, in general, the unexpectedly bad fundamentals have not dramatically changed our asset class forecasts. Yes, there has been an unexpectedly large bite taken out of the net worth of financial companies. But other than that, it is more that the probability has increased for longer and deeper overruns below fair value and the chance of a "meltdown" substantially more rapid than my long-held suggestion of a leisurely move to a low in 2010 or later.

There is, though, one important change in our outlook for emerging market equities. I still believe they will end up selling at a large P/E premium some time in the next 5 years or so, for reasons outlined last quarter in "The Emerging Emerging Bubble." What has changed is the risk over the next couple of years. I now realize that in an unexpectedly bad global economy, the combination of rising inflation, commodity dependence, and particularly high export ratios leave them more vulnerable than I had thought. Economically, most emerging countries really looked to have decoupled for 18 months as we slowed and they did not. But in a global recession no one decouples. As German, French, and British growth slowed rapidly in the last 6 weeks, a global slowdown looks more likely and more painful. To this end, we have done an about-face and lowered our weightings in emerging equities to neutral or just below. To critics of this change, I would cite the quote attributed to Keynes, caught in the same predicament: "When the facts change, I change my mind – what do you do, sir?"

Commodities do not play a very big part in our current asset mix and more's the pity, a clear mistake on our part. If they did however, we would be reducing our exposure and again expecting short-term 1- to 3-year price problems within a very positive long-term view. (See the attached *Letters to the Investment Committee XV*.)

Summary and Recommendations

Due to a combination of spectacular mismanagement by the authorities that resulted in very excessive and dangerous speculation and very bad luck in the timing of commodity problems and over-rapid expansion of China, the fundamental global outlook is substantially worse than expected. These problems lower long-term asset values by a little and increase the chances of deeper overruns and perhaps a faster trip to the lows. Our advice until now was very simple: take as little risk as possible except for emerging markets. Now it is even simpler: take as little risk as possible.

The more complex issues, as always, involve timing. Both emerging markets and commodities (especially oil) have a creative tension between the negative and risky short term (1-2 years) and the attractive long-term (5-10 years) prospects. In the short term, slowing world economic growth combines with credit, currency, and inflation problems to dominate the outlook and offer poor prospects for emerging markets and commodities. Longer term, the reverse is true and they look like the assets to own. But for those who can keep some of their powder dry, there are likely to be much better investment opportunities in a year or two (or three) than we have seen for 20 years. Our motto should be:

Don't be brave, run away.
Live to fight another day.

How Did Things Get So Bad?

At one level, we have spent 20 years or more digging our deep hole. We slowly and steadily lowered our financial standards and increased our debt leverage and our general risk-taking in the ways predicted by the late but newly famous Hyman Minsky. And we and a rapidly increasing number of others have commented quite bitterly on this long slide.

But what I think has been under analyzed is the proximate cause – the thing that really tipped us into the manure: a remarkable unwillingness of the authorities and financial leadership to believe that asset bubbles, however arrived at, always revert to normal.

The first dramatic example of this disbelief in the existence of bubbles was of course the internet and tech

bubble, with the market at 35x earnings (compared with the 1929 and 1965 highs of 21x) and with the growth half of the market at over 50x! Famously, our much praised Fed boss could see no bubble and respected the thousands of "well informed investors," most of whom by then were actually playing musical chairs and momentum and could not have cared less about information! Having been a cheerleader rather than a stern enforcer of standards, the Fed, as promised, rushed to provide help as that bubble inevitably burst. This – as we all know to our cost – facilitated a much more dangerous bubble in housing. And again the Fed cheered the "ingenuity" of the sexy new financial instruments, notably the asset-backed and subprime mortgage-backed paper.

If only financial lenders had understood the full consequences of the housing bubbles – that U.S. house prices would decline by 25% or more and U.K. prices by 40% or more – they would have acted very differently. Greenspan and Bernanke would have responded early and often to help shrink the volume of subprime mortgages instead of emphasizing, as Bernanke did, the normalcy of the market at its peak and the fact that U.S. house prices had never declined. If Hank Paulson had counted on a 30% decline, he would have foreseen a calamity for banks and related entities, since he especially must have known about the highly suspicious quality of the instruments. He would have known that Fannie and Freddie, to be topical, at over 60x leverage obviously did not have enough equity for this kind of decline. Had he believed, he would have entered his job demanding immediate damage control and that much more equity be raised rather than suggesting that all was well and contained. The big-wig bankers at Merrill, Citi, Lehman, Bear Stearns, et al. could never have behaved the way they did had they understood the size of the likely drop in housing values.

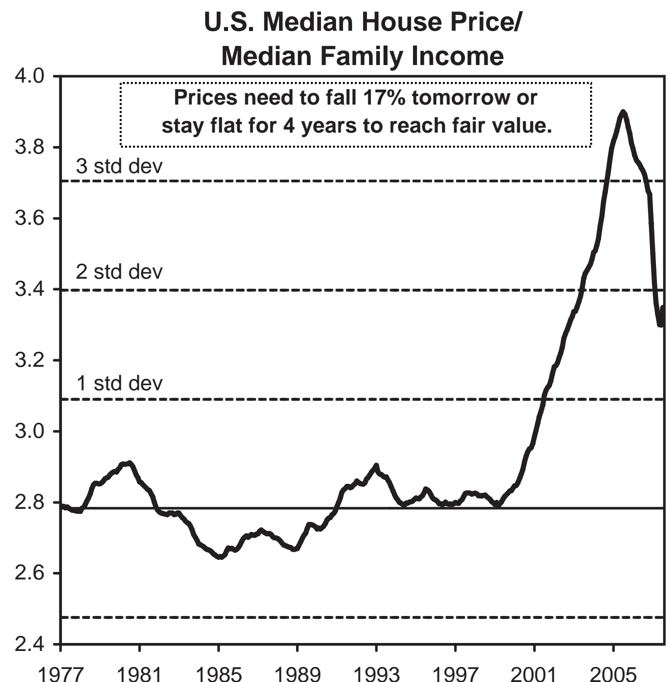
We now have several other big negatives that are unrelated (or only slightly related) to U.S. housing: commodity price increases, rising inflation, and dollar problems. They will independently cause plenty of grief. But without the U.S. (and soon the U.K.) housing issues, the pressure on the global financial system would have been manageable. And without ignorant behavior around bubbles – the near certainty of their breaking and the damage they invariably cause, especially in housing – most of our current near disaster would have been avoided. It is all very, very frustrating. It's almost as bad as struggling with the efficient market hypothesis for 30 years, and is closely related to it. As Kindleberger[2] said, this kind of belief in efficiency that denies the existence of bubbles "ignores a condition for the sake of a theory." To which I can't resist adding: Bubbles occur. They always burst. They always cause pain. Financial leaders, please wake up!

The U.S. Housing Bubble and the Poor U.K.

Well, it's been an eventful 6 months in housing! Exhibit 1 shows our well-worn, but updated exhibit of the classic bubble in U.S. house prices that we have been showing for 3 years now. It is interesting to read how surprising the U.S. house price decline has apparently been for many commentators. But in real life, it would have been far more than merely surprising, perhaps even unique, if they had not declined, as our study of all similar 2-standard-deviation (40-year event) bubbles has indicated. The reason house prices had never declined before was that hitherto the U.S. housing market was very diverse, bubbling in one area while cooling in another. Uniquely this time, the areas varied from red hot to merely warm, with the average deep in extreme bubble territory (the 100-year event or 3 standard deviations from long-term

Exhibit 1

U.S. House Prices Will Continue to Decline



Source: National Association of Realtors, U.S. Census Bureau, GMO
As of 6/30/08

[2] Charles P. Kindleberger, *Manias, Panics, and Crashes: A History of Financial Crises* (New York: John Wiley & Sons, 2005).

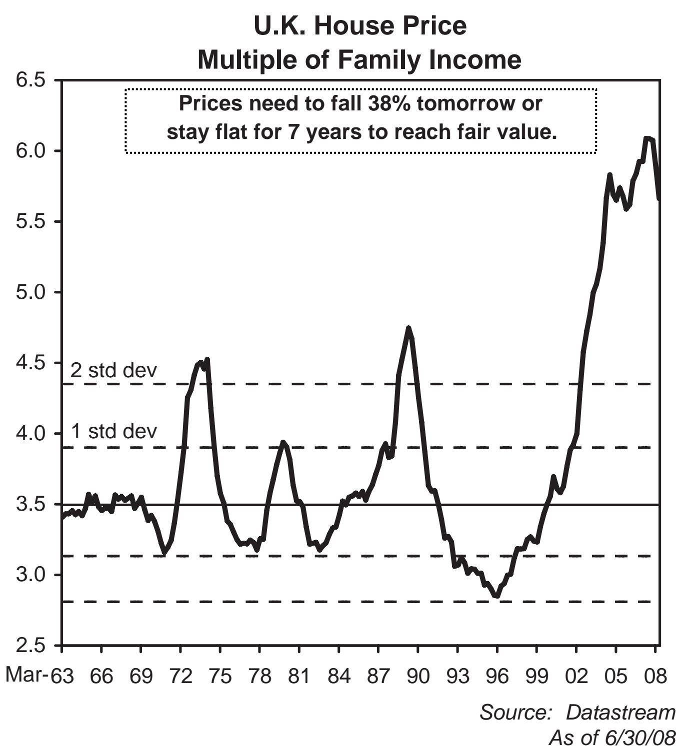
trend). From this extreme level, this bubble has burst quite rapidly, in fact about as rapidly as it went up, which is also typical of large bubble events. In order for house prices to reach normal from here, they must either decline 17% immediately or experience 4 flat years while income catches up, or some combination. However, what we must worry about is the normal tendency for bubbles to overrun on the downside. Exhibit 2, my recent favorite exhibit, shows the dramatic differences between our housing prices and those in the U.K. While the U.S. is a newcomer to housing bubbles, the Brits are old pros. It's practically their national past time. They may not win at Wimbledon, but they can do really good housing bubbles! 1973 and 1989 were the peaks of two handsome, fairly symmetrical housing bubbles in the U.K. Note in particular how the housing market reached fair value at trend in 1992 and overran considerably by 1996, which produced the lowest income multiples since the records began in 1950. We had all been told that the 1989 U.K. prices were a new high plateau because they were no longer making any more land and certainly were not zoning any more old land for housing. Presumably by 1997, they had decided to make some more after all.

The U.K. housing event is probably second only to the Japanese 1990 land bubble in the Real Estate Bubble Hall of Fame. It was no fantasy that the land under the Emperor's palace really did equal the whole of California at the peak prices. The current U.K. housing event had become the biggest tease in bubble history, beginning to decline almost 4 years ago, then putting together another 2-year rally before finally flagging this year. The bad news is that as usual it will go all the way back to normal – which you can barely see from here – and very probably will overrun just to rub it in. It will make our troubles look like a toothache to their hip replacement. Unfortunately for global financial well being, the U.K. is not Iceland, but a major player in the global banking business, so the scale of the write-downs will produce yet another wave of destabilization.

In the U.K., house prices could easily decline 50% from the peak, and at that lower level they would still be higher than they were in 1997 as a multiple of income! It is a truly ugly thought that mortgage lenders and the guardians of the financial system seem never to have considered, at least until recent weeks. If prices go all the way back to trend, and history says that is extremely likely, then the U.K. financial system will definitely need some serious bailouts and the global ripples will be substantial. Of all the negative possibilities out there, and there are plenty, real pain in this area is the most likely; I would say, nearly certain.

Exhibit 2

U.K. House Prices Will Really Decline!



Source: Datastream
As of 6/30/08

Thank Heaven for Optimists

George Soros has long believed in "Reflexivity," a term he uses to describe how even strange and irrational investment beliefs can still impact and change reality. Seldom has this been demonstrated better than in the irrational belief that the credit cycle's problems were over late last year and again in April this year. This belief allowed for two waves of capital raising by banks and related entities from sovereign funds, institutions, and corporations, who assumed all the bad news was over and the price was right. Investors have been conditioned to buy the dips since 1982, because doing so was most often successful, notably so in the 1987 crash. But this time really is different, and the problems will be deeper and longer than most investors even now expect. By the end, capital equal to a third of all the financial capital that existed in June 2007 may have been written off. At this level of reduced equity, the banking system could not function effectively. I believe that realistic investors should have held back from investing in weakened financial companies and mostly still should. But we all need the financial system

to survive and function effectively, and to do this it needs more capital. We have all benefited from the generous, if misguided, investments that have already taken place and the increasingly reluctant ones that will continue to be made. So, to all you sovereign funds, private equity funds, Bank of Americas, and shareholders who threw your money into overpriced banking stocks to provide new capital, a heartfelt "Thank you!" from all of us.

Recent Performance

This year has not been without unexpected problems for us. Our fixed income difficulties from last year continued, but now we believe, given higher yields on our asset-backed paper and the likelihood of being paid off, that we will get back over the coming months at least most of what we lost this year.

In equities, all measures of value have had a very tough time globally, and the expected move to fundamental quality and away from riskier stocks has been very slight and uneven, which is remarkable given the heightened risk awareness in fixed income. The first week of the year was phenomenally good in this respect, but in the months following the Fed's string of bailouts, risky stocks came roaring back. By May, most of our equity strategies were down against their benchmarks. Reality, however, began to bite in June and most of our equity strategies nosed ahead and continued to run in early July. For the year, our Emerging and International Active strategies were slightly behind, U.S. Core and Quality very slightly ahead, and International Quant about 2 points ahead. Asset Allocation's long-only strategies such as global balanced were slightly ahead, and our hedge strategies performed well in a difficult period. Multi-Strategy was up 6.5% for the year. We continue to have high expectations from our very conservative disposition in equities, hedge strategies, and asset allocation.

Footnote: GMO's 10-year Forecast from June 1998

There have been very good times and very bad times over the last decade, so it's a reasonably appropriate moment to look at the 10-year forecast we put out in June 1998. As you can see from Table 1, U.S. equity performance came in dead last out of 10 asset categories, as we suggested it would, but it was still 1.3% a year ahead of our expectations. All of this outperformance resulted from profit margins that in June were still well above the long-term average, in our view unsustainably so. If profit

Table 1

GMO 10-Year Forecasts for June 30, 1998

Forecasts from June 30, 1998 vs. actual as of June 30, 2008

Asset Class	Estimated Rank	GMO 10-Yr Forecast June '98 (% Real Return/Yr)	Actual 10-Yr Return*	Actual Rank
Emerging Market Equities	1	7.0	13.4	1
U.S. REITs	2	5.2	7.4	2
Emerging Country Debt	3	4.9	6.9	3
International Small Cap	4	4.9	6.5	4
U.S. TIPS	5	3.8	4.8	5
Lehman Aggregate	6	2.6	2.7	7
EAFE	7	2.5	2.9	6
U.S. T-Bills	8	2.1	0.6	9
Foreign Bonds	9	2.0	2.2	8
S&P 500	10	-1.3	0.0	10

**Actual real index returns are for 6/30/98 to 6/30/08 period.* *Source: GMO*

margins were normal today, even with no shift in P/E ratios, the last 10 years' returns would have been 0.6% a year behind our estimate. EAFE equities came in 0.4% a year ahead of expectations. Emerging equities that we ranked in first place indeed came in first, outperforming – bless them – by 6.4% a year, ahead of our already strong estimate. Although we were a little pessimistic in general, accounted for by remarkably strong ending margins, we nailed the rankings with none of the 10 categories being more than 1 place from the correct ranking. (Forestry was not a serious asset class 10 years ago but, for the record, our forestry estimate was 5.0% real – shortly after that date to be raised to 7.0% – and the actual performance on the NCREIF Timberland index came in at 6.0%, handsomely ahead of the major asset classes.)

We so-called "perma bears" are criticized because negativity is unpleasant and off-putting to most investors. Most strategists, through this dismal 10 years for U.S. equities, have been more or less "perma bulls." Back in 1998, they were arguing for a normal long-term return, that is to say about 7-8% real. If we feel that we have been unduly optimistic, what must they feel? They really do get away with murder!

Disclaimer: The views expressed are the views of Jeremy Grantham through the period ending July 25, 2008, and are subject to change at any time based on market and other conditions. This is not an offer or solicitation for the purchase or sale of any security and should not be construed as such. References to specific securities and issuers are for illustrative purposes only and are not intended to be, and should not be interpreted as, recommendations to purchase or sell such securities.

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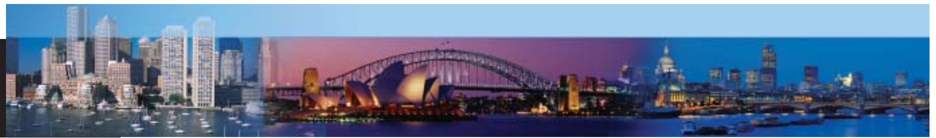
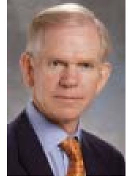
SPECIAL TOPIC



July 2008

*Letters to the Investment Committee XV**

Living Beyond Our Means: Entering the Age of Limitations



Jeremy Grantham

"Wolf! Wolf!"

How many times over the last 200 years have gloomy economists predicted limitations to growth? And always they were wrong. Science and human ingenuity always came to the rescue. Instead of rising steadily in price, raw materials and food fell in real terms. And since hourly income rose, raw materials became ever more affordable as the specter of starvation, although always around, steadily retreated. Food, for example, fell from 70% of a typical American's budget 200 years ago to about 10% today. And, every time a warning was redundant, the idea that science always wins and that the human brain and talent are boundless and can conquer all took deeper root. We have learned in the stock market not to underestimate the power of repeated events to create a consensus. Humans are just plain eager to see patterns, and 200 years of increasing plenty in the face of recurrent pessimism is serious reinforcement indeed. It is hardly surprising, therefore, to find ourselves in a position where faith in our ability to rise above the planet's limitations is complete.

It is believed today by just about everyone, smart or not, well informed or not. And so it probably was with the Mayans, whose civilization withstood the limitations imposed by the local environment and other stresses for almost 1000 years. Yes, there were close calls, dreadful droughts and wars, but with their boundless ingenuity and a few human sacrifices, they scraped through over and over again. A millennium must have left the Mayans feeling that their prosperity was divinely endowed. But eventually, despite their time-baked confidence, they leaned a little too hard on their resources, the droughts lasted a little too long, and it all ended.

Our current faith, though, is based on impressive data. Every commodity (with the clear exception of wood, and the possible exception of oil) has declined in real price for 200 years. These prices have fallen despite the obvious truth that we try to use the most fertile soil first and find the shallowest oil, the thickest coal seams, and the richest ores. Offsetting this pressure from naturally rising marginal costs was a steady rise in technological progress: it became cheaper to drill ever deeper wells because techniques for both locating and drilling oil improved. And so it was with corn and copper and everything else. But it was not a natural law that this trend would continue indefinitely. It happened because of the accidental confluence of favorable factors. As the world entered the technological and agricultural revolutions led by Britain in the 18th century, productivity surged. Britain's per capita wealth doubled in 100 years, equaling the growth of at least the previous 1000 years. This doubling occurred in Germany in 70 years, and then eventually in Japan in 40, in South Korea in 30, and finally in China in 10 or 12. This acceleration reflected the growing accumulation of advanced techniques that were exploited by the latest arrivals. The accumulated body of science and technology was applied in each new country to economic and agricultural systems that had changed only slightly for the mass of people in thousands of years. This created a mass of low-hanging fruit and, with these easy pick-ups, populations could expand and grow wealthier simultaneously. The new arrivals to economic take-off helped sustain the momentum of the more mature countries such as the U.S. and European nations that were growing at the boundaries of technology. Almost too good to be true, cumulative technological progress was a

* The Letters to the Investment Committee series is designed for a very focused market: members of institutional committees who are well informed but non-investment professionals.

little faster than the increasing marginal costs of a world now growing at a remarkable 3% a year. The real price of commodities, defying the doomsayers, fell about 1.5% a year, a number that sounds small but is large enough to steadily increase global wealth.

There were however, at least two worms in the apple. The first is that if enough people enter economic take-off at approximately the same time, as 2.3 billion Chinese and Indians have now done, then the pressure on resources might happen to increase marginal costs slightly faster than technology could offset them. The second worm, though, is much more serious: the developed world's great growth spurt has been facilitated by and sustained only at the cost of eating through our patrimony, the incredibly fortunate set of unique but finite resources that our planet inherited utterly by chance: underground water resources that currently sustain some of our most productive land but like a metronome tick off a reduction of several feet each year; rain-fed waters that, although renewable, are finite and already so overused that previously valuable lakes retreat to sometimes disastrous local effects and river volumes, once seemingly limitless, are now fought over; subsoil, which took thousands of years to form, is depleted through casual use (In the Midwest, for every bushel of wheat produced, it is said that a bushel of subsoil is lost. Our farmers are in the mining business! Yes, the soil is incredibly deep, but it is still finite.); high-grade mineral ores are fully developed, the very best are long gone, and all are irreplaceable; previously fertile land has often been overgrazed and turned into desert.

At the end of this list is the one we usually worry about the most: hydrocarbons. Here technology has remarkably kept the life of resources from imploding. But there are limits, and we have reached them. Since 1974 the U.S., despite all investments and improved technology, has steadily reduced oil output. Now the entire world routinely adds less oil to reserves than it pumps.

And you, of course, have heard it all before and dismiss it. Well, let me give you a thought experiment to mentally chew on. For the last 2 years the world's growth (of goods and services) has grown at 4.5% a year. Since we can convince ourselves that services like haircuts that were once 50¢ (or $5 in today's currency) are now "worth" $25 for an identical service, we had better limit ourselves to goods, for they are what sustain us: food, clothing, housing, and vehicles. Let us imagine a long-lived civilization. The longest lived is probably in Egypt, where a closely related culture existed for 3000 years. And let us assume, to simplify, that wealth could be defined as tangible, as the cubic capacity of possessions. If Ancient Egypt had started in 3000 BC with just 1 cubic meter of possessions and had grown them at 4.5% a year, sustained by technology and the unbounded inventiveness of man's brain, then man's brain would have a major parking problem to deal with. Egypt's wealth would have grown from 1 cubic meter to 10^{67} cubic meters, an amount so vast it could not be squeezed into the entire known universe! So let's reverse engineer it. What growth could have been sustained? At a lowly 1%, Egypt's physical wealth would have increased by more than 9 trillion times. Even at 1/10 of a percent, Egypt's wealth would have multiplied by 20 times, very much more than they accomplished but at least a level of growth in physical assets that the planet could probably sustain for another 5000 or 10,000 years. Not however, the kind of growth to which we think we are entitled, and even then only possible if there were no simultaneous population growth. For the long-term growth consequences for population are the same. The world's population, which is thought to have been about 15 million in 3000 BC, would have become 1.5×10^{20} at 1% growth or almost 150 million times 1 trillion people by the time of Christ! And remember, this is a growth rate in global population far less than the 1.5% in my lifetime, and indeed close to that which Malthus was seeing when he wrote his famous "Essay on the Principle of Population" in 1798.

I like to say that of course Malthus was right; he merely got his timing wrong. And even that comment might be unfair. He argued that if population compounded at that rate in 1800, it would eventually get ahead of food supply. With the vision of quadrillions of people before us, after 3000 years at a mere 1%, it should be easy to buy his argument. There would be nowhere to stand, let alone grow food. Impatient as ever, we wanted Malthus to be right immediately rather than realizing that his argument draws its power from its inevitability, not its immediacy. But, let's look at Malthus' argument in more detail for a few minutes. From the 15 million inhabitants of 3000 BC, population about doubled every 1000 years with some spurts and setbacks until 1000 AD, when the world's population was about 250 million. This 4000-year growth rate was coincidentally just a shade over 0.1% a year. It continued to grow at just over that rate, and by 1700 had doubled again in those 700 years. Then as the Industrial Revolution kicked in, observed by

Malthus, global population exploded: up over 10 times in 300 years, more than the prior 3000 years had produced. Even in this explosive phase, it started relatively slowly, at about 0.4% for the first 150 years and accelerated to 0.8% for the second 150 years. And that was not the end, for in the last 70 years, it averaged over 1% and actually peaked at over 2% – or at least we must pray it peaked – a few years ago!

Malthus recognized that man's ingenuity could increase agricultural output, as well he might, since he lived through England's agricultural revolution with "Turnip Townshend" and other gentlemen-scientist-farmers of that era who pioneered crop rotation, fallow years, and nitrogen-fixing crops. On the positive side of the equation, he did not foresee what might be called "The Hydrocarbon Revolution," in which a bountiful store of energy and fertilizer could be unexpectedly used to muscle multiples of the output that mere brainpower could achieve. To be fair though, he also missed the comparable increases from human engineered improved crops. On the negative side, his barely imagined worst nightmare of an accelerating growth in human population was exactly what came to pass. And, at anything like current or recent growth rates in population, we will of course – guaranteed beyond all doubt – outrun all of our resources including simply the space to put ourselves, let alone our burgeoning possessions. Indeed, if we were to try and go down that path, we would also guarantee the destruction of a great majority of the planet's diversity, quite probably including ourselves.

Malthus' second edition urged voluntary ("moral") checks on population growth but, since he considered man's sexual desire and fertility to be a given, he cannot have been too confident. So Malthus expected that it was more likely that humans, like rats, would multiply right up to the boundary of food supply and permanently stay there. Into this ugly Malthus-was-right world, however, entered a positive and unforeseen factor: a voluntary reduction in birth rate caused by two completely different reasons. For agrarian societies, as abject poverty decreases, so does the need for the old age insurance that having 10 children used to provide. Even more unexpectedly, for developed economies the second variable is the love of the good life. What a delicious irony that the very factor that causes us so much trouble in resource depletion and climate change will through a similar motive lead to fewer inconvenient and expensive children!

Whatever the reasons, it looks increasingly as if global birth rates will slow for a long time, and that before the end of this century, and perhaps much sooner, global population will start to fall until once again we are below the long-term sustainable capacity of Earth. The critical period is precisely this century. We are living in a thoroughly dangerous and interesting phase where we determine how much irreversible and semi-permanent damage we do to our planet and test our previously modest abilities to cooperate and defer gratification for the greater good of our future.

In the meantime, we are living increasingly beyond our means, and Mr. Market is about to help us reconsider our behavior. This century will likely see the end of the Industrial Revolution and the age of "limitless resources." Higher prices and (hopefully) voluntary improved behavior will together usher in the post-Industrial Revolution phase of limited resources and frugality. We will all modify our behavior and probably quite fast. We will all re-adopt Yankee virtues (or Yorkshire virtues, I might add) of "waste not, want not," and get accustomed to using our brains instead of our hydrocarbon brawn.

The prices of commodities are likely to crack short term (see first section of this letter), but this will be just a tease. In the next decades, the prices of all future raw materials will be priced as just what they are: irreplaceable. Oil, for example, will never again be priced on the marginal cost of pumping a marginal barrel from some giant Saudi oil field, as has been the practice for most of the last 100 years of oil production. Real cost is always replacement cost and oil, a precious feedstock for chemicals and fertilizers, simply cannot be replaced. Using marginal cost as a substitute was ignorant and conducive to wasteful consumption of scarce energy resources. It also enabled us to put our collective head in the sand and ignore the growing need for an enlightened long-term energy and climate policy.

Relatively quickly, in 100 years or so, we will run out of oil, underground water, and most non-fully-renewable resources. At current rates, we will do it very, very fast. A major complication now, though, is that we have been brainwashed by repetition to reject this whole idea as irretrievably pessimistic and defeatist, and just well ... thoroughly un-American.

One of the most unfortunate features of our sustained ability to overcome presumed limitations by applying

technology is in the dangerous overconfidence it has given us, particularly in our casual and profligate use of resources. Starting now, higher prices will steadily overcome our optimistic assumptions and change our wasteful behavior. We must remember that, after all, in the wolf story, the wolf finally comes.

Investment Implications

Looking ahead to the next several decades, investors should be particularly interested in all finite raw materials, especially land useful for farming or forestry, and preferably in those emerging countries where one can stand the legal risks. I would include water rights and water treatment in this category as well.

There will also be a bottomless pit of investment opportunities in new technologies that address energy conservation, alternative energy (including nuclear), carbon extraction, and agricultural improvements (including new farming techniques that conserve land and limit resource-intensive fertilizer as well as designer grains).

Those who are moving early on these issues are sending a very positive signal to investors. They are showing a willingness to think long term in a world increasingly fixated by next quarter's earnings. They are, in my opinion at least, flagging that they are quicker on the uptake and simply better suited for success in the new era. That some investors have shorter horizons than these progressive companies do will almost certainly turn out to be a failing of investors and not the corporations!

Redesigning corporations for a resource-limited world will not be easy. They have been conditioned by a 25-year credit expansion to think ... well, expansively. With this attitude, declining commodity prices for the first 20 years was strong reinforcement. "Top-line growth at all costs" and "the devil take the hindmost" were the slogans. And now, you can hear the gears grinding as the early handful realize the game has changed to careful, frugal, and profitable growth.

This is not to say that all fault lies with corporations. Mostly the profligacy has been on the part of consumers, with their McMansions and Hummers, but there has still been a critical difference between the Toyotas leading the consumers and the GMs following them.

The American genius suited the era of the Industrial Revolution. As the Confederate General Forrest would say, victory goes to those who get there first with the most. An age of limitations will be more like the "Tragedy of the Commons," where uncontrolled and uncooperative access to the common land resulted in sheep destroying grazing land. The American hard-driving way has historically been to get the most darned sheep on the common first. Going forward, the types of problems we will have to deal with include climate change, environmental pollution, and resource limitation. They need broad-ranging thinking that must be long term and must put the common good above corporate interests. Unfettered capitalism, however desirable in principle, can never handle these problems! It can never prevent over-grazing or over-fishing of common property any more than it can handle over-carbonizing of our common atmosphere. Whether the think tanks and libertarians like it or not, tragedies of the commons need enlightened government, cooperation, and leadership.

Other developed countries seemed to start this era with more suitable predispositions for dealing with the problems we all face. Recent history in the U.S., with no sensible energy policy and failure of leadership in climate problems (including the lack of government assistance for alternative energy research), means we start the new race a few steps off the pace. The French famously derive a nearly 8 times larger share of electricity from nuclear power than the U.S. The Germans have well over 8 times our share from solar and wind, in which they have become leaders. We must either change quickly, or we will fall behind. The change will not be easy, for our faith in American ingenuity conquering all – if unfettered by government – is very substantial, and we have not been in the mood to make hard choices for some time. Congress' attempt to scapegoat buyers of commodity futures as the cause of the rise in oil prices, rather than their own vacuous and weak-kneed lack of a long-term energy policy, is not a promising start. Nor is the fact that at the end of this year, Congress will have allowed subsidies for alternative energy to expire while retaining subsidies for oil and gas. That's right: they really don't get it yet. But they will.

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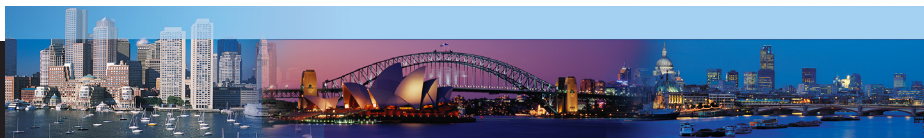
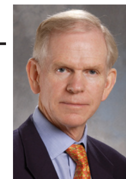


QUARTERLY LETTER

October 2008



Reaping the Whirlwind[1]

Jeremy Grantham

The time to blame should be past, or at least in abeyance until the crisis is past, but I find it impossible to avoid it completely. Sorry. In any case, just to set the scene, it is necessary to review briefly the poisonous wind that we all sowed.

1. We had an extended period of excess increase in money supply, loan growth, leverage, and below normal interest rates.
2. This combined with a remarkably lucky global economic environment that we described as "near perfect" to produce a bubble in asset classes, as such a combination has done without exception according to our research. Since all these factors were global, the combination produced what we have called "the first truly global bubble" in all assets everywhere with only a few modest exceptions.
3. While these asset bubbles were inflating, facilitated by easy money, the authorities – the Fed, the SEC, the Treasury, and Congress – rather than tightening existing regulations, partially dismantled them. They freed commercial banks while further reducing controls on investment banks, allowing leverage to take wing. More recently they almost gratuitously, without being pressured, removed the uptick rule for shorting. And this is just a sample. Simultaneously, attempts in some quarters to address growing risks were beaten back or diluted by Democrats and Republicans alike. Examples here include early efforts to rein in stock options and the attempt to add controls to Fannie and Freddie. (I'm biting my lip not to name names.) Worse yet, the regulating authorities appeared to encourage the worst excesses by admiring the ingenuity of new financial instruments (okay, that was Greenspan), and by repeating their belief that no bubbles existed (or perhaps could ever exist) and that housing at the peak "merely reflected a strong U.S. economy." Finally, as the bubbles inevitably began to break, all was said to be contained and the economy was claimed to be strong.
4. The combination of favorable conditions and irrationally exuberant encouragement from the authorities produced an even more poisonous bubble – that in risk-taking itself. Everybody, and I mean everybody, got the point that risk-taking was asymmetrical and reached to take more risk. The asymmetry here was that if things worked out badly they would help you out (this sounds very familiar!), but if all went well you were on your own, poor thing. Ah, the joys of pure capitalism!
5. In this regard, some deadly groundwork had been laid by the concept of rational expectations, or market efficiency. This argued that we were all far too sensible for major bubbles to appear. This is a convenient theory for mathematical treatment, but obviously totally unconnected to the real world of greed and fear. It dangerously encourages the belief that if you take more risk you will automatically receive more reward. That condition might often, even usually, be the case because in normal quiet markets a rough approximation of that relationship is usually priced into the markets. But in wildly-behaving markets where risk is mispriced, it is not true. From June 2006 to June 2007 on our seven-year data, investors lulled by these beliefs and the conditions of the market were actually paying to take risks for the first time in history.
6. Just as all bubbles have broken, these bubbles did. Far from being a surprise, the bubbles breaking were absolutely not outlier events, contrary to protestations. The bubbles forming in 1998 and 1999 and in 2003 through 2007 were the outlier events. The U.S. housing market, which was a clear bubble with prices at least 30% above a previous very stable trend, is

[1] "For they sow the wind, and they reap the whirlwind." Hosea 8:7

well on its way back to normal, and equities and risk-taking may well have made it all the way back.

7. The stresses on the financial and economic world of these bubbles breaking was always going to be great. To repeat a comment I made 18 months ago, "If everything goes right (as a bubble breaks) there will always be lots of pain. If anything is done wrong there will be even more. It is increasingly impressive and surprising how much we have done wrong this time!"

8. By far, the biggest failing of our system has been its unwillingness to deal with important asset bubbles as they form (see last quarter's Letter). I started a long diatribe on this topic in 1998 and 1999 and reviewed it in Feet of Clay (2002), which is aimed at my arch villain, Alan Greenspan. With the housing bubble even more dangerous to mess with than equities, Bernanke joined my rogues' gallery. If we change our policy and move gently but early to moderate bubbles, this crisis need never be repeated. There are signs that the previously intractable authorities are reconsidering their bone-headed position on this topic. If they change, all this pain will not have been totally in vain. (See Part 2 of this Letter, titled "Silver Linings," in two weeks or so.)

9. The icing on the cake as far as the bust is concerned has been provided by Buffett's "financial weapons of mass destruction" – the new sliced and diced packages of loan material so complicated that, shall we say, few understood them. The uncertainties and doubts generated by their complexities were impressive. Trust and confidence are the keys to our elaborate financial structure, which is ultimately faith-based. The current hugely increased doubt is a potential lethal blow to the system and <u>must be addressed at any cost as fast as possible</u>. Concern about moral hazard is secondary and must be put into abeyance for the time being. Wall Street leaders are in any case now fully scared and are likely to stay that way for a few years!

10. To avoid the development of crises, you need a plentiful supply of foresight, imagination, and competence. A few quarters ago I likened our financial system to an elaborate suspension bridge, hopefully built with some good, old-fashioned Victorian over-engineering. Well, it wasn't over-engineered! It was built to do just fine under favorable conditions. Now with hurricanes blowing, the Corps of Engineers, as it were, are working around the clock to prop up a suspiciously jerry-built edifice. When a crisis occurs, you need competence and courage to deal with it. The bitterest disappointment of this crisis has been how completely the build-up of the bubbles in asset prices and risk-taking was rationalized and ignored by the authorities, especially the formerly esteemed Chairman of the Fed.

Where Was Our Leadership?

This brings us to ask the question: Why did our leaders encourage the deregulation, encourage the leveraging and risk-taking, and completely miss or dismiss the growing signs of trouble and what we described as the "near certainties" of bubbles breaking? Well, I have two theories. The first is our old chestnut and is related to my current stump speech, which is called "Career Risk and Bubbles Breaking: the Only Things that Matter." Career risk is why CEOs, entrusted with our money, were still dancing late into the game. So late that the clock had already struck midnight and they had already turned back into pumpkins or rats, but just didn't know it. It's what I call the Goldman Sachs Effect: Goldman increased its leverage and its profit margins shot into the stratosphere. Eager to keep up, other banks, with less talent and energy than Goldman, copied them with ultimately disastrous consequences. And woe betide the CEO who missed the game and looked like an old fuddy-duddy. The Board would simply kick him out, in the name of protecting the stockholders' future profits, and hire in more of a gunslinger from, say, Credit Suisse.

My second theory would be even harder to prove, and this is it: that CEOs are picked for their left-brain skills – focus, hard work, decisiveness, persuasiveness, political skills, and, if you are lucky, analytical skills and charisma. The "Great American Executives" are not picked for patience. Indeed, if they could even spell the word they would be fired. They are not paid to put their feet up or waste time thinking about history and the long-term future; they are paid to be decisive and to act now.

The type of people who saw these problems unfolding, on the other hand, had much less career risk or none at all. We know literally dozens of these people. In fact, almost all the people who have good historical data and are thoughtful were giving us good advice, often for **years** before the troubles arrived. They all have the patience of Job. They are also all right-brained: more intuitive, more

given to developing odd theories, wallowing in historical data, and taking their time. They are almost universally interested – even obsessed – with outlier events, and unique, new, and different combinations of factors. These ruminations take up a good chunk of their time. Do such thoughts take more than a few seconds of time for the great CEOs who, to the man, missed everything that was new and different? Unfortunately for all of us, it was the new and different this time that just happened to be vital.

It is therefore ironic that we fire these top CEOs when the trouble hits. The headline should read: "Come back, leaders of Merrill, Citi, Bear, and Lehman. All is forgiven (for a while)." The typical CEO is precisely equipped to deal with emergencies and digging out. Thus, Paulson was just the man to miss the point, but equally just the man – or at least a typically good one – to deal with a complicated crisis under stress.

While reading this section to my wife, she asked, "But what about the Boards of Directors? Can't they complement the CEOs' short-term decisiveness with longer-term wisdom?" What a great idea – a balance of left- and right-brained thinking. And so it should be, and actually is intended to be, on paper. What a shame that we have typically subverted this balance into a CEO fan club of old friends and mutual backscratchers.

Near Certainties

The three "near certainties" we talked about in mid-2007 have all behaved themselves. They were that U.S. and U.K. house prices would decline, that profit margins globally would decline, and that risk premiums everywhere would rise, and all three with severe consequences on markets and the financial and economic systems. The U.S. and U.K. housing markets, the proximate cause of our current troubles, have declined. The U.S. market has probably quite a way to go, but likely is well over the mid-point of its correction. The price declines of the U.K. market have, in contrast, merely started. Housing transactions, in contrast, have vaporized. In fact, the scariest single data item for me, out of a huge selection, was the August decline in U.K. net new mortgages of 98% year over year (from over £7 billion down to under £200 million, a near total freeze-up)! And this with the official house price index pretending to be down only 10% at the end of August. This is one of the biggest shoes left to drop of Round I of this crisis. (I think of Round I as asset price bubbles breaking. Round II is the effect of this, especially of housing on the financial system. Round III is the effect of both Rounds I and II on the real economy.) When the U.K. housing shoe hits the floor it will come with another wave of write-downs and stress that, very fortunately for everyone, the British taxpayers have been volunteered to share. Thank you from everyone!

Global profit margins, the second near certainty, are also declining rapidly, but have a **long** way to go. The estimates of future earnings that we have been sniggering at for a year are still inconceivably high. Why do they bother? To repeat our mantra: global profit margins were recently at record highs. Profit margins are the most provably mean-reverting series in finance or economics. They will go back to normal. After big moves, they almost invariably overrun. With the current set of global misfortunes, they are very likely to overrun considerably this time.

But the most dramatic ground has been covered by the third near certainty – risk premiums. From record narrow spreads 18 months ago in fixed income markets in developed countries, most are far beyond normal already, although a few probably still don't get the full horror of some of the footnotes. (In contrast, in emerging countries we guess that most of the pain from the crisis unfortunately is still ahead, and here and there it could be very severe, although in total much less than in developed countries. It's just taking a long time to work through the system for them.) Developed equities – which we have written about as the slow-witted of the two major asset classes – had, as usual, a much harder time getting the point than bonds. At least that was the case until what seems like a few minutes ago when, in a clap of thunder, they got the whole ugly point in a wave of panic. The global equity markets moved in three weeks from quite expensive to moderately cheap for the first time in at least 20 years.

Basics

At times like this it is good to ask yourself what it is that you really know or think you really know. For us (in our asset allocation division) it is definitely **not** the ins and outs of the financial system, although we're trying harder and harder. The financial system is so mind-bogglingly complex that very few, even those with far deeper backgrounds than ours, fully understand it. Puzzlingly, despite our relative ignorance of financial details, we were more accurate than many experts in the last year about the big picture, and we can speculate why. First, as historians, we recognized that when bubbles break they almost invariably cause more pain than expected.

Second, we are Minsky mavens and believe that, with sadly defective humans making up the markets, Minsky was right to see periodic financial crises as well-nigh inevitable. Thus in the middle of last year when the experts at Goldman Sachs said they expected write-downs of $450 billion, I immediately wrote that we'd be lucky if it wasn't a trillion. I was playing off their detailed expertise and adding a generalized historical observation as I had done with the prediction that "at least one major bank – broadly defined – would fail," and that half of the hedge funds would be gone in five years. In previous banking crises, major banks had failed, and this crisis seemed likely, to us semi-pros, to be worse than most. So we studied in broad strokes previous crises and **armchaired** that we should up the ante. We got lucky in an area in which we were not real experts, and we know we were lucky. We will attempt to keep the luck and hedge our bets by also increasing our skills. The addition of Edward Chancellor, an experienced financial journalist/historian with a focus on credit crises, has been a very helpful start.

In contrast, what we do know, I believe, is asset class pricing and the behavior of bubbles, which are both derivatives of our single, big truth: mean reversion.

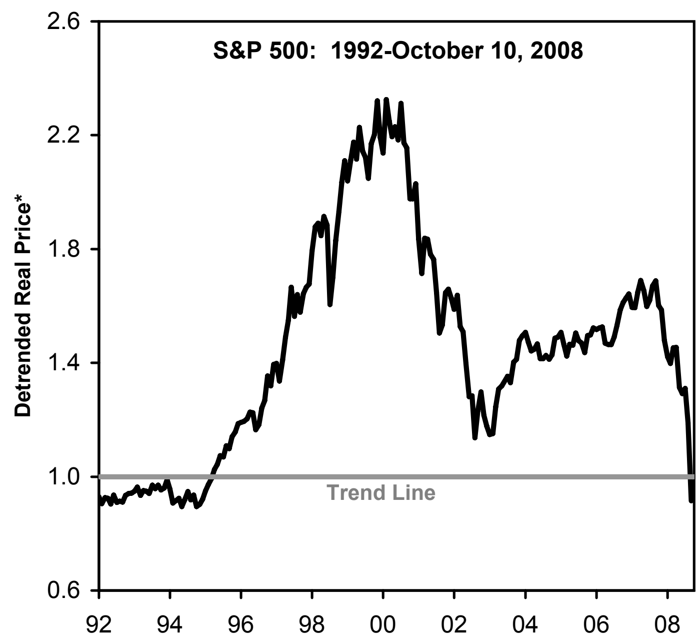
Bubbles Breaking

Back in 2000, as we continued to shake in our boots as the mad tech bubble kept defying gravity, we tried to reassure ourselves by looking at historical bubbles. We found 28 bubbles since 1920, defined arbitrarily but reasonably as two-standard-deviation events that in a Gaussian world should occur once every 40 years. All but one burst all the way back to the trend that existed prior to the start of the bubble. The single exception was the S&P 500 itself in 2000-02. Under the influence of what I've called "enough stimuli to get the dead to walk," the S&P, down from 1550, could not quite reach its trend value, which we had calculated to be 725. Instead it rallied at 775. (It had to fall 55% to reach trend, but fell 50%. Close, but no cigar. But, more critically, we had expected a fairly major overrun, which is historically so common.) Seeing this aberrant event led us to describe the market advance from 2002-07 as "the biggest sucker's rally in history." Now a wrinkle here is that, unlike most, we measure bull and bear markets based on their trend line growth after adjusting for inflation. The real growth in the index has historically been only 1.8% per year for the S&P, but for technical reasons (low payout rates in particular) we have allowed for moderately more real growth in recent years. In the six years since October 2002, the trend line has risen to 975 (plus or minus a little – we are constantly fine-tuning a percent here or there). Needless to say, two weeks ago the market crashed through that level, producing Exhibit 1. So now all 28 burst bubbles are present and accounted for. Long live mean reversion!

As for asset class returns, the early October crash has presented us with an opportunity to brandish our 10-year forecasts even more than we did last quarter. Exhibit 2 shows our 10-year forecast from September 30, 1998 and the actual asset returns for the most important assets for us in asset allocation.

Our 10-year forecast for the S&P 500 10 years ago was a lowly -1.1% real, an extreme outlier among forecasts. At the end of September the real return was exactly nil (0.0%). But it only took three days of October to hit our -1.1% forecast on the nose! Ten years and three days. For emerging equities, our forecast was +10.9% real and the actual was +12.8%. Not too bad, but even here in seven days – horrible days, admittedly – the return of emerging crossed our forecast on the way down. So today (October

Exhibit 1
The Bubble Finally Breaks



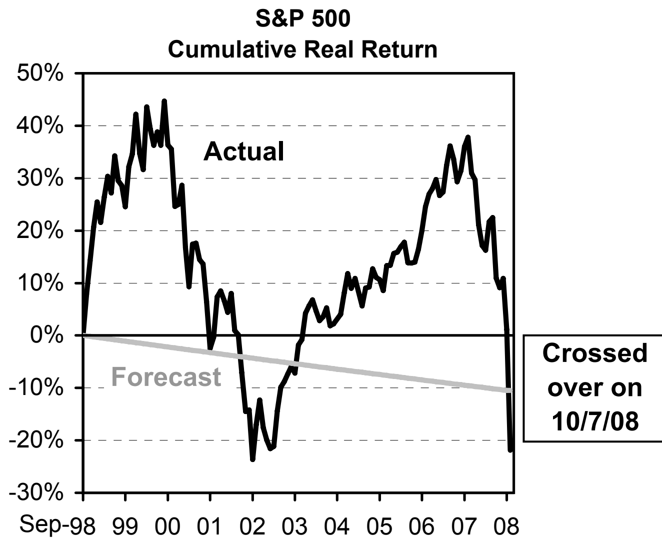
Note: Trend is 2% real price appreciation per year.

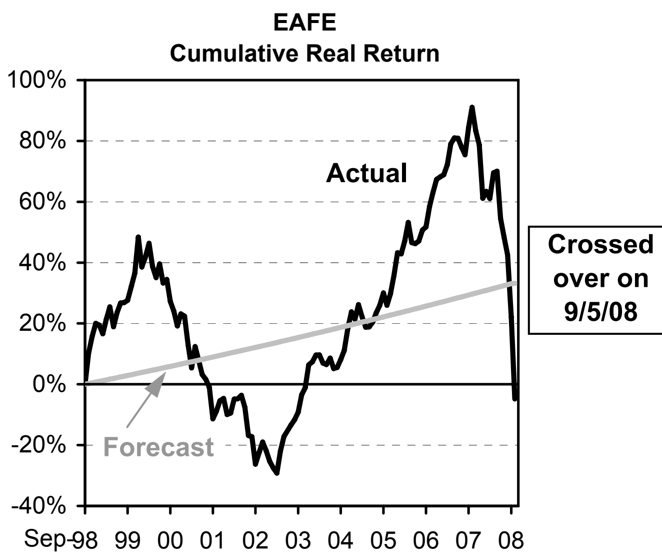
** Detrended Real Price is the price index divided by CPI+2%, since the long-term trend increase in the price of the S&P 500 has been on the order of 2% real.*

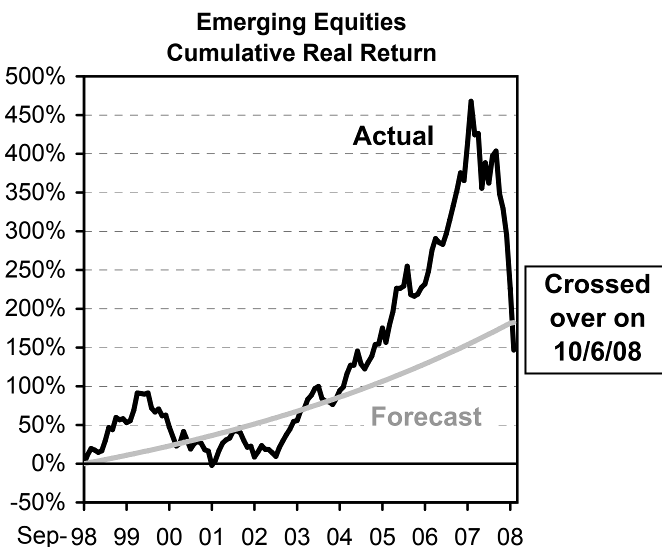
Source: GMO As of 10//10/08

Exhibit 2

On-Time Arrivals, Despite Some Turbulence







Source: GMO *As of 10/10/08*

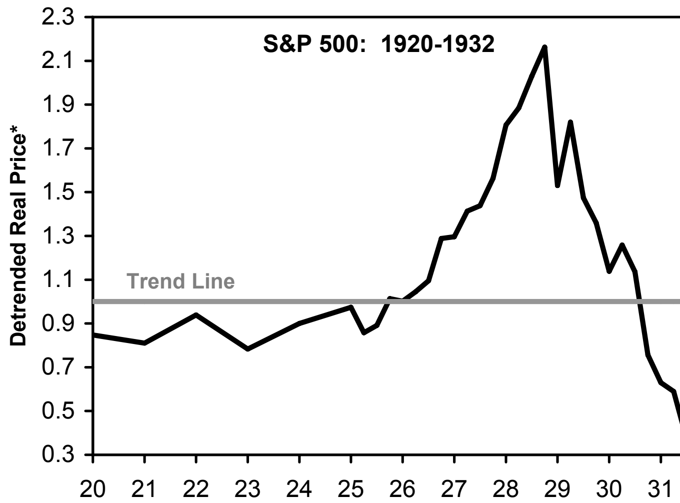
10), our forecasts of 10 years ago were optimistic, if you allow us a few days' leeway.

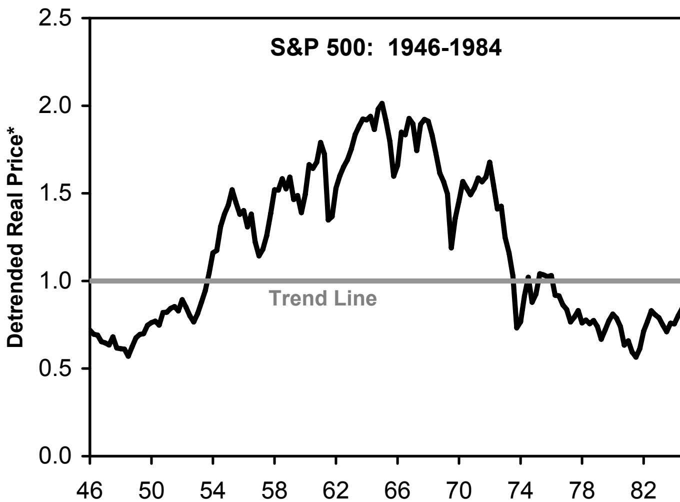
Where Are We Now?

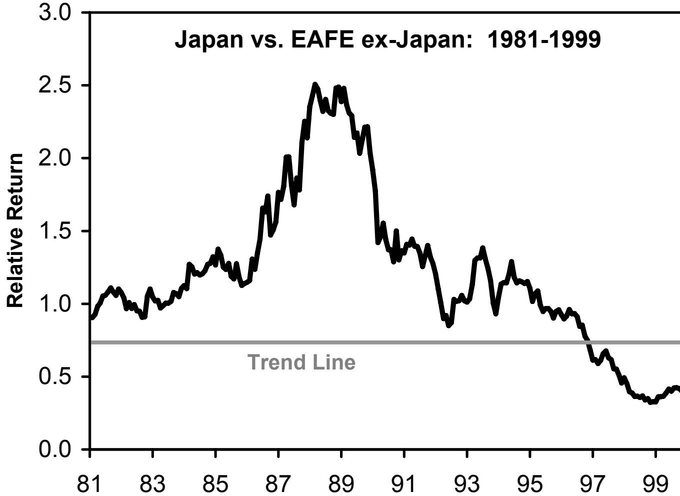
So brandishing our old 10-year forecasts and resisting the idea that even a blind pig will occasionally find a truffle, we have had some confidence in saying that by October 10th global equities were cheap on an absolute basis and cheaper than at any time in 20 years. Full disclosure requires that we add that, in our opinion, this is not as brilliant as it sounds, for markets have been more or less permanently overpriced since 1994 and have not been very cheap since 1982-83 and perhaps a few weeks in 1987. There is also a terrible caveat (isn't there always?), and that is presented in Exhibit 3, which shows the three most important equity bubbles of the 20th Century: 1929, 1965, and Japan in 1989. You will notice that all three overcorrected around their price trends by more than 50%! In the interest of general happiness, we do not trot out these exhibits often and, until recently, they would have been seen as totally irrelevant and perhaps indecent. But, after all, it's just history. Being optimistic like most humans, we draw the line at believing something so dire will happen this time. We can hide behind the fact that there are only three data points, and therefore no self-respecting statistician can give them much weight. We can convince ourselves that things are different this time since the background to each of the four events, including this one, is different. One of them had high inflation; three, including the current situation, did not. Japan and 1929 were characterized by complete incompetence, while this time we had only – shall we say – very widespread incompetence. This time we have thrown ourselves more quickly into battle, although not so quickly as some would have liked. Not all of the differences are favorable: we have a more global, interlocking, and complicated system, including non-bank players like hedge funds. We also have the "financial weapons of mass destruction" – asset-backed securities that are tiered and sliced and repackaged – and, perhaps most destabilizing of all, totally unregulated credit default swaps. Did we have even more greed and short-term orientation this time than they did? Well, we certainly didn't have less! Still, a 50% overrun seems unacceptable. Probably governments would feel that the consequences of such a loss in asset value would simply be too awful and would do anything to prevent it. And perhaps, just perhaps, their "anything" would work. But a reasonably conservative investor looking at the data would want to allow for at least a 20% overrun to, say, 800 on

Exhibit 3

Overrun!







Note: Trend is 2% real price appreciation per year.

** Detrended Real Price is the price index divided by CPI+2%, since the long-term trend increase in the price of the S&P 500 has been on the order of 2% real.*

Source: GMO

the S&P 500, and have a tiny portion of their brain loaded with the notion that it just might be quite a bit worse.

The Curse of the Value Manager

We at GMO have a strong value bias, and our curse, therefore, like all value managers, is being too early. In 1998 we saw horribly overpriced stocks that at 21 times earnings equaled the two previous great bubbles of 1929 and 1965. Seeing this new "peak," we were sellers far, far too early, only to watch it go to 35 times earnings! And as it went up, so many of our clients went with it, reminding us that career risk is really the only other thing that matters. The other side of the coin is that only sleepy value managers buy brilliantly cheap stocks: industrious, wide-awake value managers buy them when they are merely very nicely cheap, and suffer badly when they become – as they sometimes do – spectacularly cheap. I said as far back as 1999, while suffering from selling too soon, that my next big mistake would be buying too soon. This probably sounded ridiculous for someone who was regarded as a perma bear, but I meant it. With 14 years of an overpriced S&P, one feels like a perma bear just as I felt like a perma bull at the end of 13 years of underpriced markets from 1973-86. But that was long ago. Well, surprisingly, here we are again. Finally! On October 10th we can say that, with the S&P at 900, stocks are cheap in the U.S. and cheaper still overseas. We will therefore be steady buyers at these prices. Not necessarily rapid buyers, in fact probably not, but steady buyers. But we have no illusions. Timing is difficult and is apparently not usually our skill set, although we got desperately and atypically lucky moving rapidly to underweight in emerging equities three months ago. That aside, we play the numbers. And we recognize the real possibilities of severe and typical overruns. We also recognize that the current crisis comes with possibly unique dangers of a global meltdown. We recognize, in short, that we are very probably buying too soon. Caveat emptor.

Round III: The Economic Effects

Rounds I and II – the asset bubbles breaking and the credit crisis – will soon be mostly behind us, but the effect on the real world of economic output lies, unfortunately for all of us, almost entirely ahead. Employing our usual historically loaded armchair technique, we have been writing for several quarters that global economic weakness will be substantially worse and will last substantially longer than the official forecasts. We maintain that view even though official forecasts have dropped considerably.

The global economy is likely to show the scars of this crisis for several years. In particular, the illusion of wealth created by over-inflated asset prices has been dramatically reduced and, though most of this effect is behind us, a substantial part of the housing decline in some European countries and the U.S. is still to occur. We were all spending and, in the case of the U.S., importing as if we were much richer than is in fact the case. Particularly here in the U.S., increasing household debt temporarily masked some of the pain from little or no increase in real hourly wages for 20 to 30 years. Household debt since 1982 has added over 1% a year to consumer spending. Unfortunately, this net benefit does not go on forever.

In the first year in which you borrow 1% of your income, the interest payment barely makes a dent and your spending is close to 101% of your disposable income. But each year you borrow an incremental 1%, your interest load grows. After 15 years or so in a world of an average 7% interest rate, the interest on the accumulating debt fully offsets the new borrowing when one looks at consumers collectively. Well, we in the U.S. are closer to a model of 30 years of borrowing an incremental 1%, meaning that we passed through break-even years ago and now pay much more in interest than we borrow incrementally. This is a situation favorable to an overfed financial structure as long as everyone can and will pay their interest, but it is no longer beneficial to aggregate consumption compared with the good old-fashioned way of waiting until you had actually saved up to buy a TV set. Indeed, a visitor from Mars examining two countries, one with accumulated consumer debt of 1.5 times GDP and the other with zero, would, I am sure, notice no difference except for the reduced number of consumer lending outlets.

This generally unfavorable picture gets worse when you consider that we are likely to have, for the next 10 years or so, a modest annual reduction in personal debt of, say, 0.5% of gross income per year as well as a continued interest payment. So the debt accumulation effect reverses as does the illusion of the wealth effect from overpriced stocks and housing, especially the illusion of a decent accumulated pension. As we said two years ago (embroidering on Buffett), when the tide of overpriced assets goes out, it will be revealed not only who is not wearing swimming shorts, but also who has a small pension! Our silly joke has become a sick one in just two years.

This reversal of the illusory wealth effect added to deleveraging will be felt worldwide, but especially in the so-called Anglo-Saxon countries, and will be a permanently depressing feature of the next decade or so compared with the last decade. It is indeed the end of an era.

To end Part 1 of this Letter, there is only one further point I want to add on this topic, and that is about China.

Like a Bear in a China Shop

I suggested last quarter that it was ridiculous to expect great financial and economic skills from the Chinese government, which is faced with the spectacularly complicated task of maintaining the highest economic growth rate in history. "Surely they will stumble," I said. Well, the more I think about it, the more likely it seems that this is both the most likely and most dangerous disappointment (even shock) that awaits the current consensus.

Moving back to our armchair at 56,000 feet (don't you miss the Concorde?), an amateur economist could summarize and simplify the Chinese economy as 39-37-37: an astonishingly large 39% of the GDP is capital spending, 37% is internal consumption, and an amount equal to 37% of GDP is exported. (These numbers do not sum to 100 as we are not using exports net of imports because we are concerned with the vulnerability of total exports to a weak global economy.) The U.S., in comparison, is 19-70-13, disturbingly on the other side of normal; 70% consumption compared with 57% in both Germany and Japan, for example, and nearly twice that in China. China's mix is of course an utterly unprecedented one, and comes with great advantages in booming times. Now, however, we might ask: how do you stimulate the building of a new steel mill when rows of mills are sitting empty? How do you increase exports into a global economy that is not just slowing, but is unexpectedly very weak? And are they good enough at stimulating local consumption to have an impact on such a small percentage of GDP in the face of a negative wealth effect from declining stock and housing prices in their local market?

Simple old "Econ 101" thinking would suggest that their capital goods sector will have a bigger drop than the rest of the economy, and that export growth rates might slow from very large to even nil or worse. The one open-ended offset might be in Keynesian or Rooseveltian government spending, upping their already massive infrastructure spending by A LOT. (This is a specialized economic term.) And they will surely do some of that. On balance I find myself more and more convinced that

this is becoming our #1 disagreement with consensus. If we are right, it will be a very important and distressing surprise for global growth. The good news is that this is far from the "near certainty" of our recent views on housing, profit margins, and risk premiums. At best, if right, it is an inspired insight straight from the armchair. At worst, if wrong, an ill-researched hunch.

On the Virtues of Offsetting Errors

During early October (up to the 10th) global equities, in our opinion, were finally quite efficiently priced, at least for a day or two after a 20-year wait. But we did not get to this point where our 10-year forecasts were exactly right for a second because the market had taken into its head to finally be reasonable or efficient. No, it took two giant offsetting errors! I am sure the market does not yet get the full extent of future earnings and economic disappointments, nor does it easily accept how low trend line P/Es are. (Oh yes, I remember now. P/Es should be higher because of much improved stability and better economic management!) In fact I believe it will take at least another year for the truly dreary global outlook to be fully appreciated and priced in. I was also counting on over a year or more being required to break the high animal spirits that had been baked in by years of exceptionally fortunate events, moral hazard, and rising asset prices.

Offsetting this optimism, we produced – with a fairly traditional mix of greed and incompetence, but in a giant dose this time – a full-fledged panic. With no one trusting anyone's financial integrity (often including their own), and with margin calls, redemptions, and other technical factors causing forced selling, we had an old-fashioned meltdown. And by some minor miracle, this confluence of offsetting events or beliefs produced efficient long-term pricing for a few days. (P.S. The rally of October 13th may usher in a more sustained rally and help resuscitate animal spirits so that we might be able to limp through to my original target of a market low in 2010, but don't hold your breath.)

If the U.K. plan (also advocated by both Soros and Buffett independently) had not been widely adopted and the global authorities had followed the dithering U.S. lead, we would have been set up for some very unusual developments. The market would have continued to fall for a few more weeks or worse (as by October 16th it seems to be doing) until eventually the world's central bankers got their act together. The imputed seven-year returns by then might have reached, say, 15% real per year for emerging, 11% for the U.S., and, say, 12% or 13% a year for EAFE. These exceptional opportunities, nearly equal to the legendary lows of 1982 and 1974, would have set up, in my opinion, a paradox from hell for serious investors. They would have been looking forward to an 18-month-long diet of sustained genuine disappointments; disappointments in both economic growth globally and, more importantly, in global earnings for the market's consensus. Yet into those disappointments the market would likely have steadily risen because the recovery from the extreme lows of the panic would have inadvertently and accidentally more than offset all the bad news. This would have proved intellectually very difficult to deal with: you predict an unpleasant surprise, but yet you should buy! It would have been a rare historical event, which a big rally here may change. Still, you never know your luck. Something like it may still happen. (For the record, in 1932 a rally of 111% started in the face of persistent disastrous economic news.)

Provisional Recommendations
(October 10 - S&P 900)

At under 1000 on the S&P 500, U.S. stocks are very reasonable buys for brave value managers willing to be early. The same applies to EAFE and emerging equities at October 10th prices, but even more so. History warns, though, that new lows are more likely than not. Fixed income has wide areas of very attractive, aberrant pricing. The dollar and the yen look okay for now, but the pound does not. Don't worry at all about inflation. We can all save up our worries there for a couple of years from now and then really worry! Commodities may have big rallies, but the fundamentals of the next 18 months should wear them down to new two-year lows. As for us in asset allocation, we have made our choice: hesitant and careful buying at these prices and lower. Good luck with your decisions.

Disclaimer: The views expressed are the views of Jeremy Grantham through the period ending October 17, 2008, and are subject to change at any time based on market and other conditions. This is not an offer or solicitation for the purchase or sale of any security and should not be construed as such. References to specific securities and issuers are for illustrative purposes only and are not intended to be, and should not be interpreted as, recommendations to purchase or sell such securities.

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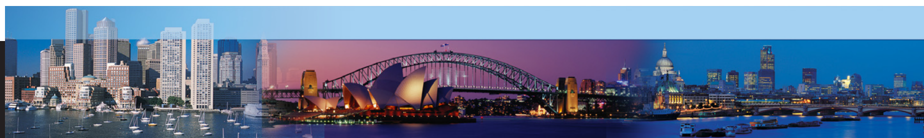
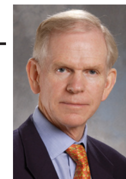


October 2008

Silver Linings and Lessons Learned

Jeremy Grantham



Summary and Conclusions

When asked by *Barron's* on October 13th if we would learn anything from this ongoing crisis, I answered, "We will learn an enormous amount in a very short time, quite a bit in the medium term, and absolutely nothing in the long term. That would be the historical precedent."

That is unfortunately likely to be the case. But over the next several years at least, there are many silver linings and valuable lessons to be learned. We have had a generally unattractive and difficult investment environment for the past 10 years. For most of that time we have also had a negative savings rate.

We have had a bloated financial industry feeding off the real world and a breach of the social contract with the increasing maldistribution of income (encouraged by tax changes!) in favor of the very rich at the expense of ordinary people. We also had unnecessary flaunting of this new great wealth. To cap it off, we had blinkered, narrow-minded leadership by the government and financial corporations. Well, much of this is ending. Some undesirable elements will disappear for a long time and some will just be moderated, but it is truly the end of an era and a rather disgusting one in my opinion, speaking as a thrifty Yorkshireman. We can now re-assess a lot of our thinking about investing, particularly market efficiency, outlier risks (boy, did Nassim Taleb get that one right!), and theories of diversification and longer-term asset allocation.

A very weak global economy is not without partially offsetting benefits: We can temporarily forget about consumer inflation and particularly enjoy the advantages of lower oil prices as reflected in lower heating oil and gas prices. Falling metal and agricultural prices will also help relieve some of the pressure on otherwise squeezed consumers. In a global crisis like this, the U.S. finds itself unexpectedly cast in the role of a safe haven. The dollar is as strong as a horse and yet our trade deficit still makes progress from earlier sustained dollar weakness, helped by new tumbling oil prices and falling consumption of other imports. Chief among the many benefits of this crisis are unprecedented opportunities for investing in some fixed income areas where some spreads are so wide as to reflect severe market dysfunctionality. As of October 18th, we also have moderately cheap U.S. and global equities for the first time in 20 years. (You really have to put the dates in these days!) Probably quite soon, global equities too will offer <u>exceptional</u> opportunities after the additional pain that is likely to occur in the next year. We at GMO are already careful buyers. We are reconciled to buying too soon, but we recognize that our fair value estimate of 975 on the S&P 500 is, from historical precedent, likely to overrun on the downside by 20% to 40%, giving a range of 585 to 780 on the S&P as a probable low. The world faces unavoidable declines in economic activity and profit margins, so this overrun is unlikely to be much less painful than average, although you never know your luck.

All We Have To Thank Is Fear Itself

Thankfully, pure fear – approaching blind panic – finally induced some real action on the part of the authorities. This more decisive phase, injecting money directly into the banks as well as supplying liquidity in many forms, was initiated in the U.K. by Prime Minister Brown, the previously profligate Chancellor of the Exchequer. European governments managed somehow to grind their teeth and overcome their natural reluctance to follow Perfidious Albion anywhere. This, in turn, apparently encouraged the U.S. to jump on board with this more direct approach.

This was a game-changing event that has probably saved us from tipping into the pit. There will unfortunately be considerably more financial pain where the recent pain has come from: more global bank failures, more massive write-downs from credit cards and leveraged debt, and,

increasingly now, the typical corporate defaults that follow a very weak economy. And the economies of most countries will surely be very weak. In the U.S., the downturn is likely to rival 1982 or worse, and almost everywhere it is likely to be a much longer downturn than normal.

Also high up the list of silver linings and lessons learned is the Fed's apparent change of heart on the topic of bubbles in asset pricing. The breaking of the tech bubble set up the excess stimulus of 2001–03, which in turn created the housing bubble as surely as if a law had been passed that all house prices had to be marked up 50%. And now at last, there are signs of hope: signs that Bernanke is reconsidering: "Obviously, the last decade has shown that bursting bubbles can be an extraordinarily dangerous and costly phenomenon for the economy *(Ed.: the man's indisputably a genius),* and there is no doubt that, as we emerge from the financial crisis, we will all be looking at that issue and what can be done about it." So all the unnecessary suffering inflicted on us by short-sighted policies dictated by academic economists may not have been entirely in vain!

However it is definitely not a done deal. Few academics change their minds, and few scientific theories founder on the simple facts. "Science advances one funeral at a time" is how Max Planck expressed his belief in academic flexibility, but a suggestion that we use firing squads would seem mean-spirited. Already, Fed members are making the obvious point that interfering with investment bubbles as they grow by using the "blunt instrument" of raising rates would likely "in the short run curtail some economic growth!"[1]

But interfering with bubbles forming would not destroy growth, only postpone it, which is undesirable enough. Bubbles breaking, in contrast, reveal the destruction of wealth produced by the extreme misallocation of capital that has sucked so much investment into certain areas – dotcom start-ups, overbuilding of housing, hiring multitudes of real estate agents, and designers of elaborately structured financial notes, for example. And if the bubbles precipitate a true credit freeze-up, then some inputs into really useful investments may be lost forever: factories not built, education postponed indefinitely, and man hours wasted in unemployment. If we collectively become more leery of asset bubbles and their inevitable downsides, it will be a giant step forward. I am not too confident of the authorities, especially the Fed, but I am pretty confident that at least the rest of society will take the formation of asset bubbles much more seriously. We'll take what we can get.

Another potential lesson learned might be our realization that capital markets don't always work for the best. My friend and former partner Paul Woolley, now retired from GMO, set up a center at the London School of Economics a year ago bearing the tantalizing title: "The Woolley Centre for the Study of Capital Market Dysfunctionality." (Fortunately for the title, his friend Wilde could not find the funding money.) I must confide that his investment timing at GMO was seldom this perfect, for in one year he has gone from suspicious eccentric to enlightened visionary, and long lines of luminaries are queuing up to be involved. We have collectively had a touching faith that capitalism – just because it's the only effective driving force behind economic growth – is basically flawless, and any controls are bound to be counter-productive. Pure Ayn Rand capitalism obviously cannot deal with social issues of the tragedy of the commons variety, such as climate change. It cannot turn corruptible and greedy types into the reasonable and honest types that our readers represent. It cannot begin to address social justice. And apparently it does a lousy job at dealing with asset bubbles and the ensuing economic and credit problems. Society's attitude on this topic will change and, with a little luck, an increase in enlightened regulation will increase the public good. I for one am optimistic. The American ship of state (among many) appears to move forward by lurching too far in one direction and then like a super tanker with an amateur at the helm, overcorrecting. (And, oh my, have we had some real amateurs at the helm recently!) For the past eight years, we have had a darned good lurch, and we need some correction. Somehow, in the long run, the ship seems to zigzag its way roughly in the right direction. The Jim Grants of the world and other very sensible people, as well as the usual right-wing suspects, will say that increased regulation has a dismal record, and they are right. But so does totally unregulated capitalism, apparently. We will have to muddle our way to an acceptable mix, and we can be sure of only one thing – that it won't be highly efficient. But it may be acceptable enough, and we must hope that it is.

[1] Gary Stern.

Still at the meta level, I would like to bring up the hope that as a result of our current misfortunes we will re-examine how we pick our leaders. It would seem for starters that a lack of prejudicial bias would be helpful. If you're looking for an open mind, why would you pick Robert Rubin or Hank Paulson for a job at Treasury that might, just might, involve decisions on the life and death of their beloved Goldman Sachs? And in the case of Paulson, why pick one of the five leaders of financial firms who lobbied hard at the SEC against increased reserves for investment banks? Why would you pick an Ayn Rand extremist like Alan Greenspan to be the Fed Boss when he openly deplored increased regulation in almost any form and thought untrammeled capitalism was the bee's knees? Wouldn't an open mind be better? Or Ben B, whose reflex is so clearly to believe in market efficiency? He believes it so profoundly that he prejudged important data such as the very dangerous housing bubble of the last few years. He seemed to believe that since no such extreme inefficiency should exist, then it did not exist. Not a good idea.

On this same topic, why would we not insist on a proven record of excellence on a relevant topic for the really important job? Ben B has an excellent record as an academic economist, but has had little contact with the messy, real world until now. And as for Alan! He had a proven record. It was proven for years that he was a very mediocre, lightweight commercial economist. He sat on a few politically connected committees, met the right people a lot, and, hey presto, had the second most important job in the land.

Lower down on the pecking order, I think we have learned not to value CEOs so highly. We have seen their limitations when under novel stresses, and we have examined how their reward system was out of kilter with the ordinariness of their talents. The boss of Lehman did an honorable and long service in my opinion, and I have no doubt he tried hard. But frankly, Lehman even in its heyday was a B player and, in its last few months, a D player. It is probably unfair to weigh too heavily his lack of skill down the home stretch and the pain he inflicted on many by holding out too long. He was obviously very unlucky to be picked out as a sacrificial lamb. But even before the unraveling, did he really deserve to have accumulated a $650 million holding in Lehman – all wealth that would otherwise have accrued to stockholders – in addition to immense annual rewards for basically doing an average job? I believe society will reconsider the merits of such remuneration and the structure that enables it.

Surely we will also reconsider the merits of having such an overdeveloped financial industry whose share of corporate profits had risen from 10% in 1982 to 27% last year. Some of these people – ideally my better competitors – could find something else to do with more redeeming social value. They could be doctors or, perish the thought, actually make something.

The permanently bullish spin put out by the financial industry – like real estate agents in heat – has also been revealed, and I hope we can expect some serious reaction. Permanent bullishness does not serve the clients well. The ridiculous bullishness of bottom-up earnings forecasts has long been a joke among serious investors, but we still see them everywhere. The bullish bias pervades the industry right up to Paulson and the other Wall Street CEOs. Estimates even from more seasoned cool types, such as those at the IMF, and economists in general have their economic forecasts creeping downward while looking nervously over their shoulders: they are desperate to avoid getting too far ahead of the pack and committing Keynes' key crime of being wrong on their own. Thus, estimates of global growth in GDP are still +3% for the world and +9.2% for China. In a crisis, the estimates always lag on the upside, and this does not help. Similarly, but worse, the earnings estimates for the S&P have stayed ludicrously higher than were likely given the rolling crisis. For example the IBES earnings estimate for the S&P over the next 12 months is still $98.5 a share. At even normal margins it would be $71, and at margins 20% below normal it would fall to $56. With any luck, the usefulness of standard industry advice will be reconsidered and routinely adjusted for congenital bullishness.

Perhaps it is also time to reconsider the fixed asset allocation approach – what I used to refer to as the "watch the locomotive coming" effect. It is fine in theory to urge ordinary investors to grit their teeth in the face of losses and show patience. But in the real world, many perfectly normal investors who take huge losses simply cannot bring themselves to stand the pain. Holding firm and waiting the 15 or 20 years for earnings to catch up is great advice for a computer, but computers don't invest, and humans are … well, very human. They will often sell out near lows and lock in enormous pain. This is a great opportunity to re-evaluate the merits of moving more assets – if only marginally – away from dangerously overpriced asset classes toward relatively cheap ones before the great bear

markets do their usual thing. I don't mean to recommend racing around on a day-to-day basis as some tactical asset allocators do. What I do recommend is an occasional significant response to outlier events both at the bull and bear ends of the spectrum. This, of course, runs into major career or business risk. But, that's life.

It will also be a silver lining if we get rid of some of the gilded-age excess on the part of the titans of industry, especially in the financial world. They should have kept their heads below the trench (see The Blackstone Peak and the Turning of the Worms, July 2007), and they certainly did not. They jumped way up, begging for a sharpshooter to notice them, and they were indeed noticed. It will now surely cost them in hostile legislation in some form or other.

One of the biggest silver linings will be in increased household savings. Now it is clear that the increased wealth was only temporary. It was paper wealth based on very overpriced assets. The losses will have to be repaired the hard way by deferred gratification – lower consumption and higher savings. The tragedy here is that since more than 10 years of normal savings were sacrificed to the grand illusion of paper wealth, it is unlikely that all of the lost savings can ever be made up. People will simply retire poorer than they might have done.

It will be pointed out that increased savings will depress consumption and lower GDP growth in the near term. This short-termism has been the logic in the past behind Bush and others who overtly encouraged consumption and therefore personal debt. But in the long term, which economies grow the fastest: China with 40% savings, or the U.S. and U.K. with negative personal savings? High savings and investment rates, of course, encourage growth, and we have to absorb the short-term negative effects of what had become over-consumption if we want to be a healthy economy. The recent crisis in credit and assets is a slap in the face, a rude wake-up call, and we will move to a better balance. The problem here is the timing. Although we need this re-adjustment to greater savings for the long term, if we get there too quickly – since one person's extra saving is another person's unexpected loss of top-line revenue – we risk getting caught in a downward spiral that breaks animal spirits. This is the nightmare that kept Keynes up at night in the 1930s. So it has to be slow and steady, at which level the extra capital spending and increased industrial capacity creates its own offsetting stimulus.

The research science world is no doubt sighing with relief at their silver lining: the prospect of once again recruiting some of the best PhDs who had been lining up to work for Goldman or a hedge fund (and even, I must admit, a few for GMO). There they designed the cleverly repackaged mortgage paper so admired by Greenspan, or developed quant equity models and "stat arb." Now they will have to waste their time once again designing nuclear facilities and second generation biomass projects. Oh well.

A real lesson will also have been learned on the "Let's all look like Yale" front. (See Immoral Hazard, April 2008.) Yes, diversification is a great idea other things being equal, but if the demand is so trendy that it overwhelms either the liquidity of small asset classes, or the talent involved in hedge funds, private equity, and other fields, then there is always likely to be a problem squeezing through the door together. And that's before someone shouts, "Fire! Fire!"

The great buying pressure from funds aspiring to look like the great endowment funds facilitated second-rate, overpriced private equity deals. (See Appendix to Letters XII: Evaluating the Usefulness of Private Equity Managers, July 2007.) Because these deals were typically overpriced in the last three years, excessive leverage had to be used to even tease out the possibility of a decent return. This, in turn, guaranteed that in a profit margin squeeze all the equity would be lost. The flood of money also allowed for over-funding of first-rate hedge funds and the start-up of thousands of second-rate funds. Real investment talent has always been scarce, and does not jump out of the ground just because there's a massive demand. Nuclear physicists do not immediately become investment talents even with IQs of 150.

The hedge fund industry is just an extension of our larger zero sum game. It adds collectively no value, it just reshuffles the existing pool of wealth minus the higher fees. Last year, in its prime, it offered mainly in place of real value added, or alpha, a simulated alpha that was dependent on rising asset prices, falling interest rates, or easy credit. All three in many cases. The existing alpha did not increase to meet the increased demand but probably shrank under the competition, and then the shrunken alpha was spread more thinly over more capital. And all that was needed for this phony alpha to be seen as wearing no clothes was a steady return to more normal conditions. Lord knows, it did not need to be stripped naked in the city square so abruptly! Fate really can be cruel.

All of these new, recently sexy alternative investment areas will now be re-evaluated: their illiquidity and their tendency to pick up nickels in front of steam rollers will be fully taken into account. Value at risk (V.A.R.) as a reliable measure of risk will hopefully be taken out and shot at dawn. In short, we will all live in a more realistic, if less exciting, world.

What I Learned

This experience has, not surprisingly, reinforced my faith in mean reversion – that all bubbles break and that it is best to study the data, make up your own mind, and screen out general opinion. It has underlined the importance of mixing with the right people: I never realized how many sensible people there were sprinkled through our business. We are certainly grateful for their input and reinforcement in nerve-wracking times. One never has enough confidence. That little voice is always there suggesting that, since there are so many of them, there may be something to their arguments. So you go long the Yen and short the financials but never enough. It was rammed home to us that some of the best bets were very technical and we needed help. So we got help and we hired good people, but much too slowly, while opportunities of a lifetime slipped through our fingers, leaving us with merely a decent profit. We have learned that in the future we need to have expertise – or at least moderate competence – in almost every aspect of the global capitalist system. It's not easy, but we have learned the hard way – missed opportunities that did not last long and would not wait for us – that it is necessary. Above all, we learned to never, ever trust the competence of government officials.

The Gold Lining

Topping off all of the offsetting virtues of this ugly last year is the arrival of cheap assets. All too easily we forget that you can compound wealth rapidly only by having cheap assets. For those with a long horizon, it is always better to have assets fall in price so that the compounding returns are higher. For an unparalleled 20 years, global equities, especially U.S. equities, have been overpriced. Now, finally, they are cheap and likely to get cheaper. Likely, I believe, to set up a once-in-a-lifetime investing opportunity (or maybe twice in a long career).

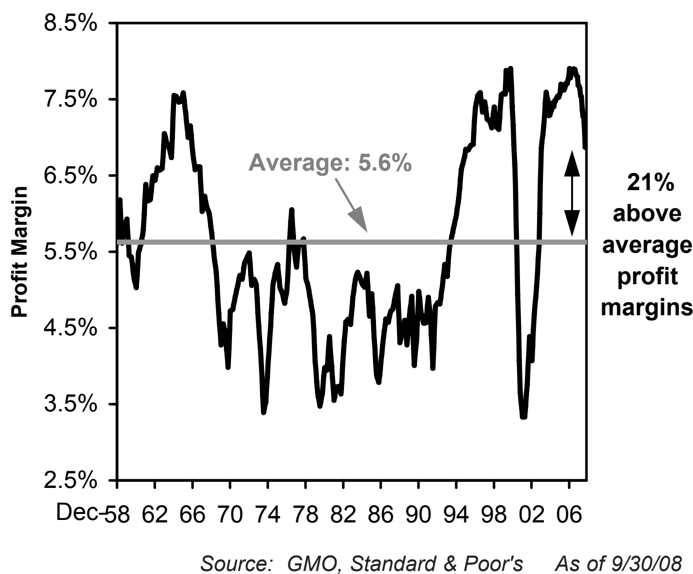
How Low Is Low?

We have a pretty good fix on fair values. For the S&P 500 we believe it is about 975 ±25. This is calculated, as always, by the simple technique of assuming that at fair price we will have a normal P/E ratio, and that profit margins will also be normal. We also showed two weeks ago how typical it is for great bubbles to overrun badly. Usually we don't invest our money on estimated likely overruns, but instead filter our money in slowly and hope to get lucky. After all, if stocks are attractive and you don't buy and they run away, you don't just look like an idiot, you are an idiot. Still we are informed by our work on overruns. So where are we this time? History says a 50%+ overrun has characterized the aftermath of the three important equity bubbles. I believe we could also come at this from a very different angle: We could work out what we think the likely range of profit margins is going to be in a severe recession, and then look at what multiples have historically been applied to earnings that are equally depressed.

In a rational world, low profit margins would be multiplied by a high P/E and vice versa to normalize for the economic cycle. In a Bernanke/French and Fama world, the correlations would be -1. High margins would always be exactly offset by low P/Es and vice versa, so that the market would always sell at fair value or replacement cost. The market would thus always be efficient, and that chunk of the financial establishment that urges the buying and holding of index funds regardless of price would unarguably be correct. In the crazy real world, in contrast, we can't even get the correlation sign right: it is positive .32, which means that high margins are multiplied by high P/Es and vice versa. Remarkably, this is particularly true at the extremes where the correlation rises. Thus in 2000, the equity bubble that Alan could not see forming sold at the highest P/E in history (35) multiplied by the highest margins in history! 1982, in contrast, sold at 8 times depressed margins. This double counting makes the market far more volatile than it needs to be by driving prices far above and far below efficient price levels.

Exhibit 1 shows our series on U.S. profit margins. This is a pretty dependable mean reverting series so you can be extremely confident that margins will come back to normal. What is easy to forget is that, of course, they spend half their time below normal. In the global conditions that we expect, S&P margins should fall below their normal

Exhibit 1
Profit Margins for the S&P 500



Source: GMO, Standard & Poor's As of 9/30/08

levels by 20% to 40%. In 1982 and 1974, which were respectively quite severe recessions, profit margins fell by 36% and 39% below normal.

Given the extreme current difficulties in the financial and economic scene, margins 36% to 39% below normal would not seem especially Draconian, but let's be slightly friendly and predict only a 28% overrun this time. These diminished margins have typically been reflected in a below average P/E as discussed above. The historical expected P/E for profit margins depressed by 28% would be 15% to 20% below average; let us assume 17% below. This would give us a market selling at 83% of its normal P/E on profit margins that would be at 72% of their normal. This computes (.83 x .72) to be almost exactly 60% of fair value. Our current fair value estimate for the S&P 500 of 975 modified by a likely overrun of 40% would yield a price of about 585 in an environment of a quite severe economic and profit recession. If the global economy surprises on the upside, however, and somehow profit margins hang in, the result would of course be far less severe. Our conclusion, though, that the S&P is likely to bottom out in the 600 to 800 range within the next two years can unfortunately be seen as not particularly pessimistic from a historical perspective.

Finally, a Single Piece of Advice for the Government

I have never been a fan of the hysteria that has surfaced on all sides in recent years at a hint of recession, and the panic to throw public money at the economy. Mild recessions have several long-term advantages discussed in earlier Letters, but in recent years we seem to have lost interest in the long term.

However, this time it's different. This is the Real McCoy crisis, and we must welcome all the stimulus we can get. It is easy, though, to end up employing people to build mildly useful parks or, in the Japanese style, nearly useless bridges to nowhere. Government stimulus can have a decent (even high) return in the long run. It absolutely doesn't have to be a series of boondoggles. Let me suggest that the magic word this time is not "plastics" but "alternatives." Massive spending on energy and, better yet, energy savings will create jobs, stimulate the economy, produce a good long-term economic return, reduce dependence on depleting Middle Eastern oil, curtail carbon dioxide emissions, and set, for once, a real example for other countries. From the simplest – better insulation and more efficient machines – through the new alternatives – solar, wind power, and second generation biomass – to the potentially massive investments in new nuclear plants and efficient energy transmission, this could be in total a long range bonanza for the U.S. in economic and broader respects. Such a program could offset the risks of a Japanese-style drawn-out recession. It would be potentially an epoch-defining change, and one of which, like the Marshall Plan, future generations might be proud.

Disclaimer: The views expressed are the views of Jeremy Grantham through the period ending October 24, 2008, and are subject to change at any time based on market and other conditions. This is not an offer or solicitation for the purchase or sale of any security and should not be construed as such. References to specific securities and issuers are for illustrative purposes only and are not intended to be, and should not be interpreted as, recommendations to purchase or sell such securities.

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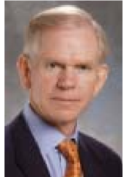
QUARTERLY LETTER

January 2009



Obama and the Teflon Men, and Other Short Stories. Part 1.

Jeremy Grantham

With economies and financial markets, it seems that if you stare hard enough and long enough at the fog of battle, you occasionally get a glimpse of what may be going on when a favorable wind blows. This, for me, is decidedly not one of those occasions. It is obvious to all of us that these are momentous days in which government actions may well have make-or-break impact, but my confidence in government and leadership is at a low ebb. (Although I must admit my confidence has increased enormously in recent weeks in all areas outside of finance. Even in finance it has increased a little.) Economic advice for President Obama covers the waterfront, and even the near-consensus case for great stimulus is lacking in historical certainties or intellectual rigor. Everyone seems to be guessing at strategies and outcomes, knowing clearly that the best strategy would have been to have avoided getting into this pickle. The current disaster would have been easy to avoid by making a move against asset bubbles early in their lifecycle. It will, in contrast, be devilishly hard to get out of. But, we are deep in the pickle jar, and it seems likely that, in terms of economic pain, 2009 will be the worst year in the lives of the majority of Americans, Brits, and others. So break a leg, everyone!

It would be helpful at a time like this to have a Quarterly Letter that sounded convinced of something … anything. So I apologize for overtly tickling around the edges. I do not apologize, though, for pointing you to the best thing I have read in *The New York Times* in a very long time: the article by Lewis and Einhorn[1] does a great job of summarizing where we are and how we got here, as well as offering some helpful advice for the future. My contribution is to address a few peripheral topics that have accumulated over recent quarters as more important topics have dominated. Half of the mini topics are covered in this Letter, and the other half will be posted in a few weeks.

[1] Michael Lewis and David Einhorn, "The End of the Financial World as We Know It," *The New York Times*, January 4, 2009. This article is available online at www.nytimes.com.

1. The Story So Far: Greed + Incompetence + A Belief in Market Efficiency = Disaster

Greed and reckless overconfidence on the part of almost everyone caused us to ignore risk to a degree that is probably unparalleled in breadth and depth in American history. Even more remarkable was the lack of insight and basic competence of our leadership, which led them to ignore this development, or worse, to encourage it. Ingenious new financial instruments certainly facilitated and exaggerated these weaknesses, but they were not the most potent ingredient in our toxic stew. That honor goes to the economic establishment for building over many decades a belief in rational expectations: reasonable, economically-induced behavior that would always guarantee approximately efficient markets. In their desire for mathematical order and elegant models, the economic establishment played down the inconveniently large role of bad behavior, career risk management, and flat-out bursts of irrationality. The dominant economic theorists so valued orderliness and rationality that they actually grew to believe it, and this false conviction became increasingly dangerous. It was why Greenspan and Bernanke were not sure that bubbles – outbursts of serious irrationality – could even exist. It was why Bernanke, who had studied the bubble of 1929, could still not see it as proof of irrationality and could still view the Depression (à la Milton Friedman) as a mere consequence of incredibly bad, easily avoidable policy measures. Of more recent importance, it was why Bernanke could dismiss a dangerous 100-year bubble in U.S. housing as being nonexistent. It was why Hyman Minsky was marginalized as an economist despite his brilliant insight of the "near inevitability" of periodic financial crises. It was why the suggestion in academic circles of stock market inefficiencies, let alone major dysfunctionality, was considered a heresy. It was why Burton Malkiel could rationalize the 1987 crash as being an efficient response to 12 or so triggers. These triggers, however, had a trivial weakness: seasoned portfolio managers at the time had never even heard of most of

them. Never underestimate the power of a dominant academic idea to choke off competing ideas, and never underestimate the unwillingness of academics to change their views in the face of evidence. They have decades of their research and their academic standing to defend. The incredibly inaccurate efficient market theory was believed in totality by many of our financial leaders, and believed in part by almost all. It left our economic and governmental establishment sitting by confidently, even as a lethally dangerous combination of asset bubbles, lax controls, pernicious incentives, and wickedly complicated instruments led to our current plight. "Surely none of this could happen in a rational, efficient world," they seemed to be thinking. And the absolutely worst aspect of this belief set was that it led to a chronic underestimation of the dangers of asset bubbles breaking – the very severe loss of perceived wealth and the stranded debt that comes with a savage write-down of assets. Well, it's nice to get that off my chest once again!

2. Lost Illusions: The Loss of Perceived Wealth and Stranded Debt

During the market's rise, I wrote about the fallacy of paper wealth, particularly as it applied to houses. At three times the price, they were obviously still the very same houses. How could we kid ourselves that we were suddenly rich and didn't need to save for our pensions when we were sitting in the very same buildings we bought in 1974? With "wealth" built on such false premises, it is not surprising that we come to grief from time to time. But the good news is that, as we move back down to earlier prices, they are still the same houses. We have not lost wealth, but just the illusion of wealth. Illusions tend not to have very long-lasting effects, but they obviously can and do have very powerful short- and even intermediate-term effects. This particular illusion, which applied to stocks, real estate, art, and almost everything else, was grand indeed, and it directly over-stimulated consumption and indirectly over-stimulated imports. In the process, it suppressed both savings and investments of our own locally generated income. (Although there was plenty of foreign investment into the U.S. to fill the gap, which has its own long-term complications.)

Now the illusion of wealth has been lost, with formidably negative effects on animal spirits. My hero, Keynes, emphasized the importance of shifts in animal spirits in economics, and explained how shifts in such spirits could ruin the most carefully calculated investment decisions. At times like this, animal spirits need nurturing. Obama's election will help, at least for a while; talking up the power of stimulus will help (whether or not the power is really there), and avuncular, optimistic advice from influential figures will not go amiss.

But let us look for a minute at the extent of the loss in perceived wealth that is the main shock to our economic system. If in real terms we assume write-downs of 50% in U.S. equities, 35% in U.S. housing, and 35% to 40% in commercial real estate, we will have had a total loss of about $20 trillion of perceived wealth from a peak total of about $50 trillion. This relates to a GDP of about $13 trillion, the annual value of all U.S. produced goods and services. These write-downs not only mean that we perceive ourselves as shockingly poorer, they also dramatically increase our real debt ratios. Prudent debt issuance is based on two factors: income and collateral. Like a good old-fashioned mortgage issuer, we want the debt we issue to be no more than 80% of the conservative asset value, and lower would be better. We also want the income of the borrower to be sufficient to pay the interest with a safety margin and, ideally, to be enough to amortize the principal slowly. On this basis, the National Private Asset Base (to coin a phrase) of $50 trillion supported about $25 trillion of private debt, corporate and individual. Given that almost half of us have small or no mortgages, this 50% ratio seems dangerously high. But now the asset values have fallen back to $30 trillion, whereas the debt remains at $25 trillion, give or take the miserly $1 trillion we have written down so far. If we would like the same asset coverage of 50% that we had a year ago, we could support only $15 trillion or so of total debt. The remaining $10 trillion of debt would have been stranded as the tide went out! What is worse is that credit standards have of course tightened, so newly conservative lenders now assume the obvious: that 50% was too high, and that 40% loan to collateral value or even less would be more appropriate. As always, now that it's raining, bankers want back the umbrellas they lent us. At 40% of $30 trillion, ideal debt levels would be $12 trillion or so, almost exactly half of where they actually are today! It is obvious that the scale of write-downs that we have been reading about in recent months of $1 trillion to $2 trillion will not move our system anywhere near back to a healthy balance. To be successful, we really need to halve the level of private debt as a fraction of the underlying asset values. This implies that by hook or by crook, somewhere between $10 trillion and $15 trillion of debt will have to disappear. Given where we are today, there are only three

ways to restore a balance between current private debt levels and our reduced, but much more realistic, asset values: we can bite the bullet and drastically write down debt (which, so far, seems unappealing to the authorities); we can, like Japan did, let the very long passage of time wear down debt levels as we save more and restore our consumer balance sheets; or we can inflate the heck out of our debt and reduce its real value. (In the interest of completeness I should mention that there can sometimes be a fourth possible way: to somehow re-inflate aggregate asset prices way above fair value again. After the tech bubble of 2000 Greenspan found a second major asset class ready and waiting – real estate – on which to work his wicked ways. This time there is no new major asset class available and, although Homo sapiens may not be very quick learners, we do not appear eager to burn our fingers twice on the very same stove. As a society, we apparently need 15 to 20 years to forget our last burn. With so many financial and economic problems reverberating around the world and with animal spirits so crushed, re-inflating equity or real estate prices way above fair value again in the next few years seems a forlorn hope if indeed it is possible at all.)

Each of the three realistic possibilities listed above would be extremely painful, each is loaded with uncertainties, and even the quickest of them would take several years. Our path this time is likely to involve a hybrid approach: we will certainly take some painful debt liquidations; this crisis will almost certainly take far longer than normal to play out; and probably, before a new equilibrium is reached, we will see inflation rates that are well above normal.

It would be convenient if we could reach safety without having our global economy come to a complete standstill for a few years; without a wave of very high inflation and, ideally, without a dollar crisis or a trade war. All of them, unfortunately, are what a quant would call "non-trivial possibilities." Traveling happily certainly has its virtues, but in these dangerous times it is probably better to be braced at least for the right order of magnitude problem that we face.

This is a good time to look at the Japanese crisis of 1989 to present since, along with the Great Depression, it is probably one of the two most relevant examples for today's problems. The Japanese had an even bigger problem in write-downs of "wealth" than we have now. They had to write down perceived wealth by an amount equal to a stunning three times GDP! Even in 1929, we had to write off amounts equal to only three quarters of a year's GDP, as the stock markets then were less developed and housing was decidedly pre-McMansion. This time in the U.S., however, we must write down perceived wealth or capital by almost precisely one and a half times GDP, worse than the Depression but happily much less than Japan.

In this context, do not kid yourself that the Japanese did a terrible job in extricating themselves. Even the Japanese often express dismay at the costs they have paid due to their heroic level of public spending. I believe that this primarily reflects their original failure to realize how deep their hole was. It can also be admitted that their program, while probably right in concept, was not highly efficient. Bridges to nowhere have not been as stimulating or productive long term as a focus on energy conservation and oil and coal replacement technologies would have been. It was often said that the Japanese should have bitten the bullet as the U.S. did in its S&L crisis, taking a quick hit rather than dragging out the pain. How superficial and self-congratulatory those comments seem now. Faced with our own credit crisis, we discover there is no easy cure – the bullet turns out to be a grenade, which doesn't fit as easily into the mouth. At about 4 to 1, the Japanese corporate sector went into the 1989 crunch with much higher leverage than the U.S. had ever seen. Remember too that their stock market, at 65 times earnings, was over three times our market's recent highs and their land was at several multiples of ours. In 1989, Tokyo's land per square foot was around ten times the value of Manhattan's! So they had higher write-offs conflicting with much higher corporate leverage. If they had rapidly marked their assets to market, the entire corporate Japan Inc. would have been under water. And since we know that around a quarter of Japan's market – their Sonys and Toyotas – was solvent, we can deduce that the remaining three-quarters was shockingly under water, using the types of rules we are attempting to apply to ourselves now. As the years passed, a few Japanese companies failed, but the great mass in the middle painfully clawed their way back to solvency. Somehow or other, Japan absorbed the greatest deleveraging in human history without incurring a severe depression. I can only hope we do as well!

Although Japanese corporations were in much worse credit shape than ours are now, the reverse is true for consumers. Japanese individuals went into the 1989 event with a very high savings rate and very high accumulated savings. In contrast, our households go into our crunch borrowed to the hilt (or beyond) and painfully under-saved. So our job is to nurture our average people in the

street and somehow restore the quality of their balance sheets, just as Japan (admittedly taking 15 uncomfortable years) did for its corporations.

To finish this section on an optimistic note (my civic duty), it is worth remembering that real wealth lies not in debt but in educated people, laws, and work ethic, as well as in the quality and quantity of fixed assets and the effectiveness of corporate organization. We, like Japan, are not proposing to destroy any of these assets. We, like Japan, have just tripped on make-believe assets and we now have to deal with chronic deleveraging and bruised animal spirits. When we have dealt with this crisis, all of our assets will still be sitting around waiting to be fully used once again. It is helpful to consider that after the Depression, the U.S. GDP got back on its original trendline as if the Depression had never occurred.

Also remember that although your portfolio is down 40%, just as you own the same house, you still control the same number of shares and hence the same fraction of long-term wealth that you had before. You simply over-estimated your wealth before, believing that the companies you owned had quickly become twice as valuable. With an individual stock, this is rarely the case; on a broad market level, it is never the case. The good news is that with the market at half price, you now have much more powerful dollars. For consumption purposes, a dollar is always a dollar. Investment dollars, in contrast, are weak dollars in badly over-priced markets but powerful dollars in cheap markets. Today, investment dollars are a whole lot more powerful than they used to be. (In fact, to encourage business, we will make a special January sale on our own investment management services: we will manage the same number of global equity shares as last year for 40% less! Hurry, hurry, limited supply!)

3. Obama and the Teflon Men

I am naturally a contrarian and a nitpicker, so I found myself becoming a Republican in the Clinton era and a real pinko in the Bush era. But after exulting in Obama's election, I couldn't even reach his inauguration before finding fault! As an environmentalist, I am delighted that he has surrounded himself with the very top talent. I, for one, find Hillary Clinton an exciting choice to head the State Department. But in the critical financial arena, he appears to have brought in Rubinesque retreads, "yes men," or both, none of whom appeared to have seen the most obvious developing bubbles in the history of finance. One can only admire Bob Rubin's ability to retain influence and have his protégés in powerful positions. Rubin is the guy who was last seen exhorting Citibank to take more leverage and keep swinging. No, come to think of it, he was last seen paying a visit to Hank Paulson, his relatively recent underling at Goldman Sachs. He pleaded with his old chum, with brilliant success, for an unprecedented bailout. He was part of the establishment that failed to express early, loud concerns over slipping financial standards, and in fact helped to create an environment where prudence was a career risk and CEOs felt obliged to keep dancing.

His man Summers has proven he has some bite. Because he has written often for the *Financial Times* we at least know his public stance on matters financial. Well, let's put it this way: he runs no risk of being on any of the many lists of people who gave clear warnings of potential financial disaster. And dozens did. Summers was emphatically not a whistleblower. He did not rail against falling financial standards. What he did, with his allies Greenspan and Rubin, was beat back a heroic attempt in late 1998 by Brooksley Born, then boss of the CFTC in Chicago, to supervise OTC derivatives. They held her off, presumably in the Greenspanian spirit of "the less regulation, the better."

Obama appointed Gary Gensler to lead the CFTC. Gensler has a good reputation, but was hired into Treasury by … you've guessed it … Robert Rubin.

And as for Tim Geithner! The FOMC minutes are available, so at least we know what he added to Greenspan's and Bernanke's meetings. Over the Greenspan years, there were a few cautionary words from other members – a very, very few from a rather spineless group – and we know from the records how they were greeted. A typically precise response from Greenspan was: "So, this seems like a good time to break for coffee," or words to that effect. And we can study Geithner's objections to the Fed's long journey down the primrose path, but our study period will not be a long one, for he questioned nothing! He was, if anything, a cheerleader, and wrote in support of the new era of "Great Moderation." He, however, was not picked by Rubin. No, he was picked by Summers, who was picked by Rubin. These guys are very, very loyal!

Mary Schapiro, appointed to head the SEC, has been greeted with great enthusiasm by the financial industry precisely because she has been a great supporter of the

industry's financial well-being during her career, which has included positions at the SEC and the CFTC. She is seen as one who poses no threat by way of introducing nasty, inconvenient new regulations. Where is Brooksley Born when we need her? (In the interest of space, this anti-Schapiro section is brief. To help out, on January 15, there was a detailed criticism of her for being a softy in *The Wall Street Journal*, of all newspapers. Bush would have been proud to hire her!)

What a missed opportunity this all is. Obama was given a mandate that could have included some serious bottom kicking. We could have quickly taken quite a few steps down the long road leading to a credible financial system deserving of respect. The time to do that was now. Many readers will object that these are all bright – even very bright – people. And so they are. But our financial ship is not doing a passable imitation of sinking because of a lack of intelligence. What was lacking was the backbone to publicly resist the establishment's greedy joyride of risk-taking and sloppy standards. Even more important, perhaps, was the breadth of vision that was missing. There was plenty of intelligence, just not too much wisdom. So it would be very encouraging if there were someone included in Obama's appointments who had actually blown the whistle on the spiraling Ponzi scheme that our leveraged financial system had become (which is why the Madoff fiasco is such a fitting capstone to our troubles). If only there were someone with real toughness who could do unpopular things. Someone, say, like Volcker. Oh, wait a minute. Didn't he get a job? Or was that only a game to get obstreperous characters like me on board with the program? Unfortunately, I have a sneaking misgiving that Volcker was indeed window dressing for the Presidential campaign. Dollars to donuts he has not been pestered around the clock for advice so far. And I'll tell you one thing. You don't have to know him well to know that he'll resign within a year if they don't get serious. Since he is the only person on the team proven to have the right credentials – a preference for high standards of financial integrity and the backbone to push through unpopular but necessary actions – it would be a real shame to lose him entirely.

4. Disillusionment

The single word that probably best summarizes all of our feelings toward this last, truly miserable year is "disillusionment." We have all been, I believe, serially shocked by the lack of competence and misguided philosophy of our top officials, who for years encouraged rather than discouraged the bad tendencies in our financial system. We have been amazed at the third-rate job done by the leaders of our great financial firms, above all by their lack of moral fiber in restricting what could best be described as an orgy of moneymaking at any price. As stockholders, we also know we did little to put on the brakes; as individual clients and home buyers, we also did our bit to make it easy for greed to win out. We were willing gulls in an age of gullibility. Madoff has done historians a good turn by making it so clear that we were looking to make our 1.5% fees rather than looking to do hard analysis, and that collectively, even when we were suspicious, we were trying not to rock the boat. And, most significantly, our regulators were happy to leave no stone turned!

But it was worse than merely a decay of financial integrity. 2008 capped in incompetence what I am sure will be remembered as the most incompetent eight years of government in modern times, and a contender even if we include ancient times. Over an even longer period, as Paul Krugman would say, we tore up the social contract; through tax changes favoring the rich, we aided and abetted the strong global economic forces that already tended to concentrate wealth in the hands of the already rich. It was an uncharitable, unsympathetic, and avaricious era in which the cult of the individual trumped overall society, and the drive for wealth and the luxuries of life took precedence over more worthwhile and longer-lasting values. Most of our society got richer in the last 20 years, but there is not a hint of research that suggests we got happier, and plenty that suggests the reverse. In the process, we took some giant steps toward ruining the planet and had to live with the sight of many wealthy firms funding expensive PR programs that attempted to obscure the science and suggest that coal is clean and all is well. In short, we messed up on a very broad front, and last year was when it became impossible not to see it. If you ended the year without becoming disillusioned, you were not paying attention.

5. Small Arguments with Two Heroes

First, Warren Buffett. At about 950 on the S&P on October 16, he announced that he was a personal buyer of U.S. stocks because they were cheap and their prices reflected widespread fear. This is not typical for him, but he certainly did it in 1974. When he said it back then, every stock in our portfolio at Batterymarch yielded almost 10%! The portfolio P/E was below 7.5x. Even with hindsight, if you value the market in 1974 using our current methodology,

it was <u>very</u> much cheaper than it is today at 950, which is what we calculate as almost precisely fair value.

His recent announcement made the market seem so much more exciting than boring old fair value. So what are the possibilities? Was he performing a civic duty? Certainly, animal spirits are a critical component of any recovery, so encouragement to take risk from an authoritative source makes perfect sense. Does he believe that 1974-type cheapness can never return, or is very unlikely in this particular case? If that were the argument, we would disagree; we suspect that cheaper prices are not just possible but probable, although admittedly far from certain. Has he perhaps a tactical market timing model that produces his obvious excitement, despite these ordinary values? Most unlikely, given his style. Or are our numbers wrong? Perish the thought! In any case, it is all an interesting conundrum.

Second, Nassim Taleb and the Black Swan logic, which I have previously admired in public. Taleb is completely dismissive – in a way only he can be – of any near certainties. He implies that we have just suffered from an outlier event crashing up against standard risk modeling that only assumes that events will occur in an approximately normal way. He argues that modeling the 95% or 99% normal range in Value at Risk (VaR) misses the whole point: that the real game is played out in the final 1%. It's hard to disagree with this criticism of VaR, but is it relevant in this case? Was the recent breaking of our credit and asset bubbles a totally unpredictable outlier?

We believe that we live in a world where bubbles routinely form and where there are – in complete contrast to Nassim Taleb's belief – some near certainties. One is that bubbles <u>will</u> break. Bernanke should not have said, "U.S. house prices have never declined," thus implying that they never would. He should have said, "Never before has a three-sigma, 1 in 100, U.S. housing bubble occurred, and be advised that all such analogous bubbles in other asset classes and in housing in other countries <u>have always burst</u>." (Robert Shiller for the Fed! He would have said almost exactly that.) The bursting of the U.S. and U.K. housing bubbles, the profit margins, and the risk premium in global asset prices were all "near certainties." This was a White Swan, a particularly White Swan. Taleb's work will no doubt be correct when we have a genuine Black Swan, but this was most definitely not it. (Okay, Nassim. I can hear you thinking: this guy Grantham is a complete loser who has obviously missed my entire point.)

Recent Recommendations and Performance

Well, we got it about as right over the past few years as we're ever going to. "Avoid all risk." "Don't be too proud to own cash." "Let the other guys be brave." "Expect at least one major bank to fail (July 2007)." "Many financial companies will approach technical insolvency (January 2008)." Expect 50% of hedge funds to disappear and, after a lag, expect a major crisis in private equity where 2006 and 2007 investments should approach zero in value. More fundamentally, we called for persistent, below-estimate growth in economies, especially in China and the U.K. and, <u>most particularly, we expected falling profit margins globally</u>. These views were perhaps best captured in our belief that risk-taking was at the heart of the bubble, and that risk premiums were nearly certain to rise significantly. And, of course, house prices would fall and cause considerable trouble. If we had implemented as well as we got the big picture right, we would have had a year from heaven – at least from that part of heaven reserved for institutional managers: <u>relative</u> heaven. In fact, we did a mixed job in implementation: some very good, some bad, and some in-between but, all in all, we had a good year.

Re-introducing the Very First of Our 7-year Forecasts: Bullish Again!

For many years, we used a 10-year forecast for asset class returns. In January 2002, we made our first 7-year forecast, dated December 31, 2001. We moved from 10 to 7 years because research proved that it was closer to the average time for financial series to mean revert. The data is shown in Table 1.

As you can see, despite being called "perma bears," we <u>overestimated</u> the returns for global equities, except for emerging, where we were more or less spot on. Government debt – not surprisingly, given our crisis – also moderately outperformed our estimate.

Current Recommendations

Slowly and carefully invest your cash reserves into global equities, preferring high quality U.S. blue chips and emerging market equities. Imputed 7-year returns are <u>moderately</u> above normal and much above the average of the last 15 years. But be prepared for a decline to new lows this year or next, for that would be the most likely historical pattern, as markets love to overcorrect on the downside after major bubbles. 600 or below on the S&P 500 would be a more typical low than the 750 we reached for one day.

Table 1

The 7-Year Forecast from 7 Years Ago: Bullish as Ever

Forecasts from December 31, 2001 vs. actual as of December 31, 2008

Asset Class	Estimated Rank	GMO 7-Yr Forecast Dec-01 (% Real Return/Yr)	Actual 7-Yr Return*	Actual Rank
Emerging Mkt Equities	1	9.4	9.9	1
U.S. REITs	2	9.1	3.1	7
Emerging Cntry Debt	3	6.8	6.4	3
Int'l Small Cap	4	5.2	4.9	4
U.S. TIPS	5	3.5	3.9	5
Lehman Aggregate	6	2.9	3.8	6
Foreign Bonds	7	2.6	7.4	2
U.S. Small Cap	8	2.2	-0.5	10
EAFE	9	2.2	1.0	8
U.S. T-Bills	10	2.1	0.2	9
S&P 500	11	-1.0	-3.9	11

The accuracy of these forecasts does not guarantee that current or future predictions will be accurate either with respect to the ranking of those asset classes over a 7-year period, the absolute levels of real return, or results over shorter periods. The accuracy of forecasted rankings in the asset class forecasts generally varies from period to period.

** Actual real index returns are for 12/31/01 to 12/31/08 period.*

Source: GMO

In fixed income, risk finally seems to be attractively priced, in that most risk spreads seem attractively wide. Long government bond rates, though, seem much too low. They reflect the short-term fears of economic weakness and the need for low short-term rates. We would be short long government bonds in appropriate accounts.

As for commodities, who knows? There were a few months where they looked like a high-confidence short, but now they are half-price or less, and are much lower-confidence bets.

In currencies, we know even less. It is easy to find currencies to dislike, and hard to find ones to like. There are no high-confidence bets, in our opinion.

For the long term, research should be directed into portfolios that would resist both inflationary problems and potential dollar weakness. These are the two serious problems that we may have to face as a consequence of flooding the global financial system with government bailouts and government debt.

Fearless Forecasts for the Long Term

Under the shock of massive deleveraging caused by the equally massive write-down of perceived global wealth, we expect the growth rate of GDP for the whole developed world to continue the slowing trend of the last 12 years as we outlined in April 2008. Since this recent shock overlaps with slowing population growth, it will soon be widely recognized that 2% real growth would be a realistic target for the G7, even after we recover from the current negative growth period. Emerging countries are, of course, a different story. They will probably recover more quickly, and will continue to grow at double (or better) the growth rate of developed countries. (See "The Emerging Emerging Bubble," April 2008.)

Footnote on the January Rule and the Presidential Cycle

In January 2008, I pointed out that the market had started the year with the worst five days ever recorded, and that the signal was "both impressive and bearish" in that down Januaries materially increase the probability of a down year. Well, that turned out to be a useful tidbit: "Worst-ever five days predict worst-ever year! Read all about it!" This year the five-day return was up a bit (saved by the last two hours), but the six-day return was down quite a bit. Ho hum.

The Presidential Cycle, as written about previously, has been completely ruined by Greenspan. He over-stimulated during the first two years, which are meant to be the time for tightening up, not only in 1997 and 1998, but also during this past cycle in 2005 and 2006. Both times this caused an extra-speculative surge in the typically stimulative Year 3s, in 1999 in the NASDAQ, and in 2007 in housing prices and ugly financial instruments. Both surges set off collapses during the critical election years, which are meant to be stable. In the coming Year 1 of the new cycle, we should be squeezing credit a little and tightening budgets so that we can re-stimulate in 2011 for the next election. What a joke! 2009 will be the greatest stimulus year ever, let alone in a normally restrictive year. So for the time being: Presidential Cycle – Rest In Peace!

Disclaimer: The views expressed are the views of Jeremy Grantham through the period ending January 21, 2009, and are subject to change at any time based on market and other conditions. This is not an offer or solicitation for the purchase or sale of any security and should not be construed as such. References to specific securities and issuers are for illustrative purposes only and are not intended to be, and should not be interpreted as, recommendations to purchase or sell such securities.

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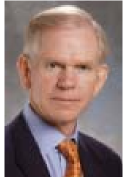
GMO

Quarterly Letter

February 2009



Obama and the Teflon Men, and Other Short Stories. Part 2.

Jeremy Grantham

1. The Year of the Value Trap

Since time immemorial, the most successful value investors have been the bravest. The greatest advantage of value investing has always been that when your cheap stock goes down in price, it gets even cheaper and more attractive. This is the complete opposite of momentum stocks, which lose their momentum rating as they decline and hence become unattractive. But averaging down in value stocks can take lots of nerve and considerable ability in convincing anxious clients of the soundness of the strategy. For at least 60 years, those value investors who managed these problems and bought more of the stocks that had tumbled the most emerged with both the strongest performance and the most business success. (Of course, analytical skills also help, but let's assume that these skills were distributed evenly between brave and nervous investors.) Major market declines in the past set up the best opportunities for brave value managers: the 50% declines of 1972-74 and 2000-02. Value investors in 1972 and 2000 were also able to buy value stocks at their biggest discounts to the general market at least since 1945. In addition, averaging down in those value stocks that fell the most eventually added substantially to an already strong return. Those value managers with the best analytical skills within this group became the few handfuls of super-successful investors.

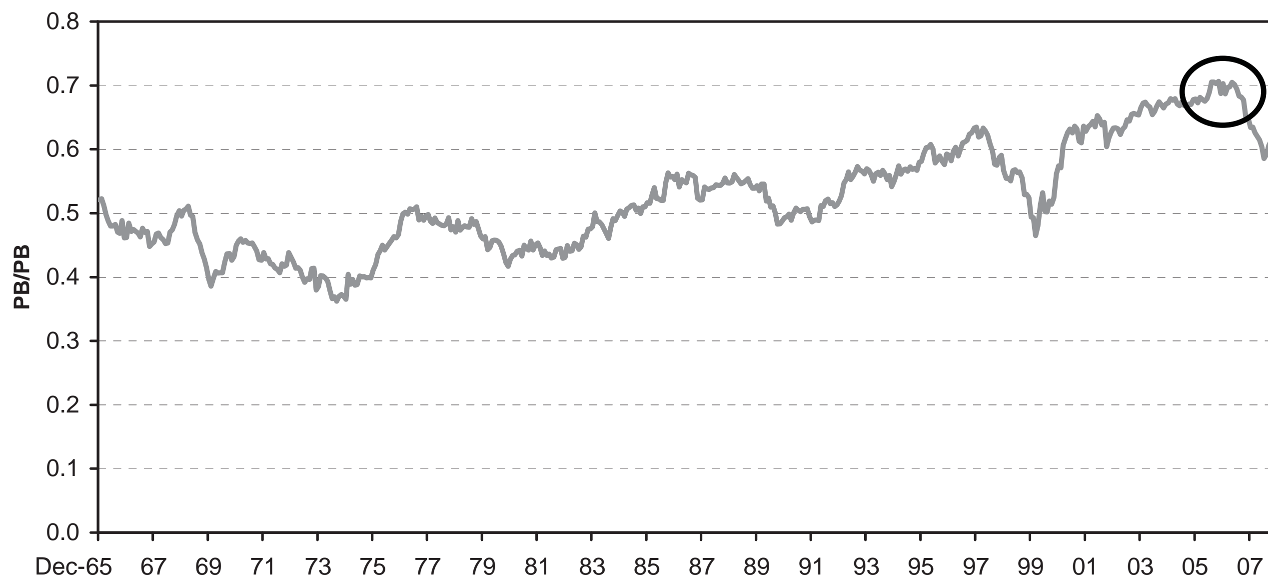
Outsiders could view this as a return to bravery, but it was also a return to risk. The cheapest price-to-book stocks are those deemed by the market to have the least desirable assets. And Mr. Market is not always a complete ass. Because these companies are so often obviously undesirable and are seen as such by clients, they represent a career or business risk to the manager who owns them. This career risk is usually reflected in an extra discount that will deliver an extra return for bearing the career risk. This "career risk" return is in addition to the discount for buying lower quality companies with more fundamental risk. Problems arise when this pattern of over-discounting and handsome recovery has taken place dependably for several cycles in a row. It begins to look like the natural, even inevitable, nature of things rather than merely the most usual outcome. The growth in the number of quantitative investors exaggerated this tendency because quants model the last 10 or 20 years (or even 40) without really requiring a full understanding of the very long-term pattern and why it behaves the way that it does. And none of us modeled data that included the last great value trap: the Great Crash of 1929.

In mild economic setbacks, even the wounded value stocks recover fully. In substantial setbacks, a very small number fail, but not nearly enough to offset the large discounts. Only in the really severe economic setbacks do enough casualties occur to bring home a truth: price-to-book (P/B) and price-to-earnings (P/E) are risk factors. Buying them and averaging down routinely has an element of picking up not nickels in front of the steamroller – that would belittle the substantial returns – but, say, $1000 bills in front of the steamroller. Because of the extra discounts for career risk in the long run (at least for those who are not dead), the strategy will probably still pay off even if the rare, severe fundamental crises are included. But investors should be aware that the fundamental part of the risk premium is justified by the pain of these outlier events and is absolutely not a free lunch.

The value problems of the last two years were particularly bad because of the outperformance that value stocks had between 2002 and 2007. They won for five years in a row, so that by mid 2007 the value/growth spread was about as unfavorable as possible for value stocks in the U.S. (see Exhibit 1). (We recognize that some value investors disagreed with this data when it was first presented. We were, and still are, puzzled by how they arrived at their more positive conclusion.)

To put a measure on how awful the value trap was during this time, please see the Fall 2007 edition of

Exhibit 1
Price to Book – Cheapest Quartile vs. Expensive Quartile



Source: GMO As of 1/31/09

the *Outstanding Investor Digest.* This publication concentrates on a dozen or so of the top value investors and is readable, interesting, and chock-full of insight. However, that particular issue is a heartbreaker as one after another of these superior investors put forward the case that – down 30% to 50% – AIG, Lehman, Wachovia, Fannie Mae, etc., were ridiculously underpriced, and represented enormous long-term franchise value that the nervous market was missing.

It has long been my view that the pricing of value stocks has a folk memory of the Great Depression when many cheap companies went bust and the expensive Coca-Colas survived the best. Remember, you cannot regress from bankruptcy. Using proprietary research data, we examined one fixed time slot: October 1929 to June 1932. With no rebalancing, the data showed a massive "value" wipeout in which high P/E stocks declined far less than low P/E stocks.

As we have pointed out before, one thing is certainly true: on fundamental measures of risk – level of profitability, volatility of profitability, and debt levels – stocks with low P/B and P/E ratios have much lower "quality" and should be expected to be hurt badly in a very serious economic setback such as the one we are now experiencing. And so it was that many of the very best investors had their very worst year in 2008, and were exceedingly happy to see the back of it. Whether 2009 will see a snapback for value is an important question, and not one that we can answer clearly. On the one hand, value stocks are now at least much cheaper on a relative basis than they were a year ago. On the other hand, they can get a lot cheaper, and they face the worst economy since 1938. I would give them at best a 50/50 bet this year. ("Thank you very much for such useful advice!")

2. GMO's Central Skill Set and Loss of Near Certainties

That last point leads neatly into one of my principal regrets: in recent years we have been spoiled by the market in that we were presented with investment opportunities that seemed to us to be near certainties, which we define as probabilities over 0.9. Our principal skill has been to study major upside outliers or bubbles in all financial series, trying to understand and recognize their patterns. That's it. Not a profound exercise. In fact, my hero Keynes was quite disrespectful of this exercise. You are probably familiar with his famous quote from 1923, "But this long run is a misleading guide to current affairs. In the long run we are all dead." What you may be unaware of is how it continues: "Economists set themselves too easy, too useless a task if in tempestuous seasons they can only tell us that when the storm is long past the ocean is flat again." Presumably, he would have been equally contemptuous of the reverse: the prediction that after a long calm, you had better be prepared for another storm sooner or later. I believe it is a rare example of Keynes simply being wrong in both cases. Ironically, for

someone who 13 years later wrote the Bible on career risk (Chapter 12 of his General Theory), his error in 1923 was because he underestimated the career and business pressure to keep dancing. In real life, Mr. Market usually acts as if the calm will go on forever, even though he presumably knows it cannot. It's so deliciously profitable until it isn't. And even when the music stops, you can still be considered a "prudent man" – you will have failed, with lots of company, in the traditional way. It turns out that shouting warnings about impending storms after a long calm is a very unpopular pursuit. Even being bullish when everyone else is finally bearish – i.e., predicting a calm after the storm – is not free of career risk.

Well, dear Keynes, that is what we do at GMO. We are specialists in warning of eventual storms after calms, and of calms after storms. In the last 10 years we have benefited from the opportunities offered by a world-record number of extreme storms and outliers, and in September 2007 I was able to warn of three bubbles in one sitting.[1] All of them were world records, and all were "near certainties" to break: extremely high U.S. house prices, extraordinarily high global profit margins, and the lowest risk premiums ever recorded! By then, we had already addressed the extraordinary bubble in U.K. house prices, and soon afterwards we hit the mother lode: a warning of a bubble in all asset prices everywhere. Talk about pigs in mud!

Now, regrettably in some ways, the outliers and near certainties are ending. It is still nearly certain that global profit margins will decline a lot further. But it is no longer certain that this belief is not reflected fully in stock prices. It is merely likely that it is not, and that stock prices will therefore decline to new lows. Perhaps the odds are 2 to 1, which is a very good bet, but far from the rare 9 to 1 odds of a near certainty. Similarly, U.S. house prices are very likely to decline their last 5% to trendline and, since it was an extreme bubble, to overrun by, say, another 10%. But, again, this is at best a 2 to 1 bet. Yes, a bet that U.K. house prices will continue to decline is a lay-up, but it has always been hard to play. Its main effect now will be to impose a lot more pain on a system already so weakened that it makes it very likely that more bailouts or the nationalization of U.K. financial companies will continue. Weakness in the pound was my favorite near certainty in the U.K., but that was at over $2 to the pound. It is now at under $1.50 and, like the other bets, this one has also become a low-confidence bet, although one I personally still hold half of, principally out of consideration for future housing weakness. And the same goes for the yen. It was fundamentally cheap and, as the reverse of the popular and risky carry trade, it was a simple and powerful way of playing the movement against an ultra-low risk premium. It worked better than one could have hoped. But now, after a magnificent move, it is a low-confidence bet where I timidly cling to one-quarter of my original position, since I still believe there are a few more shoes left to drop in the anti-risk move. But there may not be many more.

The bets that global economic weakness was underappreciated – especially in China and the U.K. – were also near certainties, but, here again, perceptions have changed so fast that these are ordinary, decent bets now. This goes for economic policy as well. I was completely confident that "they," our noble leaders, were completely missing the point before. Now I'm not so sure. Yes, I disapprove of the swallow-the-whistle retreads in Obama's financial lineup, but these are brilliant (or, at the very least, very bright) people who know now that things are extreme. They may rise to the occasion. Their potential ineptitude is by no means a near certainty. Thank heaven! So, all in all, the wonderful world of "near certainties" has come to an end, and a pity it is for those in the prediction business.

3. On Exiting a World of Bubbles and Entering a World of Busts

Economic wipeouts and severe market over-corrections, should they arrive, are second best for us. It is true that they are outliers, but busts are not so dependable as bubbles. In contrast to Greenspan's reluctance and vacillation in recognizing bubbles and Bernanke's dismissal of their existence, bubbles do, of course, exist. More to the point, they always, always break, and their breaking is the most dangerous situation the Fed – or the whole economy, for that matter – ever faces. Similarly, strong economies and heroic profit margins always weaken. In crunches, you must lower the odds of regression back to normal to "nearly always." On rare occasions, you can stay down for the duration. If, like Zimbabwe, you really want to take your country back to the Stone Age, you can probably do it. (Thank goodness for term limits in the U.S.) Argentina, the fourth richest country in 1945, has taken its very best shot at resisting the tendency to revert back upward to normal, and is still trying hard. If you

[1] Danger: Steep Drop Ahead, *Fortune*, September 17, 2007.

are in a bubble, then competition in one form or another is guaranteed to chip away at exceptional opportunities, or confidence will suddenly break, or both. In a crunch, in contrast, no one will reliably come to your rescue or help you recover. You're on your own, and can continue to make mistakes, which we in the U.S. may very well do this time.

We at GMO have another problem: almost all of our work has been aimed at the study of bubbles or upside outlier events. Until eight minutes ago, the study of a real bust seemed, in comparison, academic. Now, however, we have thrown ourselves into studying the reverse. This very morning – true story – I unpacked The Panic of 1819, a new book by Murray Rothbard. As I write this at our large and untidy breakfast table, I can see the recently read The Forgotten Man by Amity Shlaes. It is a book about the plight of working men and FDR's erratic experiments with stimulus programs in the Great Depression. At GMO, we are now in full-court press mode, studying the patterns of economic and market lows and looking for predictive clues (with luck, see next quarter's Letter). But this is a relatively new effort after spending 12 years studying bubbles. Ah, well. Of course, this is all written assuming that we are indeed heading to extremes of undervaluation. It could be much worse: we could get stuck in a no man's land where stocks are around fair price and all certainties disappear. Please not.

4. On Accepting Blame and Ethics in General

I think it would be cathartic if all professional investors confessed to making a few mistakes. Lord knows, it has become a lost art. By degrees over recent years, we have become a culture that apparently never makes mistakes, or certainly never admits to them. Almost none of the CEOs who brought companies to their knees – or graves – accepted blame clearly and emphatically. Honchos at Lehman and Bear Stearns were victims, it seems, rather than incompetents. Hundreds of billions of stockholders' money was obliterated without clear apologies. Government agencies that nearly ruined us all have also admitted no mistakes. Greenspan only apologized for other peoples' shortcomings – he failed to realize how bankers would be so greedy in the short term and bereft of rigor and analysis. Really! More recently it is claimed that no one – neither the Fed nor the Treasury – had the legal authority to save Lehman. But such excuses were given only after it appeared to have been a disastrous decision. The last two years were very difficult for everyone. In difficult times, people make mistakes. Why don't they say so? As a typical, if painful, example, I followed Paul Bremer (a classmate, no less!) to the podium at a pension conference. He had just returned from his catastrophic series of miscalculations in Iraq. All decisions had been the best that a difficult situation had permitted, he argued, with a tone that implied that anyone suggesting otherwise should be locked up. This was indeed the tone that characterized the whole last eight years of government. Are the Japanese the only people left with a code of honor? When you make mistakes, or even when the people you are responsible for make serious mistakes, you should surely admit it, at least once in a while. In cases of extreme error, of which we have just had an unprecedented number, someone might even offer to resign. Not a prayer. As a postscript, hot off the press (courtesy of Maureen Dowd in *The New York Times*) comes a shocking admission of guilt from former Vice President Dick Cheney on CBS Radio: "I think we made good decisions. I think we knew what we were doing." Dowd also reports that Rumsfeld said, "My conscience is clear." Surely anyone saying that doesn't have one! In terms of admitting no errors and denying all responsibilities, the Bush administration is certainly going out with a bang.

If this section is to be credible, I must do some confessing. Rats! Well here goes: I was not always effective in capturing, through implementation, the full benefits of top-down insights. The same could be said for our asset allocation group, to which I belong. With the benefit of hindsight, we as a firm took too much liquidity risk in one or two strategies, and tilted toward too much risk in others. Even those insights we got right, we could have played harder. I regret all of these shortcomings, and believe that we can do better. I and GMO promise that we will strive to be more effective help next time.

This has also been the very lowest point for ethical standards within the financial industry. Rather than go on at length, allow me to single out one issue: the fees charged by managers, including large and previously reputable European banks, who shoveled off clients' money to Bernard Madoff. Their legal documents are no doubt impeccable and make it clear they cannot be held liable for anything, including outright fraud. Of course, we must then ask what the 1.5% fee plus performance incentives were for, since they were not actually managing a dollar of the money. But that is not the point. Reflecting

high ethical standards, they should return all of the money for doing so shoddy a job. With even the merest hint of ethical standards, they should at least return their fees. Certain European private banks, for example, charged a substantial fee for investing their clients' money with Fairfield Greenwich Group, who, in turn, charged a lot to invest with Madoff, who actually did the "work!" At least Madoff had the decency to waive his fee. Settling for the principal was enough. You could call this a fund of funds of funds of Ponzi. Even if there had been a real investment at the end of the pipeline, this would have been iniquitous.

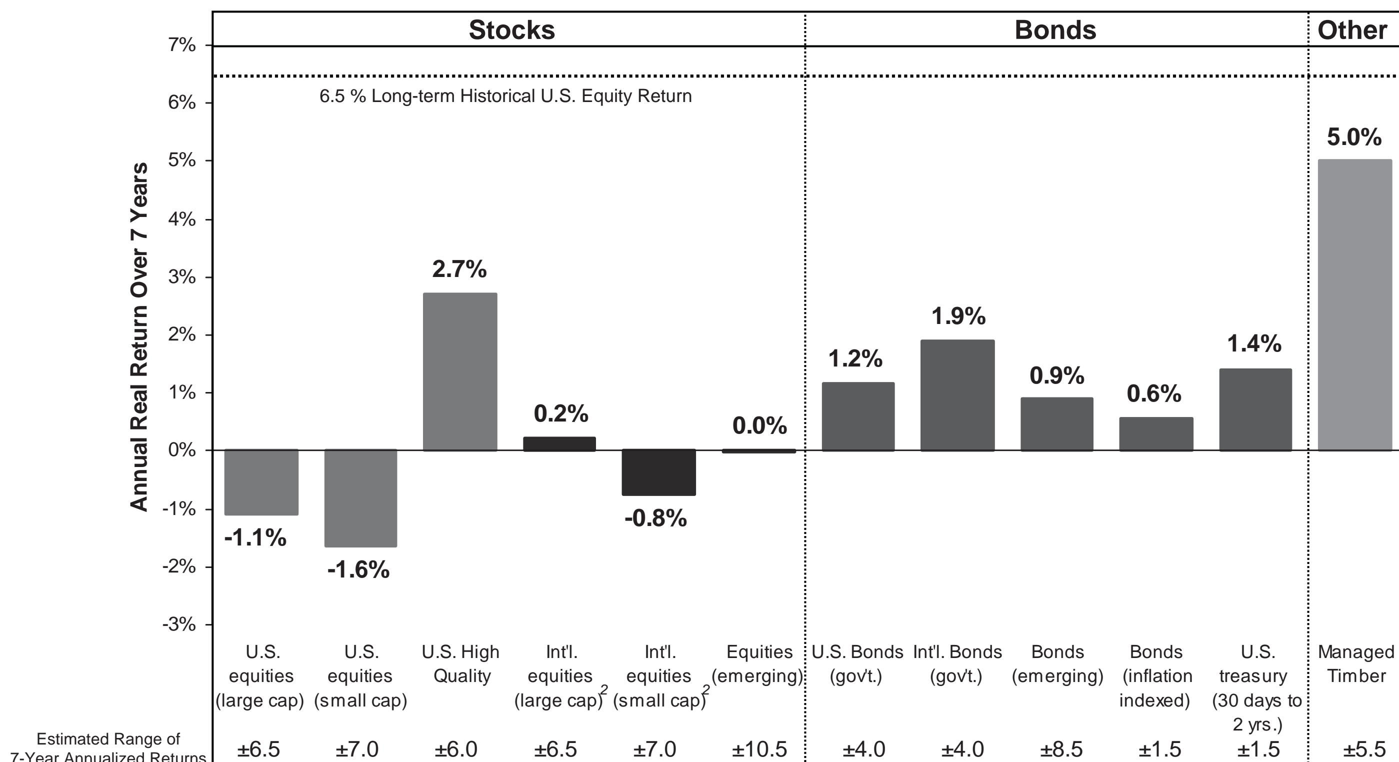
5. 7-Year Forecast and GMO's Current Strategy

Our 7-year forecast as of December 31 is a very far cry from that of a year ago. Exhibit 2 shows what a dismal forecast we had for everything on December 31, 2007. Today all equities are moderately – one might say, boringly – cheap. The forecast for the S&P has been jumping around +6% to +7% real, with other global equities slightly higher. To put that in perspective, a 1-year forecast done on the same basis we use today that started in December 1974 would have predicted a 14% return (which, by the way, it did not deliver since the market stayed so cheap). For August 1982, the forecast would have been shockingly high – over 20% real! So do not think for a second that this is as low as markets can get. Now, I admit that Greenspan and 9/11 tax cuts caused the "greatest sucker rally in history" from 2002-07. We therefore cannot rule out another aberrant phase in which extreme stimulus causes the market to rally once again to an overpriced level for a few more years, thus postponing the opportunity to make excellent long-term investments yet again. But I think it's unlikely.

GMO has attempted to tiptoe through the land mines in asset allocation and to minimize regrets as described last quarter, caught between the potential regret of missing decent investment opportunities, and the potential regret of investing too much too soon and then watching our tactical 2 to 1 guess of a new low come true. In October, our Global Balanced Asset Allocation Strategy was at 39.8% in global equities, well below our 45% target

Exhibit 2

GMO 7-Year Asset Class Return Forecasts* as of December 31, 2007



***The chart represents real return forecasts[1] for several asset classes. These forecasts are forward-looking statements based upon the reasonable beliefs of GMO and are not a guarantee of future performance. Actual results may differ materially from the forecasts above.**

[1] Long-term inflation assumption: 2.5% per year. [2] Return forecasts for international equities are ex-Japan.

Source: GMO

minimum (itself lowered from 50% in the previous year with clients' consent). We are now at 55% against a 65% norm and a 75% maximum equity position. If the market stays moderately below fair value, our current intention is to move "creeping like snail" toward a neutral 65% by late summer. If prices pull ahead of fair value, we will freeze and stay underweight. If prices plummet to new lows, we will invest more rapidly according to a prepared schedule, e.g., at 600 on the S&P, invest in another several percentage points of equities, etc. This plan minimizes our potential regrets and leaves us feeling as little discomfort as possible, given the strange world in which we now live.

6. GMO and Big Bets

Dick Mayo and I bet on small caps and hard-core value in the Nifty Fifty blue chip market of 1972. Being young and rash, and having a senior partner – Dean LeBaron – who admired flash, we put 100% of our money into small cap value before either small or value existed as sub categories. We were measured against the S&P, which made for a bumpy, but eventually very successful, ride.

We took that philosophy with us to GMO and refined it, with one refinement being to add a little more moderation, but not too much. In 1987, for example, in EAFE accounts (where we were one of the earliest players) we went to zero in Japan against a Japan weight in the EAFE benchmark that rose to 65%! More recently, for the last 10 years we had a handsome overweight in emerging equities and a minimum weight in U.S. equities, reflecting our 10-year-ago forecasts of +10.9% real for emerging and -1.1% real for the S&P. (This 12.0% difference for 10 years would have compounded so that every $1.00 in the S&P would be matched by $3.10 in emerging. This gives you some idea of the degree of aggressiveness in the forecast. And 10 years later, on October 1, 2008, there was $3.20 in emerging for every $1.00 in U.S. equities. Ta da!) But our biggest bet recently has been on quality stocks in the U.S. – a bet on the great franchise companies. Our U.S. Quality Strategy became more than 90% of our U.S. equity money in our Global Balanced Asset Allocation Strategy. And 50% of the quality stream was injected into our venerable U.S. Core Strategy. This was the first important override of our U.S. quant model in its 29-year history! We used to call the Japanese underweight a once-in-a-lifetime override. It was done – of course – three years too soon, and cost us 10% a year against a dramatically rising EAFE market. It then gained us almost 20% a year as Japan crashed. At the end, we had added over 4% a year and lowered the real absolute volatility as opposed to the benchmark volatility. Our timing of injecting quality into U.S. Core was better than the timing of the Japan bet as we won last year by 11 percentage points on a divided basis. (This is the number that determines your compound advantage: for example, a 10-point gain in a year when the market doubles is worth only 5% compounded, and a 10-point gain in a market that halves is worth 20%. I wish there were a convenient, accepted terminology for this.) The bet on quality was perhaps U.S. Core's once-in-a-lifetime override.

Perhaps the biggest and most painful bets in GMO's career, though, were against the 2000 Growth Bubble. In asset allocation, we had the allowed minimum percentage (50%) in global equities, and within that 50% minimum, we had a minimum exposure to U.S. equity. Further, within that minimum U.S. position, we had the minimum exposure to growth stocks and large caps. And, as we've been bragging recently, some of our long-term forecasts were bizarrely accurate. Yet in the short term – two-and-a-half painful years – we delivered low double-digit returns in a high double-digit world, and lost the quickest 60% of our book of asset allocation business on record!

In early 2006, I was asked at a Boston Security Analysts Society forum what the secret was to our rapid growth of assets then (*sic transit gloria*). I replied that it was the easiest question of the evening, and added, "We are simply willing to lose more business than the other guys." By this I meant that we are extremely attached to the idea that we make very big bets on those relatively rare occasions when we have very high confidence. I believe that career and business risk – the fear of losing clients – dominate our business, and it is so hard to sidestep that the big bets will always be available and will always be career threatening. And that is the turf we have staked out: make the "near certain" bets as large as we can, sweat out the timing problems, and pray for patient clients.

7. On the Joys of Buy and Hold

Jeremy Siegel and I have had several debates, and he has always been the bull. In late 1999, he was nervous about Internet stocks and a few tech stocks, but felt that the S&P would muddle through with an about-normal return. In his honor, I have always named two of our exhibits "Stocks for the very, very long-term." In the first exhibit, which we've used before, we show that buying at both the peak of 1929 and the peak of 1965 would have sentenced investors to identical 19-year periods of

waiting to get their investment back in real terms, with precisely zero positive return. Two 19-year periods in only the last 80 years, in a country that was spared the worst of global misfortunes! The second exhibit shows a 26-year round trip in Japan from 1982 until today that made no gain, and a 19-year period in Japan from 1989 until today that cost the investors 78% of their money! Now patience is a virtue, but this is ridiculous! Heavy buy-and-hold equity positions are fine for long-lived computers, but for impatient humans – given as we are to waves of overconfidence and abject fear – they are simply dangerous and unsuitable.

The buying and holding of a fixed portfolio mix with annual rebalancing is okay, I suppose, for individuals who are intimidated by making changes. And even for these individuals we had better hope that they don't panic and abandon stocks completely when all risky assets fall together as they did recently. But for institutions with access to professional advice and with long investment horizons, surely a fixed mix is aiming too low. If the last 15 years has taught us anything, hasn't it taught us that asset classes can be incredibly mispriced, along the lines of the 35 times inflated earnings for the S&P in 2000? Why would you ignore these opportunities to sidestep trouble? It is surely sensible to be fairly static when pricing is normal or even halfway normal, but when very large mispricings occur, should we not reasonably move away from extremely overpriced assets toward more attractive ones? Markets are very mean-reverting over longer horizons, and sophisticated clients always proclaim their patience. Asset allocation based on serious action at the extremes and inactivity the rest of the time has a good record and can be done quite simply. Let me give you an example of the power of asset allocation that is very close to home: GMO has a solid implementation edge in our broad range of equity funds and in emerging debt, which has equity-like features. Our average equal-weighted alpha for all equity funds is around 2.0% per year, after all costs, and cap-weighted is somewhat higher. This is one of the best records for a broad range of funds. Yet, despite our very decent implementation edge, in our 16-year-old Global Balanced Asset Allocation Strategy, over 80% of the total outperformance of the benchmark and over 60% of the reduction in volatility has come from moving the mix of assets, rather than from our implementation. (For the record, the total is about +2.9% a year over the benchmark, with a 22% reduction in volatility for an efficiency rating – return compared to volatility, or Sharpe Ratio – that is 3.5 times the benchmark, or .49 compared to .14). Asset allocation is simply much easier than adding alpha to a fund, since there is more to sink your teeth into. Counter-intuitively, asset classes are more inefficiently priced than stocks. There is a large and relatively efficient arbitrage between stocks, and the career risk of picking one stock versus another is quite modest. In contrast, when picking one asset class against another, it is painfully clear when mistakes have been made. This immense career risk makes it likely that there will always be great inefficiencies, for investors are reluctant to move money across asset boundaries. Consequently, there is great advantage to be had in getting out of the way of the freight train, rather than attempting to prove your discipline by facing it down. The advantage is in both higher return and lower risk.

Disclaimer: The views expressed are the views of Jeremy Grantham through the period ending February 11, 2009, and are subject to change at any time based on market and other conditions. This is not an offer or solicitation for the purchase or sale of any security and should not be construed as such. References to specific securities and issuers are for illustrative purposes only and are not intended to be, and should not be interpreted as, recommendations to purchase or sell such securities.

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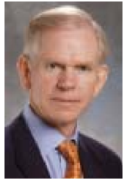
March 2009



Reinvesting When Terrified

Jeremy Grantham

It was psychologically painful in 1999 to give up making money on the way up and to expose yourself to the career risk that comes with looking like an old fuddy duddy. Similarly today, it is both painful and career risky to part with your increasingly beloved cash, particularly since cash has been so hard to raise in this market of unprecedented illiquidity. As this crisis climaxes, formerly reasonable people will start to predict the end of the world, armed with plenty of terrifying and accurate data that will serve to reinforce the wisdom of your caution. Every decline will enhance the beauty of cash until, as some of us experienced in 1974, 'terminal paralysis' sets in. Those who were over invested will be catatonic and just sit and pray. Those few who look brilliant, oozing cash, will not want to easily give up their brilliance. So almost everyone is watching and waiting with their inertia beginning to set like concrete. Typically, those with a lot of cash will miss a very large chunk of the market recovery.

There is only one cure for terminal paralysis: you absolutely must have a battle plan for reinvestment and stick to it. Since every action must overcome paralysis, what I recommend is a few large steps, not many small ones. A single giant step at the low would be nice, but without holding a signed contract with the devil, several big moves would be safer. This is what we have been doing at GMO. We made one very large reinvestment move in October, taking us to about half way between neutral and minimum equities, and we have a schedule for further moves contingent on future market declines. It is particularly important to have a clear definition of what it will take for you to be fully invested. Without a similar program, be prepared for your committee's enthusiasm to invest (and your own for that matter) to fall with the market. You must get them to agree now – quickly before rigor mortis sets in – for we are entering that zone as I write. *Remember that you will never catch the low.* Sensible value-based investors will always sell too early in bubbles and buy too early in busts. But in return, you may make some important extra money on the roundtrip as well as lowering the average risk exposure.

For the record, we now believe the S&P is worth 900 at fair value or 30% above today's price. Global equities are even cheaper. (Our estimates of current value are based on the assumption of normal P/Es being applied to normal profit margins.) Our 7-year estimated returns for the various equity categories are in the +10 to +13% range after inflation based on an assumption of a 7-year move from today's environment back to normal conditions. This compares to a year ago when they were all negative! Unfortunately it also compares to a +15% forecast at the 1974 low, and because of that our guess is that there is still a 50/50 chance of crossing 600 on the S&P 500.

Life is simple: if you invest too much too soon you will regret it; "How could you have done this with the economy so bad, the market in free fall, and the history books screaming about overruns?" On the other hand, if you invest too little after talking about handsome potential returns and the market rallies, you deserve to be shot. We have tried to model these competing costs and regrets. You should try to do the same. If you can't, a simple clear battle plan – even if it comes directly from your stomach – will be far better in a meltdown than none at all. Perversely, seeking for optimality is a snare and delusion; it will merely serve to increase your paralysis. Investors must respond to rapidly falling prices for events can change fast. In June 1933, long before all the banks had failed or unemployment had peaked, the S&P rallied 105% in 6 months. Similarly, in 1974 it rallied 148% in 5 months in the UK! How would you have felt then with your large and beloved cash reserves? Finally, be aware that the market does not turn when it sees light at the end of the tunnel. It turns when all looks black, but just a subtle shade less black than the day before.

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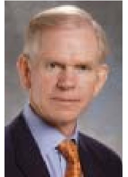

The Last Hurrah and Seven Lean Years

Jeremy Grantham

The Loss of "Near Certainties" in Investing

First, let me lament the loss of near certainties in investing. The financial and economic collapse that I described as "the most widely predicted surprise in the history of finance" about 18 months ago is behind us. More precisely, we believed that bubbles had formed in global profit margins, risk premiums, and U.S. and U.K. housing prices, and that all three were "near certainties" to break, with severe consequences for the economic and financial system. All have thoroughly burst and are in their overcorrection phase with the single exception of U.K. house prices, which I'm confident will do their duty. Normally there are, of course, no near certainties in investing. Life is not meant to be that easy. Asset allocators have been blessed in the last 10 years with a large collection of extraordinary outliers. As my favorite quote by Mandelbrot (1983) says, "Even though economics is a very old subject, it has not truly come to grips with the main difficulty, which is the inordinate practical importance of a few extreme events." If this last 10 years did not prove him right, nothing will. Since 1988, we have been offered 8 or 10 2-sigma events. (A 2-sigma event is our definition of an important bubble or bust.) All of these events were bubbles, and all behaved themselves by bursting. Now, sadly, there are probably none. Government bonds are the one serious candidate. In our opinion, they are badly overpriced but probably not by enough to justify the bubble title. Global equity markets are still cheap, but in major markets are nowhere near 2-sigma, 40-year bust levels. Some small-scale 2-sigma bargains may exist in the fixed income markets in rate differentials, but need skillful analysis and knowledge to disentangle from value traps. And, they are a very far cry from, say, the opportunities offered by buying credit default swaps at a handful of basis points on overleveraged financials in early 2007. So, all in all, welcome back to the age of guesswork.

The Last Hurrah

One reason I am parting company with many of my bearish allies for a while is my familiarity with the Presidential Cycle and, critically, what it has taught us about the power of stimulus and moral hazard to move the stock market many multiples of their modest effects on the real economy. These lessons seem to me to be particularly relevant today.

This Presidential Cycle effect is dismissed as an artifact by the great majority of financial academics, but they have a stalwart record of dismissing any data that implies even modest market inefficiency, and this effect implies great dollops of inefficiency. Simply summarized: since 1932, in the third year of the Presidential Cycle, the average S&P 500 return (from October 1 to October 1) is 22 percentage points ahead of the average of years one and two! And this is statistical noise? Year three is the time when, driven by politics, financial stimulus and moral hazard are applied so that the economy – particularly increases in employment – can be a little stronger in the run-up to the election in year four. In years one and two, in contrast, the system is tightened in order to leave some room for re-stimulus in the next year three (except during Greenspan's era, when he basically could never stop stimulating and so periodically upset the applecart). It is all pretty understandable. All we have to believe is that politicians like to be reelected and that completely independent Fed chairmen like to play ball with politicians. (Volcker of course, unlike the others, was never a ball player.) There have been no serious bear markets in year three, and many in years one and two.

In our search for what actually caused this magnificently large effect, we have been unable to find more than a very modest tendency for rates or money supply to increase above trend in year three. From this historical lack of

rapid monetary expansion, we make two guesses. First, we assume that stock markets are far more sensitive to financial stimulus than is the battleship GDP. The liquidity and other financial encouragement required to move the battleship a degree or two is apparently enough to have a very material effect on stocks. Stocks are simply much more sensitive to stimulus than the economy. The second guess is that the Fed's moral hazard is far more important than we realize, and is far more effective at moving markets than the modest financial adjustments. The implied promise to bail out speculators in years three and four if anything goes wrong, but to leave them hanging in years one and two (again, Greenspan excepted), is what drives this. Never underestimate the power of the Fed (or the Fed's willingness to deny its own influence when it suits). The best proof of this power has always been that the U.K. has shown a bigger year three jump on our Presidential Cycle than the U.S. has since 1932! Europe and even distant Japan also show a pronounced sympathy with the U.S. cycle.

Which brings us to this present case. Forget the traditional Presidential Cycle effect for the time being: Greenspan ruined it by overstimulating again in 2005 and 2006. Just bear our two principles in mind. If the stock market is many times more sensitive to financial stimulus in the short term than the economy is, then we could easily get a prodigious response to the greatest monetary and fiscal stimulus by far in U.S. history. Second, if you don't think there is a special, one-off, super colossal dose of moral hazard out there today, you are sadly uninformed. The moral hazard in play today is of a massively larger order than any we have ever seen. (But given how strangely selective the moral hazard or bailouts have been, it is enough to make those susceptible to conspiracy theories think in terms of a financial mafia led by You-Know-Who. Too much seems to depend on which friends you have.)

So by analogy to the normal Presidential Cycle effect, driven by stimulus and moral hazard, we are likely to have a remarkable stock rally, far in excess of anything justified by either long-term or short-term economic fundamentals. My guess is that the S&P 500 is quite likely to run for a while, way beyond fair value (880 on our revised data), to the 1000-1100 level or so before the end of the year. (For the record, I presented this case six weeks ago in Europe at 725 on the S&P, but was sadly distracted in my quarterly letter writing by a trip to Bhutan. Poor thing. I won't complain, though, since my "Reinvesting When Terrified" was posted on the day the market hit its low. You win some and you lose some.)

The market always anticipates an economic recovery and, sometimes, it must be admitted, there are several false moves ("suckers' rallies") before the recovery takes place. The current stimulus is so extensive globally that surely it will kick up the economies of at least some of the larger countries, including the U.S. and China, by late this year or early next year. (This seems about 80% probable to me, anyway.) Anticipating this, we should expect a stock market recovery – which normally leads economic recovery by six months, plus or minus two – sometime between two months ago and, say, August, which the astute reader will realize implies that this rally may already be it. This was part of the logic behind my March posting, "Reinvesting When Terrified": the uncertainties of the economy are so great that when the uncertainties of the stock market's anticipation are laid on top of them, you simply must have big ranges of outcomes and hedge your bets. Unless you have extreme luck or divine guidance, you will never catch the low. Alternatively, there is still time – just – for another freefall leg, but time is running out. Investor confidence is still fragile, and should we get a series of particularly shocking data points, which, in the unique position we find ourselves is quite possible (say, one out of three), then confidence could crack one more time and the market could go to a new low before the major anticipatory rally I'm describing. (This would make the current rally a short-term head fake.) In a rally to 1000 or so, the normal commercial bullish bias of the market will of course reassert itself, and everyone and his dog will be claiming it as the next major multi-year bull market. But such an event – a true lasting bull market – is most unlikely. A large rally here is far more likely to prove a last hurrah … a codicil on the great bullishness we have had since the early 90s or, even in some respects, since the early 80s. The rally, if it occurs, will set us up for a long, drawn-out disappointment not only in the economy, but also in the stock markets of the developed world.

Bulls vs. Bears

Resolute bears will point out (as we have) that the low of other major market breaks has been far lower than this one, and they would be correct. Compared to our revised fair value estimate of 880 for the S&P and its current recent devilish low of 666, the bottoms of other important comparative bear markets were much more

impressive. On a similar basis, the low in 1921 – the post WWI depression – was about 300; the U.K. in 1974 was at the current S&P equivalent of about 300. In 1982 and 1974, the lows in the U.S. were equal to about 450. Of our six best comparable examples, only in Japan, three years into the market crash, was the market still above 880 equivalent. Admittedly, I don't yet know enough about 1921, but as for the others, I could offer good reasons why their lower levels might be understandable. One group (the U.K. and the U.S. in 1974 and the U.S. in 1982) had very high interest rates providing formidable short-term competition with stocks. (In the long term, the Fed Model logic is simply false, but in the short term – up to a year – it does work for behavioral reasons.) These markets also had very high inflation, which in the short to intermediate term has a compelling explanatory power for P/E ratios. To keep it simple, high inflation rates typically come with lower than average P/Es and vice versa. A third factor in all three cases was a crisis in oil supply and the accompanying much higher oil prices. So without these extra negative factors, the current market seems unlikely to overcorrect below fair value quite as badly as these prior bear markets have.

The other two setbacks that we consider most useful for comparison purposes – 1932 in the U.S. and Japan in 1990 – were quite different. Both came with low rates and deflationary pressures, and each had extremely serious economic setbacks, with the wheels falling off the economic machine, a condition that certainly does apply this time. On the other hand, in neither case did they receive massive international stimulus. In Japan, the authorities delivered reluctant piecemeal stimulus. Interestingly, they now strongly warn against other countries copying their strategy, which they now deem an expensive failure, both in terms of growth and time. In 1932 the stimulus in the U.S. was on-again/off-again, on a trial and error basis, and usually with some elements offsetting others so that the stimulus program is judged to have been a partial or even substantial failure. In comparison, the response to today's crises is the first time that there has been even an attempt at a coordinated global policy. In some cases, including that of the U.S., the degree of stimulus far exceeds any previous efforts. It has also been initiated quite quickly despite the criticisms. So the effect of the stimulus might well kick up in time to clip off the last stage of the bear market, and this is what I think will happen.

(In this respect, George Soros' reflexivity can come into play: a false dawn can alter the eventual outcome as it chews up time. For example, in June 1932 market players saw illusory light at the end of the tunnel. In two months, the market rose almost vertically, climbing 110%! For four more months it held the gain and then, confronted with continued unrelieved bad news, sank steadily for six months so that one year after the rally began it was up only 35%. But this is the key: by then – a year later – there really was light at the end of the tunnel and the market rose again, 130% in eight months. And this time it did not give it back. If investors had jumped into a time machine back in June of 1932 and had been able to see how bad things would look in 9 to 12 months, it seems nearly certain the market would have gone lower. In this way, one or two false hopes can protect against lows that a more realistic view would cause. And I think it is likely to do so this time. Although the economy is likely to kick up in the next 12 months (although far from a near certainty) and be anticipated by the stock market, I believe it is likely that the longer-term health of the economy will be exaggerated. In time – perhaps a year into the recovery – the economy will slow once again and stay disappointingly below the standards to which we have become accustomed over the last several decades.)

But for this current market setback, it seems reasonable that we would do less badly than all of these previous worst cases. We are not trying to be bullish and we have no reputation as bulls, but – for a second ignoring the current rally, which is so sharp as to bear out my warnings of March – three months ago we at GMO collectively considered that a range of 550-650 for the S&P was about right for the low this time.

Reinvesting When Not Quite Terrified

My March note suggested that it is psychologically very difficult to reinvest any cash once a crash in the market and the economy has really frightened you. The antidote is to have a simple battle plan of determining levels at which to reinvest and to stick to it absolutely. We could call that Plan A. It is ideal for dealing with a market meltdown, which should be any asset allocator's dream: to be able to make wonderfully cheap investments. Investors, though, also need a Plan B for investing if the market bounces back up but stays either cheap – that is to say below fair value, currently at 880 on the S&P in our view – or close enough that investors can still expect a decent return

that is far in excess of cash. Our Plan B is to move our equity investments up to neutral weight steadily over 9 to 12 months. Since we were fortunate enough to trigger a second major investment at 740 on the S&P eight weeks ago (executed six weeks ago) we are now only 2% underweight. So for us, that requires investing only a fraction of one percent a month. But for those formerly in rigor mortis who were left behind and are now praying for a pull-back, this steady investing process is critical. You have missed some great investment opportunities, and now you have a psychological commitment to another major fall to add to any intellectual reasons you may have had. The market may well oblige by coming down sharply again in the near future, and I for one continue to believe there is still about a 1 in 3 chance it will do so. There is also perhaps a 1 in 5 chance that the market will come down much further in the future to a new low, but if it does not and it continues to rise, extended praying may not make you as much money as you would like.

Plan C gets to be a particularly speculative prospect, and that is what to do if the market, fueled by liquidity and hopes from the stimulus program and the usual morally hazardous promises from the Fed, soars way over fair value, say to the 1000 to 1100 range, which I begin to think is quite likely by the end of the year, whether or not there is another near-term fall. But to keep things simple, we will discuss what to do for Plan C if and when we get there.

Where GMO's Asset Allocation Stands in All This

In traditional asset allocation accounts, we hit an all-time low of 39% global equities against a theoretical minimum of 45% due to the speed of the decline last October. In October and November we invested a double tranche of 16%, and at 740, as already mentioned, we invested another 7.5%, leaving us then 4% underweight equities with two more 7% tranches lined up to go at lower prices. We would have preferred a lower low to trigger at least one more trade, and we would much prefer a new low going forward, especially one in the next two or three months. We prefer it so intensely that we hope it is not impacting our assessment of the future odds. Our second choice is for a new low, say, late next year after our longer-term head fake to over 1000 has been washed away by the longer-term economic and financial problems. Strangely, therefore, if a lot of the thinking in this letter is simply wrong and far too bullish, we will be in a good position to benefit by reinvesting the rest of our reserves at wonderfully cheap prices. It is seldom that one wants to be wrong! For sensible long-term investors, what can possibly be better than investing at great prices? Every percent of our 23% invested so far has been done at 7-year forecasted returns of over 10% real. We would just like to do some more. So should you.

Seven Lean Years

For the biblical record, Joseph, consigliere to the Pharaoh, advised him that seven lean years were sure to follow the string of bountiful years that Egypt was then having. This shows an admirable belief in mean reversion, but unfortunately the weather does not work that way. It, unlike markets, really is random, so Joseph's forecast was like predicting that after hitting seven reds on a roulette wheel, you are likely to get a run of blacks. This is absolutely how not to make predictions unless, like Joseph, you have divine assistance, which, frankly, in the prediction business is considered cheating. Now, however, and definitely without divine help but with masses of help from incompetent leadership, we probably do face a period that will look and feel painfully like seven lean years, and they will indeed be following about seven overstimulated very fat ones.

Probably the single biggest drag on the economy over the next several years will be the massive write-down in perceived wealth that I described briefly last quarter. In the U.S., the total market value of housing, commercial real estate, and stocks was about $50 trillion at the peak and fell below $30 trillion at the low. This loss of $20-$23 trillion of perceived wealth in the U.S. alone (although it is not a drop in real wealth, which is comprised of a stock of educated workers and modern plants, etc.) is still enough to deliver a life-changing shock for hundreds of millions of people. No longer as rich as we thought – under-saved, under-pensioned, and realizing it – we will enter a less indulgent world, if a more realistic one, in which life is to be lived more frugally. Collectively, we will save more, spend less, and waste less. It may not even be a less pleasant world when we get used to it, but for several years it will cause a lot of readjustment problems. Not the least of these will be downward pressure on profit margins that for 20 years had benefited from rising asset prices sneaking through into margins.

Closely related to the direct wealth effect is the stranded debt effect. The original $50 trillion of perceived wealth supported $25 trillion of debt. Now, with the reduced and more realistic perception of wealth at $30 trillion

combined with more prudent banking, this debt should be cut in half. This unwinding of $10-$12 trillion of debt is not, in my opinion, as important as the loss of the direct wealth effect on consumer behavior, but it is certainly more important to the financial community. Critically, we will almost certainly need several years of economic growth, which will be used to pay down debt. In addition, we will need several years of moderately increased inflation to erode the value of debt, plus $4-$6 trillion of eventual debt write-offs in order to limp back to even a normal 50% ratio of debt to collateral. Seven years just might do it.

Another factor contending for worst long-term impact is the severe imbalance between overconsuming countries, largely the U.S. and the U.K., and the overproducing countries, notably China, Germany, and Japan. The magnitudes of the imbalances and the degree to which they have become embedded over many years in their economies do not suggest an early or rapid cure. It will be hard enough to get Americans to save again; it will be harder still to convince the Chinese, and indeed the Germans and the Japanese too, that they really don't have to save as much. In China in particular they must first be convinced that there are some social safety nets.

A lesser factor will be digesting the much shrunken financial and housing sectors. Their growth had artificially and temporarily fattened profit margins as had the general growth in total debt of all kinds, which rose from 1.25x GDP to 3.1x in 25 years. The world we are now entering will therefore tend to have lower (more realistic) profit margins and lower GDP growth. I expect that, at least for the seven lean years and perhaps longer, the developed world will have to settle for about 2% real GDP growth (perhaps 2.25%) down from the 3.5% to which we used to aspire in the last 30 years. Together with all the readjustment problems and quite possibly with some accompanying higher inflation, this is likely to lead to an extended period of below average P/Es. As I have often written, extended periods of above average P/Es, particularly those ending in bubbles, are usually followed by extended periods of below average P/Es. This is likely to be just such a period and as such historically quite normal. But normal or not, it makes it very unlikely with P/Es, profit margins, and GDP growth all lower than average that we will get back to the old highs in the stock market in real terms anytime soon – at least not for the seven lean years – and perhaps considerably longer. To be honest, I believe that most of you readers are likely to be grandparents before you see a new inflation-adjusted high on the S&P.

If we are looking for any further drawn-out negatives, I suspect we could add the more touchy-feely factor of confidence. We have all lost some confidence in the quality of our economic and financial leadership, the efficiency of our institutions, and perhaps even in the effectiveness of capitalism itself, and with plenty of reason. This lack of confidence will not make it easier for animal spirits to recover. This does not mean necessarily that we haven't already seen the low, for, in my opinion, it is almost 50/50 that we have. It is more likely to mean a long, boring period where making fortunes is harder and investors value safety and steady gains more than razzle dazzle. (The flaky, speculative nature of the current rally thus bears none of the characteristics that I would expect from a longer-term market recovery.)

The VL Recovery

So we're used to the idea of a preferred V recovery and the dreaded L-shaped recovery that we associate with Japan. We're also familiar with a U-shaped recovery, and even a double-dip like 1980 and 1982, the W recovery. Well, what I'm proposing could be known as a VL recovery (or very long), in which the stimulus causes a fairly quick but superficial recovery, followed by a second decline, followed in turn by a long, drawn-out period of sub-normal growth as the basic underlying economic and financial problems are corrected.

An Amateur's Assessment of the Stimulus Program

On the confidence topic, it would be a start if we could all believe in the effectiveness of our stimulus program, but it is not easy. The situation today is that an unprecedented amount of stimulus is being thrown at our problems and it is being thrown on a global basis. Some hurlers, like the U.S., are more prodigal than others, and some, like the Germans, whose only imaginative stimulus – a scrapping bonus, not surprisingly reserved for their beloved cars – are more frugal. But in total, the effort is unrivaled in history. The bad news comes in two bits: first, no one really knows if generous bailouts are a good idea in the long run; and second, no one really knows, if they are indeed a good idea, whether this current stimulus is enough. What most of us, including me, agree on is that the problems we face are unprecedented both in global reach and in the breadth of financial assets that are affected, which is to say everything.

My own personal and speculative take on this is that

the stimulus program will have a positive effect on all countries, and in some cases this will be enough to kick GDP growth back into positive territory quite soon for the most fortunate, in which group I include the U.S.

It is ironic, by the way, that the U.S. would be less hurt than most given that Pied Piper Greenspan led all of us global rats off the cliff. And, yes, in this case the Maestro (well named) had an orchestra pit filled with Treasury and Fed officials (especially the NY Fed), and such a large supporting cast of dancing CEOs of financial firms and their reckless board chums that even Cecil B. DeMille would have found them sufficient. So we in the U.S. developed almost single-handedly the tech bubble of the late 1990s, and then engineered a U.S. housing bubble and a flood of excess dollars that almost guaranteed that global assets would follow suit. Yet, unfairly or not, the U.S. has some considerable advantages in this mess we created. First, we have an unusually low percentage of our labor force in manufacturing and export-oriented companies that will be the most immediately affected by the global downturn, unlike Germany and China, to name two. Second, the dollar plays an important role that may cushion U.S. pain by allowing U.S. authorities the flexibility to make their own rules where other countries such as Spain and Ireland have most decisions heavily constrained. More profoundly, the U.S. is in a position where necessary sacrifices will simply be less painful. We in the U.S. will have to buy two fewer teddy bears for our already spoiled four-year-olds. The third television set will be postponed as will the second or third car. We will have to settle for a slimmed down financial industry and fewer deal-oriented lawyers. Woe is us. China, on the other hand, will close teddy bear factories, and send its workers back to marginal or sub-marginal jobs in the countryside. That is the real world, and it delivers real pain. Even worse, in some ways the Germans (and to a lesser extent the Japanese) make and sell the equipment that builds the teddy bear factories, no more of which will be needed for a long while. That, too, is real pain. To add to these advantages – at least in the short term – the U.S. is pouring on more stimulus than anyone else.

So for the U.S. at least I have considerable confidence that the GDP will kick back into positive territory (+0.8) by late this year or early next year. This, I concede, is a consensus view, but one that comes with a significant caveat. I believe that there is a decent chance, say 20%, that we still badly underestimate the downward momentum of short-term economic forces. We know we are perfectly capable of doing this since as recently as last November the "authorities" like the IMF estimated a +0.5% GDP for the developed world in 2009 and it is now at –4%! Not bad … a 1% reduction per month where a 0.1% change per month for four months would normally be considered a landslide.

But to get back to the point: the stimulus program is not based on either persuasive economic theory (if that is not an oxymoron these days) or on solid historical studies: there are simply too few examples and absolutely no controlled experiments, so we are reduced to guesswork. Almost everyone has had the thought that if overconsumption and excessive debt have caused our problems in the U.S., then pushing rates so low that they practically beg us to borrow and consume some more seems an odd cure. We acknowledge that a stiff whiskey can get the drunk to stagger to his feet and make it a few blocks, but it doesn't seem like a probable long-term answer. Yet we all override this thought by saying that because a great majority of dignified economists, although they all disagree on the details, seem to think stimulus is necessary, surely they must collectively have it right. However, we in the investment business are blessed by an example that allows us to keep an open mind. The widespread acceptance of rational expectations and the efficient market hypothesis has taught us never to underestimate the ability of the economics establishment to get an idea brutally and expensively wrong. So they may have done this time. It may indeed be a better long-term solution to accept a more punishing decline and let foolish overleveraged banks go under together with weak players in other industries. Surely assets would flow to stronger hands with beneficial long-term effects. Indeed, the quick 1922 recovery from the precipitous decline of 1919-21 was so profound that the "Roaring Twenties" suppressed the memory of that earlier depression.

So what do we really know about the merits of stimulus programs? We do know that National Socialist Germany had full employment by 1935 when we – Americans and Brits – still had 15% unemployment. They did this as far as one can tell by direct government expenditures: by building autobahns, "people's cars" (VWs), and the odd battleship. We also know that wartime preparations finally and absolutely cured the recalcitrant depression in the U.S.

Germany and Japan sprang back from the ashes after

World War II, but are we sure that this doesn't say more about remarkable economic resilience than it does about stimulus? On the stimulus side it certainly had the Marshall Plan, the very high point of enlightened and generous American foreign aid. On the other hand, surprisingly, the U.K. received more Marshall aid than the Germans, who had far more damage to their infrastructure. So, perhaps it is indeed more about resilience and work ethic than stimulus. We know that in 15 years, with a semi-flattened industrial sector, the Germans had flashed past the Brits and even the neutral Swedes for that matter. The U.S. economy was also back on its long-term growth trend in 1945 as if the depression and the war had never occurred. So, we know a lot about the powerful resilience of economies. They are not such delicate flowers that we need to protect every foolish bank or be faced with wrack and ruin. Current stimulus seems to be more about timing. We are unwilling to take a very sharp economic downturn even if such a downturn makes a quick, healthy recovery more likely. Rather, we seem to be making a desperate attempt to make the setback shallower, perhaps at the expense of a longer recovery period. What is likely to happen in the near term always has far more political influence than what may happen in the longer term. So we have been more decisively selecting the Japanese route rather than the 1921 or the S&L approach of a more rapid liquidation. Month by month we are voting for desperate life support systems – at the tax payers' expense – for zombie banks and industrial companies that have been technically bankrupted by years of excess and almost criminally bad management.

I do think I know one thing, however. If a government invests directly, drawing employment from a large pool of the unemployed, and only invests in projects with a high societal return on investment such as hiring workers with well-stocked tool belts to install insulation, or repair bridges and transmission lines, or lay track to accommodate a respectably fast train from Boston to Washington (Yes!), it seems nearly certain that such a government will never have to regret it. Keeping banks, bankers, or even extra auto workers in business seems, in comparison, far more questionable. So questionable in fact that it must be justified by politics, not economics. We should particularly not allow ourselves to be intimidated by the financial mafia into believing that all of the failing financial companies – or very nearly all – had to be defended at all costs. To take the equivalent dough that was spent on propping up, say, Goldman or related entities like AIG (that were necessary to Goldman's well being), as well as the many other incompetent banks and spending it instead on really useful, high return infrastructure and energy conservation and oil and coal replacement projects would seem like a real bargain for society. Yes, we would certainly have had a very painful temporary economic hit from financial and other bankruptcies if we had decided to let them go, but given the proven resilience of economies, it would still have seemed a better long-term bet. But, as I said, this is all just speculative theory and I don't have to deal with Congress.

Let me end this section by emphasizing once again the difference between real wealth and the real economy on one hand, and illusionary wealth and debt on the other. If we had let all the reckless bankers go out of business, we would not have blown up our houses or our factories, or carted off our machine tools to Russia, nor would we have machine gunned any of our educated workforce, even our bankers! When the smoke had cleared, those with money would have bought up the bankrupt assets at cents on the dollar and we would have had a sharp recovery in the economy. Moral hazard would have been crushed, lessons learned for a generation or two, and assets would be in stronger, more efficient hands. Debt is accounting, not reality. Real economies are much more resilient than they are given credit for. We allow ourselves to be terrified by the "financial-industrial complex" as Eisenhower might have said, much to their advantage.

Appendix

Just for Fun: One Strategist's List of (Hopefully Well-informed) Guesses

	Probabilities
Branch #1:	
The economies of the U.S. and some other leading countries kick up by late this year or early next year	**.80**
In which case:	
▪ Chances of a new low in the next three months	**.333** and rapidly declining
▪ Chances of a new low late next year or beyond as the painful longer-term truth dawns	**.167**
▪ Therefore, chances we have already seen the low	**.50**
Branch #2:	
The global economies prove to be so weak that they do not start to recover until late next year after a series of disappointments	**.20**
In which case:	
▪ Chances of a new low this year or next	**.80**
▪ Chances that somehow hope triumphs over disappointment	**.20**
Aggregate probabilities of a new low:	
Branch 1: .50 × .80 = .40 Branch 2: .80 × .20 = .16	= **.56**
Branches 1 and 2:	
▪ Chances that this is the start of a lasting bull market destined to take us to new highs within three or four years (after inflation)	**.15!**
▪ Therefore, chances we face a long, drawn-out period to reach a new high (up to 20 years)	**.85**

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QUARTERLY LETTER

July 2009

Boring Fair Price!

Jeremy Grantham

Waiting for Markets to be Silly Again

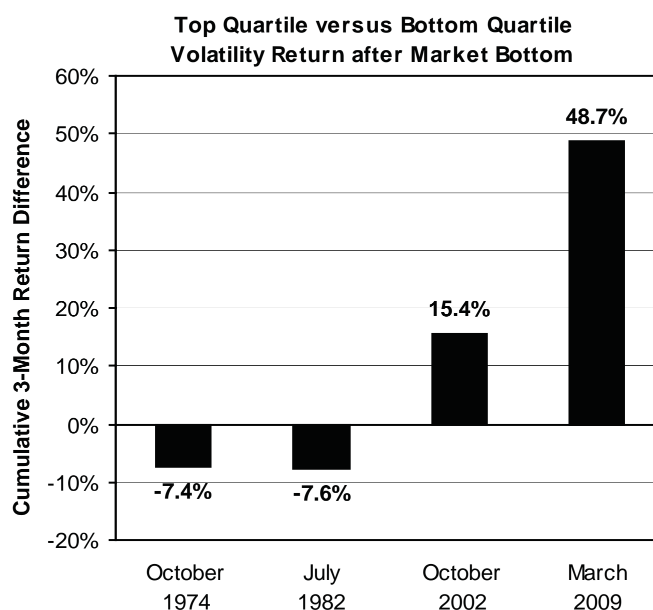
A year is certainly a long time in markets, and so is a quarter. A year ago, equities globally – and everything else for that matter – were very overpriced, particularly if they were risky. A quarter ago, in mid March, prices everywhere were cheap. Now they have all – or almost all – converged for a few unusual moments at fair value. A year ago, it was very easy to know what to be: a risk avoider. It was not so easy reinvesting when terrified, but most of us knew that we should have been doing more. But today? It's difficult to be inspired at fair value.

Since early March, the market has had the type of strong speculative rally that often follows extreme declines. The danger of a breathtaking rally is that it leaves those few investors who raised considerable cash waiting for a pullback and psychologically invested in the case for a new bear market leg. This was covered in our mid-March posting, "Reinvesting When Terrified." That theme was developed a few weeks later for me when the penny dropped: the extreme stimulus and moral hazard of recent quarters resembled the stimulative third year of a Presidential Cycle. Indeed, it seems to have turned this usually restrictive Year One into a giant Year Three effect. The market in Year Three typically outperforms its average by 12 percentage points predicated on much less desperation exhibited by the authorities than we had this year. A notionally independent Fed has to be at least somewhat discreet in its friendly support of an existing administration in Year Three. While in Zurich on April 1 (you get what you pay for on April 1), under the impact of that penny dropping, I told *Finanz und Wirtschaft* that "Der S&P 500 Index kann rasch auf 1100 steigen." That is, the S&P could move rapidly to 1100. I actually remember saying that the move could be between 1000 and 1100, but journalists hate wasting space. In a belated quarterly letter a few weeks after that, I tried to make the point that such a rally had absolutely nothing to do with the logic of long-term fundamentals, but was merely a response to great stimulus and great implied promises.

Well, this time once again, enough risk takers were found to get the job done, and the market rose to 950, with presumably at least a decent shot (say, 50/50) at rising over 1000 in the next two to three quarters.

In addition to making the sharpest upward move since 1938, the market had a record speculative bias, as shown in Exhibits 1 and 2. On this topic I failed badly to emphasize enough one aspect of the analogy to the third year of the Presidential Cycle: it is usually extremely speculative. Where the S&P outperforms normal by 12 percentage points in Year Three, the most volatile quarter of the market outperforms by 21%! This is a lot of money in a year. Exhibit 1 shows the gap between high and low

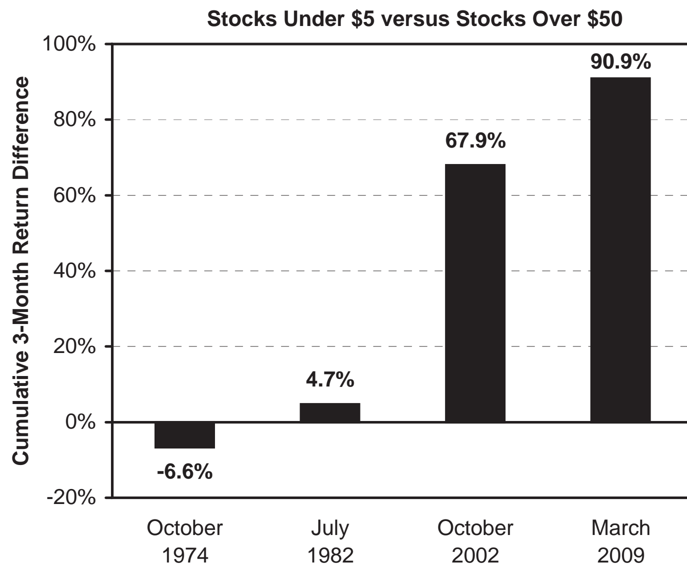
Exhibit 1
Speculative Rallies I



Note: The universe for the above data is the top 1000 U.S. stocks by market cap.

Source: GMO

Exhibit 2
Speculative Rallies II



Note: The universe for the above data is the top 1000 U.S. stocks by market cap.

Source: GMO

volatile stocks in each of the most impressive market recoveries in recent decades, and Exhibit 2 shows the gap between stocks under $5 and over $50, which has a very good record as a risk proxy. This current move clearly looks like the record holder! And the rally did indeed leave institutional investors feeling left behind. In an informal survey at a recent meeting of 150 or so institutions, those admitting to feeling nervous about underexposure to risk outnumbered those feeling too aggressive by a neat 10 to 1! This also suggests how a speculative rally can keep going longer than reasonable investors expect.

We at GMO, while we were really quite good in re-entering the market, perhaps under-responded to the probabilities of a particularly risky rally. As value purists (at least most of the time), we were very constrained by the fact that we still measured U.S. quality blue chips as the highest return global equities even at the very low. This was in complete contrast to the situation at the low in 2002, where the best values were in risky emerging markets and small caps, and we simply had to follow our value noses to really participate in, even outperform, a strong rally. For any approach, some market stages cooperate and some try to really mess with you. We came very close to getting the point this time but still missed it, although all the pain can and very well may be recovered. One of the encouraging things about investing is that you only have to be partly right: in our typical global balanced accounts, for example, we fell last year with an average of 42% global equity and we rose off the low with an average of 62%.

On its way up from 666, the S&P flashed through its fair value of about 880 on our best estimates (our estimate of fair value has decreased slightly again due to write-downs of book value, among other factors). The market's overshoot to 950 caused our seven-year forecast for the S&P to drop to 4.8% real compared with its 5.7% estimate at fair price. After 20 years of more or less permanent overpricing of the S&P, we get five months of underpricing. There is no justice in life! Well, at least not for the apparent handful of us who welcome the opportunity to invest at bargain prices! There is more happiness, it seems, for the armies of investors who prefer the temporary endorphin rush that comes with a rising market, even if it's overpriced.

In March and April, I wrote about Plan A: you must force yourself to invest in a cheap market even when you are terrified by rapidly falling prices, as I admit I was to some extent. I also suggested Plan B: if you missed the earlier lows, you must grit your teeth and phase slowly into a cheap market. You can't gamble that it will oblige you by another low, and historical analogies with earlier, much lower market lows are fraught with genuine differences. Now it is time for Plan C.

Plan C: What to do if the Market Overruns

Given our view that we are in for seven lean years in which the market will be looking for an excuse to be cheap, we recommend taking some risk units off the table, including becoming underweight in equities – between 1000 and 1100 on the S&P, if it gets there this year. Around 880 you should continue to move slowly to fair value, twiddle your thumbs, and wait to see what happens. Boring! Otherwise, it is time to focus on the lesser issues: which types of equities are cheaper or more expensive than the market. This leads us back once again to the bet on quality stocks.

The Quality Bet

The easy winner of the cheapest equity sub-category contest is still high quality U.S. blue chips. They were really trashed on a relative basis by the second quarter rally in junk. I understand a rally in junk after the record decline, but this was excessive and based apparently on unrealistic hopes for a strong, sustained economic recovery. Such a recovery seems most unlikely, whereas a temporary, weaker recovery appeared very likely three

months ago as the substantial size of the stimulus package was revealed. The latter scenario still seems probable. Our original estimate for the timing of some economic recovery to occur late this year or early next year still stands. Without an unexpectedly strong improvement in the economy, it is hard to see high quality stocks losing much more ground, given their extreme value gap over junky stocks – more than an 11 percentage point spread per year on our seven-year forecast! If our numbers are correct, long quality (or long quality and short junk) is substantially the most outlying bet available today in all global equities. (Let me admit here, once again, that there is always more subjectivity and, hence, doubt in measuring "quality" as a sector than there is in, say, large caps versus small caps. But we have been estimating quality this way for 30 years and think we have a good record in doing so.)

Our other perennial favorite – emerging market equities – has had an amazing recovery, all things considered, and is no doubt also vulnerable to a reassessment of how quickly the global economy is recovering. Deciphering the strength of the Chinese economy will also play a major role in formulating our view of any future relative strength of emerging. My colleague, Edward Chancellor, strongly suspects that the Chinese economy is dangerously unbalanced and very likely to come unhinged in the next few quarters, surprising the pants off investors. On the other hand, the strong longer-term case that I outlined in "The Emerging Emerging Bubble" 15 months ago seems intact. I suggested then that emerging equities would sell within five years or so at a distinct P/E premium to celebrate their obviously superior GDP growth compared with that of an aging developed world. Emerging market equities are already selling at a modest premium to EAFE and the higher quality half of the U.S. equity market.

Being pro-emerging yet anti-China is a dilemma for us; we are working to resolve it. Meanwhile, emerging equities, like most risky asset components, are moderately overpriced. We in asset allocation may, however, push our luck in emerging – particularly ex-China emerging – using inertia to reduce our current modest overweight. If we do this, it will be out of respect for the high probability that emerging equities will sustain and increase their overpriced level relative to the rest of the world.

Caveats

What we specialize in at GMO, not surprisingly perhaps, is doing the easy job: we wait for extreme situations and predict that they will become normal once again. When markets sell at normal prices, life for us becomes much harder, perhaps 10 times harder. Predicting movements away from rational prices in an irrational world should not be easy, and indeed it is not. Our one and only effort at predicting a bubble – in emerging markets – is likely to stay just that. Only U.S. quality feels (and measures) to us like a real outlier. As for the rest, if you feel yourself becoming overconfident about anything, take a cold shower and start again. Just be patient. In our strange markets, you usually don't have to wait too long for something really bizarre to show up.

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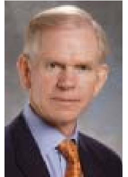

Initial Report: Running Out Of Resources

Jeremy Grantham

Getting Used to Lower Growth and Higher Prices

As the economy sorts itself out from the recent financial turmoil, we are very likely to have lower growth rates for quite a few years. We described the reasons for this last quarter: writing down excessive loans and curtailing expenditures as we realize we are not as rich as we thought.

Economic expansion will also be held back by the decreasing growth of available man hours. Since 2000, this growth has declined to below 1% per year from an average of 1.62% for the prior 50 years. Over the next 30 years, it is almost certain to continue to decline to about 0.5%, ignoring the temporary cyclical bounce in employment that we will get as the current severe recession ends.

Behind these two issues, however, lurks another longer-term and more important factor affecting future growth, and that is the increasing limitations on resources: we are simply running out of everything at a dangerous rate. We apparently have trouble processing numeric issues of this kind, and this missing faculty will cause considerable grief. We do not understand the implications of exponential or compound growth rates: the main implication being that they are impossible to sustain.

No better example of resource limitation in the face of both denial and strong efforts can be found than U.S. oil production. As is well known, we have been on the steep downslope of production since 1974 despite our best attempts to "Drill, baby, drill!" The largest oil discovery in the Gulf in the last 20 years will keep our engines running for a mere 41 days. Nothing we do can reverse the decline, and drilling our reserves faster has been described as "oil independence through more rapid exhaustion of our reserves!" Coal reserves of the highest quality – anthracite – are basically mined out everywhere, and the second choice – bituminous coal – has probably also passed its peak. All attempts to maintain the growth of total hydrocarbon output must now depend on subbituminous coal, lignite (which is a little bit better than burning rock, but not much), and tar sands, which are themselves increasingly energy- and water-intensive to exploit.

Modern agriculture has been described as a way of turning hydrocarbons into food. Without cheap energy – a single gallon of gas is the energy equivalent of 100 hours of old-fashioned labor – the world would certainly have trouble producing half of the current food supply, and that fraction could be substantially less. Hydrocarbons are not only critical to farm equipment and food distribution over very large distances, but also play a dominant role in fertilizer production. With sparse hydrocarbon usage, American agriculture would have to be totally and painfully restructured away from very large scale monoculture. Hydrocarbons are very efficient in the use of manpower but surprisingly inefficient with everything else, including output per acre and output per unit of energy.

All metals are facing the same depletion problem as hydrocarbons. Where 30 tons of copper ore once produced a ton of copper, it now takes 500 tons of ore! And with every extra ton of ore required, the energy intensity also rises. Several specialized metals critically important as catalysts are past their peak production. Water resources, so necessary for agricultural growth, are under incredible economic pressure, and are simultaneously diminishing in absolute terms.

This would be a dangerous situation with zero population growth; in fact it would guarantee that per capita growth would slow. Yet population growth in the last century has been the fastest in the history of man. The recent 100-year growth exceeded that of any 2000-year block in history. And in terms of absolute numbers added, the world's

population has increased 2.5 times in my lifetime, from 2.5 billion to 6.5 billion.

It should be obvious from simple arithmetic that population growth is on a direct collision course with increasingly scarce resources. For millennia, food constraints held the world's population nearly constant. About 12,000 years ago, these constraints were altered significantly with the start of organized agriculture. Then, around 200 years ago, the so-called Agricultural Revolution – the introduction of science to farming – allowed for another doubling in output. All of this was dwarfed, however, by the harnessing of hydrocarbons – the sun's energy stored over hundreds of millions of years. This remarkable patrimony is now about half gone, and some time in the next 10 to 40 years, half of all of our resources will have been used or, stated another way, one last doubling will remain. We are looking at the last of 14 doublings in the past 250 years. We are, if you prefer, 13/14ths of the way through the game in exponential terms! At 1% growth in hydrocarbon consumption, which would be a dramatic reduction in the growth rates of the last 30 years, our reserves would last for merely one more generation. As we move through our remarkable and irreplaceable hydrocarbon reserves, the price will, of course, rise remorselessly to ration supplies. Hydrocarbons will increasingly be limited to their highest and best uses: (probably) petrochemical feed stocks and aviation fuels. The price rise, which for a while is quite likely to be parabolic – rising at an increasing rate rather than a steady rate – will have an immediate effect on the price of all agricultural products. Also affected will be the price of all metals, which too have become extremely energy-intensive, as has hydrocarbon production itself.

This transition away from carbon-based fuels could have been relatively painless on paper, but in real life our species has such a modest ability to deal with distant outcomes or to defer gratification that a bad ending is probably inevitable. We need, it seems, the shock of a Pearl Harbor to really gear up and make sacrifices. For the record, in 1977 President Carter pointed out that we were running out of oil and would need to make some "sacrifices." By "sacrifices," by the way, he did not mean real wartime-like sacrifices, but merely a time of settling for a lower rate in the increase of wealth. He noted quite accurately that in the 10 short years preceding 1977, our planet's population had used as much oil as in its whole previous history! (That is to say, it had doubled usage in 10 years, or had grown at 7% a year, which doesn't sound so Draconian but, of course, is.) Carter urged us to fully insulate 80% of our houses in 10 years and to continue President Ford's auto fuel economy initiatives; following these recommendations would have actually freed us from the need to import any sensitive Middle Eastern oil! As a famous symbol, he had solar panels installed on the White House roof. Remarkably, this very un-American speech of his was well received by its audience but, unfortunately for him (and probably for us also), very little else he did was.

Carter was dispatched by President Reagan, who was admirable in many other ways in my opinion, but apparently had psychological problems when dealing with limits. In a display of brilliant politics and complete innumeracy, Reagan argued passionately and appealingly that the whole idea that our children were not entitled to a much richer life than their parents was un-American, sacrifice was unnecessary, Carter had overstated the case, and down came the solar panels. Thus, our sole effort at dealing with some foresight with the iron laws of limits was brushed aside, and the particularly egregious age of SUVs and increasing dependence on oil imports was ushered in.

Well, dear readers, happy thoughts and wishful thinking do not make it so; 30 precious years have passed, and there is now no safety margin. We must prepare ourselves for waves of higher resource prices and periods of shortages unlike anything we have faced outside of wartime conditions. In fact, I believe we are already several years into this painful transition but are still mostly invested in denying it. Everything within the investment business will be affected as well as everything outside of the business. GMO intends to make a sustained effort in this area to get ahead of the curve, and we will keep you posted.

As a parting note, let me point out that China is showing every sign of being a country ahead of the curve. There has been a whiff of panic – which I believe is justified – in China's last 5 years of behavior regarding resource limitations and possible mitigation through truly dramatic increases in alternatives, desperate attempts at resource acquisitions, and the fostering of special foreign relationships. Being more authoritarian may come with great long-term advantages in this field. It would be convenient if we could offset China's natural advantages with some of our own; for example, flexibility, a vigorous venture capital industry, and, above all, an enlightened government policy. A Carter-type statement of resolve

would be a good start, and would show a willingness to take a short-term political hit in the interest of a significant long-term advantage. I must confess to not holding my breath, but I am crossing my fingers. Do not allow yourselves to be kidded by our usual optimism – this is the Real McCoy!

Have a good (if worried) summer!

Reading and Listening List

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QUARTERLY LETTER

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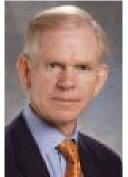


Just Deserts and Markets Being Silly Again

Jeremy Grantham

Just Deserts

I can't tell you how surprised, even embarrassed I was to get the Nobel Prize in chemistry. Yes, I had passed the dreaded chemistry A-level for 18-year-olds back in England in 1958. But did they realize it was my third attempt? And, yes, I will take this honor as encouragement to do some serious thinking on the topic. I will also invest the award to help save the planet. Perhaps that was really the Nobel Committee's sneaky motive, since there are regrettably no green awards yet. Still, all in all, it didn't seem deserved. And then it occurred to me. Isn't that the point these days: that rewards do not at all reflect our just deserts? Let's review some of the more obvious examples.

1. For Missing the Unmissable

   Bernanke, the most passionate cheerleader of Greenspan's follies, is picked as his replacement, partly, it seems, for his belief that U.S. house prices would never decline and that at their peak in late 2005 they largely just reflected the unusual strength of the U.S. economy. As well as missing on his very own this 3-sigma (100-year) event in housing, he was completely clueless as to the potential disastrous interactions among lower house prices, new opaque financial instruments, heroically increased mortgages, lower lending standards, and internationally networked distribution. For these accumulated benefits to society, he was reappointed! So, yes, after the fashion of his mentor, he was lavish with help as the bubble burst. And how can we so quickly forget the very painful consequences of the previous lavishing after the 2000 bubble? Rewarding Bernanke is like reappointing the *Titanic's* captain for facilitating an orderly disembarkation of the sinking ship (let's pretend that happened) while ignoring the fact that he had charged recklessly through dark and dangerous waters.

2. The Other Teflon Men

   Larry Summers, with a *Financial Times* bully pulpit, had done little bullying and blown no warning whistles of impending doom back in 2006 and 2007. And, famously, in earlier years as Treasury Secretary he had encouraged (I hope inadvertently) wild and reckless financial behavior by helping to beat back attempts to regulate some of the new and most dangerous instruments. Timothy Geithner, in turn, sat in the very engine room of the USS *Disaster* and helped steer her onto the rocks. And there are several others (discussed in the 4Q 2008 Letter). You know who you are. All promoted!

3. Misguided, Sometimes Idiotic Mortgage Borrowers

   The more misguided or reckless the borrowers, the more determined the efforts to help them out, it appears, although it must be admitted these efforts had limited effect. In comparison, those who showed restraint and either underhoused themselves or rented received not even a hint of help. Quite the reverse: the money the more prudent potential buyers held back from housing received an artificially low rate. In effect, the prudent are subsidizing the very same banks that insisted on dancing off the cliff into Uncle Sam's arms or, rather, the arms of the taxpayers – many of whom rent.

4. Reckless Homebuilders

   Having magnificently overbuilt for several years by any normal relationship to the population, we have decided to encourage even more homebuilding by giving new house buyers $8,000 each. This cash comes partly from the pockets of prudent renters once again. This gift is soon, perhaps, to be extended beyond first-time buyers (for whom everyone with a heart has a slight sympathy) to any buyers, which

would be blatant vote-buying by Congress. So what else is new?

5. Over-spenders and Under-savers

   To celebrate the overwhelming consensus among economists that U.S. individuals have been dangerously overconsuming for the last 15 years, we have decided to encourage consumption and penalize savers by maintaining the aforementioned artificially low rates, which beg everyone and sundry to borrow even more. The total debt to GDP ratio, which under our heroes Greenspan and Bernanke rose from 1.25x GDP to 3.25x (without even counting our Social Security and Medicare commitments), has continued to climb as growing government debt more than offsets falling consumer debt. Where, one wonders, does this end, and with how much grief?

6. Banks Too Big to Fail

   Here we have adopted a particularly simple and comprehensible policy: make them bigger! Indeed, force them to be bigger. And whatever you do, don't have any serious Congressional conversation about breaking them up. (Leave that to a few journalists and commentators. Only pinkos read pink newspapers anyway!) This is not the first time that a cliché has triumphed. This one is: "You can't roll back the clock." (See this quarter's Special Topic: Lesson Not Learned: On Redesigning Our Current Financial System.)

7. Over-bonused Financial Types

   Just look at Goldman's recent huge "profits," two-thirds of which went for bonuses. It is now estimated that this year's bonus pool will be plus or minus $23 billion, the largest ever. Less than a year ago, these same guys were on the edge of a run on the bank. They were saved only by "government" – the taxpayers' supposed agents – who decided to interfere with the formerly infallible workings of capitalism. Just as remarkably, it is now reported that remuneration for the entire banking industry may be approaching a new peak. "Well, we got rid of some of those pesky competitors, so now we can really make hay," you can almost hear Goldman and the others say. And as for the industry's concern about the widespread public dismay, even disgust, about excessive remuneration (and, I would add, plundering of the shareholders' rightful profits)? Fuhgeddaboudit! In the thin book of "lessons learned," this one, like most of our other examples, will not appear.

8. Overpaid Large Company CEOs

   Even outside the financial system, there are many painfully obvious unjust deserts in the form of top management rewards. And most of the excessive rewards come out of the pockets of our clients and other stockholders, which is particularly galling. When I arrived in the States in 1964, the ratio of CEO pay to the average worker was variously reported to be between 20/1 and 40/1. This seemed perfectly respectable and had held for the previous 30 years. By 2006, this ratio had exploded to between 400/1 and 600/1, which can only be described as obscene. The results certainly don't suggest such high rewards: a) 10-year stock market returns are close to zero in real terms; and b) U.S. GDP growth has finally slipped below its 100-year trend of 3.5%. After deducting the effect of the rampant increase in the financial system, the growth in GDP ex-finance has fallen to 3.1% since 1982 and well below 3% since 2000, all measured to the end of 2007 to avoid the recent crisis. The corporate system, to be frank, seemed to run faster and more efficiently back in the 1960s before CEOs and financial types began to gobble up other people's lunches. I suppose I have done my share of gobbling. But, it still ain't right!

9. Holders of the Stocks of Ridiculously Overleveraged and Wounded Corporations

   Yes, I admit this is part envy and part hindsight investment regret. But, really, our financial leaders so overstimulated the risk-taking environment that junky, weak, marginal companies and zombie banks produced a record outperformance (the best since 1933) of junk over the great blue chips. (Ouch!) In a world with less moral hazard, which would be a world of just, although painful deserts, scores of these should-be-dead companies would be. As it is, they live to compete against the companies that actually deserve to be survivors. Excessive bailouts are just not healthy for the long-term well-being of the economy.

10. The Well-managed U.S. Auto Industry

    While firms in other industries fail and their workers look for new jobs, the auto industry is rewarded by direct subsidized loans, governmental arm-twisting of creditors forced to settle far below their legal rights, and direct subsidies for their products. All of this for

their well-deserved ranking as the most short-sighted industry of the last 20 (40?) years, and one of the worst managed.

11. The World's Most Over-vehicled Country

    We chew up a dangerously large amount of Middle Eastern oil (and oil desperately squeezed from Canadian tar sands), which is ruinous for our global-political well-being (and ability to avoid war) and also not so good for an overheating world. So the answer must be to subsidize more car purchases, and when the subsidies run out, you can have all the fun again. Good long-term thinking!

12. Stock Options

    This, of course, is the crème de la crème of unjust deserts. Recent practices have basically been a legalized way to abscond with the stockholders' equity. So if the stock price crashes, perhaps with considerable help from management, that's all right – just rewrite the options at the new low prices. There has been no serious attempt to match stock option rewards (or total financial rewards for that matter) to the building of long-term franchise value. Instead, the motto is: grab it now and run! You can fill in your own favorite anecdotes here – there are so many of them!

13. Finally, Just in Case You've Forgotten, We Have My Old Nemesis, Greenspan

    Alan Greenspan receives the title of Maestro in the U.S. and is knighted by the Queen for thoroughly demolishing the integrity of the U.S. financial system. He overtly ignored the great threat of bubbles in asset classes and, in fact, encouraged them. He Ayn Rand-ishly facilitated the progressive dismantling of governmental restrictions on financial behavior, he deliberately kept real interest rates at zero for years, etc., etc., etc. You have heard it before. Now, remarkably, in his very old age he has become imbued with the spirit of Hyman Minsky: "Unless somebody can find a way to change human nature, we will have more crises." Now he finally gets it. Too late! In his merely old age, he ignored or abhorred Minsky, and consistently behaved as though markets were efficient and the players were honest and sensible at all times. But for all of the egg on his face, the Maestro continues to consult with the rich and famous, considerably to his financial advantage. In the good old days, he would have been set in the village stocks, and not the kind you buy and sell. And I would have been right there, Alan, with very ripe tomatoes.

The Last Hurrah and Markets Being Silly Again

The idea behind my forecast six months ago was that regardless of the fundamentals, there would be a sharp rally.[1] After a very large decline and a period of somewhat blind panic, it is simply the nature of the beast. Exhibit 1 shows my favorite example of a last hurrah after the first leg of the 1929 crash.

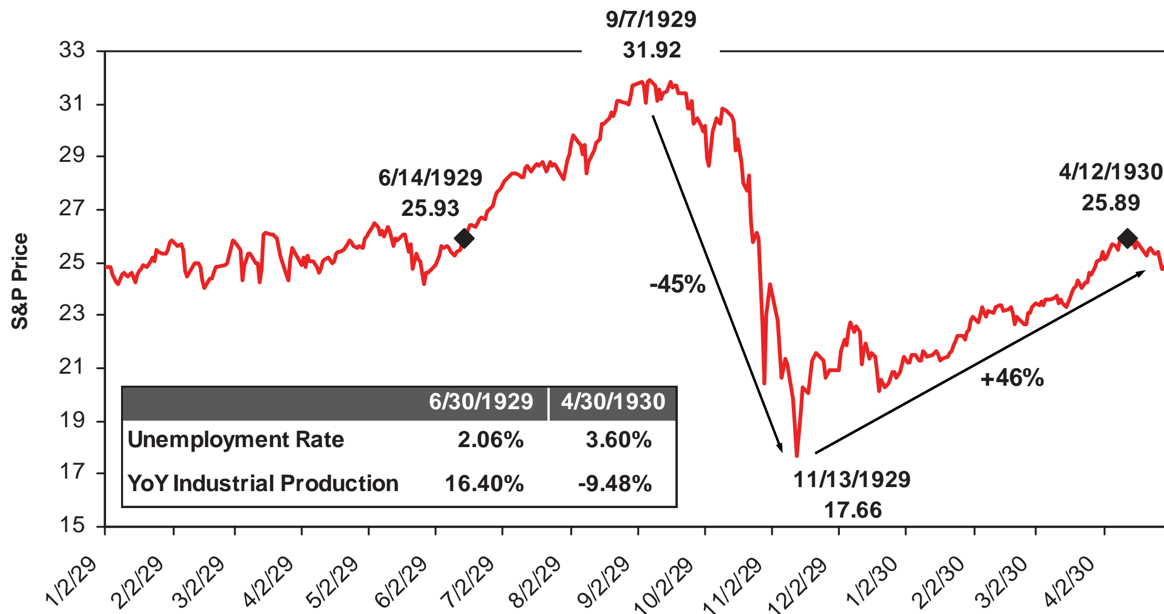
After the sharp decline in the fall of 1929, the S&P 500 rallied 46% from its low in November to the rally high of April 12, 1930. It then, of course, fell by over 80%. But on April 12 it was once again overpriced; it was down only 18% from its peak and was back to the level of June 1929. But what a difference there was in the outlook between June 1929 and April 1930! In June, the economic outlook was a candidate for the brightest in history with effectively no unemployment, 5% productivity, and over 16% year-over-year gain in industrial output. By April 1930, unemployment had doubled and industrial production had dropped from +16% to -9% in 5 months, which may be the world record in economic deterioration. Worse, in 1930 there was no extra liquidity flowing around and absolutely no moral hazard. "Liquidate the labor, liquidate the stocks, liquidate the farmers"[2] was their version. Yet the market rose 46%.

How could it do this in the face of a world going to hell? My theory is that the market always displayed a belief in a type of primitive market efficiency decades before the academics took it up. It is a belief that if the market once sold much higher, it must mean something. And in the case of 1930, hadn't Irving Fisher, arguably the greatest American economist of the century, said that the 1929 highs were completely justified and that it was the decline that was hysterical pessimism? Hadn't E.L. Smith also explained in his *Common Stocks as Long Term Investments* (1924) – a startling precursor to Jeremy Siegel's dangerous book *Stocks for the Long Run* (1994) – that stocks would always beat bonds by divine right? And there is always someone of the "Dow 36,000" persuasion

[1] Erratum: Last quarter I cast mild aspersions on *Finanz und Wirtschaft* by suggesting that I had not precisely said that the S&P would scoot rapidly up to 1100; I remembered it more as between 1000 to 1100. Never mess with a Swiss journalist: this one duly pointed out that his tape of April 1 confirmed his accuracy. Either way, here we are, more or less (at 1098 on October 19).

[2] Andrew Mellon, Secretary of the Treasury, 1931.

Exhibit 1
The Last Hurrah: 1929-1930



Source: Global Financial Data

to reinforce our need to believe that as markets decline, higher prices in previous peaks must surely have meant something, and not merely have been unjustified bubbly bursts of enthusiasm and momentum.

Today there has been so much more varied encouragement for a rally than existed in 1930. The higher prices preceding this crash (that were far above both trend and fair value) had lasted for many years; from 1996 through 2001 and from 2003 through mid-2008. This time, we also saw history's greatest stimulus program, desperate bailouts, and clear promises of years of low rates. As mentioned six months ago, in the third year of the Presidential Cycle, a tiny fraction of the current level of moral hazard and easy money has done its typically great job of driving equity markets and speculation higher. In total, therefore, it should be no surprise to historians that this rally has handsomely beaten 46%, and would probably have done so whether the actual economic recovery was deemed a pleasant surprise or not. Looking at previous "last hurrahs," it should also have been expected that any rally this time would be tilted toward risk-taking and, the more stimulus and moral hazard, the bigger the tilt. I must say, though, that I never expected such an extreme tilt to risk-taking: it's practically a cliff! Never mess with the Fed, I guess. Although, looking at the record, these dramatic short-term resuscitations do seem to breed severe problems down the road. So, probably, we will continue to live in exciting times, which is not all bad in our business.

Economic and Financial Fundamentals and the Stock Market Outlook

The good news is that we have not fallen off into another Great Depression. With the degree of stimulus there seemed little chance of that, and we have consistently expected a global economic recovery by late this year or early next year. The operating ratio for industrial production reached its lowest level in decades. It should bounce back and, if it moves up from 68 to 80 over three to five years, will provide a good kicker to that part of the economy. Inventories, I believe, will also recover. In short, the normal tendency of an economy to recover is nearly irresistible and needs coordinated incompetence to offset it – like the 1930 Smoot-Hawley Tariff Act, which helped to precipitate a global trade war. But this does not mean that everything is fine longer term. It still seems a safe bet that seven lean years await us.

Corporate ex-financials profit margins remain above average and, if I am right about the coming seven lean years, we will soon enough look back nostalgically at such high profits. Price/earnings ratios, adjusted for even normal margins, are also significantly above fair value after the rally. Fair value on the S&P is now about 860 (fair value has declined steadily as the accounting smoke

clears from the wreckage and there are still, perhaps, some smoldering embers). This places today's market (October 19) at almost 25% overpriced, and on a seven-year horizon would move our normal forecast of 5.7% real down by more than 3% a year. Doesn't it seem odd that we would be measurably overpriced once again, given that we face a seven-year future that almost everyone agrees will be tougher than normal? Major imbalances are unlikely to be quick or easy to work through. For example, we must eventually consume less, pay down debt, and realign our lives to being less capital-rich. Global trade imbalances must also readjust. To repeat my earlier forecast, I expect developed markets to grow moderately less fast – about 2.25% – for the next chunk of time, and to look pretty anemic compared to emerging countries growing at twice that rate. We are nervous about the possibility of a major shock to Chinese growth. (My personal view of a major China stumble in the next three years or so is that it is maybe only a one in three chance, but is still the most likely important unpleasant surprise of the fundamental economic variety.) Notwithstanding this concern, I believe we are well on the way to my "emerging emerging bubble" described 18 months ago (1Q 2008 Quarterly Letter). I would recommend to institutional investors, including my colleagues, to give emerging equities the benefit of value doubts when you can. For once in my miserable life, I would like to participate in a bubble if only for a little piece of it instead of getting out two years too soon. Riding a bubble up is a guilty pleasure totally denied to value managers who typically pay a high price to the God of Investment Discipline (Thor?) for being so painfully early. I think the first 15 percentage points over fair value would satisfy me. If I'm right, the first 15% will be a small fraction of the eventual bubble premium. So in a sense, we would be early once again.

We believed from the start that this market rally and any outperformance of risk would have very little to do with any dividend discount model concept of value, so it is pointless to "ooh and ah" too much at how far and how fast it has traveled. The lessons, if any, are that low rates and generous liquidity are, if anything, a little more powerful than we thought, which is a high hurdle because we have respected their power for years. And what we thought were powerful and painful investment lessons on the dangers of taking risk too casually turned out to be less memorable than we expected. Risk-taking has come roaring back. Value, it must be admitted, is seldom a powerful force in the short term. The Fed's weapons of low rates, plenty of money, and the promise of future help if necessary seem stronger than value over a few quarters. And the forces of herding and momentum are also helping to push prices up, with the market apparently quite unrepentant of recent crimes and willing to be silly once again. We said in July that we would sit and wait for the market to be silly again. This has been a very quick response although, as real silliness goes, I suppose it is not really trying yet. In soccer terminology, for the last six months it is Voting Machine 10, Weighing Machine nil!

Price, however, does matter eventually, and what will stop this market (my blind guess is in the first few months of next year) is a combination of two factors. First, the disappointing economic and financial data that will begin to show the intractably long-term nature of some of our problems, particularly pressure on profit margins as the quick fix of short-term labor cuts fades away. Second, the slow gravitational pull of value as U.S. stocks reach +30-35% overpricing in the face of an extended difficult environment.

On a longer horizon of 2 to 10 years, I believe that resource limitations will also have a negative effect (see 2Q 2009 Quarterly Letter). I argued that increasingly scarce resources will give us tougher times but that we are collectively in denial. The response to this startling revelation, for the first time since I started writing, was nil. It disappeared into an absolutely black hole. No one even bothered to say it was idiotic, which they quite often do. Given my thesis of a world in denial, though, I must say it's a delicious irony.

So, back to timing. It is hard for me to see what will stop the charge to risk-taking this year. With the near universality of the feeling of being left behind in reinvesting, it is nerve-wracking for us prudent investors to contemplate the odds of the market rushing past my earlier prediction of 1100. It can certainly happen.

Conversely, I have some modest hopes for a collective sensible resistance to the current Fed plot to have us all borrow and speculate again. I would still guess (a well-informed guess, I hope) that before next year is out, the market will drop painfully from current levels. "Painfully" is arbitrarily deemed by me to start at -15%. My guess, though, is that the U.S. market will drop below fair value, which is a 22% decline (from the S&P 500 level of 1098 on October 19).

Unlike the really tough bears, though, I see no need for a new low. I think the history books will be happy enough with the 666 of last February. Of course, they would probably be slightly happier with, say, 550. The point is that this is not a situation like 2005, 2006, and 2007 when for the first time a great bubble – 2000 – had not yet broken back through its trend. I described that reversal as a near certainty. I love historical consistency, and with 32 bubbles completely broken, the single one outstanding – the S&P 500 – was a source of nagging pain. But that was all comfortably resolved by a substantial new low for the S&P 500 last year. This cycle, in contrast, has already established a perfectly respectable S&P low at 666, well below trend, and can officially please itself from here. A new low (or not) will look compatible with history, which makes the prediction business less easy.

Forecast Summary

Bonds, except emerging, have very low seven-year return forecasts: on our numbers, they are below 1.25% real. The forecast for the S&P 500 is well below 3%, but the high-quality subset is still handsome. We score international developed stocks as close to fair value, and emerging equities as expensive, although just within range of normal if I am allowed to give them a seven-year bonus of 2% a year (15% in total).

Portfolio Recommendations

Having reinvested back in March to be almost neutral in equities, we have recently taken just a few chips off the table and recommend that anyone who was neutral weighted in equities or even overweighted (lucky you!) do the same. For us, the neutral 65% equity position that we reached has been slightly pulled back to 62%, leaving plenty of room to pull back further if the market runs above 1100, say, to 1200 later this year. This reduction is slight for two other reasons. First, we can find a sufficient group of equities at or very close to fair value. U.S. high quality, foreign developed (EAFE), and some emerging (with the benefit of the doubt) are collectively a reasonable buy. [Let me take a moment to make it clear that this is my personal view on emerging, since my suitably stern colleagues don't believe in giving the benefit of the doubt, and feel that the overpricing of emerging should determine everything. This is a pretty mild disagreement, and I recognize that I may be getting carried away by my confidence in an emerging bubble.] The second reason for the smallness of our pullback is that typically we do not micromanage the portfolio dispositions, but try to allow for extremes to occur and then make a very significant move. Although the U.S. market is still in a routine overpricing range, we are making an exception this time since we had a strong prior assumption in April that a healthy last hurrah would overrun and eventually slam into the longer-term disappointments of the seven lean years variety. And it still seems likely to work out that way. So we are breaking our rules and teasing out a few percentage points more of safety margin as the market runs. The 1Q 2009 Quarterly Letter, by the way, said "in a rally to 1000 or so, the normal commercial bullish bias of the market will of course reassert itself, and everyone and his dog will be claiming it as the next major multi-year bull market." Well, now it's happened precisely that way, and you should not believe them! As we have demonstrated to our clients in earlier cycles, earnings estimates in particular merely follow the market up (not the other way around, as one would hope). So it is a law of nature that strong estimates will abound after a major market rally. The earnings and economic growth estimates in such cases are usually throwaways. But the economic data next year will indeed look strong. The irony may well be that just as nine months of weak economic data this year has been accompanied by a very strong market, so the strong economic data next year is likely to be accompanied by a weak stock market.

Yet Another Plug for U.S. Quality Stocks

Our main argument is quantitative. Quality stocks (high, stable return and low debt) simply look cheap and have gotten painfully cheaper as the Fed beats investors into buying junk and other risky assets, a hair-of-the-dog strategy if ever there was one. In our seven-year forecast the quality segment has a full seven-percentage-point lead per year over the whole S&P 500, or 9% over the balance ex-quality. This is now at genuine outlier levels.

In addition, there are qualitative arguments. We like owning high-quality blue chips if we are indeed going into a more difficult seven years than any we have faced since the 1970s. The problems of reducing debt and the potential share dilution that can go with it as it did in Japan for a decade, particularly play to the strength of the largely debt-free high-quality companies. And for nervous investors there is yet another reason for favoring quality stocks: their more than 50% foreign earnings component, which is higher than the balance of the S&P

500 with its heavy financial component. In the long run, quality stocks have proven to be the one free lunch: you simply have not had to pay for the privilege of owning the great safe companies, as plain logic and established theory would both suggest. Exhibit 2 shows that quality stocks have slightly outperformed the market for the last 40 years. Not bad.

A Footnote: Endowment Troubles, or, The Budgeting Blues

Suddenly we are reading of serious college cutbacks and janitors being laid off. What has precipitated this crisis is a decline in a broad range of assets to … fair price! Global equities were underpriced for a few months, and by the end of the scholastic fiscal year on June 30, market prices were approximately on their long-term trend. In fact, they were about as close as they ever get, with foreign stocks slightly cheap and U.S. stocks almost spot-on fair value. So why would a drop to fair value induce so broad a crisis? Clearly, this was a budgeting problem rather than an investment performance problem. Because asset prices had been above normal prices for most of the last 20 years (defined, as usual, by normal profit margins times normal price/earnings ratios), the budgeting departments, sometimes perhaps advised by investment committees, had built abnormally high prices into normal income assumptions. The percentage of the budget coming from the endowments had been allowed to increase with the rise of valuations. The truth is that colleges spent these last 20 years half believing, at least, in the efficient market. Even now, after the shocking revelations of the NASDAQ-Growth bubble of 2000 and the Housing-Asset bubble of 2008, they still seem to half believe it. Keynes said, "Practical men who believe themselves to be quite exempt from any intelligent influence are usually the slaves of some defunct economists." Well, our independent committee members in this case are the unwitting (or witting) slaves of the theories of French, Fama, Malkiel, Lucas, et al. And one could not find a more defunct collection of theories than these! Rational expectations and the efficient market hypothesis are as dead as dodos, yet their baleful and painful influence lives on in two ways.

First, committee members by and large buy into the idea that portfolio composition should not change and should be fixed as closely as possible to the policy benchmark, which certainly would make sense in that parallel universe where markets really are efficiently priced. This means that you cheerfully own just as much equity in 2000 at 35 times earnings as you did in 1982 at 6 times. This is not a good idea unless you derive enormous personal utility from a display of discipline, perhaps better viewed as inflexibility in this case. Assets in our very inefficient world should surely be moved slowly toward the best mix of risk and return.

Exhibit 2
The One Free Lunch

Source: GMO As of 9/30/09

Second, and the point of this argument, is that budgeting should be based on asset values at fair price. Withdrawals should be a fixed percentage of fair price or should lean heavily in that direction. The more common practice is to take out more when assets are overpriced, particularly when the overpricing lasts for years as it did for the 1993-2007 period and so is incorporated into smoothing equations. And yes, it is satisfying to take out more, which means to sell more when prices are high, but this approach of having your funding boat rise with the temporary tides can get you hooked on unsustainably high withdrawals. Such a situation is bound to end badly. All overpriced markets will eventually mean revert and when they do they will leave most institutions with, shall we say, withdrawal symptoms. In contrast, a policy that recognizes fair value will effectively build up a safety margin in overpriced times that can be drawn down in underpriced times.

And while I'm defending endowment managers, I might as well add that complaining about an 8%+ underperformance by the traditionally elite managers for the single year just ended, after they have beaten the average endowments by at least 5% per year for the previous 10 years using the very same approach, is pure short-term silliness. It gives the alumni, the local papers, and the college VIPs who are not on the investment committee a long-delayed and satisfying opportunity to complain. (Yes, I know you don't need defending!)

Recent Shortcomings

Where we got most things right last year, ex-fixed income, we have tended to mess up this year, again ex-fixed income, which has now climbed a remarkable three quarters of the way out of the deepest hole I ever remember seeing. Our biggest mistakes this year clearly involved a dose of the "terminal paralysis" that is so hard to overcome on those rare occasions when the world really is trying to fall to pieces and actually might pull it off unless the authorities get lucky or clever. We were simply too slow to get the message that the combined stimulus package was so heavily weighted toward stimulating risk-taking and paper transactions and relatively less toward stimulating the real economy. It was, as they say, "an available insight!" The data was there for intelligent analysis. We showed less flexibility than is desirable, and stayed precisely with our seven-year forecasts in asset allocation, where we could have substantially tilted more to risk and generally raised our beta. In equity accounts we stuck with a massive overweight in quality even though quality had contributed a huge win last year. You could call this the winner's curse or winner's inertia. Regardless, it has always been a big thing in investing and one that's hard to resist. Greater flexibility might well have suggested that emerging equity and small cap international were close enough to U.S. quality stocks in expected return to justify some greater risk diversification. We regret these missed opportunities and will very seriously consider being more flexible next time.

Today, at these very different prices, there are two important mitigating arguments. First, even if we had reduced a big chunk of our quality bet in the spring, with today's extreme spread we would now be moving most, and maybe all, of the money back into quality. Second, there is the classic GMO argument. Even back in March we believed it was a winning bet against the market over our seven-year horizon, and by enough to cover most of our typical measurement errors. Quality was also the cheapest subset of global equities. Over the years, we have had some very tough times waiting out losses in the early days of some of our forecasts, only to have the forecasts eventually prove correct. Too, the S&P 500 could have gone much lower – 500 or so would have been quite normal. Had this happened, quality stocks combined with our cash reserves would have given us relative performance from heaven. We have all been learning to live with regrets these last 18 months!

To rub in the previous point that our forecasts are useful, we are reproducing the seven-year forecast from seven years ago in June (Exhibit 3). This is a particularly interesting point in time because markets were close to fair value in June. At fair value our estimates, in theory, should turn out to be pretty close. As can be seen, it worked out well. As my 2Q 2009 Quarterly Letter said, it was "Boring Fair Price." Because our methodology assumes a move back to normal pricing every time the market hits fair value, about every six or seven years, for a few minutes, our forecasts almost by definition look nearly perfect at those rare fair value moments. (By the end of September, in contrast, with most markets overpriced, the average return for all 13 asset classes taken together was over 2.5% a year above our forecast of seven years ago, although the rank order was still better than chance at a 1 in 30,000 level.) We now have over 70 estimates since 1994, admittedly with overlapping time periods, and every single one of them was better than random, and the best – 10 years ending October 2008 – had a 1 in 100,000

chance of being just lucky. Still, it would be very nice indeed to twist and turn a little more along the seven-year path in order to make more money and avoid losses. After all, we've done it once – I'm afraid that's all there is so far – by underweighting emerging equity last summer just in time to avoid its two-month freefall of 40%. So maybe there's hope for a second time.

Exhibit 3

The 7-Year Forecast from June 2002 to June 2009: 'Boring Fair Value'

Forecasts from June 30, 2002 vs. actual as of June 30, 2009

Asset Class	Estimated Rank	GMO 7-Yr Forecast June-02 (% Real Return/Yr)	Actual 7-Yr Return*	Actual Rank
Emerging Market Equities	1	10.0	14.3	1
International Small Cap	2	8.9	7.7	3
U.S. REITs	3	8.1	1.5	10
Emerging Country Debt	4	6.9	9.2	2
EAFE	5	6.5	4.0	7
Foreign Bonds	6	4.6	6.8	4
U.S. TIPS	7	3.1	5.3	5
U.S. Small	8	2.8	3.0	8
Lehman Aggregate	8	2.8	4.4	6
U.S. T-Bills	10	2.1	2.1	9
U.S. Large Value	11	1.1	0.9	12
S&P 500	12	0.5	0.8	13
U.S. Large Growth	13	-0.2	1.2	11

Correlation of rank order: 78.7%
Probability of picking same or better rank order randomly: 1 in 900

** Actual compound annual real returns are for the period 6/30/02 to 6/30/09.*

The accuracy of these forecasts does not guarantee that current or future predictions will be accurate either with respect to the ranking of those asset classes over a 7-year period, the absolute levels of real return, or results over shorter periods. The accuracy of forecasted rankings and absolute returns in the asset class forecasts generally varies from period to period.

Source: GMO

P.S.: We plan to post the entire set of forecasts to our website along with some preliminary analysis of the results. We will keep you informed as to when these will be available.

Disclaimer: The views expressed are the views of Jeremy Grantham through the period ending October 26, 2009, and are subject to change at any time based on market and other conditions. This is not an offer or solicitation for the purchase or sale of any security and should not be construed as such. References to specific securities and issuers are for illustrative purposes only and are not intended to be, and should not be interpreted as, recommendations to purchase or sell such securities.

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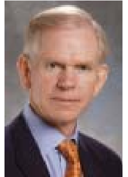
Special Topic

October 2009



(Written in early July and held back from last quarter's letter for health reasons: attacked by a small tick bearing a large grudge.)

Lesson Not Learned: On Redesigning Our Current Financial System

Jeremy Grantham

I can imagine the company representatives on the *Titanic II* design committee repeatedly pointing out that the *Titanic I* tragedy was a black swan event: utterly unpredictable and completely, emphatically, not caused by any failures of the ship's construction, of the company's policy, or of the captain's competence. "No one could have seen this coming," would have been their constant refrain. Their response would have been to spend their time pushing for more and improved lifeboats. In itself this is a good idea, and that is the trap: by working to mitigate the pain of the next catastrophe, we allow ourselves to downplay the real causes of the disaster and thereby invite another one. And so it is today with our efforts to redesign the financial system in order to reduce the number and severity of future crises.

After a crisis, if you don't want to waste time on palliatives, you must begin with an open and frank admission of failure. The *Titanic*, for example, was just too big and therefore too complicated for the affordable technology of its day. Given White Star Line's unwillingness to spend, she was under-designed. The ship also suffered from agency problems: the passengers bore the risk of unnecessary speed and overconfidence in "too big to sink!" while the captain stood to be rewarded for breaking the speed record. No captain is ever rewarded for merely delivering his passengers alive. Greenspan, nearly 100 years later in his short-lived "irrational exuberance" phase, did not enjoy being metaphysically slapped by the Senate Subcommittee for threatening the then speedy progress of the economy. What is needed in this typical type of agency problem is for the agent on those rare occasions when it really matters, whether a ship's captain or a Fed boss, to stop boot licking and say, "No, this is wrong. It is just too risky. I won't go along."

We have a once-in-a-lifetime opportunity to effect genuine change given that the general public is disgusted with the financial system and none too pleased with Congress. I have no idea why the current administration, which came in on a promise of change, for heaven's sake, is so determined to protect the status quo of the financial system at the expense of already weary taxpayers who are promised only somewhat better lifeboats.

It is obvious to most that there was a more or less complete failure of our private financial system and its public overseers. The regulatory leaders in particular were all far too captured and cozy in their dealings with reckless and greedy financial enterprises. Congress also failed in its role. For example, it did not rise to the occasion to limit the recklessness of Fannie and Freddie. Nor did it encourage the regulation of new financial instruments. Quite the reverse, as exemplified by the sorry tale of CFTC Chairman Brooksley Born's fight to regulate credit default swaps.

But, at least now, Congress seems to realize the problem: the current financial system is too large and complicated for the ordinary people attempting to control it. Even Barney Frank, were he on his death bed, might admit this; and most members of Congress know that they hardly understand the financial system at all. Many of the banks individually are both too big and so complicated that none of their own bosses clearly understand their own complexity and risk taking. The recent boom and the ensuing crisis are a wonderfully scientific experiment with definitive results that we are all trying to ignore. And, except for bankers, who have Congress in an iron grip, we all want and need a profound change. We all want smaller, simpler banks that are not too big to fail. And we can and should arrange it!

Step 1 should be to ban or spin off that part of the trading of the bank's own money that has become an aggressive hedge fund. Proprietary trading by banks has become by degrees over recent years an egregious conflict of interest with their clients. Most if not all banks that prop trade now gather information from their institutional clients and exploit it. In complete contrast, 30 years ago, Goldman Sachs, for example, would never, ever have traded against its clients. How quaint that scrupulousness now seems. Indeed, from, say, 1935 to 1980, any banker who suggested such behavior would have been fired as both unprincipled and a threat to the partners' money. I, for one, saw Goldman in my early days as a surprisingly ethical firm, at worst "long-term greedy." (This steady loss of the old partnership ethic is typically underplayed in descriptions of Goldman.) Today, Goldman represents a potential hedge fund trade as being attractive precisely because they themselves have already chosen to do it. These days, all – or almost all – large banks do proprietary trading that is pure hedge fund in nature. Indeed the largest bank, Citi (owned by us taxpayers), is gearing up to substantially increase its aggressive prop trading as I write. ("No, no, we're not!")

Some insiders have argued that we should not worry about prop trading because they claim it did not play an important part in the recent crisis. I think this is completely wrong for it misses the very big picture. Prop trading can easily introduce an aggressive hedge-fund type mentality into the very hearts of what ideally should be conservative, prudent – even boring – banks. This hedge-fund mentality became a dominant organizing principle, particularly with respect to compensation practices. It encouraged personal aspirations over corporate goals and invited bonus-directed behavior at the clients' expense and ultimately, as we have seen, at the taxpayers' expense to rid itself of this problem. All Congress has to overcome is the lobbying power and campaign contributions of the finance industry itself, which I admit is no small feat. In a bank with a hedge fund heart, you can't reasonably expect ethical or non-greedy behavior, and you haven't seen it.

Of course, commercial and investment banks need to invest their own capital. They probably should have the right to do genuine hedging against investments that flow naturally from their banking business. As for the rest, they could easily be required either to limit the leverage used on prop desk trading or to be restricted to investing in government paper and, at the very least, play by the same rules as other hedge funds. What they certainly should not be is advantaged at the cost of taxpayer back-up or insurance, as is now the case.

In the early 1930s, following the famous Pecora hearings, the conflict of interest between the management of other people's money as fiduciary and the business of dealing and underwriting in securities was considered so inimical to the public interest that Congress almost compelled separation of proprietary trading and client trading. Close, but no cigar. Instead, Glass-Steagall made the probably less useful step of separating commercial and investment banking. Unfortunately, they left intact the obvious conflict between the banks' managing their own money and simultaneously that of their clients. We now have a unique opportunity to revisit this matter.

(As we ponder the problem of prop trading, let us consider Goldman's stunning $3 billion second quarter profit. It appeared to be almost all hedge fund trading. Be aware also that this $3 billion is net of about $6 billion reserved for future bonuses. Goldman's CEO had, in fact, the interesting job of deciding how much of this $9 billion profit would be arbitrarily awarded to shareholders. [In this case, one-third. Could be worse!] This means that they extracted every penny of $9 billion from a fragile financial system. "Good for them," you may say, and they indeed are very smart. But surely they should not have been insured against failure by us taxpayers! Remember, they are now also a commercial bank yet very, very little of their $9 billion came from making loans. Three months later their bonus pool for the year is estimated to be a new record at $29 billion. And the whole banking industry is back to a new record for remuneration. How resilient! How remarkable! How basically undesirable for our economy!)

In Step 2, the Justice Department, together with Congressional and other advisors, should be invited to develop a special set of rules for the banking industry that recognizes the moral hazard of "too big to fail." If really too big to fail, banks should be divided by Justice into manageable, smaller pieces that can indeed be allowed to fail. With these two steps and possibly with an intelligent son of Glass-Steagall, the deed would be done! Regulators would have a fighting chance of being able to regulate, unlike their recent woeful past. If an angel appeared, waved his wings and, lo, it was so, almost every single Congressman would sigh with relief.

The separation of commercial banking from investment banking is not as vital as the removal of prop desk

conflicts, but it would certainly make large and ineffably complicated enterprises both smaller and simpler, which characteristics I for one believe are probably essential if we are to avoid further disasters. So what is the problem? The argument against all major changes, without at least some of which we will soon surely be back in another crisis, is always the same. "Oh, you can't roll back the clock." But, even repeated twice before every breakfast, it is not persuasive. Why exactly can't you roll back the clock? We did it once before and, although it was very imperfect and probably missed the central point of conflict of interest, it still produced an improved system that was successful enough for 50 years. In general, countries with simpler and less aggressive banks have had much less pain in the recent crisis while we were pawning the Crown Jewels – sorry, the Federal Jewels – to bail out aggressive bankers who were out of their depth in the new complexities.

Step by step, even as the complexity grew, our regulatory leaders enabled systemic risk to grow. They continued to push the boundaries for banks by allowing more leverage, new instruments, and less control. The details are familiar. All this was done in the name of untrammeled, unfettered capitalism, and almost all of it was a bad idea.

"Oh!" say the bankers, "If we become smaller and simpler and more regulated, the world will end and all serious banking will go to London, Switzerland, Bali Hai, or wherever." Well, good for those other places. If that means they will have knee-buckling, economy-cracking, taxpayer-impoverishing meltdowns every 15 years and we will be left looking like a boring back water, that sounds fine to me. Remember, just like our investment management branch of the financial system, banking creates nothing of itself. It merely facilitates the functioning of the real world.

Yes, of course every country needs a basic financial system to function effectively with letters of credit, deposits, and check writing facilities, etc. But as you move beyond that it is worth remembering that every valued job created by financial complexity is paid for by the rest of the real economy, and talent is displaced from real production, as symbolized by all of the nuclear physicists on prop trading desks. Viewed from the perspective of the long-term well-being of the whole economy, the drastic expansion of the U.S. financial system as a percentage of total GDP in the last 20 years has been a drain on the health and cost structure of the balance of the real economy. To illustrate this point, in 1965 the financial sector of the economy took up 3% of the GDP pie. The 1960s were probably the high water mark (or one of them) of America's capitalism. They clearly had adequate financial tools. Innovation could obviously have occurred continuously in all aspects of finance, without necessarily moving its share of the economy materially over 3%. Yet by 2007 the share had risen to 7.5% of GDP!

The financial world was reaching into the GDP pie and taking an unnecessary extra 4%. Every year! This extra rent is enough to lower the savings and investment potential of the rest of the economy. And it shows. As mentioned earlier, the growth rate of the GDP had been 3.5% a year for a hundred years. It had proven to be remarkably robust. Even the Great Depression bounced off it, and soon GDP growth was back on the original trend as if the Depression had never occurred. But after 1965, the growth of the non-financial slice, formerly 3.4%, slowed to 3.2%. After 1982 it dropped to 3.1% and after 2000 fell to well under 3%, all measured to the end of 2007, before the recent troubles. These are big declines. It is as if a runner has a growing and already heavy blood sucker on him that is, not surprisingly, slowing him down. In the short term, I realize that job creation in the financial industry looked like a growth driver, as did the surge in financial profits (which we now realize were ludicrously overstated). But in the long term, like a sugar high, this stimulus was temporary and unhealthy.

The financial system was growing because it could. The more complex and confusing new financial instruments became the more "help" ordinary citizens needed from the experts. The agents' interests were totally unaligned with the principle/clients' interests. This makes a mockery of "rational expectations" and the Efficient Market Hypothesis, which assumes (totally unproven, as usual) equivalent and perfect knowledge on both sides of all transactions. At the extreme, this great advantage in knowledge and information held by the financial agents has the agents receiving all the rewards, according to the recent work[1] by my former partner, Paul Woolley, and his colleagues at the Woolley Centre for the Study of Capital Market Dysfunctionality. (With a great name like that

[1] Biais, Bruno; Rochet, Jean-Charles; and Woolley, Paul. Rents, *Learning and Risk in the Financial Sector and other Innovative Industries*. September, 2009. Working Paper Series 2009, The Paul Woolley Centre for the Study of Capital Market Dysfunctionality, London School of Economics & Political Science.

http://www.lse.ac.uk/collections/paulWoolleyCentre/news/RentsLearningAndRisk.htm

their job is half done before they start.)

The second problem, right on the heels of the too-big-and-complicated issue, is that of inadequate public oversight. Even with existing institutions, we would have avoided most of the recent pain, borne by taxpayers, if we had had better public leadership. Yes, the public bodies had flaws, but the individuals running the shop had far bigger flaws. Greenspan, with arguably the most important job in the world, simply did not believe in interfering with capitalism at all. His regulatory colleagues such as Bernanke and Geithner fell into line without any challenges. And Congress, strongly influenced by the financial industry, or merely misguided, or often both, facilitated the approach that capitalism in general and banking in particular would do just fine if left entirely alone. It was a very expensive error. Does anyone think we would have run off the cliff with even one change – Volcker at the Fed? I, for one, am confident that we would have done far less badly.

Behind this weakness in the recent cast of characters is a systemic (suddenly the trendiest word in the English language) weakness in our method of job selection. How can Greenspan, with his long-established record of failure as a professional economist, have resurfaced as the Fed boss? With no record of success in any important job, he gets one of the world's two most important jobs! Now we have to decide how much more decision-making power to give to the Fed – an institution with a 25-year proven record of failure. How can we separate the logical neatness of institutional design from our recent proven inability to pick effective, principled leaders with strong backbones?

It is a conundrum: too many regulatory agencies and you have too many opportunities for financial interests to shop around for regulatory bargains and to find and exploit the ambiguous seams between them. Too few agencies and we run the risk of my worst nightmare: waking up and finding Alan Greenspan with twice the authority!

At the least we must recognize the improbability of acquiring great leaders and that our financial system must be simple and robust enough to withstand the worst efforts from time to time of poor or even bad leadership. A simpler, more manageable financial system is much more than a luxury. Without it we shall surely fail again. And it looks as if we are bound and determined to bend once again to the will (and the money) of the financial lobby, which is encouraged by the unexpected conservatism of the current administration's "Teflon" men. They seem terrified to make any substantial changes. And the one person with the character to make tough changes – Paul Volcker – is window dressing, exactly as I suggested in January. A sad, wasted opportunity!

Summary

- Yes, this was a profound failure of our financial system.
- The public leadership was inadequate, especially in dealing with unexpected events that often, like the housing bubble breaking, should have been expected.
- Of course, we should make a more determined effort to do a more effective job of leadership selection. But excellence in leadership will often be elusive.
- Equally obvious, we could make a hundred improvements to the lifeboats. Most would be modest beneficial improvements, but in the long run they would be almost completely irrelevant and, worse, they might kid us into thinking we were doing something useful!
- But all of the above points fail to recognize the main problem: the system has become too big and complicated for even much-improved leaders to handle. Why should we be confident that we will find such improved leaders? For, even in an administration directed to "change," Obama and his advisors fell back on the same cast of characters who allowed, even facilitated, the development of the current crisis. Reappointing Bernanke! What a wasted opportunity to get a "son of Volcker" type. (Or should that be "grandson of Volcker?")
- The size of the financial system continues to grow and shows every sign of being out of control. As it grows, it becomes a bigger drain on the rest of the economy and slows it down.
- The only long-term hope of avoiding major recurrent crises is to make our financial system simpler, the units small enough that they can be allowed to fail, and, above all, to remove the intrinsically conflicted and dangerously risk-seeking hedge fund heart from the banking system. The rest is window dressing and wishful thinking.
- The concept of rational expectations – the belief in the natural efficiency of capitalism – is wrong, and is the root cause of our problems. Hyman Minsky, on

the other hand, was right; he argued that the natural outcome of ordinary people interacting is to make occasional financial crises "well nigh inevitable." Crises are desperately hard to avoid. We must give ourselves a chance by making the job of dealing with them much, much easier.

- All in all we are likely to have learned little, or rather to act, through lack of character, as if we have learned nothing. In doing so we are probably condemning ourselves to another serious financial crisis in the not-too-distant future.

PS: As quite often happens, since I write painfully slowly (even without extra tick-borne delays), a professional slipped in with a great column that gets to the heart of this matter. Please read John Kay in the *Financial Times* of July 9. It is short and persuasive. "Our banks are beyond the control of mere mortals" – now, that's what I call a title!

Disclaimer: The views expressed are the views of Jeremy Grantham through the period ending October 26, 2009, and are subject to change at any time based on market and other conditions. This is not an offer or solicitation for the purchase or sale of any security and should not be construed as such. References to specific securities and issuers are for illustrative purposes only and are not intended to be, and should not be interpreted as, recommendations to purchase or sell such securities.

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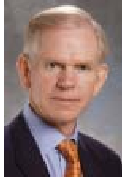
QUARTERLY LETTER

January 2010



Stop the Presses! (January 21, 2010)

Jeremy Grantham

The Good News …
Volckerization

In a remarkable development, a Volcker plan for Glass-Steagall-lite has been proposed by the Administration. One minute Paul Volcker, the only financial administrator not called Brooksley Born who has shown any real backbone in the last 30 years, is so out in the cold that his toes must have frozen off, and the next – hey, Presto! – his ideas are put forward lock, stock, and barrel and Geithner and Summers are left scrambling to take some credit for the plan and pretend they hadn't been dissing Volcker up until eight seconds ago for what they thought were his antique and unnecessary ideas that were far too harsh on our poor banking system. Wow! Well, these new ideas are all good stuff as far as I'm concerned, and entirely justified. Everyone in Congress, and anywhere else for that matter, knows prop desk trading (banks trading their own capital like a hedge fund) is a conflict of interest. They may or may not think it important or that it caused this or that problem, but they know it's a real conflict. Congressmen, since when wasn't conflict of interest and poor ethical standards reason enough to change the law? But since we bring it up, of course prop trading was indeed the rot at the heart of our financial problems (see last quarter's Letter). Watching traders take home their $28 million bonus sent a powerful message to lowly salesmen and packagers of asset-backed securities, for example, to get out there and really take some risk. This rot spread to the very top, and pretty soon chairmen of boards were exhorting CEOs to leverage up and look more like some much more profitable rival that resembled a hedge fund rather than an investment bank. Thus encouraged – or intimidated – some CEOs just kept on dancing right off the cliff. Let's learn from our near disaster. Viva Volcker!

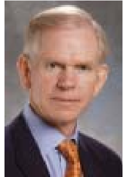
… and the Bad News
Supremely Extreme: Another "Day That Will Live in Infamy"

Five Supreme Court justices today announced that not only are corporations people and that their money is free speech – this is old hat and a very ugly hat at that – but now, there should be no limit to the money they spend to influence political outcomes. This would be one thing if corporations really were "democratic associations" of humans that the Founding Fathers may have wanted to protect. They are, instead, small oligarchies of top management. Thus, the top management of major oil and coal companies can decide what political outcomes they want to promote, say, unlimited production of carbon dioxide (none of their CEOs apparently has grandchildren!), utterly without any approval of their decisions by the millions of actual owners. The financial power of corporations was already in danger of overwhelming the democratic process in Congress and this makes the damage potentially unlimited and puts the Court's seal of approval on it. So let's do it in style and have a name change. The U.C.A. has a familiar look: The United Corporations of America!

GMO

Quarterly Letter

January 2010



What a Decade!

Jeremy Grantham

The Patagonia Insight

I just returned from a long vacation in Patagonia. I took long hikes that gave me lots of time to think about life and death and Bernanke. It was an ideal time to have an inspiration, and I had one. This is it: sometimes, whatever the situation and however hard you try, you will not have an inspiration! This is not to say that insights are not available, just that someone else is having them. There is always a great temptation to convince yourself that you have an insight, and then to push it. It can be very, very expensive.

It is easy today to be confused, for this is a remarkably complex time. I argued two years ago that we were all part of an elaborate experiment, the inputs to which were completely new. We had an unprecedentedly low risk premium on every asset class and a stew of new and badly understood financial instruments. That was bad enough, but isn't the picture even more complicated and without precedent now? We have never in our lifetime seen a financial and economic bust such as the one we just had. We have never had two great asset bubbles break in the same decade. We have never wiped out so much wealth in all asset classes as we have this time: $20 trillion at its worst point, on our reckoning. We have never experienced such rapid deterioration in the government's budget and in the balance sheet of the Fed, nor witnessed such moral hazard, with bailouts flying around like this. What hope do we really have in making accurate predictions of how the world will recover from all of this, and in what ways it will be changed? Very little.

My view of the economy's future is boringly unchanged: "Seven Lean Years." I still believe that after the initial kick of the stimulus, we will move into a multi-year headwind as we sort out our extreme imbalances. This is likely to give us below-average GDP growth over seven years and more than our share of below-average profit margins and P/E ratios, so that it would feel more like the bumpy (bumpy, but not so disastrous) 1970s than the economically lucky 1990s and early 2000s.

In contrast to predicting the impossibly difficult real world, predicting market outcomes is relatively straightforward. Profit margins and P/E ratios always seem to pass through fair value if, and it's a big if, you can just be patient enough. Normalcy is what we assume in our 7-year forecasts and in our old 10-year forecasts. We had one for the last decade, a 10-year forecast starting on December 31, 1999 and ending December 31, 2009, which is summarized in Exhibit 1. We forecast then that the egregiously overpriced S&P would underperform cash and everything else – what should you expect starting at 33 times earnings? – and we assumed that emerging equities would do extremely well despite a 0.7 correlation with the S&P, because they were cheap. The efficient market people, who apparently will take their faith with them to the grave, will say we were lucky, in spite of the one in several hundred thousand odds of being correct. "Preposterous. How can the risky asset underperform cash for 10 years?" you can hear them say. But we would say it was just the normal grinding of regression to the mean. It's an awfully normal world we inhabit, in the long term. It's only the short-term zigs and zags that drive us all crazy, and right now we should brace ourselves for some very odd and unpredictable short-term market effects brought on by the recent crisis and the massive governmental response. But the bigger danger is that once again the Fed is playing with fire!

Playing with Fire

Whenever the Fed attempts to stimulate the economy by facilitating low rates and rapid money growth, the economy responds. But it does so reluctantly, whereas asset prices respond with enthusiasm. In our studies of the Presidential Cycle we have shown that, historically, where modest Fed stimulus and some moral hazard hardly move the dial on the economy in the third year of the cycle, they

Exhibit 1

Performance of GMO Asset Class Forecasts for the Decade Dec. 31, 1999 to Dec. 31, 2009

Asset Class	Estimated Rank	GMO 10-Yr Forecast Dec-31-99 (% Real Return/Yr)	Actual 10-Yr Return*	Actual Rank
U.S. REITs	1	10.0	7.4	3
Emerging Market Equities	2	7.8	8.1	1
Emerging Country Debt	3	6.1	7.5	2
U.S. TIPS	4	4.3	4.9	4
Barclays Capital U.S. Gov't. Debt	5	3.8	3.5	6
International Small Cap	6	3.4	3.5	7
Foreign Bonds	7	3.0	3.9	5
U.S. Small	8	2.5	2.3	8
U.S. T-Bills	9	2.1	0.3	9
EAFE	10	0.4	-1.4	10
S&P 500	11	-1.9	-3.5	11

Correlation of rank order: 93.6%
Probability of picking same or better rank order randomly: 1 in 550,000

** Actual compound annual real returns are for the period 12/31/99 to 12/31/09.*

The accuracy of past predictions does not guarantee that current or future predictions will be accurate either with respect to the ranking of asset classes over a 10-year period, the absolute levels of return, or results over shorter time periods. The accuracy of the forecast rankings and returns in the asset class forecasts generally varies from period to period.

Source: GMO

push stocks up almost 15% a year above normal and risky stocks even more. This effect echoes around the world as a tribute to the influence of the Fed. Yet the Fed has been reckless in facilitating rapid asset booms in the tech and housing bubbles. As we know, the official policy remains to avoid trying to contain asset bubbles, but to ameliorate the pain of any setbacks should asset prices reverse course and collapse. Indeed, the Fed claims never to have been sure that bubbles even exist. Non-financial corporations and the Treasury were lucky that they went into the tech bubble in good financial shape and into the housing bubble in reasonable shape, except for the overstretched consumer. Now, though, after our massive stimulus efforts, the Fed's balance sheet is unrecognizably bad, and the government debt literally looks as if we have had a replay of World War II. The consumer, meanwhile, is approximately as badly leveraged as ever, which is to say the worst in history. Given this, we would be well advised to avoid a third go-around in the bubble forming and breaking business. Up until the last few months, I was counting on the Fed and the Administration to begin to get the point that low rates held too long promote asset bubbles, which are extremely dangerous to the economy and financial system. Now, however, the penny is dropping, and I realize the Fed is unwittingly willing to risk a third speculative phase, which is supremely dangerous this time because its arsenal now is almost empty.

I do not regret the bailout, although half as much to bankers and more to people with hammers insulating roofs would have been better. With ships lining up by the hundreds outside Singapore harbor, unloaded for want of letters of credit and other basic financial services, our financial leaders had better have acted fast. And they did. Not efficiently. Not fairly. And certainly not frugally. But they thawed the global real world, which was freezing rapidly.

I thought in return for the pain we had all learned some lessons. I was naïve. Congress will probably stay in the pocket of the financial world, and few useful changes will

be made. Investors, traditionally reluctant to burn their fingers badly twice in a generation, line up to buy risk and bid down spreads as if eager to suffer for a third time in a decade. Scientists believe that some wild animals that are threatened constantly by predators quickly forget the worst episodes lest they become so completely traumatized that they dare not return to nibbling grass. Normally, investors appear to have longer memories than rabbits, but not this time! And the Fed, having learned nothing, still worships at the Greenspan altar. Overstimulus was painful in the 2000 break and extremely painful in 2008, but the Fed soldiers on with its failed strategy like Field Marshal Haig in World War I ("The machine gun is a much over-rated weapon.").

So all investors should brace for the chance that speculation will continue for longer than would have seemed remotely possible six months ago. I thought last April that the market (S&P 500) would scoot up to 1000 to 1100 on a typical relief rally. Now it seems likely to go through 1200 and possibly higher. The market, however, is worth only 850 or so; thus, any advance from here will make it once again seriously overpriced, although the high quality component is still relatively cheap. EAFE equities seem a little overpriced, emerging markets more so, and fixed income seems badly overpriced, especially cash, which is awful. Exhibit 2 shows our current 7-year forecasts.

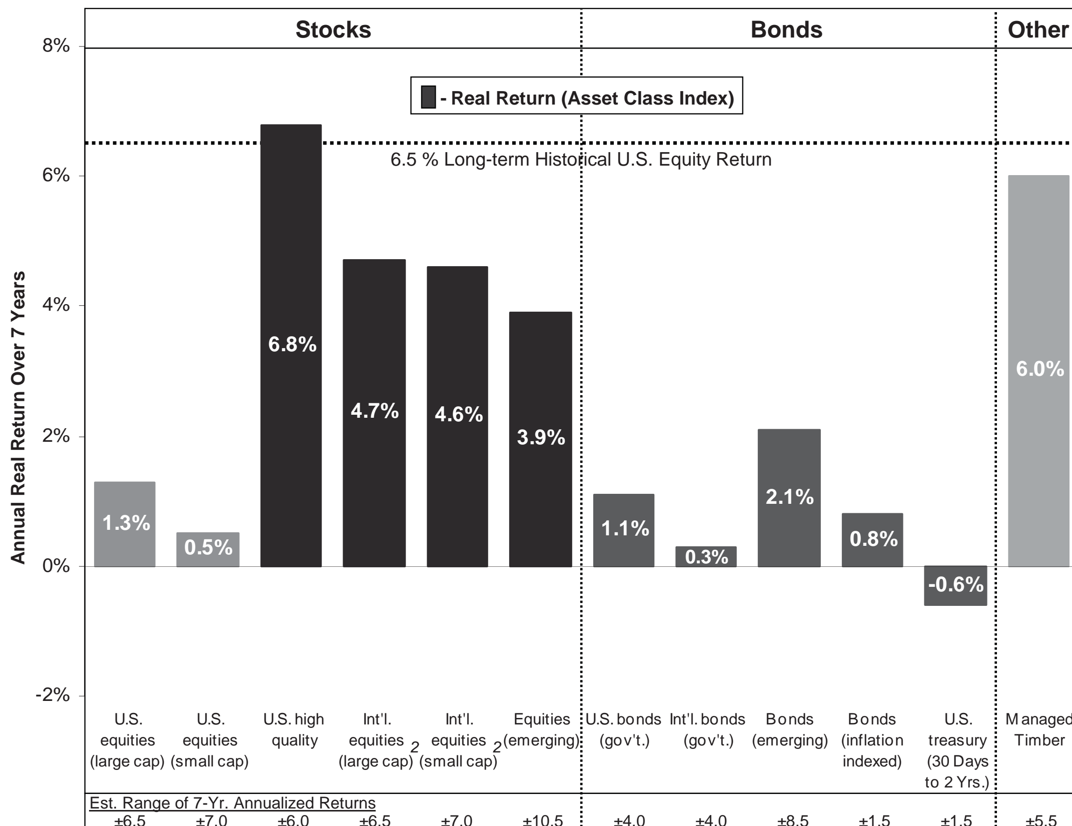
The real trap here, and a very old one at that, is to be seduced into buying equities because cash is so painful. Equity markets almost always peak when rates are low, so moving in desperation away from low rates into substantially overpriced equities always ends badly.

So this is a dilemma. In 2010, value purists will have to struggle increasingly with the Fed's continued juicing of the markets. In order to control real risk – the risk of losing money – they will be forced to take the increasing

Exhibit 2

GMO 7-Year Asset Class Return Forecasts*

As of December 31, 2009



***The chart represents real return forecasts[1] for several asset classes. These forecasts are forward-looking statements based upon the reasonable beliefs of GMO and are not a guarantee of future performance. Actual results may differ materially from the forecasts above.**

[1] Long-term inflation assumption: 2.5% per year. [2] Return forecasts for international equities are ex-Japan.

Source: GMO

career and business risk of lagging a rising market.

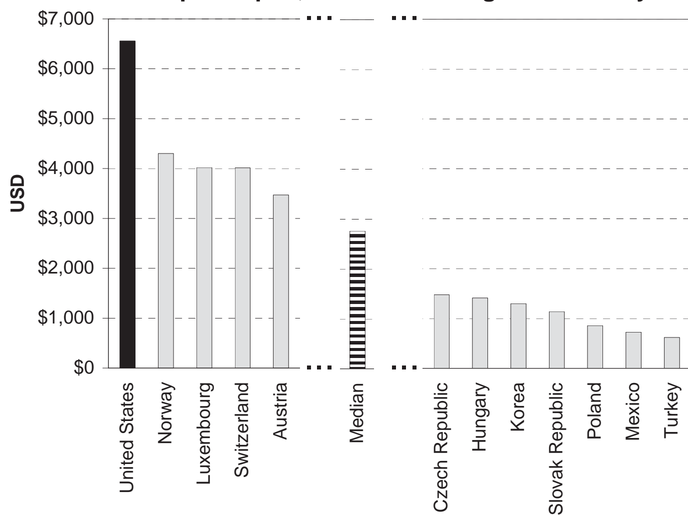
Our choice – by no means a "solution" – is to only very slightly underweight global equities on the grounds that, when tilted to quality, they are still adequate in terms of return potential. We also have to swallow our distaste for parking the rest in unattractive fixed income. And if the equity markets are indeed driven higher in the next six months, which, unlike my view of last summer, now looks to be at least 50/50, we will very slowly withdraw equities: eight times bitten, once shy, so to speak, for in these situations we typically beat a much too rapid and enthusiastic retreat. If we do see a substantially higher market in the next few months, we will probably underperform, but likely not by much.

There is perhaps, though, one saving grace: the risky stocks have already been driven to extreme overpricing. Further attempts to drive the market higher (they may not be deliberate attempts, but does it matter?) will probably result in a much broader advance in which high quality stocks should hold their own or even outperform. Believe it or not, they can outperform on the upside, and these times tend to be: later in bull markets, or when they are relatively cheaper than the rest of the market, or both. (More quantitatively, high quality stocks have outperformed in more than 40% of up months and approximately 60% of the time when they were relatively very cheap, as they are now.) For the record, they also outperformed in 1929 and 1972, at the end of the first two great bull markets of the 20th century, and held level in 1999. In a continuing rally, even level pegging for quality would be a great improvement over 2009. And, if the market surprises me and goes into an early setback in 2010, then quality stocks should outperform by a lot. What could cause an early setback would be some random bunching up of unpleasant seven-lean-years data: two or three bad news items in a week or two might do the trick. This would suit me – cheaper is always better – but given the Fed's intractability, it seems less likely than some further gains. For the longer term, the outperformance of high quality U.S. blue chips compared with the rest of U.S. stocks is, in my opinion, "nearly certain" (which phrase we at GMO traditionally define as more than a 90% probability).

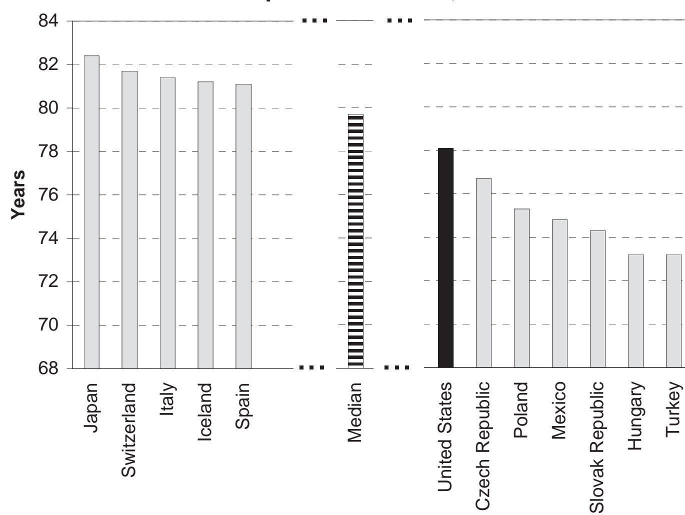
Why Do They Keep Messing with Our Great Health Care System?

(Part of an occasional series of unappreciated statistics)

Spend the most . . .



. . . get the least



Watch out when the Turks, Poles, and Czechs decide to cut back on smoking and spend a bit more on health care. Enough said.

Data source: OECD Health Data 2009

A Brief Review of the Decade

It really was the best and the worst of times. The U.S. seemed to approach dysfunctionality in Congress and other leadership, especially the Fed, and our reputation sank overseas. Japan was still missing in action for the second decade in a row, and Europe seemed toothless in most respects, but especially in political influence. The developed world showed off its middle-age spread: GDP growth rate slowed everywhere, and its financial superiority over the developing world, which was exalted for the first eight years of the decade, was revealed as hollow by the end. The developed world's lack of ability to make hard decisions on a dangerous climate situation was also stunningly revealed by the decade's end, and for the whole decade the greatest polluter, the U.S., was a drag on the process rather than the leader that was so needed.

The developing countries, in extraordinary contrast, had their greatest economic decade ever recorded, and dragged global growth up to very strong levels despite the slowing developed economies. They seemed far more stable in every respect than their previous reputation. To rub it in, they survived the banking crisis in general far better than we all did. And China for one began to move faster than we in developing alternative energy and in making a good start (bad for us) on becoming the leader in this critical area.

Reviewing GMO's Decade

GMO's decade was also full of ups and downs. Asset allocation, helped by two bubbles breaking, had a lot to get its teeth into. Perhaps for allocators, the decade proved to be about as helpful as it ever gets. Consequently we did well, we got the big bets right (the ones that mattered), and our December 1999 forecasts came close to their marks by the end of the decade. Helped by this, all of our asset allocation strategies outperformed their benchmarks well for the decade. In our international equity strategies, we had a string of great years in the 2000 tech bust and some not-so-good years more recently as risky stuff dominated in 2006, 2007, and last year. Since the beginning of 2000, though, all of those international equity strategies with 10-year records beat their benchmarks, developed markets by a lot and emerging equities by a little. U.S. Core, our flagship strategy, had a similar pattern, and ended the decade modestly up on the benchmark (+1.05% per year[1]). Our fixed income division suffered a spectacular problem in the financial crisis, but came rocketing back in the recovery, as it turned out that nearly all of those super triple-A asset-backed securities really were money good, and almost all of ours paid off or look as if they will. On a 10-year basis, our Emerging Debt Strategy was the very best, while the rest of the fixed income strategies were moderately behind. All in all, though, the decade for us held some disappointments. We had done somewhat better in the previous two decades, and we are confident that we can do better in the next one. We are better prepared now, I believe, than we were 10 years ago. Even so, the great majority of our strategies outperformed, which is not all that common in a zero sum world where on average investors underperform by costs. The past decade leaves us impressed with just how difficult this business has become. Our new decade's resolution is to move from generally good top-down decisions to better detailed implementation, and we believe we have staffed up and, we trust, wised up enough to make this objective achievable. We are certainly one of the few firms that has taken advantage of the unusual availability of good investment people to materially increase our headcount and, I hope, brain count, in the last two years. We are very aware that this is a much more competitive industry than it was in December 1999 or December 1989.

Postscript on the Decade's Performance

Going into this next decade, we start with the U.S. overpriced, so do not be conned into believing that every bad decade is followed by a good one. It happened historically because when bull markets peak at only 21 times, a bad decade's return will always make them cheap. This does not necessarily apply to a decade that started at 35 times! A decade's poor performance can still leave you expensive (as this one has) when it starts so overpriced. We did, however, come close to having good numbers for the next decade: just 9½ months ago we had felt enough pain to make the next decade's prospects look very good indeed, almost everywhere more than 10% (annualized) plus inflation on our 7-year forecast. (A decade forecast

[1] Performance data quoted represents past performance and is not predictive of future performance. Returns are shown after the deduction of management fees, transaction costs, and other expenses. The returns assume the reinvestment of dividends and other income. A GIPS compliant presentation of composite performance has preceded this presentation in the past 12 months or accompanies this presentation, and is also available at www.gmo.com. Actual fees are disclosed in Part II of GMO's Form ADV and are also available in each strategy's compliant presentation. The information above is supplemental to the GIPS compliant presentation that was made available on GMO's website in April of 2009.

would be only a little less impressive.) All of this was ruined by a rapid 65% rally, which took more than 7% a year off our 7-year forecast!

Lessons Learned in the Decade

- The Fed wields even more financial influence than we thought.
- Low rates have a more powerful effect on driving financial assets than on driving the economy.
- The Fed is capable of being extremely out of touch with the real world – "what housing bubble?" – plus more doctrinaire – "no, the low rates had no effect on housing" – than anyone could have imagined.
- Congress is nearly dysfunctional, primarily controlled by large corporations, and hamstrung by the supermajority now routinely required in the Senate.
- Government administrations can be incompetent for long periods.
- Poor leadership can really damage a country's hard-won reputation in a mere 10 years.
- Obama is not a miracle worker!
- The leadership of major corporations can be very lacking in insight and competence on a fairly routine basis.
- The two time-tested investment tools, value (P/E ratios and P/B ratios) and price momentum, are now much more heavily used and not so reliable as they once were, say from 1977 to 1997.
- Asset classes really are more inefficiently priced than individual stocks on average, and therefore offer greater opportunities for adding value and reducing risk.
- Developed countries, including the U.S., are past their prime compared with developing countries: it is indeed a new world order.
- Education and training are the keys to increasing wealth on a sustainable basis and the U.S. is in danger of losing its once large edge here.
- We all live on an island, which can be overexploited and turned into a barren Easter Island if we are not careful. Resources are finite and biodiversity is fragile, and both must be protected. Carbon emissions are the single greatest threat.
- Being a global policeman is expensive, and somewhere between difficult and impossible.
- The Fed learns no lessons!

Have a happy and prosperous new decade. All the best!

Appendix

"Beware the Financial Industrial Complex"

It is not often one gets the opportunity to debate a Nobel Prize winner, but Richard Bookstaber and I went to Wall Street to debate Myron Scholes and Robert Reynolds (Putnam's CEO) on a very topical topic: "Financial Innovation Boosts Economic Growth." There are no prizes for guessing which side opposed the proposition. Richard Bookstaber, by the way, is an experienced quant who, despite that, wrote an excellent book, *A Demon of Our Own Design: Markets, Hedge Funds, and the Perils of Financial Innovation* – a title so superb you might think it unnecessary to read the book, but do.

We squared off using the Oxford-style debate rules: 5-minute alternating presentations, 2 minutes each to rebut, 20-minutes of give and take with the audience, and 1 minute each to summarize. The audience voted at the beginning and again at the end of the debate. The opening poll from the 200 attendees (each of whom had forked over $1,500 to attend a special 2-day *The Economist* Magazine conference in November graced by Summers, Geithner, and other illuminati) was, not surprisingly, in favor of innovation to the tune of 80% to 20%. Bookstaber and I were thrilled at this vote, as it gave us a good base for improvement. Modesty compels me not to divulge the final tally, even though the swing to a dazzling 20% to 80% the other way would surely justify yet more sales of Bookstaber's book (good name for a writer).

I should reveal here that no cheap trick is beneath my contempt when it comes to debating. To prove it, I am going to reproduce my argument here with some modest editing.[1] (This saves on the attempt at creative thought so close to year-end, always at a premium, and allows me to show, perhaps, a less discreet side.) The truth is that, although Oxford debating rules encourage polemic, I really do care about this topic: largely unregulated new instruments really did bring us to our knees!

My Part in the Debate

I will try to make the case that our economy has a painfully overdeveloped financial sector.

Let's start with the Investment Industry component. It is so obvious in this business that it's a zero sum game. We collectively add nothing but costs. We produce no widgets; we merely shuffle the existing value of all stocks and all bonds in a cosmic poker game. At the end of each year, the investment community is behind the markets in total by about 1% costs and individuals by 2%.

And the costs have steadily grown. As our industry's assets grew tenfold from 1989 to 2007, despite huge economics of scale, the fees per dollar also grew. There was no fee competition, contrary to theory. Why?

a. Agency problems – we manage the other guy's money, and

b. Asymmetric information – the agent has much more information than the client.

Clients can't easily distinguish talent from luck or risk taking. It's an unfair contest, nothing like the fair fight assumed by standard Economics. As we add new products, options, futures, CDOs, hedge funds, and private equity, aggregate fees per dollar rise. As the layers of fees and layers of agents increase, so too products become more complicated and opaque, causing clients to need us more.

As total fees in the past grew by 0.5%, we agents basically reached into the clients' balance sheets, snatched the 0.5%, and turned it into income and GDP. Magic! But in doing so, we lowered the savings and investment rate by 0.5%. So, we got a short-term GDP kick at the expense of lower long-term growth.

This is true with the whole financial system. Let us say that by 1965 – the middle of one of the best decades in U.S. history – we had perfectly adequate financial services. Of course, adequate tools are vital. That is not the issue here. We're debating the razzmatazz of the last 10 to 15 years. Finance was 3% of GDP in 1965; now it is 7.5%. This is an extra 4.5% load that the real economy carries. The financial system is overfeeding on and slowing down the real economy. It is like running with a large, heavy, and growing bloodsucker on your back. It slows you down.

[1] Real gluttons can still catch a video of the debate by clicking on the link below:
http://economistevents.pb.feedroom.com/economist/economistevents/oneclipgreen/player.html?fr_story=2f1833380e67f2003162128192dedd493ec291d0
Remember, you can fast forward.

For 100 years the GDP Battleship grew at 3.5%. (Even the Great Depression did not change that trend.) But after 1965 the GDP growth rate ex-finance fell to 3.2% a year. After 1982 it fell to 3.1%, and after 2000 to 2.5%, with all of these measurements to the end of 2007 before the current crisis.

From society's point of view, this additional 4.5% burden works like looting or an earthquake. Both increase short-term GDP through replacement effect, but chew up capital. All of the extra financial workers might as well be retirees or children, in that they are supported by the rest of the workforce, but they are much, much more expensive.

Economists have not studied the optimal size for finance. Indeed, a leading finance journal recently rejected a paper on this topic, saying "Finance cannot comment on social utility." That is perhaps why it has so little!

The underlying problem in the recent crisis was a touching faith in capitalism. This faith was based on 50 years of a dominant economic theory that was shockingly not based on facts but rather on unproven assumptions: rational expectations and the Efficient Market Hypothesis (EMH). Believe them and you don't have to regulate new instruments or, indeed, anything. Capitalism will look after itself. So Greenspan, Rubin, Summers, and Levitt of the SEC could beat back Brooksley Born when she dared to suggest regulating the new instruments.

But as Keynes knew by 1934, markets are behavioral jungles wracked by changing animal spirits that can mock the best laid plans. It is a world of agency problems and the "beauty contest." The EMH has proven to be the most wildly mis-specified theory in the history of finance, and the most expensive. Without it, we would have recognized market dysfunctionality and instituted more controls to help limit the wild expansion of the financial business. We might easily have steered clear of the three-sigma (100-year) bubbles in tech and U.S. housing that led to our present crisis. We might not even be debating this topic.

With perfect timing, my friend and former partner, Paul Woolley, started a center for the study of "Capital Market Dysfunctionality" at the London School of Economics. They have recently concluded in academese, with lots of math, that the growth of the financial world has become a rogue element, and that the overmatched clients have allowed the agents to move toward accruing all the rents or benefits of new financial instruments.

One-minute Summary

I will try to make the case that our economy has a painfully overdeveloped financial sector.

1) Beware the financial-industrial complex: they are eating your lunch. (And to be honest, I've eaten more than my fair share. It was a good lunch.)

2) Do not underestimate the scale of the disaster caused by the fancy new instruments combined with the belief in market efficiency. It was cosmic and may indeed not be over yet. There was such loss of confidence that, left to our own devices – real capitalism – more than Citi and Bank of America would have failed. This was a real run on the banks; Morgan Stanley and dozens of other banks would almost certainly have gone quickly, perhaps even Goldman Sachs (leaving us at the mercy of a truly giant J.P. Morgan?).

3) The client world pays up precisely in proportion to how bamboozled it is by unnecessary complexity and this, among other negatives, is what the fancy new instruments were offering: confusion, doubt, and bamboozlement.

4) As for our opponents: academics so badly want their theories to be right that they assume them to be so, and with no proof. They assume not only that market participants are efficient and well-informed, but also that they are good and worthy citizens. But they're all self-serving, and many are slightly wicked. As for mutual funds: they need complexity coupled with a client's lack of confidence, or more clients would invest on their own. So, for them, the status quo is just fine. Finally, I urge you to vote the spirit of this issue and not the letter of the rather badly worded proposition.

PS: I would have mentioned Paul Volcker's opinion that the only financial innovation useful to the country in the last 20 years is the ATM, but at the time of this debate he hadn't made that compelling point.

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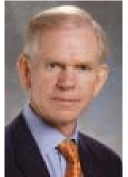
QUARTERLY LETTER

April 2010



Playing with Fire (A Possible Race to the Old Highs)

Jeremy Grantham

It's spring, and this spring a young man's fancy lightly turns to thoughts of speculation. The Fed's promises look good and, as long as you're not a small business, you can borrow to invest or speculate at no cost. The market has had a near record rally, sprinting far past our estimated fair value of 875 for the S&P 500. Bernanke is, in fact, begging us to speculate, and is being mean only to conservative investors like pensioners who cannot make a penny on their cash. Collectively, we forego hundreds of billions of potential interest, but at least we can feel noble because we are helping to restore the financial health of the banks and bankers, who under these conditions could not fail to make a fortune even if brain dead. We are also lucky to have a tiny fraction of our foregone interest returned by the banks as loan repayments with "profit." Some profit! Oh, for the good old days when we could just settle for a normal market-clearing rate of interest. But that, I suppose, would be wicked capitalism, and we had better get used to bank- and speculator-benefiting socialism.

The massive bailout program stopped the meltdown of the financial system and engineered at least a temporary economic recovery. We know the obvious cost of this bailout: unprecedented deterioration of the Federal balance sheet. But what of the less obvious costs incurred by taking away the rewards of caution by saving the reckless and incompetent? These weak enterprises, financial and other, were not gobbled up by the stronger, more prudent, and more competent natural survivors, and there is a long-term cost in that.

So now, Bernanke begs us to speculate, and we are obedient. Despite being hammered down twice in 10 years and getting punished for speculating, we again pick ourselves up off of the canvas and get back into the good fight. Such persistence is unprecedented – 20 years for each really painful experience has been the normal recovery time – but Uncles Ben and Alan have treated us so well in these two disasters that, with hindsight, they don't feel so bad after all. Yes, the market is still down a lot in over 10 years and on our data is likely to have a second consecutive very poor decade, but we have had two wonderful recoveries in which the more speculative you were, the more money you made. So why not break the historical rules and try a third time? Perhaps this time it will be lucky.

Still, it does seem inefficient for the Fed to help us up and then lead us off the cliff again. And to do it twice seems like sadism. And for us to play the game once more seems like lining up behind hot stoves and begging, "Please, can I burn my hand a third time?" Investors used to be more pain averse. It used to be "once bitten, twice shy." This time, surely it should be "twice bitten, once bloody shy!" The key shift seems to be the confidence we now have in Bernanke's soldiering on with low rates and moral hazard to the bitter end, if necessary, cliff or no cliff. The concept of moral hazard has changed. It used to be a vague expression of intent: "If anything goes wrong, I will help you if I can." It seems to have been transmuted into a cast-iron commitment. The Fed seems to be pledging that it will bail us out after every flood. All that is lacking is a rainbow!

Speculators are not stupid. They see that after each crash, a long, artificial period of low rates and easy financial borrowing has been delivered. They see that Bernanke is an unreconstructed Greenspanite in that he refuses to address bubbles, but will leap to help ease the pain should a bubble break. With asymmetry like that, why not speculate? And so another bubble appears and then another. This time, the recovery for the total market was 80% in one year, second only to 1932, and the really speculative stocks are almost double the market, as they also were in 1932. But frankly 1932 was far worse than our crisis where, according to our research, only 7% of the market value of speculative stocks remained, compared with 35% this time. Back then, they deserved that kind of rally. And even though I guessed last April that we would have a quick rally to 1100, this looks quite likely to be far more.

I'm convinced that this excessive market response has occurred because stocks are far more sensitive to both low rates and the Fed's promises than is the economy. The economy is limping back into action, but faces some tough long-term headwinds that I collectively call "seven lean years." Mortgage defaults in housing, steady repayments of consumer debt, and refinancings in commercial real estate and private equity, are all problems that linger, as do many others, on what is becoming a long, boring list. We may get very lucky and have a strong broad-based economic recovery. The economy's durability and flexibility is usually undersold by the bears, and I have generally been leery of underestimating its potential. But we can probably agree that the economy is plagued by unusual problems this time. It is therefore perhaps more likely that the economy will recover in fits and starts, and that over several years it will underperform its historical record.

If the economic recovery is slow and if unemployment drops slowly, then Bernanke will certainly keep rates very low, as he has promised in as clear a way as language permits. In that case, stocks and general speculation will very probably rise from levels that are already overpriced. And if they do, Bernanke will definitely not be concerned and has told us as much. There were some teasing comments from Bernanke at the lows last spring to the effect that the Fed might take the embedded risk of asset class bubbles more seriously, as many foreign central bankers have begun to, and very sensibly so. But that hope has now been utterly squashed, and Bernanke has returned to the original Greenspan line: let the bubbles look after themselves. Even if we were to re-enter bubble territory in a way that would be obvious to anyone who can tell the difference between 15 P/E and, say, 28 P/E (35 of us at last count), he still will do nothing. For he is now once again genuinely unconcerned with bubbles and even doubts their existence, as proven conclusively by his comments during this last one, the 100-year U.S. housing bubble, the breaking of which landed us in the rich and deep manure of 2009: "The U.S. housing market has never declined," etc., etc. No believer in the existence of bubbles could ever say such things.

If we get lucky and have a strong, broad, and sustained economic recovery, interest rates will probably rise before we reach real bubble territory. As rates rise, the market will almost certainly settle down, and we will only have to deal with a substantially overpriced U.S. market and moderately overpriced global equities and risk premiums. In that world, the market would have to decline, but not disastrously, and would probably exercise no really damaging effect on the economy.

If, however, the economy only limps along, which seems more likely to me, then we run a very real danger of a third dangerous bubble in stocks and in risk-taking in general. For in that event, Bernanke will definitely keep rates low quarter after quarter and speculation will surely respond. Again? Yes, I'm afraid so. In that environment, Bernanke will do nothing to let the air out gently. His lack of anti-bubble action is pretty much guaranteed. The end of such events is always hard to predict, but usually bubbles break for almost any reason when they are big enough. Of course, the larger the asset bubble, the bigger the shock to the economic and financial system. Now, Greenspan was lucky enough to inherit Volcker's good work, and that gave him a base from which he could launch or blow a huge equity bubble; he also had the advantage that the country's balance sheet was in excellent shape. Even Bernanke inherited a reasonably solid position from which to fund a second bailout. But a third time? It is hard to work out where the resources would come from to resuscitate the economy if a real shock were to be delivered by another collapse of a major asset class. The key problems here are the Fed's refusal to see the risks embedded in asset class bubbles and the willingness of both the Administration and Congress to tolerate this dangerous policy. Heck, they recently reappointed him! Yes, the Congressional natives were restless, but in waiting for a third crisis to kick him out, they may be too late to avoid the major-league suffering caused by his blind spot.

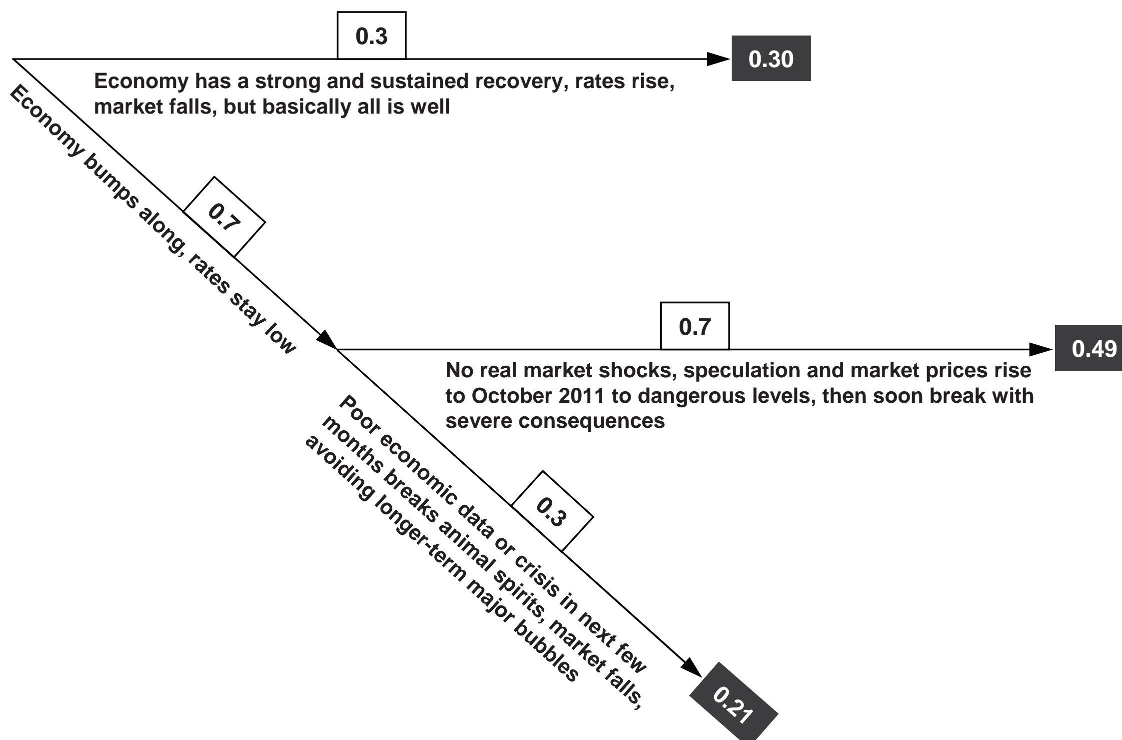
Should unemployment linger at high levels, which I think is likely, and I get these things right better than half the time (I believe about 52%), then we had better hope that something lucky turns up to break the speculative spirit. This is perverse, but so is Bernanke. What could go wrong, preferably in the next few months? Some combination of the following: an unexpected second leg down in house prices and a continued rise in the level of defaults, leading to a crisis at Fannie, etc.; a wash-out in commercial real estate and private equity caused by refunding problems (along the lines of Goldman's and Morgan Stanley's recent real estate fund wipe-outs) that result in a chain of major defaults in properties like Stuyvesant Town; a crisis in the euro where Portugal or Spain or Greece, or all three, default and strange things start to happen; a rapid rise in commodity prices, despite the anemic growth of

the developed world, which, with the same caveats, I also think is quite likely; competitive devaluations leading to a serious trade war; or my colleague Edward Chancellor's favorite, two or three wheels falling off of the Chinese economy, which today acts as the main prop to global growth. Okay, enough. We all know that there is plenty that could go wrong. Some combinations would be enough to break the market but still leave the economy limping along. This would be far better than having the market rise through the fall of next year by, say, another 30% to 40%, along with risk trades similarly flourishing and then all breaking. The possibilities of this happening seem nerve-wrackingly high. The developed world's financial and economic structure, already none too impressive, would simply buckle at the knees.

And, briefly, let me give you my reasons why this rally running through next fall is not at all out of the question. In October we enter the third year of the Presidential Cycle, the year every Fed except, of course, Volcker's, helped the incumbent administrations get re-elected. Since 1932, there has never been a serious decline in Year 3. Never! Even the unexpected Korean War caused only a 2% decline. Even when Greenspan ran amok and over-stimulated the first two years instead of cooling the system down – which he did twice, having not suffered enough the first time – he stimulated Year 3 as well. The result was that we entered Year 3 in October 1998 and Year 3 in October 2006 with horribly overpriced markets, and still the market went up, and by a lot. The overpricing in October 1998, by the way, was so bad that our 10-year forecast was down to -1.1%; in October 2006, by a nerve-wracking coincidence, our 7-year forecast was -1.0%. If the market is 1320 by this coming October (up 10% from today), our 7-year forecast will again be -1.0%. (Please hum the *Jaws* theme here.) Do not think for a second that a very stimulated market will go down in Year 3 just because it's overpriced … even badly overpriced. So far it has had 19 tries to go down since 1932 and has never pulled it off. We can, of course, hope that this time will be exceptional. Even in the best of times, though, overpricing is only a mild downward pull. Its virtue is that it never quits. Eventually it wears the market back down to fair value.

So what do I think will happen? That's easy: I don't know. We have been spoiled in the last 10 years with many near certainties – mainly that real bubbles would break – but this is definitely not one of them. Not yet anyway. (However, I am still willing to play guessing games despite the fact that "I don't know." So here, as Exhibit 1, is my probability tree.) The general conclusion

Exhibit 1
Probability Tree: The Line of Least Resistance



Source: GMO

is that the line of least resistance is a market move in the next 18 months or so back to the old highs, say, 1500 to 1600 on the S&P, accompanied by an equivalent gain in most risk measures, followed once again by a very dangerous break. If that happens, rates will still be low and thus difficult to use as a jump starter, the financial system will still be fragile, and the piggybank will be more or less empty. It is remarkably silly for the Fed to allow, even encourage, this flight path. It is also remarkably silly for investors to be so carefree, given their recent experiences. Fortunately, there are several less likely outcomes that collectively, I hope, are equally probable. We are definitely playing with fire and need some luck. The best kind of luck would be that Bernanke gets bitten by a Volcker bug.

Recommendations

Our policy is simple: however complicated the world may be, we will play by the numbers. The global equity markets taken together are moderately overpriced, and the U.S. part is now very overpriced but not nearly so bad as it could be. Surprisingly, within the U.S. the large high quality companies are still a little cheap, having been left totally behind in the rally. They are unlikely to do very well in a bubbly environment, however long it lasts, but should be great in declines and in the end should win. A potential plus for quality franchise stocks in the next few years is that they are far more exposed to emerging countries and, as investors fall in love with all things emerging, this should be seen as an increasing advantage. A mix of global stocks, tilted to U.S. high quality, has a 7-year asset class forecast of about 5% excluding inflation compared with a long-term normal of about 6%. Not so bad. On balance, therefore, we are only slightly underweight equities.

Within my personal portfolio, I have a stronger preference for the already overpriced emerging market equities than do my colleagues at GMO, and actually more than I should have as a dedicated value manager. This is because I believe they will end up with a P/E premium of 25% to 50% in a few years, as outlined two years ago in "The Emerging Emerging Bubble" (*Letters to the Investment Committee XIV*, April 2008). The appeal of emerging's higher GDP growth compared with the slow growth of U.S. developed countries is proving as compelling as I suspected, and I would hate to miss some modest participation in my one and only bubble prediction. It is hard, though, for value managers like us to ever overweight an overpriced asset, so we struggle on the margin to find kosher ways to own a little more emerging in order to give them the benefit of the doubt. I recommend that readers do the same. The urge to weasel and own a little more emerging is a direct result of the lack of clearly cheap investment alternatives.

Odds and Ends

1) SEC and Goldman: to those who said that hedge funds and proprietary trading had nothing to do with the crisis, this recent SEC charge speaks for itself. Watching hedge fund players both outside and inside their banking firms making billions of dollars was an obvious seduction to everyone. It led individuals and even firms to become more aggressive in risk-taking and in interpreting the codes of ethical behavior, and Goldman is probably no worse than average. The real issue here is more about ethical conflicts with clients than about legal restraints. These were, in any case, mostly disassembled by the last four administrations. If we want to be serious about regaining reasonable standards of client protection, then hedge fund-like proprietary trading should of course not be allowed within banks.

2) The U.K. and Australian housing bubbles may be unimportant to U.S. investors, but to bubble historians they look extraordinary. The U.K. event in particular has broken out of any previous mold. Despite the usual cry of "special case," they will decline around 40%, back to trend, as was the case for the previous 32 bubbles. If not, it will be the first time in history that a bubble has not behaved in this way. Reversion to trend will involve considerable pain, which I will discuss further next quarter if things are quiet.

3) Attached is the first half of a short and accurate letter on global warming by the heads of both the National Academy of Sciences (U.S.) and the Royal Society (U.K.). Couldn't have done better myself!

4) I also include here a link to a video of my April 19 *Financial Times* interview about bubbles, which saves me a whole section of writing. It is also a testimonial to talking so fast that they can't ask you too many difficult questions! http://link.brightcove.com/services/player/bcpid71778049001?bclid=69928231001&bctid=79128759001

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What's happening to the climate is unprecedented

Published: April 9 2010 03:00 | Last updated: April 9 2010 03:00

*From Prof Martin Rees and Dr Ralph J. Cicerone.**

Sir, We were stimulated by your editorial "**Cooler on warming**" (April 5). There has undoubtedly been a shift in public and media perceptions of climate change – a consequence of, at least in part, leaked e-mails from some climate scientists and the publication of errors in the fourth Intergovernmental Panel on Climate Change report.

However, as your editorial acknowledges, neither recent controversies, nor the recent cold weather, negate the consensus among scientists: something unprecedented is now happening. The concentration of carbon dioxide in the atmosphere is rising and climate change is occurring, both due to human actions. If we continue to depend heavily on fossil fuels, by mid-century CO 2 concentrations will reach double pre-industrial levels. Straightforward physics tells us that this rise is warming the planet. Calculations demonstrate that this effect is very likely responsible for the gradual warming observed over the past 30 years and that global temperatures will continue to rise – superimposing a warming on all the other effects that make climate fluctuate. Uncertainties in the future rate of this rise, stemming largely from the "feedback" effects on water vapour and clouds, are topics of current research....

* Martin Rees is President of the Royal Society and Ralph J. Cicerone is President of the US National Academy of Sciences.

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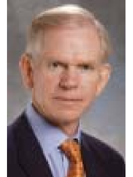
Special Topic

April 2010



*Letters to the Investment Committee XVI**

Speech at the Annual Benjamin Graham and David Dodd Breakfast (Columbia University, October 7, 2009), edited for reading. (Part 2 may follow next quarter.)

Part 1: "Friends and Romans, I come to tease Graham and Dodd, not to praise them." (On the potential disadvantages of Graham and Dodd-type investing.)

Jeremy Grantham

The main struggle I've had my entire investment life is with the preposterous belief that all information is embedded so quickly and efficiently into stock prices that asset class bubbles cannot possibly occur. But to be honest, I've also been pretty irritated by Graham-and-Doddites because they have managed to deduce from a great book of 75 years ago, *Security Analysis*,[1] that somehow bubbles and busts can be ignored. You don't have to deal with that kind of thing, they argue, you just keep your nose to the grindstone of stock picking. They feel there is something faintly speculative and undesirable about recognizing bubbles. It is this idea, in particular, that I want to attack today, because I am at the other end of the spectrum: I believe the <u>only</u> things that really matter in investing are the bubbles and the busts. And here or there, in some country or in some asset class, there is usually something interesting going on in the bubble business. The rest of the time, if you keep your nose clean, you will probably keep your job. But when there is a great event, that's the time to cash in some of your career risk units and be a hero. And it turns out that Graham and Dodd themselves were not nearly as anti-the-big-picture as Graham-and-Doddites would have you believe.

This weekend it dawned on me that I had never read *Security Analysis*. I had very strong opinions about it, but had never actually read it. So I did my best to cover all of the chapters that mattered to me. What I found surprised me; this in particular: "[The] field of analytical work may be said to rest upon a twofold assumption: first, that the market price is frequently out of line with the true value; and, second, that there is an inherent tendency for these disparities to correct themselves. As to the truth of the former statement, there can be very little doubt – even though Wall Street often speaks glibly of the 'infallible judgment of the market' … The second assumption is equally true in theory, but its working out in practice is often most unsatisfactory. Undervaluations caused by neglect or prejudice may persist for an inconveniently long time … and the same applies to inflated prices caused by over enthusiasm or artificial stimulants." If ever we were living in a world of artificial stimulus, it is now. (Also, the great quote attributed to Keynes that "The market can stay irrational longer than the investor can stay solvent," comes to mind here. Keynes and Graham and Dodd agree a whole lot more than I would have thought.) *Security Analysis* continues, "the market is not a weighing machine … Rather should we say that the market is a voting machine … product partly of reason and partly of emotion." More shades of Keynes. Now, I have heard that weighing and voting machine line misquoted a billion times by you guys in this room. It is <u>not</u> a weighing machine!

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1 Graham, B. and Dodd, D.L., *Security Analysis*, McGraw-Hill, 1934.

* The Letters to the Investment Committee series is designed for a very focused market: members of institutional committees who are well informed but non-investment professionals.

So I have come, friends and Romans, to tease Graham and Dodd, not to praise them, even though this is the 75th anniversary of *Security Analysis*. And my second point of attack is that Graham and Doddery is all a little obvious. I was brought up by a Quaker and a Yorkshireman – that is known as "double jeopardy" in the frugality business. Quakers believe waste to be wicked and Yorkshiremen, who consider Scotsmen to be spendthrifts, consider it criminal. The idea that a bigger safety margin is better than a smaller one, that cheaper is better than more expensive, that more cash is better than less cash, deserves, in modern parlance, a "Duh!" It is just rather obvious, and going on about it for 850 pages can get extremely boring.

The next negative point comes from my much admired Chapter 12 of Keynes' *General Theory [of Employment, Interest and Money]* – as for most of the rest of Keynes, as far as I am concerned, you can take it or leave it. It is vague, contradictory, and sometimes dangerous, although I admire his reintroduction of the importance of "animal spirits" as a potential wrecker of the best laid economic plans (there is a nice new book on the subject by Hunter Lewis[2]). But Chapter 12 is a pearl, a polished pearl. It explains how the market works. And along the way, Keynes makes the point – he makes a lot of points that cut across Graham and Dodd – that you all here represent a threat to the economy: Keynes believes that if we had a margin of safety and showed the typical prudence that Graham and Dodd recommend, no one would undertake to initiate a single new enterprise. Over 80% of all new enterprises have failed fairly quickly in the past. The ones that make it have to struggle with a very uncertain future. Graham and Dodd were not at all comfortable with the future. They thought that dealing with it was speculative. They much preferred the present. What are your assets in the piggy bank now? What is the yield you receive today? It's all quite irrational because they are prisoners of the future just like anybody else. However many assets you have in the corporation, including cash, can all be eroded long before you can get your hands on them.

Keynes continues, "… if the animal spirits are dimmed and the spontaneous optimism falters, leaving us to depend on nothing but a mathematical expectation, enterprise will fade and die … It is safe to say that enterprise which depends on hopes stretching into the future benefits the community as a whole. But individual initiative will only be adequate when reasonable calculation is supplemented and supported by animal spirits, so that the thought of ultimate loss which often overtakes pioneers" – and nearly always overtakes Graham-and-Doddites – "is put aside as a healthy man puts aside the expectation of death." You only undertake dramatic initiatives of the type that create the Microsofts or Apples of the world with a heavy dose of animal spirits. If you Graham-and-Dodded it, you would never do anything spectacularly successful. And this willingness to roll the dice is an important relative advantage for the U.S., and too much risk avoidance will simply kill this instinct.

Let me move on to make a point about how illogical I think it is to leave out the great bubbles and the great busts and focus on the grindstone. That's my main complaint with you guys: very, very narrow focus. There you are, working away, picking stocks, even when the world is having its occasional cataclysms.

When you buy a stock, because it has surplus assets or a good yield or a great safety margin, you are really making a bet on regression to the mean. We are really counting on the fact that current unpopularity will fade, that the current problems in the industry will dissipate, and that the fortunes of war will move back to normal. Well, as a provable, statistical fact, industries are more dependably mean-reverting than stocks, for individual stocks can on rare occasion, permanently change their stripes à la Apple. (Or is that à l'Apple?) Sectors, like small caps, are more provably mean-reverting than industries. The aggregate stock market of a country is more provably mean-reverting when mispriced than sectors. And great asset classes are provably more mean-reverting than a single country. Asset classes are the most predictable of all: when a bubble occurs in a major asset class, it is a near certainty that it will go away. (A bubble for us is defined as a 2-sigma event, statistical talk for an event that would occur randomly every 40 years under normal conditions, a definition that is arbitrary but at least to us feels reasonable. And we define a "near certainty" as over 90% probable.)

For the record, I wrote an article for *Fortune* published in September of 2007 that referred to three "near certainties": profit margins would come down, the housing market would break, and the risk-premium all over the world would widen, each with severe consequences. You can perhaps only have that degree of confidence if you have been to the history books as much as we have and looked

[2] Lewis, H., *Where Keynes Went Wrong: And Why World Governments Keep Creating Inflation, Bubbles, and Busts*, Axios Press, 2009.

at every bubble and every bust. We have found that there are no exceptions. We are up to 34 completed bubbles. Every single one of them has broken all the way back to the trend that existed prior to the bubble forming, which is a very tough standard. So it's simply illogical to give up the really high probabilities involved at the asset class level. All the data errors that frighten us all at the individual stock level are washed away at these great aggregations. It's simply more reliable, higher-quality data.

Keynes thought that the Graham and Dodd approach, if done in an institutional world, was also incredibly dangerous to your job. "Investment based on genuine long-term expectation," Keynes wrote in Chapter 12 in 1936, "is so difficult today as to be scarcely practicable. He who attempts it must surely lead much more laborious days and run greater risks than he who tries to guess better than the crowd how the crowd will behave; and, given equal intelligence, he may make more disastrous mistakes … It needs more intelligence to defeat the forces of time and our ignorance of the future than to beat the gun." Keynes understood that what really drives our industry, then and now, is momentum, career risk, and beating the gun. "Moreover, life is not long enough – human nature desires quick results, there is a peculiar zest in making money quickly … The game of professional investment is intolerably boring and over-exacting to anyone who is entirely exempt from the gambling instinct." All of you here have of course been injected with the Graham and Dodd anti-speculation serum, so my sympathies for the boredom that you have to suffer. "Finally it is the long-term investor … who will in practice come in for the most criticism, wherever investment funds are managed by committees … For it is in the essence of his behavior that he should be eccentric, unconventional and rash in the eyes of average opinion." Average opinion, by the way, is prudence. Prudence is defined as doing what a similarly well-educated person would do. Therefore, if you are not going with the pack, you are imprudent. Sorry guys, all of us contrarians are, by this standard, imprudent. To continue with Keynes: "If [our value manager] is successful, that will only confirm the general belief in his rashness …." (I like to say that when he's successful he will be patted on the back but, when he leaves the room, he will be described as a dangerous eccentric.) "[And] if … he is unsuccessful … he will not receive much mercy." The pure administration of Graham-and-Doddery really needs a long-term lock-up, like Warren Buffett has, or it will have occasional quite dreadful client problems.

Let me tell you a story to illustrate this last point. In 2000, Gary Brinson ran broad-based portfolios of global assets, as did we. He did it for UBS, then, the largest pool of money in the world. He rotated his mix around to avoid troubles and to take advantage of cheaper asset classes. (This seems a perfectly sensible approach but is a very tiny part of our industry.) I considered Gary in the late 1990s completely brilliant. That is to say his portfolio looked identical to ours. He was underweighted in stocks and largely out of growth stocks. Conversely, he was heavily overweighted in value stocks. And two weeks from the market peak, because they had lost about 25% of their asset allocation business as growth stocks surged, he was fired from UBS/Brinson. As was Tony Dye, a die-hard Graham-and-Doddite who ran a very value-based contrarian portfolio for Phillips and Drew, a UBS subsidiary. Gary, by the way, is unlike most of us contrarians: he is a capable administrator and generally made of steel. If any of us could withstand the corporate pressures to go with the flow in a major bull market, he could. It was a fair test, and had the tech bubble lasted just a month or two less, his bets would have been wonderfully successful and we would have had to share that anti-growth market niche with a real 800-pound gorilla. So his firing was very convenient for us. Today, I don't believe any public company could withstand the rapid loss of business involved in opposing an <u>extreme</u> bubble on the grounds of overpricing. Management would simply not stand for the hit to quarterly earnings involved in the inevitable loss of business that comes from fighting a bull market. After Gary's firing, a normally reasonable "trade rag" suggested his stance had been eccentric and moving to a more traditional balance of growth stocks – despite their being at 65 times earnings – was, all things considered, less risky. Less risky, that is, for the manager's next quarter's business, not less risky, of course, for the ultimate beneficiaries, the pensioners.

Meanwhile, back in Boston, we, unlike UBS, had no hand holders and no marketing people then. And in our asset allocation division we lost 60% of our book of business. We lost more than any other competitor that we are aware of, then or now. And we lost it by making the right bets for the right reasons - bets we ultimately won. It was a wonderful hothouse experiment – a perfect demonstration to prove Keynes' hypothesis. And we lost the business quickly – in two and a half years. In the fall of 1997 we had a good several-year record in asset allocation, and two and a half years later we had lost 60% of the book of business!

To be more serious in my criticisms, a potential weakness of the Graham and Dodd approach, as it is usually practiced, is in its reliance on low price-to–book (P/B) ratios as one of its cornerstones. Low P/B ratios are, after all, the market's way of saying "these are the assets in which I have the least trust." It should not be surprising, therefore, that when you have a depression, or nearly have one, that more of these "cheap" companies go bust than is the case for the "expensive" Coca-Colas. These serious economic setbacks can give us serious value traps. We had one starting in late 2006, where cheap companies became cheaper and cheaper and quite a few ceased to exist. And several more that were blatantly bankrupt were bailed out by the government for reasons that still seem quite arbitrary and desperate rather than capitalistic. With a less corporate-friendly government, the loss involved in this value trap would have been far worse. In my opinion, despite the pain taken by many heroes of the Graham and Dodd world, you were still collectively desperately lucky, saved by the Great Bailout.

The other value trap that was impossible – or improbable – to avoid was the Great Crash. Normally, a cheap company with lots of assets and a high yield outperforms in a bear market because it's propped up by the yield that gets higher and higher as its price goes down. These companies almost always end up going down less than the average stock. When there is a really severe recession, however, the dividend starts to get cut and it becomes a little more questionable. And when there is a depression or a crash, then the companies start to get cut – to go out of business – and "value" companies get to take serious pain. We sent someone into the stacks to get data from 1929 to 1932 (he nearly died of dust inhalation). This data (Exhibit 1) is completely proprietary and it must be said that some contradictory data has also been dug out of the archives. If this data is correct, as we believe, then it certainly shows the hidden risk of low P/B. I think P/B and yield and price-to-earnings (P/E) are risk factors. They have less fundamental quality and are therefore more prone to failure in rare crashes. I think this is the one thing Fama and French got right – for the wrong reasons. On everything else, of course, I disagree with them.

Exhibit 1 shows the number of times your holdings had to increase from 1932 to get back to the 1929 level. If you were expensive, on the left, you had to go up 6.4 times. But the cheap stocks with the best P/B ratios had to go up 14.3 times to get their money back. Too many of them had gone the way of all flesh. Let's assume we get two

Exhibit 1
The Hidden Risk of Low Price/Book Stocks – Price/Book in the Great Depression

Post 1933 expected risk premium of low Price/Book stocks
2.0% per year

Time required to catch up with high Price/Book stocks
41 years

Source: GMO

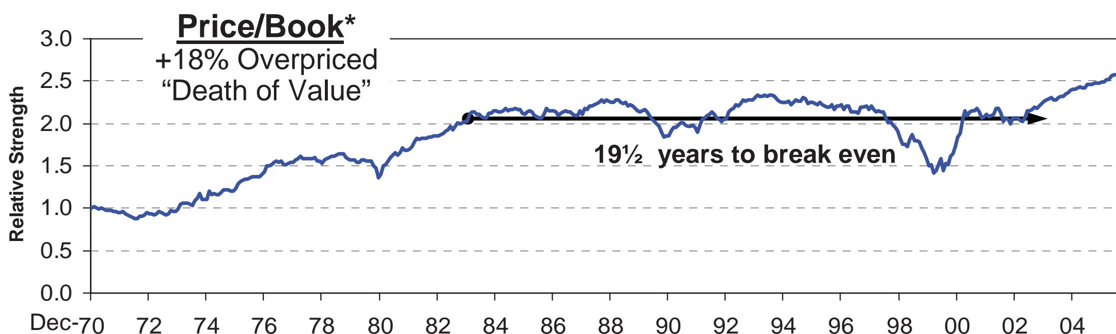
points a year for the extra fundamental risk of carrying cheap P/B stocks. That 1932 drop chewed up what amounts to 41 years' worth of a reasonable risk premium! That was the value trauma of the century. The rest of the time until 2007, admittedly with temporary interruptions or ebbs and flows, you made extra money buying low P/B and low P/E. But in 1929 you basically took such a hit that you had a hard time getting back out of the hole. Let me take this opportunity to point out, courtesy of Jim Grant, that Ben Graham lost 70% in the Crash. That's 70% of his clients' money. He went into the Crash highly leveraged, net long, apparently completely unaware of the possibility of a speculative bubble about to burst. The great value manager, master of the safety margin, was more than 100% long equities! No wonder by 1934 he was very, very conservative. That will do it! (And by the way, just to rub it in, Roy Neuberger went into the Crash net short; that's a big head start.)

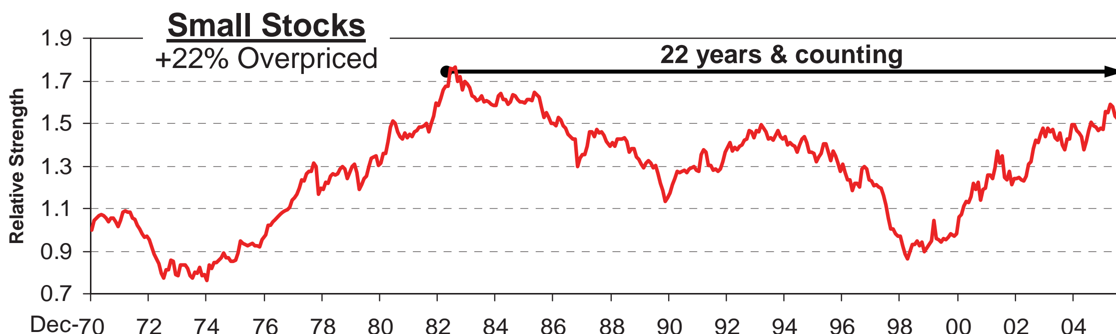
Incidentally, Keynes too got wiped out in the early 1920s, currency speculating, and was bailed out by a rich friend. That's fine if you've got rich friends. He didn't do that well later on in the Crash either, but he began, in the early 1930s, to get the point. He had been hammered enough that he began to adopt a rather Warren-Buffetty sort of approach – buying a handful of names that he really understood. He became very suspicious of the idea that diversification could be an advantage. It just meant he argued, that you owned a lot of stocks you didn't understand well. It really sounds like Buffett, doesn't it? And he became a contrarian. Quote: "The central principle of investment is to go contrary to the general opinion, on the grounds that if everyone agreed about its merits, the investment is inevitably too dear and therefore unattractive." So, ironically, Graham and Dodd are less Graham and Doddy than you like to think, and Keynes, the Father of Momentum – the beauty contest, musical chairs, and the quick draw – is much more akin to the traditional view of Graham and Dodd and Buffett than is commonly thought.

The "cheapest" P/B ratios have another potential weakness. Sometimes they are not usefully cheap at all. The range of P/B ebbs and flows to a magnificent degree as shown in Exhibit 2. In 2000, the range between the P/B of the market favorites and the market pariahs was very, very wide. As wide as it had ever been. When the range is wide, the top end – the high P/E favorites – are very vulnerable, and the cheap, contrarian stocks at the other extreme can make you a fortune. The top exhibit

Exhibit 2

Even for Price/Book and Small Cap, Relative Value Is Very Unforgiving





* Best 25% price/book by name ** Stocks 600 on by market cap *Source: GMO As of 9/30/06*

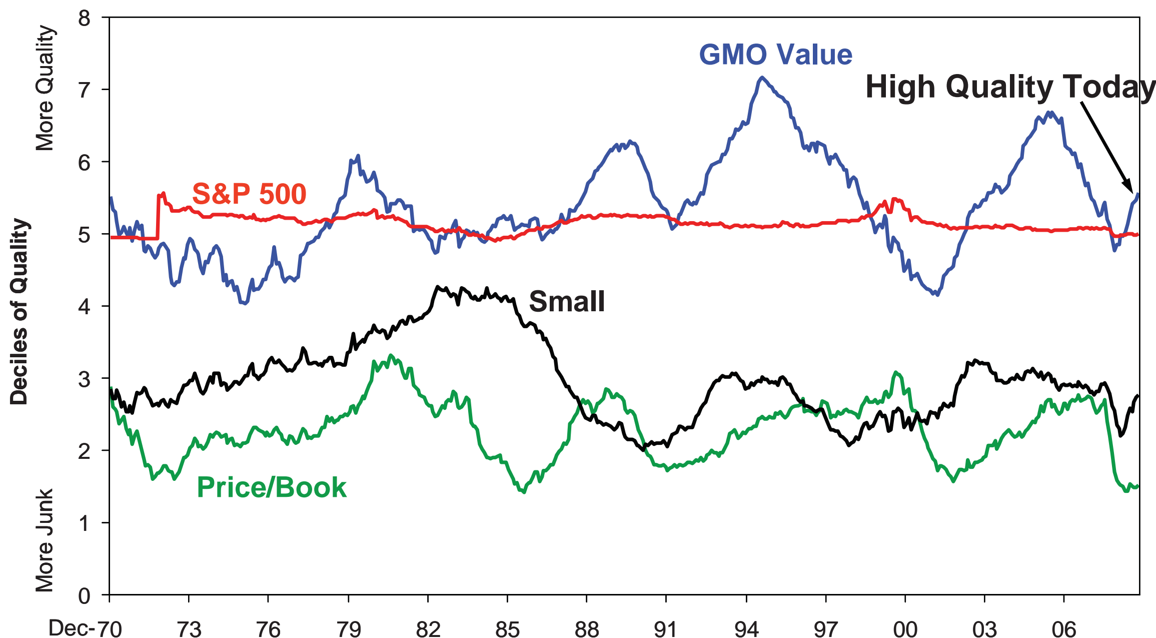
here shows a peak in 1983, when I am very pleased to say I gave a talk in Boston called "The Death of Value." It was looking like a crowded trade. Everybody wanted to be a value manager by 1983 because it had done so dazzlingly well since 1974. It had beaten the market by over 100 percentage points! The growth managers were hiding under the table. Yet from 1984, because value investing became so trendy, you made no extra money in the cheapest P/B (value stocks) for 19.5 years! Now that takes patience! You were paid absolutely nothing extra for carrying the lower fundamental quality that P/B represents. Exhibit 3 shows, relative to the market, this extra risk that P/B derives from being very low quality. Quality here is measured in the standard GMO way, using principally the level and stability of profitability and secondarily the level of debt. This exhibit also shows the similarly low fundamental quality of small cap, so it also is a risk factor. The final bit of data on Exhibit 3 is GMO's intrinsic value series, which recognizes that quality and growth deserve a premium. On this basis, half the time Coca-Cola is "cheap," and half the time expensive, while Microsoft spent several years in the best decile! Traditional value that wants its assets and yield now would never score the great companies as cheap. Yet they must have been for they outperformed, which is the only check on the accuracy of historical value measures that really counts. What this means is that any outperformance on our intrinsic value is pure alpha, where for P/B, etc., and for small cap it is a risk premium, and a risk that definitely comes to bite you every so often. Yet the client world has seldom been interested in this apparently vital difference, which is an interesting commentary on where our industry has been on this issue. Outperformance of a benchmark is usually everything, and risk-adjusted returns nothing. For us, this approach has been a disadvantage. For the industry, it has pushed managers into ignoring risk in value management.

To cut to the chase, P/B does not represent intrinsic value. Nor do P/E ratios or yields. To make this point I regularly pose a question to investment audiences: "I give you Coca-Cola at 1.2 times book or General Motors at 1.0 times book. Hands up, who wants General Motors?" No one ever puts up their hand, and I say, "Therefore, Q.E.D., P/B is not value." You know that the extra qualities represented by Coca-Cola are worth a premium. The question is only, "How much?"

The simple "value" measures outperformed nicely in the good old days, probably for three reasons. First, they represented the higher fundamental risk shown above – a higher risk of commercial and financial failure. Second, they represented higher career and business

Exhibit 3

GMO Value Has S&P Quality – and It Is High Today



Source: GMO As of 9/30/09

risk. It is hard to justify having bought a contrarian, unpopular stock when things go wrong, which happens quite often. Even reasonable committees felt it was an obvious risk and only imprudent managers would have bought it. In contrast, when a Coca-Cola has a bad time in the market, the same committee tends to see it as a sign of the market's superficiality in not recognizing the stock's great characteristics. This extra career or business exposure should not be borne by value managers without the expectation of a higher return. Before the mid-1980s this was, generally speaking, the case, for at that time (and this is the third and most important reason) the investment community was more risk averse than now so that, with 1929 as the sole exception, stocks with low P/B ratios, low P/E ratios, etc., and small caps typically over discounted the specific problems and the general low quality and consequently outperformed.

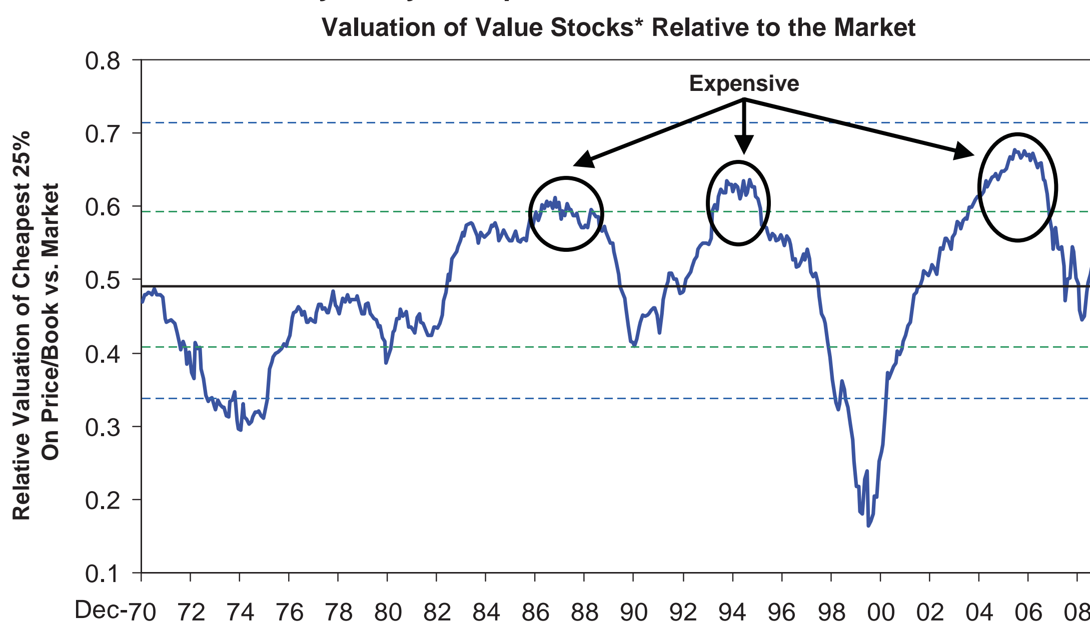
This state of affairs in which simple value measures outperformed was changed by two events, perhaps forever. First, there was the massive outperformance of "value" from 1973 to 1983 when the cheapest decile of P/B outperformed the market by over 100 percentage points. Second, a few years later a newly arriving wave of statistically well-educated "quants" adopted P/B and small cap as winning factors that should be modeled. Egged on by French and Fama, et al., they tended to assume that these "risk" factors delivered an extra return by divine right, regardless of how they were priced. These factors in the past had delivered the goods because the "spreads" – the range between large and small cap and between high and low P/B ratios – had been wide. As they became mainstream "risk factors," and with the popularity from their huge success in the 70s, the ranges narrowed. When the range between Coca-Cola and U.S. Steel on P/B becomes narrow, it can still easily be picked up and modeled but, it will fail to deliver an excess return. Low P/B stocks, or small cap stocks, only outperform when they are priced to do so, as I hope every Grahamite knows.

And this was precisely the problem by mid-2006. After some strong years of performance, the range of old-fashioned value measures such as P/B and P/E had become severely compacted – the range between the low book ratios and high book ratios had been bid down. Yet some very illustrious Grahamites, including a couple of well-known hedge funds, were saying that "value" was quite well-positioned.

Exhibit 4 shows exactly how the attractiveness of P/B ebbed and flowed on our data. The period starting in 2006 when P/B reached its maximum overvaluation was a pretty shocking time – a 50-year flood for P/B, P/E, and value managers in general. This was the modern value trap from hell, a reminder of 1932.

Exhibit 4

Cheap Price/Book Are Not Always Very Cheap



*Cheapest 25% (of largest 1,000 stocks) on Price/Book *Source: Compustat, GMO* *As of 9/30/09*

Small Caps

Like low P/B stocks, small caps peaked in 1983 (see Exhibit 2), but unlike them, small caps have never regained their old relative high of that year. Yes, small caps have won over the very long run and had a truly wonderful rally after 1972, but who do you think goes bust in the Great Depression? The big blue chips with all those workers to protect, or the little companies? If the governor of some state has one telephone call to make to the President, he makes it for a Lockheed, he doesn't make it for some unknown little company. The small caps had to go up 14 times to get their money back, the blue chips 6.8 and 5.4 times. Note that 5.4 isn't a very low multiple, but these were tough times. It's just a whole lot better than 14 times. The time taken to catch up if you had, say, a reasonable 1.5% risk premium for small caps, would have been 48 years. Basically, small cap investing was brilliant for 60 years, but if you had been managing money in small caps in 1929, you would almost certainly have been knocked out of the game, having dug too big a hole too quickly. Would any clients have allowed you the time to recover when they were left with 7% of their money? I suppose the good news is that there were no small cap managers in 1929; nor for that matter, were there any when we started at Batterymarch in 1970 with a small cap portfolio.

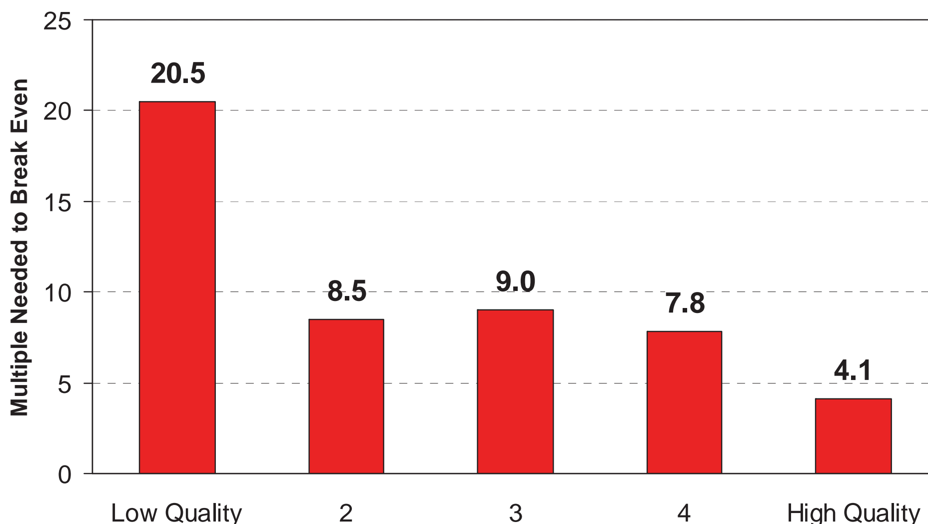
Quality

A missing ingredient in this critique of Grahamism, or rather Grahamism as usually practiced in the real world, is probably Warren Buffett, whose introduction would conveniently bring up the topic of Quality, which typically is something of a missing ingredient in value investing. It is what he really introduces as an extra emphasis into the world of safety margins and attractive traditional value measures.

If the rare value traps are the bane of Grahamism, then equally they offer an opportunity for quality stocks to show their merits. In Exhibit 5 we show the relative performance in the Great Crash of Quality's close cousin, high return on equity. The high return companies that entered the Crash overpriced still outperformed brilliantly. They had a princely 25% of their money left at the low – whoopee! – whereas the low return firms were left with 5% of theirs so that they had to quintuple just to catch up with their high return brethren! If you had picked up a risk premium of 1% a year for holding low quality –

Exhibit 5

Quality as Armor Plating Is Free and When You Really Need It – Quality in the Great Depression



Source: GMO

which on average you had not – it would have taken you nearly 165 years to catch up.

In fact, Quality stocks have outperformed the market since 1965 (when our quality data begins) as shown in Exhibit 6. We define "quality" using primarily a high and stable return. I think you would agree that this is a workable definition of a franchise since to be both high and stable means you have the ability to set your own prices. Secondarily, we look at debt. This yields a very uncontroversial list of stocks of the Coca-Cola, Johnson & Johnson, and Microsoft ilk with not even one financial! Even though the "quality" factor is now cheap, it has still outperformed by a decent (maybe you'd say "modest") 40% over almost 50 years. But this 40% is an amazing free lunch. Warren Buffett doesn't really talk much about the fact that he is playing in a superior universe. Why should he? It's like having the Triple A bond outperforming the B+ bond in the long term by 1% a year when, in a reasonable world, it "should" yield, say, 1% less. And how nicely this messes up the Fama and French argument on risk and return.

That P/B and small cap outperformed was noticed by academics several decades after investment practitioners at Batterymarch and elsewhere had been using these factors to make money. On noticing this outperformance, embarrassingly late in my opinion, Fama and French adopted a circular argument rather typical of finance academics in the 1970 to 2000 era: the market is efficient; P/B and small cap outperform, ergo they must be risk factors. That the reasoning in this case happens to get to the right result is luck. The real behavioral market is perfectly happy not rewarding "risk" when it feels like it, as is shown by the 70-year underperformance of high beta stocks. But this time it worked. Price-to-book, despite its low beta, is a risk factor because of its low fundamental quality and its vulnerability to failure in a depression. This is true with small cap as well. But what about "Quality?" This factor has outperformed forever. (The S&P had a High Grade Index that started in 1925 and handsomely outperformed the S&P 500 to the end of 1965 when our data starts.) Since the market is efficient, to Fama and French quality must be a risk factor! So, by protecting you in the 1929 Crash and in 2008, and by having a low beta for that matter, Quality as represented by Coca-Cola and Johnson & Johnson must be a hidden risk factor. Oh, I know: "The real world is merely an inconvenient special case!"

Exhibit 6

Quality: Finally, a Free Lunch – High Quality Stocks Win Over the Long Term

Note: GMO defines quality companies as those with high profitability, low profit volatility, and minimal use of leverage.
The historical valuation is determined by our proprietary intrinsic valuation measure.

Source: GMO As of 9/30/09

Disclaimer: The views expressed are the views of Jeremy Grantham through the period ending April 23, 2010, and are subject to change at any time based on market and other conditions. This is not an offer or solicitation for the purchase or sale of any security and should not be construed as such. References to specific securities and issuers are for illustrative purposes only and are not intended to be, and should not be interpreted as, recommendations to purchase or sell such securities.

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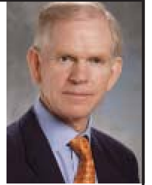
QUARTERLY LETTER

July 2010

Summer Essays



Jeremy Grantham

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1 Portfolio Outlook and Recommendations

Well, I, for one, am more or less willing to throw in the towel on behalf of Inflation. For the near future at least, his adversary in the blue trunks, Deflation, has won on points. Even if we get intermittently rising commodity prices, which seems quite likely, the downward pressure on prices from weak wages and weak demand seems to me now to be much the larger factor. Even three months ago, I was studiously trying to stay neutral on the "flation" issue, as my colleague Ben Inker calls it. I, like many, was mesmerized by the potential for money supply to increase dramatically, given the floods of government debt used in the bailout. But now, better late than never, I am willing to take sides: with weak loan supply and fairly weak loan demand, the velocity of money has slowed, and inflation seems a distant prospect. Suddenly (for me), it is fairly clear that a weak economy and declining or flat prices are the prospect for the immediate future.

The worrying news is that most European countries, led by Germany (not surprisingly in this case), are coming on more like Hoover than Keynes. More surprisingly, Britain and half of the U.S. Congress are acting sympathetically to that trend, which is to emphasize government debt reduction over economic stimulus. Yet, after a relatively strong initial recovery, the growth rates of most developed economies are already slowing, despite the immense previous stimulus. You don't have to be a passionate follower of Keynes to realize that to rapidly reduce deficits at this point is at least to flirt with a severe economic decline. We can all agree that we had a financial crisis, a drop in asset values, and an economic decline, all three of which were global (although centered in the developed countries), and all three of which were the worst since the Great Depression. All three were destined to head a whole lot deeper into the pit without the greatest governmental help in history, also global. Yet despite this help, the economic recovery was merely adequate, unlike the stock market recovery, which was sensational and, as often happens, disproportionate to the fundamental recovery. But in the last three months, more or less universally in the developed world, there has been a disturbing slackening in the rate of economic recovery. (Perhaps Canada and Australia on their own look okay, propped up by raw materials and, so far, un-popped housing bubbles.)

I am still committed to my idea of April 2009 that there would be a "last hurrah" of the market, supported psychologically by a substantial economic recovery but then, after a year or so, that this would be followed by a transition into a long, difficult period that I called the "seven lean years." I had, though, supposed that the economic reflex recovery – how could it not bounce with that flood of governmental help to everyone's top line? – would last longer or at least not slow down as fast as we have seen in the last few weeks. And with unexpectedly strong fiscal conservatism from Europe and perhaps from us, this slowdown looks downright frightening. I recognize that in this I agree with Krugman, but I can live with that once in a while. However, where I am merely fearful, he is talking about another "Depression."

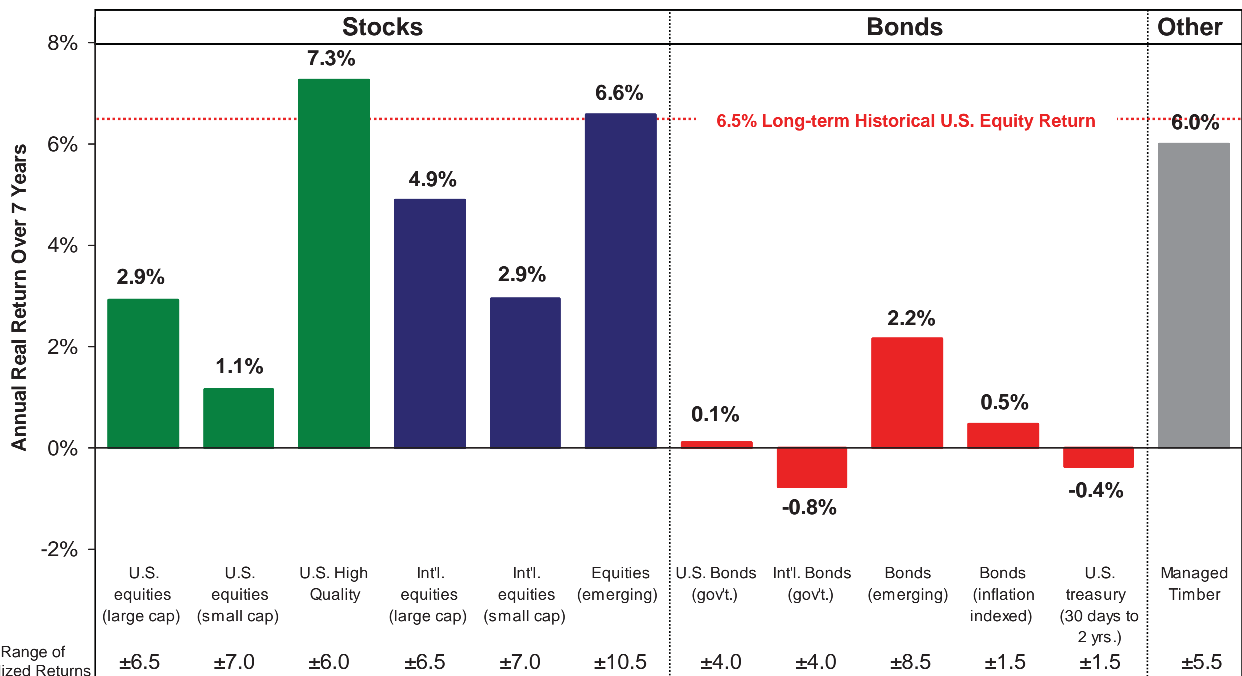
At GMO, our asset allocation portfolios, however, are merely informed on the margin by these non-quantitative considerations. They draw their strength from our regular seven-year forecast. Today this forecast (see Exhibit 1) suggests that it is possible to build a global equity portfolio with just over the normal imputed return of around 6% plus inflation. With our forecast, this can be done by overweighting U.S. high quality stocks and staying very light on other U.S. stocks. At a time when fixed income is desperately unappealing, this, not surprisingly, results in our accounts being just a few points underweight in their global equity position, which is suddenly a little nerve-wracking as the growth of developed countries slows down. A little more dry powder suddenly seems better than it did a few weeks ago, but then again, prices are 13% cheaper. I regret not having seen the light a few weeks earlier. Running at the same rate of change in attitude as both the market and general opinion is both frustrating and unprofitable. But even as global equities approach reasonable prices, I would err on the side of caution on the margin.

Let me give a few more details: just behind U.S. high quality stocks, at 7.3% real on a seven-year horizon, is my long-time favorite, emerging market equities at 6.6%. This is now above our assumed 6.2% long-term equilibrium return. Additionally, my faith in an eventual decent P/E premium over developed equities exceeding 15%, perhaps by a lot, is intact. Emerging equities' fundamentals also continue to run circles around ours. EAFE equities at 4.9% are a little expensive (6% or 7%) but make a respectable filler for a global equity portfolio. Forestry remains, in my opinion, a good diversifier if times turn out well, a brilliant store of value should inflation unexpectedly run away, and a historically excellent defensive investment should the economy unravel. Otherwise, I hate it.

Exhibit 1

GMO 7-Year Asset Class Return Forecasts*

As of June 30, 2010



*The chart represents real return forecasts[1] for several asset classes. These forecasts are forward-looking statements based upon the reasonable beliefs of GMO and are not a guarantee of future performance. Actual results may differ materially from the forecasts above.

[1] Long-term inflation assumption: 2.5% per year.

Source: GMO

Other Advice

Don't walk in the woods any more than you have to these days. Don't get sick until September, when medical practitioners' vacations end. *The Girl with the Dragon Tattoo* really is as readable as they say, and the movie is even better. The Sharpe series by Cornwell is the easiest read ever and a painless way to pick up some Napoleonic history. *War and Peace* is the most self-indulgent, overwritten work ever. There is, though, a great 600-page novel lurking inside it. 4,300 clicks on my Kindle! Have a good summer!

Correction

I mentioned in last quarter's *Letter* that UBS had fired the inestimable Gary Brinson at the peak of the 2000 bull market. This turned out to be incorrect, as Gary was not fired. He and UBS had agreed to his withdrawal for a variety of personal and other reasons some considerable time earlier. No negatives were meant to be applied to Gary. Quite the reverse. Being fired for standing one's ground for a good cause is always an honorable activity in my opinion. My apologies.

2 Finance Goes Rogue (But Volcker Wins a Round!)

My previous argument in the *Economist* debate* was that the 3% of GDP that was made up of financial services in 1965 was clearly sufficient to the task, the proof being that the decade was a strong candidate for the greatest economic decade of the 20th century. We should be suspicious, therefore, of the benefits derived from the extra 4.5% of the pie that went to pay for financial services by 2007, as the financial services share of GDP expanded to a remarkable 7.5%. This extra 4.5% would seem to be without material value except to the recipients. Yet it is a form of tax on the remaining real economy and should reduce by 4.5% a year its ability to save and invest, both of which did slow down. This, in turn, should eventually reduce the growth rate of the non-financial sector, which it indeed did: from 3.5% a year before 1965, this growth rate slowed to 2.4% between 1980 and 2007, even before the crisis.

This bloated financial system was also increasingly deregulated and run with increasing regard for profit and bonus payments at all cost. Thirty years ago, Hyman Minsky could have told you that this would guarantee a major financial bubble sooner or later and at periodic intervals into the indefinite future. This unnecessary explosion in the size of the financial world has been a clear example of the potential for dysfunctionality in the capitalist free market system. I have not been a great fan of the theory of rational expectations – the belief in cold, rational, calculating homo sapiens; indeed, I believe it to be the greatest-ever failure of economic theory, which goes a long way toward explaining how completely useless economists were at warning us of the approaching crisis (with a half handful of honorable exceptions). But it would be a better world if their false assumptions were actually accurate ones: if only information flowed freely, were processed efficiently, and were available equally on both sides of every transaction, we would indeed live in a more efficient and probably better world. The problem that information is asymmetrical in the financial business is a serious one. One side of the transaction, say an institutional pension fund, is often at the mercy of the other, say the prop desk of a talented and mercilessly profit-oriented investment bank.

The problem of asymmetrical information is compounded by the confusion between the roles of agent and counterparty. I grew up in a world where stocks and other financial instruments were traded by the client with a high degree of trust in the agent. Millions of dollars traded on a word, without a tape recording. Somewhere along the way, without any formal announcement of the change, the "client" in a trade mutated into a "counterparty" who could be exploited. Steadily along the way, the agents' behavior became more concerned with the return on their own trading capital than with the well-being of their clients. One of my nastiest shocks in 45 years was the realization one day in 1985 that we had been ripped off by our then favorite broker on one of the early program trades we were doing. We had supposed we had developed a trusting relationship. We had certainly done many incentive trades that were successful from our point of view. Perhaps, with hindsight, our strong incentives might have merely motivated them to rip off some other client.

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* http://economistevents.pb.feedroom.com/economist/economistevents/oneclipgreen/player.html?fr_story=2f1833380e67f2003162128192dedd493ec291d0

So there is an irony in incentive payments. When institutions, for example, pay 20% of their profits to a hedge fund, they are presumably paying a market-derived competitive rate. But what the institutional industry in total misses is that it is a zero-sum game. All of the profits the hedge fund makes are extracted from the market at someone's expense, let us say, to oversimplify, another institution's expense. One part of the collective institutional fund universe is paying a large group of hedge fund managers to squeeze gains out of another part of the total pot and then is sharing these gains in a rather cannibalistic way. The incentive payment is designed in a way that encourages and maximizes this extraction of gains at their own collective expense. One institution pays a fee to encourage another institution's loss, and then participates in the loot. The logic is acceptable only because it is obscured by a fallacy of composition: we always forget that we are the market, and that all costs are a reduction in our returns.

The good news is that we have come close to some version of the Volcker rule. It is a rare opportunity to do away with some of the conflicts and costs to our institutional investors that arise from prop desks within banks. They run multiples of the leverage used by free-standing hedge funds and yet they have been backed by taxpayers' money. Proprietary bank capital knows no "clients" by definition, and simply extracts money from the market at the expense of the institutional world. If we do not ban this activity now we will be saddled with these conflicts for years, greatly to our collective detriment. And we should never ever underestimate the power of the financial lobby to soften or remove the important elements of the bill. Even minor celebrations should be delayed until the fat lady has sung. (I guess she beat me to the punch by one day. Finally, Congress worked more quickly than I expected! As far as I can tell in fifteen minutes, the Volcker component is a great step forward, but the rest of the bill is modest and very, very complicated. I hope it will be worth it.)

Our trading misfortune of 25 years ago also reminds me of another point: how little our side of the industry did to move its business to the more ethical firms and to make a fuss about conflicted or unethical behavior. Had a number of us moved our business, we might have slowed or even stopped the 30-year slide in conflicted, unethical behavior that we have experienced. I, for one, regret the modest nature of our moves. We all could have done more. We have tolerated a pretty nasty decline in standards. Shame on us.

3 The Fearful, Speculative Market

Last quarter, I engaged in the forecaster's last resort: I suggested three main routes for the market and the economy. The least likely in my opinion now, although I gave it a 30% probability, was what one might call the Panglossian way – he of the "everything is for the best in the best of all possible worlds" philosophy. In this encouraging world, the economic recovery would be fairly consistently better than expected. It would be, in short, the type of very strong recovery that normally follows a very severe wipeout. And one that was additionally helped along by unprecedented stimulus. Frankly, I was being deliberately generous to guard against a possible bearish bias. (Inconceivable!) The last quarter, though, has not been encouraging for that route at all. Today a 25% probability would seem generous.

I guessed that the major theme, the line of least resistance as I called it, with a 50% probability, would be a reluctantly and irregularly recovering economy in which Bernanke would be certain to keep rates at rock-bottom for the next 18 months or longer. These low rates, added to the market's awareness that Bernanke's Fed clearly belongs to the old Greenspan put camp, would create a long, steady incentive to borrow and speculate. The key point here is that the economy responds reluctantly to low rates – there are so many other negative factors it has to worry about – whereas the market responds with much more persistent enthusiasm. In such a world, aggressive hedge funds (is that redundant?) can leverage easily and, in their drive to make money, will emphasize more aggressive or more speculative investments. On this path, I suggested that the S&P could move all the way back to 1500 or 1600 before yet another bust, this time a spectacularly dangerous one because the government piggy bank would be empty.

The final path I suggested (with a 21% probability) was that in the six months following last March, two or three of a long list of potential problems would come home to roost and would knock the market down, perhaps all the way down to fair value, which is now about 900 or so on the S&P 500, or about a 25% decline from the peak. I guessed

that one major negative would not be enough, but that two or three simultaneously might be enough to expose the thinness of investor confidence. For the record, a 25% decline in any six-month period is about a 3% probability, so this estimate was suggesting that an important drop in the market was seven times its normal probability.

Well, what we are seeing now is a tussle between the 50% sustained speculation branch and the branch where two or three things go wrong and crack confidence. This struggle is an unusual one, and has created market effects I have never seen before, and you have not either. This market might well be called a fearful, speculative market. Low rates, although they tend to produce a feeding frenzy at the aggressive end of institutional investors, merely produce a feeling in ordinary individual investors somewhere between dejection and desperation. They hate to park money in cash at negative real returns, and yet they are still thoroughly nervous, so surveys reveal, about normal equity investing. These investors did not need the recent slowing in growth and sovereign debt problems to become nervous.

Aggressive institutions carry a lot of weight these days, though, and their influence can be felt all over the market. They are not easily intimidated when rates are low and moral hazard is in full swing. The other key component is the conservative half of institutional money that is apparently (and reasonably, I think) seriously disturbed by recent negative global and U.S. economic events. Thus, it is my guess that the main struggle these days is between these two wings of the institutional business. Let's look at some of the symptoms of this struggle.

Anyone who knows anything about the market knows that for the last 30 years, small cap stocks have had a pretty reliably high beta; that is, the group rises and falls in the market more than the blue chips. We at GMO know that there is another very powerful component in this equation, which is badly and widely underestimated, and that is value. For example, at GMO we were very pleased with ourselves in the 2000-02 market break because, first, we were very anti-stocks and, second, for those stocks we had to own, we were very pro small caps. This was more puzzling to our clients than anything I can remember. But we knew from history that value was a key modifier, and that when small cap stocks were normally priced, they indeed fell with a beta close to 1.2 times the market. When they were expensive, they had been typically annihilated, up to a relative decline of 2.0 times the market, but when they were cheap, they outperformed. In 2000, they were as cheap as they have ever been, and fell much less than the S&P despite their higher beta and lower fundamental quality, for that matter. (Yet another blow for Fama and French, et al.) Well, this time, starting from the S&P high of around 1200 in March this year, small caps were expensive, not only absolutely, but also relative to the S&P. So here is a quiz. How many times, when a year has reached a point where the S&P 500 is down 7.5%, have small caps outperformed when they began their decline more overpriced than the market? The answer, since the Russell 2000 index was introduced in 1981, is never. (Before 1981, small caps were barely acceptable in the institutional world, and did not really exist as a separate category. Because of being off the radar screen, they often lagged the market and delivered inconsistent betas, often lower than the market.) Yet by June 30, with the S&P down 7.5%, small caps were 5% less bad!

The same effect, plus 6% or 7% for the relative outperformance of small caps, holds in developed countries outside the U.S. based on the EAFE index. In its way, that is even more remarkable since the headlines have been battering investor confidence there for months. This battering, however, has been focused on financial strength. This focus has finally been sufficient to push high quality stocks in EAFE ahead of low quality (remember, low debt is a component of quality on our definition) after a huge year last year for low quality stocks. But this bad news was not centered on small caps, so the undertow in favor of speculation won out for them. This difference between small cap and low quality – both speculative characteristics – could be viewed as the front line in the struggle between low rates and poor financial and other news. In the U.S., however, we (GMO) were not so fortunate in that headlines, although disturbing, did not sound the same dire drumbeat as they did in Europe, and low quality stocks continued to win as did small caps, by about the same amount. This, then, is the outcome to date in the U.S.: deteriorating fundamentals (especially a slowing in the overall growth rate of GDP), intractably high unemployment, disastrous local government finances, and disturbing news from Europe have been enough to drive the market down 13% from its high and 7.5% for the half year, which is very unusual so early in an economic recovery. Yet the continuing low rates and the Bernanke put have allowed the undertow of speculation or aggressive investing to continue so that, uniquely to this cycle, both lower quality and smaller companies are winning in a down year. Just think about that for a second. Given all of the

justifiable misgivings that all of us seem to share, both speculative and small stocks that were relatively overpriced on January 1 have beaten the blue chips year to date. It really is remarkable.

So, how will this unusual struggle resolve itself? Despite growing nervousness and despite a slowing economy, I am so impressed by the power of low rates and Greenspanism (for lack of a better or shorter description) that I would still put odds of 45% (down from 50% last quarter) for the market to rise to over 1400 (down from 1500 to 1600 last quarter) by October of next year, accompanied by a speculative spin. On the other hand, I also have to recognize that the 21% I put on a quick and rapid decline to fair value looks even more likely today, perhaps closer to 30%. If the market does indeed continue down the current sell-off path, it should result in some unusual movement in the Russell 2000 (small cap index) and possibly even the junky stocks, which might give up their unusual relative strength in a real hurry. I can imagine a situation, for example, where the Russell 2000 gives up a relative 10% in two to three weeks as the aggressive investment world finally has second thoughts on the wisdom of continuing to speculate and changes its mind in its usual rapid way. (Remember, you read it here first.) High quality is perhaps not so promising in this respect, but could still win by several percentage points if the world becomes more circumspect. It would be more typical for quality to outperform over several years.

Why Are Quality Stocks Cheap?

High quality stocks were left very much behind in the great rally last year, which was the biggest and most speculative since 1932. Much more surprisingly, they have underperformed this year, probably for the reasons discussed above. But unlike small caps, they have been cheap for almost five years and, given the uncertainties around today, this is unusual. There are surely additional reasons, other than the low rates, why the great companies have persistently sold at a discount. Why didn't quality stocks at least become expensive, and risky stocks become cheap on a relative basis, when we were at the deepest point in the crisis? Most risky fixed income securities certainly became very cheap then. I understand the general direction of the performance of quality stocks: down in 2005, 2006, and 2007, which were speculative years; up a lot in 2008, which was the year of anti-risk panic; and down in 2009 and 2010, which were also very speculative. But, I'm puzzled by the general value level around which they have been moving. It's as if there is an extra and unusual force working against them. This type of mispricing always has a reason. It may not be particularly rational, but there is a reason. Let me confess that I have no certain answer, but I'll offer a couple of candidates. One is the population profile: there are more new retirees per new worker than there used to be. Retirees are selling stocks to pay the bills and to buy more conservative fixed income investments. And what stocks are they selling? By the time they retire, they probably own blue chips, having sold down most of their speculative stocks in the decade before retirement. This is just a guess; I have no good data to prove it. But it does seem reasonable.

A second candidate, accompanied by stronger circumstantial evidence, is the "Let's all look like Yale" syndrome. In the last 10 years, institutions and even ultra-rich individuals have, in general, been increasing the share of their portfolios that is invested in private equity and hedge funds, commodities, and real estate. And even within their equities, they have been increasing their share of foreign equities, including emerging markets and small caps. At the second derivative level, hedge funds may feel that they do not get paid to buy Coca-Cola, and private equity firms, particularly now, do not go after many of the great franchise companies. So what is being liquidated to buy all of this new stuff? Old-fashioned blue chip U.S. stocks and U.S. government bonds that used to completely dominate even sophisticated institutional accounts and now no longer do. In the case of U.S. bonds, we have the noble Chinese to step into the breach for a powerful reason: they have no alternative if they want to run trade surpluses. But blue chip stocks are on their own, without any natural offsetting buyers.

In a rational market, structural selling pressures that are not related to long-term value will create a modest mispricing opportunity into which sensible money will be drawn. That would be a nice, boring world to live in. In ours, where herding dominates and an extreme libertarian like Greenspan or a painfully academic academic like Bernanke are the shepherds, the inefficiencies can be much greater than in Fama's and French's wildest dreams. And so it is today. The next time – at some unknowable point in the future – when relative prices for quality versus the rest of the market once more cross through fair value (as the market in aggregate did in October 2008 and June 2009, by the way), the excess

return for quality could be over 40 percentage points! (This is reflected in our seven-year forecasted difference of 7.3% for high quality and 1.1% for the rest of the S&P 500, compounded over seven years as of June 30.) Incidentally, although it is interesting to wonder why certain stocks or groups become cheap, there are no points for getting the reasons right. There are only points for knowing what actually is cheap and owning it.

Supply-demand issues like the two described can be powerful in distorting prices in the short run and even the quite long run, but it is like holding a ping pong ball under water: it needs constant pressure to keep it there. Remove the pressure even for a short while and the normal equilibrium will quickly be restored. In this way, quality stocks might possibly spend much of the next several years underpriced, but from time to time will bounce back to fair value. This is all that patient investors need. It is the converse of the market pattern of the last 20 years: mostly overpriced, but occasionally spiking down to fair value.

4 Everything You Need to Know About Global Warming in 5 Minutes

1) The amount of carbon dioxide (CO_2) in the atmosphere, after at least several hundred thousand years of remaining within a constant range, started to rise with the advent of the Industrial Revolution. It has increased by almost 40% and is rising each year. This is certain and straightforward.

2) One of the properties of CO_2 is that it creates a greenhouse effect and, all other things being equal, an increase in its concentration in the atmosphere causes the Earth's temperature to rise. This is just physics. (The amount of other greenhouse gases in the atmosphere, such as methane, has also risen steeply since industrialization, which has added to the impact of higher CO_2 levels.)

3) Several other factors, like changes in solar output, have major influences on climate over millennia, but these effects have been observed and measured. They alone cannot explain the rise in the global temperature over the past 50 years.

4) The uncertainties arise when it comes to the interaction between greenhouse gases and other factors in the complicated climate system. It is impossible to be sure exactly how quickly or how much the temperature will rise. But, the past can be measured. The temperature has indeed steadily risen over the past century while greenhouse gas levels have increased. But the forecasts still range very widely for what will happen in the future, ranging from a small but still potentially harmful rise of 1 to 2 degrees Fahrenheit to a potentially disastrous level of +6 to +10 degrees Fahrenheit within this century. A warmer atmosphere melts glaciers and ice sheets, and causes global sea levels to rise. A warmer atmosphere also contains more energy and holds more water, changing the global occurrences of storms, floods, and other extreme weather events.

5) Skeptics argue that this wide range of uncertainty about future temperature changes lowers the need to act: "Why spend money when you're not certain?" But since the penalties can rise at an accelerating rate at the tail, a wider range implies a greater risk (and a greater expected value of the costs.) This is logically and mathematically rigorous and yet is still argued.

6) Pascal asks the question: What is the expected value of a very small chance of an infinite loss? And, he answers, "Infinite." In this example, what is the cost of lowering CO_2 output and having the long-term effect of increasing CO_2 turn out to be nominal? The cost appears to be equal to foregoing, once in your life, six months' to one year's global growth – 2% to 4% or less. The benefits, even with no warming, include: energy independence from the Middle East; more jobs, since wind and solar power and increased efficiency are more labor-intensive than another coal-fired power plant; less pollution of streams and air; and an early leadership role for the U.S. in industries that will inevitably become important. Conversely, what are the costs of not acting on prevention when the results turn out to be serious: costs that may dwarf those for prevention; and probable political destabilization from droughts, famine, mass migrations, and even war. And, to Pascal's real point, what might be the cost at the very extreme end of the distribution: definitely life changing, possibly life threatening.

7) The biggest cost of all from global warming is likely to be the accumulated loss of biodiversity. This features nowhere in economic cost-benefit analysis because, not surprisingly, it is hard to put a price on that which is priceless.

8) A special word on the right-leaning think tanks: As libertarians, they abhor the need for government spending or even governmental leadership, which in their opinion is best left to private enterprise. In general, this may be an excellent idea. But global warming is a classic tragedy of the commons – seeking your own individual advantage, for once, does not lead to the common good, and the problem desperately needs government leadership and regulation. Sensing this, these think tanks have allowed their drive for desirable policy to trump science. Not a good idea.

9) Also, I should make a brief note to my own group – die hard contrarians. Dear fellow contrarians, I know the majority is usually wrong in the behavioral jungle of the stock market. And Heaven knows I have seen the soft scientists who lead finance theory attempt to bully their way to a uniform acceptance of the bankrupt theory of rational expectations and market efficiency. But climate warming involves hard science. The two most prestigious bastions of hard science are the National Academy in the U.S. and the Royal Society in the U.K., to which Isaac Newton and the rest of that huge 18th century cohort of brilliant scientists belonged. The presidents of both societies wrote a note recently, emphasizing the seriousness of the climate problem and that it was man-made. (See the attachment to last quarter's *Letter*.) Both societies have also made full reports on behalf of their membership stating the same. Do we believe the whole elite of science is in a conspiracy? At some point in the development of a scientific truth, contrarians risk becoming flat earthers.

10) Conspiracy theorists claim to believe that global warming is a carefully constructed hoax driven by scientists desperate for … what? Being needled by nonscientific newspaper reports, by blogs, and by right-wing politicians and think tanks? Most hard scientists hate themselves or their colleagues for being in the news. Being a climate scientist spokesman has already become a hindrance to an academic career, including tenure. I have a much simpler but plausible "conspiracy theory": that fossil energy companies, driven by the need to protect hundreds of billions of dollars of profits, encourage obfuscation of the inconvenient scientific results.

11) Why are we arguing the issue? Challenging vested interests as powerful as the oil and coal lobbies was never going to be easy. Scientists are not naturally aggressive defenders of arguments. In short, they are conservatives by training: never, ever risk overstating your ideas. The skeptics are far, far more determined and expert propagandists to boot. They are also well funded. That smoking caused cancer was obfuscated deliberately and effectively for 20 years at a cost of hundreds of thousands of extra deaths. We know that for certain now, yet those who caused this fatal delay have never been held accountable. The profits of the oil and coal industry make tobacco's resources look like a rounding error. In some notable cases, the obfuscators of global warming actually use the same "experts" as the tobacco industry did! The obfuscators' simple and direct motivation – making money in the near term, which anyone can relate to – combined with their resources and, as it turns out, propaganda talents, have meant that we are arguing the science long after it has been nailed down. I, for one, admire them for their P.R. skills, while wondering, as always: "Have they no grandchildren?"

12) Almost no one wants to change. The long-established status quo is very comfortable, and we are used to its deficiencies. But for this problem we must change. This is never easy.

13) Almost everyone wants to hear good news. They want to believe that dangerous global warming is a hoax. They, therefore, desperately want to believe the skeptics. This is a problem for all of us.

Postscript

Global warming will be the most important investment issue for the foreseeable future. But how to make money around this issue in the next few years is not yet clear to me. In a fast-moving field rife with treacherous politics, there will be many failures. Marketing a "climate" fund would be much easier than outperforming with it.

5 "Seven Lean Years" Revisited

The idea behind "seven lean years" is that it is unrealistic to expect to overcome the several problems facing most developed countries, including the U.S., in fewer than several years. The purpose of this section is to review the negatives that are likely to hamper the global developed economy, especially from the viewpoint of how much time may be involved.

First, one of the causes of the financial crisis was the over-indebtedness of consumers in certain countries, including the U.S., the U.K., and several European countries. As of today, although they have stopped increasing consumer debt – which itself is unprecedented and has eaten into consumption – the total improvement in personal debt levels is still minimal. It would take at least seven years of steady reduction to reach a more normal level. Anything more rapid than this would make it nearly impossible for the economy to grow anywhere near its normal rate or, perhaps, at all.

There is in the situation today a nerve-wracking creative tension. At one extreme, massive stimulus induces government debt to rise to levels that cause a real problem in servicing the debt – interest and repayment – or at least a crisis of confidence. At the other extreme, a draconian attempt to hold debt levels while the economy is still fragile runs the risk of causing a severe secondary economic decline. Deciding which horn of this dilemma to favor will probably prove to be the central economic policy choice of our time. I am sympathetic to those in power. This is not an easy choice. My guess, though, is that the best course is less debt reduction now and a longer, slower reduction later. Overdoing it now may well cause an economic setback for an already tender and vulnerable global economy that might easily be enough to more than undo all of the benefits of debt reduction. Indeed, with a weaker economy leading to lower government income, it might sadly cause debt levels to rise after all. This need for time to cure all ills is one reason why I picked a seven-lean-year recovery over a more normal and rapid one. The bad news, though, is that in the end, by hook or by crook, debt levels must be lowered at every level, especially governmental. There is almost no way that this process will be pleasant or quick.

Second, and the most immediately frightening aspect of the seven-lean-year scenario, is that although the credit crisis was caused by too much credit on too sloppy a basis, the cure was to increase aggregate debt by flooding economies with government debt. Dangerously excessive financial system debt was moved across, with additions, to become dangerously excessive government debt, with levels of debt to GDP not seen outside of major wars, and seldom then. Increasingly the "cure" seems more like a stay of execution. With bank crises, there is the backstop of the central government. For minor countries, the IMF may be a net help, but for major countries in trouble, the IMF seems outgunned and, if several major countries have a debt crisis simultaneously, the IMF is clearly irrelevant.

Third, we have lost a series of artificial stimuli that came out of the steady increases in debt levels and the related asset bubbles. For example, the artificial lift to consumers' attitudes resulting from steadily rising house prices is unlikely to return soon. In fact, some further price decline in house prices in the U.S. is probably more than a 50/50 bet, and in the U.K. and Australia is nearly certain. For sure, that feeling of supreme confidence – counting on the inevitability of further steady rises in house prices, which was baked into average U.S. opinion by 2006 (including Bernanke's, unfortunately) – is long gone. The direct shot in the arm to the economy from the rise in economic activity from an abnormally high rate of home construction and the services associated with an abnormally high turnover rate of existing houses (more realtors, etc.) is also a distant memory here. So the stimulus from rising prices has gone, and stock prices, although they have made a strong recovery everywhere in the developed world, are still way down from their highs of 10 years ago and, notably in the U.S., are still overpriced. Both the market and house price declines have also reduced confidence in the nest eggs that people felt they could count on for retirement as well as a little more spending on the way there. Now consumers are readjusting to a greater need to save and, perhaps unfortunately, a greater need to work longer. Unprecedentedly, they are paying down some consumer debt. These changed attitudes will surely last for years.

Fourth, although the financial system has passed its point of maximum stress in the U.S., very bad things may lie ahead in Europe. And the leverage in the system and the chances of further write-downs (yet more housing defaults and private equity write-downs, for example) leave banks undercapitalized and reluctant to lend. Any more shoes

dropping here or in Europe, or elsewhere for that matter, will tend to keep them nervous. The growth in the total U.S. GDP caused by previous rapid increases in the size of the financial sector has also disappeared, and with any luck will stay disappeared, for it was not healthy growth in my opinion.

Fifth, the runaway costs in the public sector, particularly at the state and city levels, where average salaries and pensions ran far above private sector equivalents in a mere 15 years (why, that would make a good report by itself!), have run into a brick wall of reduced taxes. State and other municipalities are incredibly dependent on real estate taxes, which are down over 30% from falling real estate prices and defaults, and also on capital gains rates, which have been hit by falling asset prices generally. Their legal need to stay balanced is leading to painful cost cutting, which in turn puts pressure on an economy that is coming to the end of much of the stimulus. With many of the artificial stimuli of the '90s and 2000s gone, their revenues are unlikely to bounce back in one or two years, and a double-dip in the economy or new asset price declines would move their recovery back further.

Sixth, unemployment is high and will also suffer from the loss of those kickers related to asset bubbles. The U.S. economy appears to have an oddly hard time producing enough jobs to get ahead of the natural yearly increases in the workforce. (At least for a while, one long-term economic drag – slowing longer-term growth of the U.S. labor force – becomes an intermediate-term help in reducing unemployment, but beyond five years, it too will work to reduce GDP growth, as it has already done in the last 10 years.) Needless to say, unemployment works to keep consumer confidence and, hence, corporate willingness to invest, below normal.

Seventh, another longer-term problem for the global economy is trade imbalances. The U.S. in particular cannot continue to run large trade imbalances. In a world growing nervous about the quality of sovereign debt – even that of the U.S. – domestic sovereign debt levels have exploded. The added complication and threat to the dollar from accumulating <u>foreign</u> debts just adds risk and doubts to the system. This is similar to the accumulating surpluses of the Chinese. Imbalances destabilize the system. The trick, though, is to reduce these imbalances so that the process does not reduce global growth. This necessary rebalancing will not be quick or easy.

Eighth, there is a related but different problem with the euro: incompetent management in Spain, Greece, Portugal, Ireland, and Italy allowed the local competitiveness of their manufactured goods to become 20% or more uncompetitive with those of Germany. It was never going to be an easy matter to head this process off, and doing so would have taken some tough actions with uncomfortable short-term consequences. But they could see the problem building up like clockwork at about 2% to 3% a year, year after year. This did not result from the banking crisis, and it was never going to be easy to solve with a fixed currency. The difficulty was implicit in the structure of the euro from the beginning. Indeed, my friend and former partner, Paul Woolley,* believed, and let everyone know it, that from day one this was a fatal flaw nearly certain to bring the euro down under stress. But one might have hoped for better evasive action or better survival instincts.

Greece in particular has two largely independent problems. First, it has approximately 22% overpriced labor (complete with 14 months' salary and retirement in one's 50s), which can only be cured by reducing their pay by 22%. This would be tough for any government that does not have an exceptionally well-established social contract – a commitment from individuals that they have obligations to help the whole society to prosper or, in this case, muddle through. The Greeks probably do not have it. Perhaps the U.S. does not either. Would we take being told that ordinary workers would have to earn 22% less when there are so many other people to blame for our current problems? The Japanese, in contrast, probably do, but may well have other offsetting disadvantages.

The second problem for the Greeks is that they have accumulated too many government debts relative to their ability to pay and, as the doubts rise, so do the rates they must pay such that their ability to pay falls and the doubts rise further. Temporary bailouts are postponements of a necessary restructuring. Should the system get out of control, there is the problem of the Greek debt that is stuffed into other European banks. (My colleague, Edward Chancellor, is writing on this topic.) I merely want to make the point that these twin Greek problems, which affect, to varying

* Paul Woolley started a center for the study of "Capital Market Dysfunctionality" at the London School of Economics.

intensity, the other PIGS, have become an intrinsic part of the "seven lean years," more or less guaranteeing slower than normal GDP growth and a long workout period.

Ninth, the general rising levels of sovereign debt and the particular problems facing the euro bloc and Japan are leading to the systematic loss of confidence in our faith-based currencies. It is becoming a fragile system that will increasingly limit governments' choices in terms of dealing with low growth and excessive credit.

Finally, and possibly most important of all, on a long horizon there is a very long-term problem that will overlap with the seven-year workout and make the period even tougher: widespread over-commitments to pensions and health benefits, which is covered in the next section.

6 Aging Populations, Pensions, and Health Costs

The populations of the developed world are getting older and, as they age, they need more medical attention. The march of medical science means that an increasing number of expensive helpful treatments are available. The problem is that they are mostly very expensive and only a little bit helpful. Yet it is hard to limit or ration their use. A symptom of this is that almost 25% of total medical expenses occur in the last year of life, while equivalent spending in prenatal and child care would yield multiples of the payoff to society. Understandably, perhaps people of my age and older are very sensitive to this kind of talk and chants of "death panels" easily arise. The result is that total medical costs rise rapidly, and in the U.S. are handsomely in first place globally, with the percentage of GDP going to medical care at one-third more than the average developed country. With progress in the study of the human genome, we will soon see breathtakingly expensive ways to reduce the incidence of very rare diseases and much more that will be hard to ration or resist. And a great leap in life extension drugs – perhaps rapamycin – although desirable (where can I buy it?) would result in a terrible extension of the age profile problem.

The plain truth is becoming more obvious by the minute. Almost all developed countries are overcommitted to retirement benefits, especially health care. Even without severe aging problems, health costs alone would be a major economic challenge. With an aging population, though, health costs and retirement costs balloon and put an intolerable burden on younger workers. We in developed countries are on a collision course with budgetary integrity: given our current policies on health costs we simply cannot afford the commitments we have made. We all face the choice of reneging or rewriting the social contract. Such rewriting in the U.S. would require a substantially higher level of taxes, approaching the current rates in Europe – oh base and villainous thought!

In the developed world, which choice is made will depend on the country's history and on the strength of its concept of the social contract: how much personal disadvantage is the individual willing to accept in the interest of the social good? The U.S., like most countries, has been brilliant in this area on occasion, but these occasions were only during major wars. Outside of wars, the culture is more like the individual *über alles* and the devil take the hindmost. Japan is always amazing at the other extreme (although finally social cohesion is starting to fray a little), and European countries are somewhere in between, with the Scandinavian countries close to the Japanese level and Greece and some other Mediterranean countries more like the U.S. Under current stresses, the Europeans seem ready to extend the retirement age (never waste a good crisis!), which can fairly be seen as involving a degree of reneging, received with varying degrees of kicking and screaming. Clearly, almost everywhere people will end up working into their late 60s until the baby-bust works its way through the population profile and in 40 years or so begins to be less painful. On average, European countries will also be better than the U.S. at rationing health costs, which of course in the end must be done. The U.K. may have exceptional credit problems, relatively low productivity, and a vulnerable and bloated financial sector, but it does start with huge advantages in this area. It has promised less to retirees and is more advanced in the reasonable rationing of health costs – not that its population likes either development!

This brings us to the U.S. Here the possibility of rationing health benefits to the level society is willing to pay is so anathema that it cannot be talked about sensibly and, if at all, the language must be tortured in order to talk around

the point. Our culture demands the best that money can buy, combined with unlimited legal liability (courtesy of the legal lobby and all those lovely lawyers in Congress), and friendly conditions for the drug and insurance industries (courtesy also of their effective lobbies). Nobody gets treated badly except, of course, the ordinary user. That is to say, the ordinary taxpayer, who pays a third more for mediocre or worse aggregate health results, lower life expectancy, etc., etc., etc. Yes, I know for the very rich it is said to be the best system in the world. Yet I am rich, and have had less than brilliant experiences recently with a tiny country tick running rings around the medical industry. And never get sick during vacation season. "Dr X is fishing in Alaska so your call will be forwarded to Dr. Y, who is scuba diving in Grand Cayman. Click." Anecdotal evidence. Heresy. Strike it from the record!

Our cost-laden health system is perhaps fine if you are willing to pay for it. But the same people who scream "death panels" at the concept of sensible rationing also reach for their revolvers, of which they insist on having plenty, at the prospect of having a tax structure nearer the average of the rest of the rich world. Now, this is a non-compute. It has to be one or the other, either rationing or taxes. Presumably we will hunker down, wait for a crisis, and then respond. (To be fair, we did modestly extend the age to receive Social Security and I, for one, had to wait an extra four months. Rage, rage.) In my opinion, this refusal to make painful choices puts the U.S. fairly high up the list of countries with longer-term financial problems. Japan, perversely, has a much worse population profile and has had a terrible 20 years, yet with its social cohesion should still dig its way through these choices and agree to pay the inevitable, very high prices more easily.

A Time-out on Pension Logic

This is a good opportunity to make some points on pensions. The only way that pensions can be paid is out of the current year's GDP – the total output of new goods and new services. You cannot materially move resources to pay pensioners through time. Sure, you can store a few tins of beef and carrots in the basement. This is indeed preparing for the future, but it is by its very nature a rounding error in total scale. I suppose you could build an extra supply of houses, more than you currently need, in order to prepay future bills, but empty houses have a poor return on investment and deteriorate, as we are finding out now, for completely different reasons. No. Every bus ride, every full grocery bag, every TV set, and every doctor's visit for a pensioner comes out of this year's GDP pie just as it does for a young worker. All that accumulated financial wealth does is shuffle the accounting claims to determine the pecking order: in the end, everyone needs to derive a life-support system from the current GDP. In this sense, a pay-as-you-go pension fund like Germany's is merely admitting the obvious. When you have an aging population mix, more of the current year's GDP pie will be eaten by retirees and less by younger workers, and nothing you do can materially change this fact.

So what can you do to prepare even modestly for a shift in population mix? I believe that there are two useful steps that can be taken, or could have been.

Step 1. You can make sure that the infrastructure is as up-to-date as it can possibly be to minimize any unnecessary load on future workers and taxpayers so that no unnecessary maintenance costs have to be paid. In such a sensible world, the roads and bridges are sparklingly well maintained, with many of them new. The schools, water, and energy transmitting systems are as modern and efficient as can be. Obviously, we have totally failed on Step 1. We have not even discussed that our aging population makes this policy extremely desirable. We enter the new difficult world of an aging population profile perhaps as badly prepared as possible, with huge unpaid maintenance bills, the worst in modern times. Our infrastructure is sadly neglected even by our own earlier standards, with poor public transportation, decrepit bridges, etc., etc., etc. It's as if we expected a great and immediate increase in the worker bee percentages, which is the complete opposite of reality.

Step 2. We can pay down all future debts to further ease the problem of the squeezed 30-year period that we know we face. Here again, we enter our trickiest period, with record Federal Debt heaping additional claims onto the future. Not content with having the reduced percentage of workers carrying proportionately more retirees, we have needlessly loaded them with our routine current expenditures so that they – the working taxpayers – will have to add unnecessarily high interest and debt repayments to their future load.

Both steps are completely the reverse of what is needed. What a testimonial to the shortsightedness of both today's and yesterday's politicians. And to be fair, let it be said that long before Obama was a gleam in the eye, no conversations at all were heard on the prudent preparation that this aging population problem desperately required. Congress has played the part of the carefree, unprepared grasshopper perfectly.

Summary

Parts 5 and 6 present a heart-breakingly long list of problems. Some of them stem directly from the recent financial and economic crisis. Some of them draw their importance from bad habits built up in the last 30 years, in what we might call the post-Volcker period. The huge issue of the aging population cannot be blamed on policy, but we can agree that it was an obvious and certain future event, and therefore could have been prepared for.

One group of problems draws a lot of its potency from an overgrown, reckless, and greedy financial system. But all of them owe too much to a common cause: an inadequate supply of wise long-term planning by our leadership in Congress and the rest of government. One of our central problems in investing and in economics in general is our default assumption that "they" (the government) know what they are doing. Unfortunately, nothing could be further from the truth. As investors, we may not have any effective cures up our sleeve other than lobbying ourselves for specific improvements, like the Volcker rule, one by one. We will, however, be generally better investors if we recognize the worst and refuse to live in a fool's paradise.

Just over a year ago, I speculated that where we had formally aspired as developed countries to a growth rate of 3.5%, we would now be doing well to reach 2.25% for the next seven years. Fifteen months later, I think we will be lucky to reach 2%.

Disclaimer: The views expressed are the views of Jeremy Grantham through the period ending July 20, 2010, and are subject to change at any time based on market and other conditions. This is not an offer or solicitation for the purchase or sale of any security and should not be construed as such. References to specific securities and issuers are for illustrative purposes only and are not intended to be, and should not be interpreted as, recommendations to purchase or sell such securities.

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GMO

QUARTERLY LETTER

October 2010

Jeremy Grantham

NIGHT OF THE LIVING FED

something unbelievably terrifying

RUNAWAY COMMODITIES !

BANKS COME BACK TO LIFE !

HOMES DESTROYED !

FAMILIES EVICTED !

CURRENCY WARS !

Starring BEN BERNANKE

and Introducing JANET YELLEN

with Guest Appearance as Chief Zombie ALAN GREENSPAN

The Ruinous Cost of Fed Manipulation of Asset Prices

My diatribe against the Fed's policies of the last 15 years became, by degrees, rather long and complicated. So to make it easier to follow, a summary precedes the longer argument. (For an earlier attack on the Fed, see "Feet of Clay" in my 3Q 2002 *Quarterly Letter.*)

Purpose

If I were a benevolent dictator, I would strip the Fed of its obligation to worry about the economy and ask it to limit its meddling to attempting to manage inflation. Better yet, I would limit its activities to making sure that the economy had a suitable amount of liquidity to function normally. Further, I would force it to swear off manipulating asset prices through artificially low rates and asymmetric promises of help in tough times – the Greenspan/Bernanke put. It would be a better, simpler, and less dangerous world, although one much less exciting for us students of bubbles. Only by

hammering away at its giant past mistakes as well as its dangerous current policy can we hope to generate enough awareness by 2014: Bernanke's next scheduled reappointment hearing.

To Summarize

1) Long-term data suggests that higher debt levels are not correlated with higher GDP growth rates.

2) Therefore, lowering rates to encourage more debt is useless at the second derivative level.

3) Lower rates, however, certainly do encourage speculation in markets and produce higher-priced and therefore less rewarding investments, which tilt markets toward the speculative end. Sustained higher prices mislead consumers and budgets alike.

4) Our new Presidential Cycle data also shows no measurable economic benefits in Year 3, yet point to a striking market and speculative stock effect. This effect goes back to FDR, and is felt all around the world.

5) It seems certain that the Fed is aware that low rates and moral hazard encourage higher asset prices and increased speculation, and that higher asset prices have a beneficial short-term impact on the economy, mainly through the wealth effect. It is also probable that the Fed knows that the other direct effects of monetary policy on the economy are negligible.

6) It seems certain that the Fed uses this type of stimulus to help the recovery from even mild recessions, which might be healthier in the long-term for the economy to accept.

7) The Fed, both now and under Greenspan, expressed no concern with the later stages of investment bubbles. This sets up a much-increased probability of bubbles forming and breaking, always dangerous events. Even as much of the rest of the world expresses concern with asset bubbles, Bernanke expresses none. (Yellen to the rescue?)

8) The economic stimulus of higher asset prices, mild in the case of stocks and intense in the case of houses, is in any case all given back with interest as bubbles break and even overcorrect, causing intense financial and economic pain.

9) Persistently over-stimulated asset prices seduce states, municipalities, endowments, and pension funds into assuming unrealistic return assumptions, which can and have caused financial crises as asset prices revert back to replacement cost or below.

10) Artificially high asset prices also encourage misallocation of resources, as epitomized in the dotcom and fiber optic cable booms of 1999, and the overbuilding of houses from 2005 through 2007.

11) Housing is much more dangerous to mess with than stocks, as houses are more broadly owned, more easily borrowed against, and seen as a more stable asset. Consequently, the wealth effect is greater.

12) More importantly, house prices, unlike equities, have a direct effect on the economy by stimulating overbuilding. By 2007, overbuilding employed about 1 million additional, mostly lightly skilled, people, not counting the associated stimulus from housing-related purchases.

13) This increment of employment probably masked a structural increase in unemployment between 2002 and 2007, which was likely caused by global trade developments. With the housing bust, construction fell below normal and revealed this large increment in structural unemployment. Since these particular jobs may not come back, even in 10 years, this problem may call for retraining or special incentives.

14) Housing busts also help to partly freeze the movement of labor; people are reluctant to move if they have negative house equity. The lesson here is: Do not mess with housing!

15) Lower rates always transfer wealth from retirees (debt owners) to corporations (debt for expansion, theoretically) and the financial industry. This time, there are more retirees and the pain is greater, and corporations are notably avoiding capital spending and, therefore, the benefits are reduced. It is likely that there is no net benefit to artificially low rates.

16) Quantitative easing is likely to turn out to be an even more desperate maneuver than the typical low rate policy. Importantly, by increasing inflation fears, this easing has sent the dollar down and commodity prices up.

17) Weakening the dollar and being seen as certain to do that increases the chances of currency friction, which could spiral out of control.

18) In almost every respect, adhering to a policy of low rates, employing quantitative easing, deliberately stimulating asset prices, ignoring the consequences of bubbles breaking, and displaying a complete refusal to learn from experience has left Fed policy as a large net negative to the production of a healthy, stable economy with strong employment.

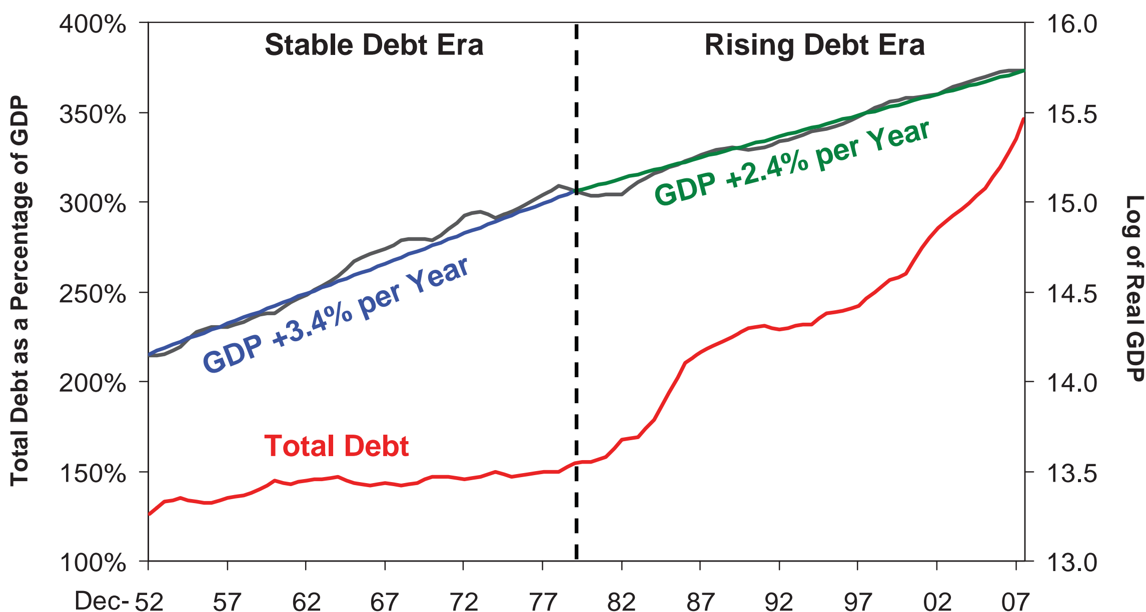
The Effect of Debt on Long-term Growth

My heretical view is that debt doesn't matter all that much to long-term growth rates. What I owe you, and you owe Fred, and Fred owes me is not very important; on the positive side, all it can do is move demand forward a few weeks and then give it back later. This is the paper world. It is, in an important sense, not the real world. In the real world, growth depends on real factors: the quality and quantity of education, work ethic, population profile, the quality and quantity of existing plant and equipment, business organization, the quality of public leadership (especially from the Fed in the U.S.), and the quality (not quantity) of existing regulations and the degree of enforcement. If you really want to worry about growth, you should be concerned about sliding education standards and an aging population. All of the real power of debt is negative: it can gum up the works in a liquidity/solvency crisis and freeze the economy for quite a while.

On this topic, take another look at Exhibit 1, my personal favorite. What a powerful and noble experiment! We tripled debt to GDP ratio over 28 years, and yet GDP growth slowed! And it slowed increasingly, especially after 2000. The 3.4% trend line had been intact for over 100 years, from 1880 to 1982. From this data it is possible to hope that the decline in GDP would have been even worse if we had not been wallowing in debt. But I believe it probably suggests that there is no long-term connection between debt and GDP growth. After all, the last 10 to 15 years have revealed some great reasons for GDP growth to be stronger than average, not weaker: the growth rate of emerging countries helped along by the collapse of communism and the moderate de-bureaucratization of India, the ensuing explosion of world trade, and a claimed surge in productivity from the rapid developments of the internet and cell phone technology

Exhibit 1

Debt Does Not Create Growth!



Source: Federal Reserve, Global Financial Data As of 6/30/08

in particular. Given the above, there is little or no room for higher debt levels to provide a net benefit to economic growth. Therefore, artificially low interest rates must also be of insignificant help to long-term growth, for its main role in stimulating growth is to encourage more debt. After all, a lower rate hurts the lenders exactly as much as it helps the borrowers. The debt expansion, though, was great for financial industry profits: more debt instruments to put together, to sell, and to maintain. Not to mention all of those debt officers to pay for and charge for, and all of that increased debt for investment managers to manage. Thus, the role of finance grew far beyond its point of usefulness. (See "Finance Goes Rogue" in last quarter's *Letter*.)

The Effect of Subsidized Rates and the Economy on Financial Markets

But subsidized debt – debt at manipulated rates – in contrast to normal debt at market clearing prices, has a large, profound, and dangerously distorting effect on market prices. The Presidential Cycle, which I have often talked about, shows most clearly how hard it is to move the real economy with low rates and moral hazard, and how easy it is to influence speculation and market prices. Table 1 shows the data for growth in GDP and employment in Year 3 of the Cycle: it is completely normal, not above average at all.

The economic response to the extra market move of 18.5% in Year 3 occurs in Year 4, just when it is needed politically. It shows a reasonable 0.6% increase in GDP, a 0.5% gain in consumption, and a 0.3% drop in unemployment. This last item, by the way, is the only thing we have ever found that actually moves the vote. This 0.6% effect for GDP, though, is almost exactly what could be expected from the wealth effect on its own, leaving no room in the data for Fed stimulus (or fiscal stimulus, for that matter) to have had any other economic effect in Year 4. This can be tested by looking at all of the best 12-month market moves, excluding Year 3s, which have a cut-off just 3.5 percentage points per year better than the Year 3 performance (22% versus 18.5% above average). These moves are followed by an extra 0.8% GDP the following year – a very similar relationship to that between Years 3 and 4. It is reasonable to conclude from this data that the Fed was able to move the market a lot in Year 3, but that the wealth effect associated with these moves was the only effect on fundamental growth. As a footnote, we can conclude that the stock market wealth effect here works out to about 3% of increased wealth, which is compatible with most academic studies. (Please note that this 3% number includes one cycle of house price wealth effect over the 50 years, and so is moderately overstated.)

In contrast, Exhibit 2 reminds us of the remarkably large effect that low rates and the Greenspan-Bernanke put have on speculation in Year 3, both in raising the broad market and, not surprisingly, on lifting the speculative quarter of the market even more. Exhibit 3 reminds us of the substantial Fed effect all around the world. Never fight the Fed about market prices or underestimate its global reach. The U.K. stock market has been more responsive to the U.S.'s Year 3 stimulus than the U.S. market has itself. It shows Britain in its true colors: half a hedge fund and half the 51st state. How humiliating!

Table 1

Presidential Cycle Effects on Real Economy: None in Year 3, Some in Year 4

The Year 3 Effect Moves Market but not Economy	
Year 3 Compared to Average	
Average Change in Unemployment	+0.15 %
Average Real GDP Growth	-0.3 %
Average Real Personal Consumption Growth	-0.2 %
Average Stock Market Real Return	+17.6 %
Average Change in Fed Funds	-0.56 %

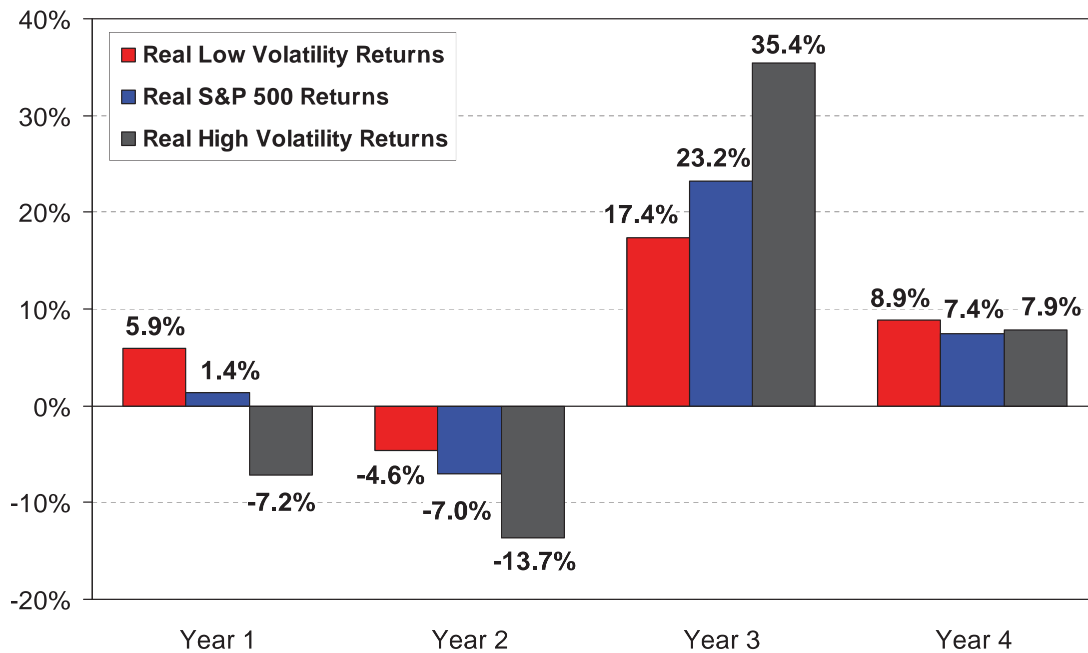
Year 3 Stock Moves Affect Year 4 Economy	
Year 4 Compared to Average	
Average Change in Unemployment	-0.26 %
Average Real GDP Growth	+0.6 %
Average Real Personal Consumption Growth	+0.5 %
Average Stock Market Real Return	+1.7 %
Average Change in Fed Funds	+0.26 %

Source: S&P, BLS, Federal Reserve *Data from 1/1/64 to 12/31/07*

Exhibit 2

WOW … (It's Year 3 Market Moves that Affect Year 4 Economy)

Presidential Cycle 1964-2007

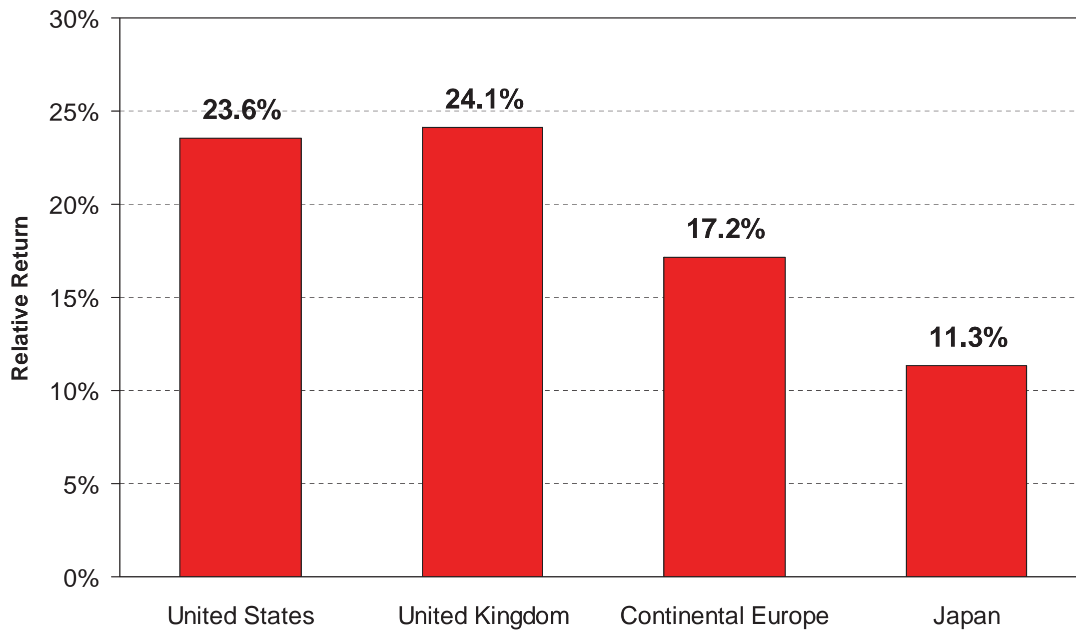


Source: Global Financial Data, GMO As of 12/31/07

Exhibit 3

Never Underestimate the Fed's Global Reach!

Third year of local markets relative to their average: 1964-2010



Source: Global Financial Data As of 9/30/10

Greenspan and Bernanke Learn How to Stimulate Stock Markets

Here the plot thickens, for I suspect that Greenspan and Bernanke know this: that their only decent tool to help the economy is to move the market. They know, as we have also deduced, that the market is far more sensitive to monetary factors than is the real economy. "Monetary policy works for the most part by influencing the prices and yields of

financial assets, which in turn affect economic decisions and thus the evolution of the economy" (Bernanke, May 2004, *American Economic Review*). If you believe this, then goosing the market deliberately is a useful short-term tool for getting traction in difficult economic times, such as those following a severe financial crash or even a normal cyclical contraction.

Unfortunately for us, as the economy recovers and the artificially stimulated market gets up a nice head of steam, the Greenspan-Bernanke team officially loses interest, emphatically and repeatedly denying any interest in, or responsibility for, curtailing their latest experiment in market manipulation. And manipulation is exactly what it is. They express uncertainty that a bubble could even exist. Who am I, argued Greenspan, to disagree with the opinions "of tens of thousands of well informed investors?" They both imply or state outright that markets are overwhelmingly efficient, yet they themselves manipulate the prices to help in the recovery from a recession! How are we to interpret these contradictions? As distortions of their true beliefs, or as sloppy thinking revealed? Whichever it is, we have discovered twice in a decade, and may discover again in a year or two, that this asymmetric policy of stimulating stock moves by setting artificially low rates and then leaving the bull markets, when overstimulated, to bubble over, is dangerous. It is probably the most dangerous thing to inflict on a peacetime economy with two possible exceptions – runaway inflation and a housing bubble. So, not only have these two Fed bosses been almost criminally inept in ignoring stock bubbles, they have also deliberately instigated them as a policy tool! Since we continue to be at Bernanke's mercy and Greenspan's spirit is still alive and well, could things be much worse?

Messing with Housing Is More Dangerous than Messing with Stocks

Well, yes, they could be worse. For the same technique that encourages equity markets (and especially speculation) also encourages housing prices. The housing market is much, much more dangerous to mess with than stocks, as is clearly illustrated by the Greenspan-instigated remarkable and disastrous housing bubble of 2002-06. Housing is always likely to have a larger effect on consumption than stocks for many reasons: for one, higher house prices used to feel permanent, while those for stocks were uncertain. Borrowing against house values has always been more appealing for other reasons: it is easier and usually cheaper to withdraw equity or increase leverage, and is not subject to margin calls. This housing cycle, of course, was exceptional in that borrowing against increased house values was rendered effortless and was actively encouraged by parts of the financial industry. The latter was done with such "success" that at the very peak of the first-ever housing bubble in the U.S., with prices up 60% in four years and 100% in seven years, borrowing against house values reached a record 50% of the total new inflated value. Rising house prices were initially a potent boost to the economy, but later became a lethal weapon. It was just possible that the housing bubble was incidental to the deliberate attempt by Greenspan to encourage higher stock prices, and it may have been unexpected, but the evidence suggests otherwise. As early as 2001, Greenspan was practically bragging about the help that rising house prices was delivering to the wounded economy. Yet, to further confuse the issues, while Greenspan later began to see "extreme speculation" in some housing markets, Bernanke remained unconvinced, claiming not to see a problem even as house prices in 2006 hit the 100-year flood level. "It largely reflects the strong U.S. economy." That was it. And, after all, not to worry, for "U.S. house prices have never declined." Thus, with a closed mind, he seemed to completely ignore the extreme sensitivity of the economy to housing, and this mistake brought us, and most of the developed world, to our knees. It was a direct outcome of a policy that is clearly still in place.

House prices may often not be susceptible to manipulation. Low interest rates may not be enough: they may stimulate hedge fund managers to speculate in stocks, but most ordinary homeowners are not interested in speculating. To stir up enough speculators to move house prices, we needed a series of changes, starting with increasing the percentage of the population that could buy a house. This took ingenuity on two fronts: overstating income and reducing down payment requirements, ideally to nil. This took extremely sloppy loan standards and virtually no data verification. This, in turn, took a warped incentive program that offered great rewards for quantity rather than quality, and a corporation overeager, with aggressive accounting, to book profits immediately. It also needed a much larger, and therefore new, market in which to place these low-grade mortgages. This took ingenious new packages and tranches that made checking the details nearly impossible, even if one wanted to. It took, critically, the Fed Manipulated Prices to drive

global rates down. Even more importantly, it needed the global risk premium for everything to hit world record low levels so that suddenly formerly staid European, and even Asian, institutions were reaching for risk to get a few basis points more interest. Such an environment is possible only if there exists an institution with a truly global reach and a commitment to drive asset prices up. In the U.S. Fed, under the Greenspan-Bernanke regime, just such an institution was ready and willing.

The Wealth Effect of Housing

The effects of house price increases on consumption have been hard to measure. First, prior to 2000, nationwide house prices had never risen materially, so there is no good historical data. Second, if such a rise stimulates a surge in home building and an accelerated turnover of houses, it is impossible to separate this direct stimulus from the wealth effect. But based on a sample of one in the U.S. and a few overseas, we can conclude that the stimulus effect from a house price rise is somewhat greater than for stocks if the boom is not accompanied by a house building surge (as in the U.K. and Australia), and far greater if there is such a surge (as in Ireland, Spain, and the U.S.). The direct effect for stocks and houses is usually calculated as being between 2.5% and 5%, meaning that up to 5% of the new wealth is used for increased spending in the next several years. (Our research suggests the lower end of the range.) The increased facilities to withdraw capital from housing in the U.S. almost certainly made it a bigger effect than normal, and one that was more rapidly delivered.

The Stimulus to Home Building from Rising Prices

What makes a rise in house prices so dangerous, however, is that it can cause a great surge in home building. Recently in the U.S., home construction rose to 1 million more houses per year than trend line average. As far as we can tell, this increase led directly to a 1.5% jump in the workforce. With the related surge in realtors, mortgage brokers, and bankers, let's say that number is closer to 2%. There was also the extra stimulus that more rapid house turnover delivered for household furnishings and appliances. A formidable total.

We can deduce that without this burst of extra employment from increased home building activity, unemployment between 2003 and 2007 would have been even higher. It is a reasonable deduction that the beginnings of a structural problem with the population of mid- and lower-skilled workers would have been revealed had it not been for the abnormal level of house building. The "jobless recovery" would have been seen back then as a crisis.

When the housing boom inevitably ended, all of these temporary advantages were given back with interest. House construction dropped to just above half normal, delivering almost by definition a greater than 2% increment to unemployment. The bad news is that the jobs related to abnormally high house building will not, of course, reappear for some time, perhaps not for 10 or 20 years. Or even longer. Completely new jobs must be found for this small army of the housing-related unemployed.

To make a bad situation worse, the housing bust has badly reduced the free flow of labor across state lines, which is now at the lowest percentage ever recorded. Labor mobility is particularly necessary when unemployment is as high as it is now. But with positive equity in houses suddenly having turned into negative equity, and with some hope (justified or not) that housing prices may recover, many of the unemployed and others will simply not move.

Inflated Asset Prices Cause Faulty Budgeting

Compared to the huge effect that higher house prices had on the economy from 2001 to 2006, the effect of rising stock prices was probably quite mild. But together, they had a powerful destabilizing effect on tax revenues, first inflating them and then crushing them as prices fell. The Federal government, with its unique right to print money, could counter this effect and smooth it out, albeit at the cost of adding to other longer-term problems. But state and local governments were left – and remain today – high and dry. Their loss of capital gains on equities coincides with a much more drastic loss of property taxes, which has the added sting that property values take several years to catch down to new lower price levels.

States and municipalities thus made the painful mistake common to pension funds and endowments: they became acclimatized to the taxes on higher asset prices over so long a period that they assumed them to be a new high plateau. They basically built these higher prices into their budgets. Similarly, endowments did not calculate payouts based on the fair value of assets; they merely "normalized," using the average of the last five abnormally high years. In the same way, pension funds did not materially adjust their target returns downward. These (at around 8% nominal) would be at the outer boundaries of reasonable, even if we were dealing with a decade with above-average inflation, combined with a reasonable or below average P/E, say, as occurred in the '70s and '80s. But since 1995, we have been dealing with below-average inflation and persistently above-average P/Es, which is to say, lower imputed returns. Absolutely no adjustments have been made.

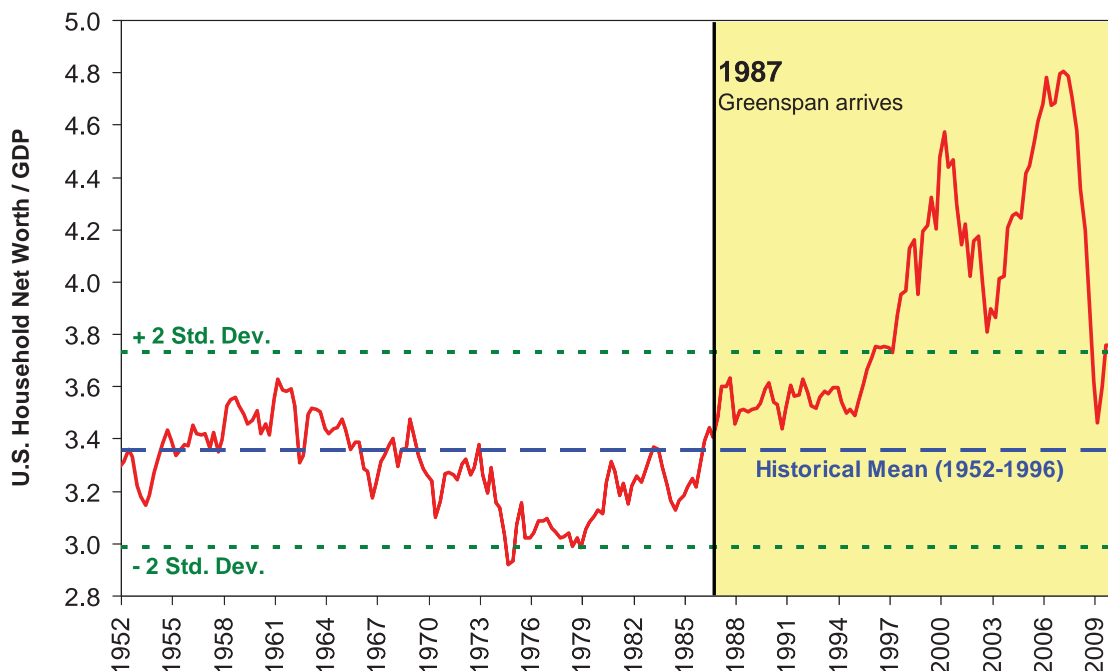
Abnormally High Profit Margins Also Misled

Compounding this problem, which for endowments has already resulted in severe cuts and for pension funds is a looming disaster, is a third factor that is even easier to miss: above-average profit margins. For long-term budgetary purposes and for establishing fair value for global equities, variations in profit margins are an even more potent variable – and very variable indeed – than are P/E ratios or inflation. The '70s had margins well below average and the '80s were average, but since 1995, we have lived in an above-average profit margin world as well as an above-average P/E world. But the fact that this environment has persisted for 15 years most emphatically does not make it normal. It just guarantees that most models and almost all committees will accept it as normal. And we have had some rude shocks on the P/E front, coming down from 35 times in the U.S. market to less than half that in a decade, which, not surprisingly, is a decade that has delivered negative returns. The second shoe to drop is likely to be a similar effect on profit margins. In this way, pension funds, endowments, states, and municipalities have all become collateral damage to a Fed policy that resulted in abnormally high asset prices. But these higher prices were, regrettably, not permanent.

The Fed "Succeeds": Higher Asset Prices

Exhibit 4

Fed "Success": The Greenspan-Bernanke Era of Overpriced Markets

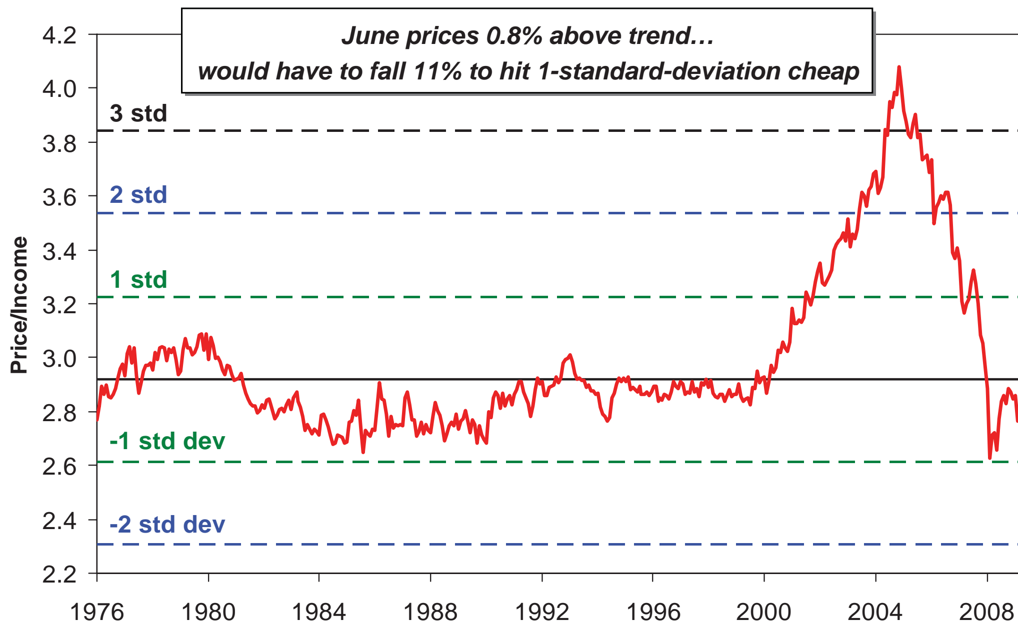


Source: Federal Reserve, BEA As of 6/30/10

Exhibit 5

Fed "Success": Blood Out of a Stone – The Fed Provides the First Housing Bubble in History

Median house price/median family income



Source: National Association of Realtors, U.S. Census Bureau, GMO *As of 6/30/10*

Effects of Engineered Higher Asset Prices

By the 21st century, the pernicious practice of asset price manipulation had become baked into the pie. It guaranteed that stocks would be overpriced most of the time and that the persistent overpricing would move the average higher, while not, of course, changing fair value – replacement cost – at all. Investors would receive lowered dividends and a lower compound return. This distorted high average has been like the deliberately misplaced signal lanterns, which the Cornish, in the stormy west of England, used to lure ships onto the rocks for plunder. Individuals, as well as institutions, were fooled into believing that the market signals were real, that they truly were rich. They acted accordingly, spending too much or saving too little, all the while receiving less than usual from their overpriced holdings. Especially in the boom periods, capital was substantially misallocated, with billions being raised for worthless dotcom companies and massive overcommitment to fiber optic cable. Even worse was the excessive percentage of GDP spent on the overbuilding of homes – basically, a nonproductive asset. Apparently, much of our leadership believed in the permanence of those higher asset prices (either believed or cynically played the game and miscalculated). Regrettably, the perpetrators, in this case the Fed, did not get any plunder, but ended up with a ruined balance sheet. Any plunder to be had from the booms and busts went, of course, to the more nimble members of the financial community!

This most unfortunate matter of asset price manipulation does not merely change politics and economics. It is also desperately important to those of us in the stock market, and we must make sense of it. We have mentioned lower returns and scrambled budgeting. More disturbingly for investment professionals, it changes the normal workings of capitalism and the market. Weaker companies need more debt. Artificially low rates that are engineered by the Fed mean that leverage is less of a burden and survival is easier. Similarly, the Great Bailout allowed many companies that normally would have failed and been absorbed by the stronger or more prudent ones to survive. If we look at the time frame since 2001, it is composed of two periods of negative interest rates with a bailout in between. This whole era has been artificially favorable to marginal companies and leveraged companies, partly at the expense of conservative, unleveraged blue chips. The great companies look less excellent on a relative basis, and they have missed opportunities

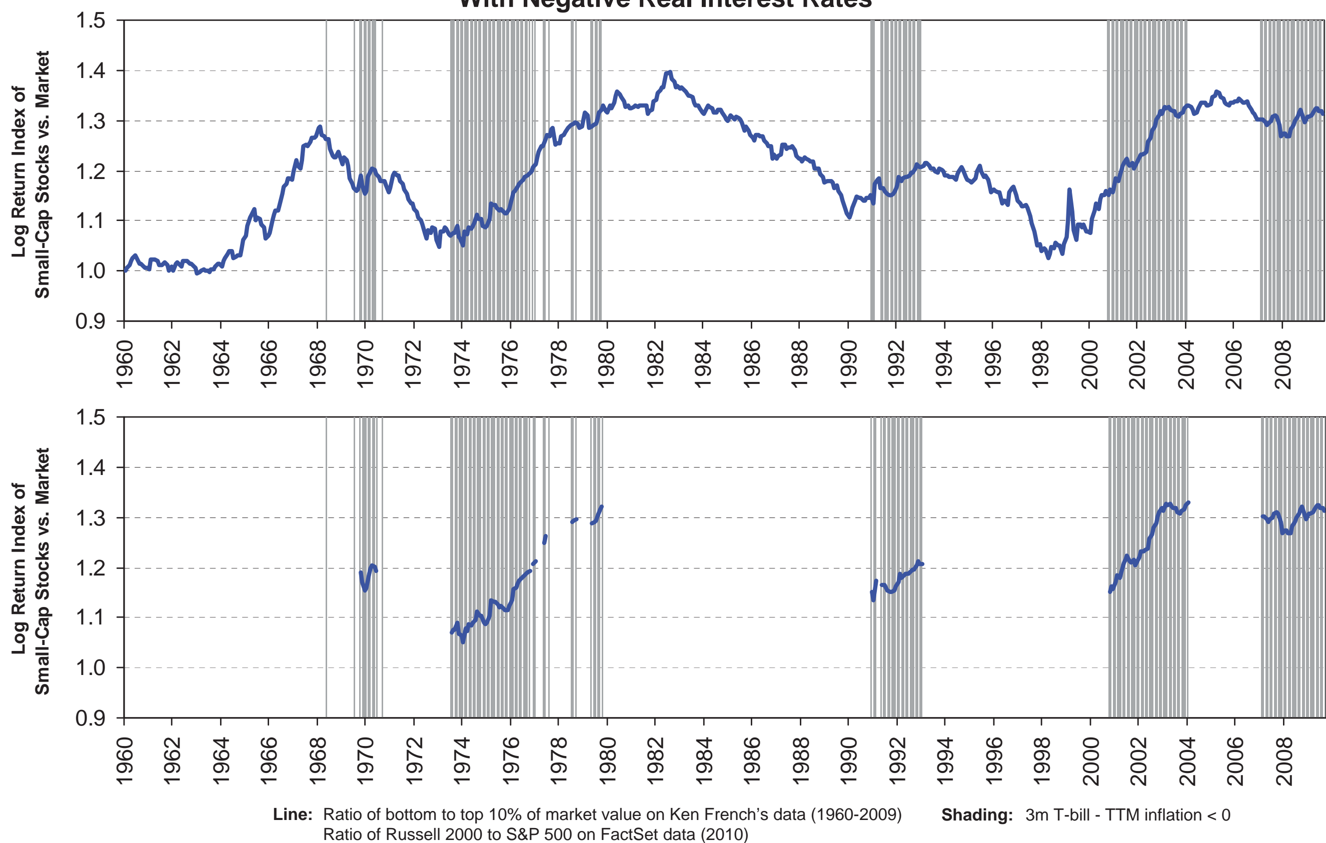
for picking up failing companies that they would normally have acquired at attractive prices. To see how sensitive more marginal companies are to this effect, we took a look at the effect of negative real short-term rates on the performance of the small stocks (as representatives of more marginal companies) relative to the S&P 500. Exhibit 6 shows the results in an emphatic way: 100% of those four major and several minor periods of negative real rates show outperformance for the small stock group. With the Fed begging speculators to borrow at negative rates, it should not be surprising that they do, and that these speculative investments are not typically the Coca-Colas of the world. Because of this effect, it is also probable that the regression rate of profitability, particularly for weaker companies, has slowed. This change, in turn, seems to have caused value models to work less effectively since 2001 than was the case for the prior 50 years.

The Stimulus of the Fed Manipulation Must Always Be Repaid, Sometimes with Interest

The saddest truth about the Fed's system is that there can be, almost by definition, no long-term advantage from hiking the stock market, for, as we have always known and were so brutally reminded recently, bubbles break and the market snaps back to true value or replacement cost. Given the mysteries of momentum and professional investing, when coming down from a great height, markets are likely to develop such force that they overcorrect. Thus, all of the beneficial effects to the real economy caused by rising stock or house prices will be repaid with interest. And this will happen at a time of maximum vulnerability, like some version of Murphy's Law. What a pact with the devil! (Or is it between devils?)

Exhibit 6

Subsidized Rates Encourage Speculation



Source: FactSet As of 8/31/10

The Underestimated Costs of Lower Interest Rates

For all of us, unfortunately, there is still a further great disadvantage attached to the Fed Manipulated Prices. When rates are artificially low, income is moved away from savers, or holders of government and other debt, toward borrowers. Today, this means less income for retirees and near-retirees with conservative portfolios, and more profit opportunities for the financial industry; hedge funds can leverage cheaply and banks can borrow from the government and lend out at higher prices or even, perish the thought, pay out higher bonuses. This is the problem: there are more retirees and near-retirees now than ever before, and they tend to consume all of their investment income. With artificially low rates, their consumption really drops. The offsetting benefits, mainly shown in dramatically recovered financial profits despite low levels of economic activity, flow to a considerable degree to rich individuals with much lower propensities to consume. This trade-off might be worth it if the low rates also encouraged more corporate borrowing for capital investment, more hiring and, hence, more long-term growth. We know already that increased debt does not cause an increase in long-term GDP growth. We also know that this particular time, capital investment by corporations is so particularly weak as to be considered non-existent. The willingness to hire is also unprecedentedly low, so the costs of low rates are higher (more retirees) and the benefits (capital spending stimulus) are less than normal. Yet the normal effect of low interest rates can be seen to be minimal if indeed they exist; if they do exist, they come packaged in this very dangerous game of asset price stimulus involving booms and busts. In a number of years, after academic wheels have turned, I suspect this policy approach will be totally discredited. And the sooner, the better! In the meantime, as far as I can see in the data, it is probable that an engineered low interest rate policy has no net benefit at all, even in normal times. It is quite likely in these abnormal times that it even has a negative effect – it holds back economic recovery!

The Last Desperate Round: Quantitative Easing, Currency Wars, and Commodity Panics

And these are most decidedly not normal times. The unusual number of economic and financial problems has put extreme pressure on the Fed and the Administration to help the economy recover. The atypical disharmony in Congress, however, has made the Federal government dysfunctional, and almost nothing significant – good or bad – can be done. Standard fiscal stimulus at a level large enough to count now seems impossible, even in the face of an economy that is showing signs of sinking back as the original stimulus wears off. This, of course, puts an even bigger burden on the Fed and induces, it seems, a state of panic. Thus, the Fed falls back on its last resort – quantitative easing. This has been used so rarely that its outcome is generally recognized as uncertain. Perhaps the most certain, or least uncertain, is that the eventual outcome will be inflationary or, at best, that it will be inflationary unless precise and timely countersteps are taken. Knowing this, the entire financial world acts accordingly: the dollar goes into accelerated decline, over 5% down in the last few days (ending October 15) alone. Global commodities, frightened by dollar weakness in response to QE2, have gone on a rampage, at least temporarily, with the entire CRB commodity index up 2.5% for the single day of Friday, October 8. Unfortunately, bad weather and tightening supply conditions as emerging countries pick up economic speed have added to this wild panic. But most disturbing of all is the response of other countries to the dollar's decline. With the renminbi tied more or less to the dollar, the competitive pressure on China's main export rivals such as South Korea, Taiwan, and Japan has become immense, and the temptation for competitive devaluations, not surprisingly, is growing. Just remember, even as we fulminate against China – and they are pretty good villains in this part of the game – the dollar is underpriced in purchasing parity terms, and yet the U.S. government is far from having even a neutral position on the dollar. We are still obviously encouraging a further decline. This, unfortunately, makes our perhaps justified complaints against China seem hypocritical. Our ill-chosen program of ultra-cheap rates at all costs may end by creating a currency war. Thus, our current policy of QE2 is merely the last desperate step of an ineffective plan to stimulate the economy through higher asset prices regardless of any future costs. Continuing QE2 may be an original way of redoing the damage done by the old Smoot-Hawley Tariff hikes of 1930, which helped accelerate a drastic global decline in trade. We may not even need the efforts of some of our dopier Senators to recreate a more traditional tariff war. And all of this stems from the Fed and the failed idea that it can or should interfere with employment levels by interfering with asset prices.

Time Out: Let's Try To Empathize with the Fed

If you were a Fed boss and had, as one of your twin responsibilities, to look after employment, you would justifiably be panicking. The other responsibility – to look after inflation – is, in comparison, a piece of cake. So, what would you do? The only economic stimulus that seems to be available is the wealth effect, which is mild in the case of stocks, although very easy indeed to manipulate and more intense, as it turns out, in the case of house prices. And here is what the Fed bosses do: when they need help for the economy, they deliberately throw their resources, moral and otherwise, at the markets. It's all they can do. They then cross their fingers and hope for a quick and strong wealth and animal spirit effect. Thus, during 1991, the game began, and stocks were stimulated to recover from the 1991 recession. Why the dread of taking a normal recession set in I cannot guess, for the refusal to take mild recessions has been likened to a policy of not allowing forest fires. Such a policy weakens the resistance of the forest so that when the fire inevitably starts, it burns so hot that the trees die along with the undergrowth. The Fed's intervening to push up asset prices helps retain some weaker corporate players and creates steadily increasing moral hazard. And this is certainly the choice that was consistently made. The market gathered steam, and very probably helped the economy recover. Then, as momentum built, Greenspan swore off intervention after a second's hesitation in 1996 with his suggestion that the market might be showing "irrational exuberance." With that idea quickly abandoned and with a very unusual over-stimulation in 1997 and 1998, the market spiraled out of control and, at a remarkable record 35 times earnings, broke spectacularly in 2000. This, in turn, brought forth from the Fed an even greater dose of low rates and moral hazard, which very probably curtailed the market decline. It stopped, uniquely in the history of equity bubbles breaking, at just above trend line value in September 2002, when normally it would have overcorrected for several years and seriously depleted the market's animal spirits and, consequently, its enthusiasm to speculate. But this time, with negative real rates for well over two years, in 2003, 2004, and 2005, the stock market, the housing market, and <u>all risky assets</u> responded to create the first truly global bubble in risk taking, with the lowest risk premiums ever seen or even dreamed of: virtually non-existent. And the rest is history; although one, apparently, we are condemned to repeat, as, here we are, with risk taking bouncing back under the same old impetus.

Fiscal Stimulus Appears To Be the Only Option

I've always been sympathetic to the general idea of crowding out: that government spending displaces an equal and offsetting amount of private spending. But it is an academic argument and, although it may have a grain or two of truth, it smells of the typical recent tendency in economics: to be heavy on assumptions and light on common sense and the real world. This concept is known, after the British nineteenth century economist, as Ricardian Equivalence, but to be fair to Ricardo, there were no government statistics then, so everything had to be theoretical. The same relatively small group of taxpayers also owned most of the bonds, so one can see how Ricardo might have gotten there. But today, the government's hiring someone is absolutely not the same as a private company's hiring exactly the same person, for if the person is not hired, the government bears all of the costs of <u>unemployment</u> and the corporation none. This cost is not merely welfare, food stamps, and the loss of taxes federally and locally. It also includes the long-term cost to society of the unemployed losing their skills and becoming less employable. For lower-paid workers, these total costs may equal, on rough estimate, one-third to one-half of the cost of hiring them. In this situation, there is no equivalence. A hired worker who would otherwise be unemployed is simply a better bargain for the government. A more capitalist alternative would be to offer some or all of the government's savings as a subsidy to employers who hire lower-skilled workers. This has been tried and, at times of severe unemployment, seems to be effective.

The real problem starts when direct governmental spending cuts into the always limited pool of skilled workers, or it is attempted when the pool of unemployed workers is only marginally above normal and the private sector has begun to hire. That is "crowding out." None of these conditions applies now. It is intuitively obvious, at least to me, that if fiscal spending were directed only: a) to lower-skilled workers, b) when there is clearly an abnormal level of unemployment, or c) when you hire them only to do jobs with a high return to society, that we will all come out ahead and there is no equivalence. Future debt commitments are paper; current useful jobs are real life. How can we possibly be better off when the unemployed who want to work are sitting idle and depressed, as their skills decay? Be serious! With a dreadfully deteriorated infrastructure and a desperate need for improvements in energy efficiency, there is certainly a

great potential supply of high societal returns waiting to be had on one hand, and an army of non-frictional unemployed ready to get to work on the other.

Political Consequences of the Fed's Boom and Bust Policy

Let me make a simple point for all of those who decry any and all governmental interference: in my opinion, capitalism has been manipulated far more, and more dangerously, by the last two Republican-appointed Fed bosses than everything else added together. It is naïve, if fashionable, to blame the rather lame current Administration for all of our problems. They inherited a cake already baked or, better, "half baked," and the master bakers were the current and former Fed bosses, and the underbaker (not quite an undertaker, but nearly) was Hank Paulson with his "contained" sub-prime crisis. Aided by Timothy Geithner at the New York Fed, they first did absolutely nothing for two years and then laid the groundwork for a bailout, the scale of which neither Democrats nor Republicans had ever dreamed! And of all of the many mistakes of the current Administration, the worst, in my opinion, are directly related to this fiasco: the inexplicable choice of Geithner, who was actually placed at the scene of the crime in New York and whose fingerprints were on the murder weapon, and the reappointment of ... gulp … Bernanke himself, about whose reappointment much juicy Republican criticism was made, all of it completely justified in my view. There may, however, be a small ray of hope. The recent Fed appointee, Vice Chair Janet Yellen, said not long ago, "Of course asset bubbles must be taken seriously!" She also said, "It is conceivable that accommodative monetary policy could provide tinder for a buildup of leverage and excessive risk taking." Yes, sir! Or rather, madam! A promising start. These sentiments, of course, are completely contrary to the oft-repeated policies of Greenspan and his chief acolyte, Bernanke. Perhaps she will slap some good sense into her boss on this issue.

The net effect of deliberately encouraging the start of asset bubbles – particularly in the case of housing – and then neglecting them and leaving them to burst, created the worst domestic and global recession since 1932. It exposed intractable, structural unemployment that had been building up. With a Congress totally at stalemate, this is a nearly impossible situation but one which, as usual, will be associated with the current Administration and therefore will cost dearly in votes. In 1970, England's Labour government was 7.5% ahead in the polls with just three weeks to go, but was ruined by England's favored and beloved World Cup team's losing to archrival Germany just four days before the election. Curses! It's better to be lucky. As to picking the right road to an economic recovery, the Irish punch line would be, "I don't think you can get there from here." It would all have been so much easier to prevent than to cure.

All This and Climate Change Too

I joked with my wife that I would end by saying that at least I couldn't blame the Fed for climate change. Ho, ho. Then I began to think: wait a minute, without the housing boom and bust and the stock boom and bust, we would not have had this chronic recession and intractable unemployment. This would then not have been blamed on Obama and, with less to worry about, he would not have been a "no show" on the climate debate, and we would probably have had a decent energy and climate bill. No kidding. So there you are: the Fed really is at the bottom of almost all of our problems.

Apologies

Since it is customary in polite society to apologize for causing distress, on behalf of the Fed, let me apologize for the extraordinary destructiveness of its policies for the last 15 years. Bernanke's version of an apology, delivered in January this year to the American Economic Association, was to claim that the Fed's monetary policy during the 2000-08 period was appropriate, and that there were no major failings, such as missing the housing bubble completely, that were worth mentioning. This stubbornness in the face of clear data is right up there with efficient market believers. And very impolite indeed.

Current Investing Questions

1) Does this year being a Year 3 of the Presidential Cycle confuse the issue?

Yes. Exhibit 2 shows the extent of the problem. In Year 3, risky, highly volatile stocks have outperformed low risk

stocks by an astonishing average of 18% a year since 1964 (when good volatility data started). Also, to repeat a favorite statistic, the record says that 19 Year 3s have occurred since FDR with not one serious bear market – in fact, just one Year 3 was down, finishing at -2%. Who wants to bet on the 20th being different this time? Yet, if ever there were an argument for "this time is different," this is it, isn't it? This year, a Year 3 has been preceded by two abnormally stimulated years when, typically, the Fed works to cool the markets down in Years 1 and 2. This time, Years 1 and 2 were turned into a sort of massive Year 3 in which low rates and moral hazard added to the market's natural reflex to have a big rally after a major nerve-rattling decline. The market responded by rallying 82% in 13 months (to April 26, 2010), with risky stocks up by over 120%, both second only to the rally from the low of 1932. Also unique this time is the great bust of 2008 and the ensuing great bailout. How much difference do you want? Even so, I expect that the bottom line will come down to short rates. Surely they will stay low for the entire Year 3. And, if so, the "line of least resistance" is for the market to go up and for risk to flourish. In the last six months I've guessed on separate occasions that levels of 1400 or 1500 on the S&P 500 are reachable a year from now; this still seems a 50/50 bet. If we include more moderate market advantages, the total odds would be well over 50%. (I'm trying to wean myself from a recent dangerous habit of using precise probabilities.) Risks to this forecast are highlighted by some ugly near-term possibilities. The worst of these is that Senator Smoot and Representative Hawley, sponsors of the anti-trade bill of 1930, will pull a *Night of the Living Dead* and prepare a very dangerous opening salvo in the next global trade war. Indeed, today it feels as if there were an inexhaustible supply of politicians who would put their political/philosophical principles way ahead of global well being. As mentioned earlier, the Fed is also stirring up a hornet's nest on the currency side of this issue with its quantitative easing. There is also the definite possibility that we could slide back into a double dip, so we may get lucky and have a chance to buy cheaper stocks. But probably not yet. And, of course, if we get up to 1400 or 1500 on the S&P, we once again face the consequences of a badly overpriced market and overextended risk taking with six of my predicted seven lean years[1] still ahead. And this time the government's piggy-bank is empty. It is not a pleasant prospect.

2) Should we hold onto quality stocks?

For sensible long-term investors, the probable outcome of a further speculative rally as described above would be irritating and resolve testing. For good short-term momentum players, it may be heaven once again. Being (still) British, this is likely to be my n^{th} opportunity to show a stiff upper lip. There is, though, one quite friendly influence lurking around that may help us lovers of quality stocks. They are getting so cheap relative to the market that a wider range of buyers is finally noticing them. In the third quarter, in a market up a significant 12%, quality stocks held the market. To say the least, this has not been the law of nature recently: for the past eight years, quality stocks usually won in down quarters and usually lost badly in extreme up quarters. That the Fed Manipulation of Prices was still in force and that this was not a "risk off" quarter was proven by the continued outperformance of small caps and riskier stocks. So the better performance of quality stocks was clearly a bargain effect and not an anti-risk move. This may be grasping at straws, but if the expected speculative rally takes place in this Year 3 starting now, I believe that there is a decent chance, say one in three, that quality stocks are so cheap that they will "unexpectedly" hang in. And, after this next 12 months, the odds move in our favor, and I believe (once again speaking for myself) that high quality stocks should have an even bigger win over low quality than our GMO numbers suggest. I think it is probable that the remaining six of my seven lean years will wear down low quality, leveraged companies. Their margins, which are currently far above average, will end up far below average some time during this period, and their relative stock performance may well be horrific.

3) How far can emerging equities go?

I have been showing late-career tendencies to wander off the reservation of pure historical value. The "Emerging Emerging Bubble" thesis of 2½ years ago (1Q 2008 *Quarterly Letter*) is in splendid shape. The idea is that within a few more years, emerging equities will sell at a substantial premium P/E because their much higher GDP growth

1 "The Last Hurrah and Seven Lean Years," 1Q 2009 *Quarterly Letter*.

(6% compared to 2%) will give a powerful impression of greater value. Everyone and his dog are now overweight emerging equities, and most stated intentions are to go higher and higher. Emerging markets are admittedly fully priced, but they still sell at a decent discount to the 75% of the S&P 500 that are not quality stocks – a particularly strange quirk in a strange market. With their high commodity exposure, their strong finances, and their strong GDP growth especially, I believe that they will sell at a premium to the S&P, perhaps a big one. How much of this premium to go for depends on an investor's commitment to pure value relative to the weight that is placed on behavioralism – the way investors really behave versus the way they should behave. This gives us quite a wide range for investing in emerging that might be considered reasonable. GMO will make its own decision on how "friendly" to be toward emerging market equities as a category. You must make yours.

4) What to do about raw materials?

The "running out of everything" thesis that I dropped into a black hole a little over a year ago (2Q 2009 *Quarterly Letter*) is creeping out of its hole (helped by the Fed's mooted QE2), and at least the idea of generalized shortages is heard now and then. The last two weeks (October 3-17) have been truly remarkable for commodity prices: on October 8 alone, the entire commodity index was up 2.5%! Tin, for example, is at an all-time high (in nominal prices, I admit) and, more importantly, "Doctor Copper" is almost back to its 2008 high, which was then four times its previous level. Imagine what this means: in a developed world with 9% unemployment and masses of spare capacity, commodities are acting much too strong for this to be simply a normal response to a rather anemic cyclical recovery. I really believe that we are in a new world in which we are running out of resources … a world that only China truly gets. (For the record, I singled out rare earths in my 2Q 2009 *Letter*.) Some of these stocks have quadrupled in price, and at least one has tentupled! That would have been great for one of those "best ideas" dinners, where relevance to a large pool of money doesn't matter, since it's impossible to play rare earths in any size. My personal advice (i.e., how I invest my sister's pension fund, etc.) is to give the benefit of any doubts for very long-horizon (20 years) investments to resources in the ground, agricultural land, and, above all, forestry. Resource stocks, though, have really run, and a serious price decline caused by, say, China's stumbling, would of course make for a much better entry point. On a seven-year horizon, GMO is enthusiastic only for forestry, which has, in so many ways, more certainty to it than most investments: the sun shines, the trees grow.

5) Should we buy overpriced stocks when bonds are even worse?

We plan to write more substantively on this topic in the near future, but for now the short answer is that bond prices are currently manipulated, and are yielding less than any market clearing price would suggest. They absolutely do not reflect the substantial fears in many quarters about inflation in the long term. Even in less manipulated times, bond prices can be quite silly for the usual behavioral reasons, as demonstrated most clearly by the 15% yield on the 30-year Treasury in 1982! Bonds are thus emphatically not a reasonable yardstick for measuring value in stocks. We use the long-term returns for stocks to decide what their fair value is. They are currently overpriced. Bonds are even less attractive. Yet, remember that in a strongly mean-reverting world, you need to be careful about enthusiastically buying the less ugly of two overpriced investments. Cash has an option value: on the chance that stocks or bonds or, better yet, both, decline, the investor will need resources from which to buy.

6) Religious wars (or, Should we buy gold?)

Everyone asks about gold. This is the irony: just as Jim Grant tells us (correctly) that we all have faith-based paper currencies backed by nothing, it is equally fair to say that gold is a faith-based metal. It pays no dividend, cannot be eaten, and is mostly used for nothing more useful than jewelry. I would say that anything of which 75% sits idly and expensively in bank vaults is, as a measure of value, only one step up from the Polynesian islands that attached value to certain well-known large rocks that were traded. But only one step up. I own some personally, but really more for amusement and speculation than for serious investing. It may well work and it may not. In the longer run, I believe that resources in the ground, forestry, agriculture, common stocks, and even real estate are more certain to resist any inflation or paper currency crisis than is gold.

Very Brief Recommendations

1) Emphasize U.S. quality companies, which are still cheap in an overpriced world.
2) Moderately overweight emerging market equities.
3) Moderately underweight the balance of global equities.
4) Heavily underweight lower quality U.S. companies.
5) Carry extra cash reserves for a volatile market with insecure fundamentals.
6) For the very long term (20 years) overweight resources, particularly if they have a sharp decline. (This is my personal view rather than that of GMO, which on this topic is agnostic.)

Postscript: Australian and U.K. Housing

I happily concede that the U.K. and Australian housing events are not your usual bubbles. Australia, though, does pass one bubble test spectacularly: we have always found that pointing out a bubble – particularly a housing bubble – is very upsetting. After all, almost everyone has a house and, not surprisingly, likes the idea that its recent doubling in value accurately reflects its doubling in service provided, e.g., it keeps the rain out better than it used to, etc. Just kidding. So, the house is the same. Perhaps the quality of the land has changed? In any case, Australians violently object to the idea that their houses, which have doubled in value in 8 years and quadrupled in 21, are in a bubble.

The U.K. and Australia are different partly because neither had a big increase in house construction. That is to say that the normal capitalist response of supply to higher prices failed. Such failure usually represents some form of government intervention. In Australia, for example, the national government sets the immigration policy, which has encouraged boatloads of immigration, while the local governments refuse to encourage offsetting home construction. There has also been an unprecedentedly long period of economic boom in Australia, and the terms of trade have moved in its favor. And, let's not forget the $22,000 subsidy for new buyers. But does anyone think that bubbles occur without a cause? They always need two catalysts: a near-perfect economic situation and accommodating monetary conditions. The problem is that we live in a mean-reverting world where all of these things eventually change. The key question to ask is: Can a new cohort of young buyers afford to buy starter houses in your city at normal mortgage rates and normal down payment conditions? If not, the game is over and we are just waiting for the ref to blow the whistle. In Australia's case, the timing and speed of the decline is very uncertain, but the outcome is inevitable. For example, the average buyer in Sydney has to pay at least 7.5 times income for the average house, and estimates range as high as 9 times. With current mortgage rates at 7.5%, this means that the average buyer would have to chew up 56% of total income (7.5 x 7.5), and the new buyer even more. Good luck to them! In the U.K., which also has floating rate mortgages and, in this case, artificially low ones, the crunch for new buyers will come when mortgage rates rise to normal. But even now, with desperately low rates, the percentage of new buyers is down. Several of these factors, which do not apply to equities, make for aberrant bubbles, and clearly the Australian and U.K. housing markets fit the bill. In comparison, the U.S. and Irish housing bubbles behaved themselves. So let's see what happens and not get too excited. After all, these may be the first of 34 bubbles not to break back to long-term trend. There may be paradigm shifts. Oil looks like one, but oil is a depleting resource. If we could just start depleting Australian land, all might work out well.

Disclaimer: The views expressed are the views of Jeremy Grantham through the period ending October 26, 2010, and are subject to change at any time based on market and other conditions. This is not an offer or solicitation for the purchase or sale of any security and should not be construed as such. References to specific securities and issuers are for illustrative purposes only and are not intended to be, and should not be interpreted as, recommendations to purchase or sell such securities.

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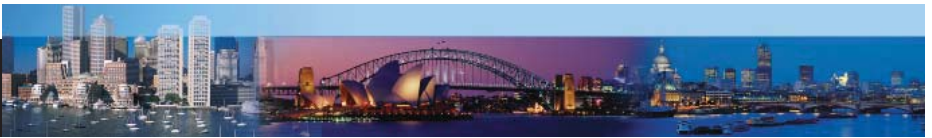
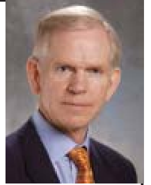
GMO
Special Topic
January 2011



I Like Ike: A Powerful Warning Ignored, January 17, 1961



Jeremy Grantham

Fifty years have gone by in a flash since President Eisenhower, three days from the end of his eight years in office, pushed to give an atypical end-of-term address to the people. It was not the most memorable speech given by an American President, but it was probably the most unusual and the most unexpected. Most great speeches say what is more or less expected but say it very eloquently: "… government of the people, by the people, for the people, shall not perish from the earth …," "I have nothing to offer but blood, toil, tears and sweat …," and a handful of others. Eisenhower's speech, in contrast, appeared at the time to have come out of left field, and 50 years later it seems even more remarkable and unusual. I have attached the speech with several points highlighted. These points, and the speech in general, give us an opportunity to see, perhaps, how President Eisenhower might have graded us.

He opens with the point that over eight years, "the Congress and the Administration have, on most vital issues, cooperated well, to serve the national good rather than mere partisanship, and so have assured that the business of the Nation should go forward." What a particularly bitter taste that thought leaves today, doesn't it? There may have been Congresses that were more partisan than this current one, but it would take a serious political historian to track them down. Eisenhower is suggesting that with a chronic lack of bipartisan cooperation and with the increasingly vicious partisan tone that characterizes the current political situation, the "business of the Nation" is unlikely to go forward satisfactorily. Most of us would agree.

Ike goes on to express concern that the world community could become dominated by "dreadful fear and hate" rather than becoming one of "a proud confederation of mutual trust and respect." This is bland enough, I suppose, although of course devoutly to be wished, but he goes on to say, "Such a confederation must be one of equals. The weakest must come to the conference table with the same confidence as do we, protected…by our moral, economic, and military strength." (Emphasis added.) It is very hard to imagine recent Presidents expressing so benevolent an attitude.

"Disarmament" not surprisingly for that age, "… is a continuing imperative." All things considered in our real world, America has achieved a fair amount along these lines, and looks likely to be taking another positive step soon under our current President.

Eisenhower's fears, in my opinion, miss only one point: he believed that technology and scientific research should be held in respect, but warned that "we must also be alert to the equal and opposite danger that public policy could itself become the captive of a scientific-technological elite." They wish! Today business-oriented technology may be doing fine, but the scientific community is not dripping in public respect, and many laws – local and federal – reflect a growing anti-science bias. Climate science has reached a point at which the National Academy and the Royal Society are the objects of suspicion (or conveniently feigned suspicion) of participating in some conspiracy to mislead. Heck, scientists and teachers are still fighting an endless war on the science of evolution!

Next, we have the most unexpected point: "As we peer into society's future, we – you and I, and our government – must avoid the impulse to live only for today, plundering, for our own ease and convenience, the precious resources of tomorrow. [Emphasis added.] We cannot mortgage the material assets of our grandchildren without risking the loss also of their political and spiritual heritage." Wow! How is it possible that we collectively seem to have forgotten this clear warning? I have not once seen it referred to.

Historians may well look back on this period, say, from 1960 on, as the "Selfish Era" – a time when individualism and materialism steadily took precedence over social responsibility. (To be fair, in the period from 1960 to 1980, the deterioration was slow, and the social contract dating back to the mid-1930s was more or less intact.) Personal debt grew slowly at first but steadily accelerated, even though it can be easily demonstrated that consumers collectively are better off saving to buy and that the only beneficiary of a heavy debt society is the financial industry, whose growth throughout this period was massive, multiplying its share of a growing pie by a remarkable 2.2 times.

Government debt was so high after World War II that it fell initially, but by 1974 it started to rise again, very slowly at first but then dramatically in recent years, to move back to WWII levels. But this time, the catalyst was not a major war. The main cause this time was not Hitler and the Japanese High Command, but the broad-based incompetence of our financial leadership. Obligations have been piled onto future generations. Deferring gratification is apparently not easy for our species, and nowhere is this better demonstrated than in our disregard, even contempt, for the idea that we should consider our descendents and not just ourselves. Financially, they – our descendents – will soon face a population bind wherein a bigger load is placed on the workers to support a growing army of retirees. It bears repeating that all we can do to help them in this respect is to leave them with no national debt and an impeccably up-to-date infrastructure, which is, of course, the exact opposite of the current situation.

But much more important is looking out for our great-grandchildren, and trying not to leave them with a resource crisis. When discussing conservation of all kinds, we frequently hear the cry that it costs too much to change our profligate ways. But that is precisely the point: by engaging in moderately and affordably higher cost steps now – mainly reduced consumption through increased efficiency and the use of brain power to modify life styles – we can mitigate an enormous rise in resource prices that our great-grandchildren will otherwise have to pay, increases that will bite deeply into their quality of life. For make no mistake: our planet's resources are finite and we continue to mine them (and agriculture has become a form of mining) with reckless abandon. In stock markets, we consider accurate replacement cost to be the gold standard of true value. The true replacement cost of our non-replaceable patrimony of oil, gas, and coal is their replacement – renewable energy sources. But we continue to price these resources on a very short horizon by using marginal cost of production. It is a shocking failure or, rather, a lack of long-term thinking. Capitalism can quite easily price traditional manufactured items efficiently. However, it has trouble dealing with externalities: who pays for pollution, and how? It absolutely cannot deal effectively with pricing goods held in common, a well-known tragedy. Capitalism also fails to achieve effective long-term pricing solutions relevant to vital finite resources that will of course run out. When they do start to run out, there will be incalculable costs to society if we have not prepared ourselves well in advance. As in now.

I wrote 18 months ago that we should brace ourselves for rolling crises in commodities – cotton soaring and falling, then corn, then copper and oil, and so on without end. Well, 18 months turns out to be a long time in commodities. Even without the developed world's full recovery, metals and carbon-based fuels are selling way over their average levels of the 1990s and 2000s. And as for the agricultural index, in December 2010 it rose above the then remarkable and riot-inducing levels of 2008. Think what might happen when we in developed countries enter our next boom. President Eisenhower would not be favorably impressed with the mess we are getting ourselves into.

This is a good time to mention Ike's closing admonition, "… that those now denied opportunity shall come to enjoy it to the full; that all…will learn charity." Let it suffice to say that the U.S., under the Marshall Plan, was charitable in the broadest sense. It was magnificent by any standard, and the high point of U.S. governmental aid. Where are we now? We have long been at the very bottom of the developed world's league table, with 0.2% of GDP being given as foreign aid (half of it, by the way, to Israel and Egypt) compared with Sweden's 1.0% and an average of 0.5%. Our income mal-distribution since Ike's era has also deteriorated. A Fortune 500 CEO has gone from earning 40 times more than his average worker in 1960 – maybe that's high, maybe it's fine – to a recent peak of more than 400 times, which is, of course, obscene. The share of income going to the top 1%, which made Ike nervous, was 10%. The same share today goes to the top 0.1% – 10 times worse! And remember that when our roaring growth pushes up energy and food prices as it is doing, it is borne completely disproportionately by those poorer countries that spend up to four

times the percentage of their total income on these items than does the U.S. And within even the richest country – the U.S. – these increases are borne disproportionately by our poor. This is to say that resource inflation works in a dangerously inequitable way.

Nor can this current inequality be traded off against a dynamic future potential for these poor, for social and economic mobility is slowing down here: the U.S., once a celebrated #1 for this mobility, is now well down in the pack, fighting it out with such traditionally sticky societies as the U.K.[1]

This brings us to the most famous part of Ike's speech: "In the councils of government, we must guard against the acquisition of unwarranted influence, whether sought or unsought, by the military-industrial complex. The potential for the disastrous rise of misplaced power exists and will persist. We must never let the weight of this combination endanger our liberties or democratic processes. We should take nothing for granted. Only an alert and knowledgeable citizenry… [can produce a system in which] security and liberty may prosper together." To give this emphasis, Ike had already said elsewhere, "God help the Nation when it has a President who does not know as much about the military as I do."[2] That, of course, is a hurdle set so high that no later President has jumped over it. But luck plays a major role in the life of even the largest countries, and the unexpected collapse of the Soviet Union and its European satellites created a previously unimaginable world where military spending could be reduced and with it the suffocating political power of the "military-industrial complex." Given the extent of the opportunity, we can admire the ability of the military and its friends in the armament business to hold onto resources that dwarf those of other countries: military spending in the U.S. still exceeds the absolute spending of the next 15 countries and is more than 70% of the rest of the world added together, as if we are preparing to repel the Martians! And still the struggle to limit military expenditures goes on. Recently I was lucky to hear a discussion on N.P.R. in which Barney Frank and Ron Paul (as wide a range of political beliefs as could be easily imagined) agreed on almost everything regarding the need to reduce military spending, particularly that part that still seems, in their opinion, to relate to the threat of a major tank invasion of Western Europe by the Soviet Union and its allies. I suppose we should be grateful that the U.S. cavalry has been disbanded! But, let me add as an aside that I much admire how magnificently and pragmatically "green" the military has become, and how seriously they take the problem of diminishing resources and the global problems that it, together with global warming and associated weather instability, will cause. (Now, if they would just talk more persuasively to their friends in Congress!)

The bottom line, though, is that the military, by virtue of unexpected circumstance, is not the problem foreseen by Ike, and thank heavens for that. Unfortunately, the political-economic power problem has mutated away from the military, although it has left important vestiges there, toward a broader problem: the undue influence of corporate America on the government, and hence the laws, taxes, and social policies of the country. This has occurred to such a degree that there seems little real independence in Congress, with most Congressmen answering first to the desire to be reelected and the consequent need to obtain funding from, shall we say, sponsors, and the need to avoid making powerful enemies. "Well, Senator, we have $10 million here, which can either be used to point out how wise and desirable you are for your sensible vote on the upcoming energy bill or, alternately, can be used to point out how un-American and anti-job you are. Your call."

The financial resources of the carbon-based energy companies are particularly terrifying, and their effective management of propaganda goes back decades. They established and funded "independent" think tanks and even non-profit organizations that have mysteriously always come out in favor of policies favorable to maintaining or increasing the profits of their financial supporters. The campaign was well-organized and has been terrifyingly effective. And the results speak for themselves: which other developed country has so little gas tax? Not one. And better yet, which other country now accepts the myth that good red-blooded Americans will never stand for such a tax? That is the real art. It has created an environment in which we cannot aspire to the social responsibility – and a higher gas tax is simply that – of, say, the Italians (the most agreeable people on the planet, in my opinion, but

1 OECD, "Economic Policy Reforms: Going for Growth 2010," Chapter 5.

2 Walter LaFeber, *The American Age: United States Foreign Policy at Home and Abroad 1750 to the Present* (New York: W.W. Norton, 1994) 513.

not noted for making tough political decisions). Which other developed country has had no improvement in fuel efficiency because it has reinvested the considerable technological advances in heavier SUVs, with no real need for most other than the nurturing of their macho instincts? Not one.

The financial industry, with its incestuous relationships with government agencies, runs a close second to the energy industry. In the last 10 years or so, their machine, led by the famously failed economic consultant Alan Greenspan – one of the few businessmen ever to be laughed out of business – seemed perhaps the most effective. It lacks, though, the multi-decadal attitude-changing propaganda of the oil industry. Still, in finance they had the "regulators," deregulating up a storm, to the enormous profit of their industry. Even with the biggest-ever financial fiasco, entirely brought on by the collective incompetence they produced ("they" being the financial regulators and the financial industry leaders working together in some strange, would-be symbiotic relationship), reform is still difficult. Even with everyone hating them, the financial industry comes out smelling like a rose with less competition, profits higher than ever, and not just too big to fail, but bigger still.

Other industries, to be sure, are in there swinging: insurance and health care come to mind, but they seem like pikers in comparison. No, it's energy and finance in coequal first place, military-related companies an honorable third, and the rest of the field not even in contention. And now, adding the icing to the corporate cake, we have the Supreme Court. Formerly the jewel in the American Crown, they have managed to find five Justices capable of making Eisenhower's worst nightmare come true. They have put the seal of approval on corporate domination of politics, and done so in a way that can be kept secret. The swing-vote Senator can now be sand-bagged by a vicious advertising program on television, financed by unknown parties, and approved by no stockholders at all!

All in all it appears that Eisenhower's worst fears have been realized and his remarkable and unique warnings given for naught. From now on, we should tread more carefully. Honoring President Eisenhower's unique warnings, we should perhaps not take this 50-year slide lying down. Squawking loudly seems preferable.

We have reviewed the last 50 years and compared 1960 with 2010 in every way we considered interesting, and present the results in Table 1.

Please note that my *Quarterly Letter* will be published in a week or two.

Table 1: 50 Years Ago ... and Today

	Country / Region	1960	2010	Notes
Foreign aid, % GDP	U.S.	0.52%	0.20% [1]	
	UK	0.56%	0.50% [1]	
Estimated average hourly wage, PPP 2009 USD	U.S.	$16.87	$25.31 [1]	
	France	$6.43	$22.34 [1]	
	Japan	$3.46	$15.57 [1]	
	UK	$8.79	$21.25 [1]	
GDPPC, PPP 2009 USD	U.S.	$21,133	$45,990 [1]	
Real total equity return index*, 1960 = 100	U.S.	100.0	1386.9	
	Italy	100.0	110.5	
	France	100.0	745.7	
	UK	100.0	1757.1	
	Germany	100.0	586.1	
Real labor productivity index, 1960 = 100	U.S.	100.0	172.8 [1]	
	Germany	100.0	903.3 [1]	5
Population, millions	U.S.	180.6	307.0 [1]	
	France	45.7	62.3 [1]	
	UK	52.4	61.8 [1]	
% of population 25 yrs and over with 4 yrs or more of college	U.S.	7.7%	29.5% [1]	
Annual new college enrolment as % of 18-yo population	U.S.	29.0%	44.6% [2]	
	Japan	8.4%	45.6% [2]	
Corporate profits, % GDP	U.S.	9.9%	11.1%	
Military burden, % GDP	U.S.	8.7%	4.6% [1]	
	Canada	4.2%	1.5% [1]	
	UK	6.4%	2.7% [1]	
	Germany	4.4%	1.4% [1]	
	China	11.0%	2.0% [1]	
Profits of financial corporations, % GDP	U.S.	1.6%	2.5%	
Financial services "value added," % GDP	U.S.	3.7%	8.3%	
	Germany		4.6% [2]	
	Japan		3.8% [2]	
Total health expenditure, % GDP	U.S.	5.2%	16.0% [2]	
	Canada	5.4%	10.4% [2]	
	Japan	3.0%	8.1% [3]	
	UK	3.9%	8.7% [2]	
Government health expenditure, % GDP	U.S.	1.2%	7.4% [2]	
	Canada	2.3%	7.3% [2]	
	UK	3.3%	7.2% [2]	
Life expectancy at birth	U.S.	69.9	77.9 [3]	
	Australia	70.9	81.5 [2]	
	Germany	69.1	80.2 [2]	
	Japan	67.8	82.7 [2]	
	UK	70.8	79.7 [3]	
Infant mortality, per 1000 live births	U.S.	26.0	6.7 [4]	
	Australia	20.2	4.1 [2]	
	France	27.7	3.8 [2]	
	Germany	35.0	3.5 [2]	
	United Kingdom	22.5	4.7 [2]	
Hospital beds per 1000 population	U.S.	9.2	3.1 [2]	
	Australia	9.7	3.9 [4]	

Table 1: 50 Years Ago ... and Today (cont.)

	Country / Region	1960	2010	Notes
Lawyers as % of population	**U.S.**	**0.160%**	**0.380%** [1]	
	Japan	0.007%	0.023%	6
	France		0.077% [2]	
	Germany		0.179% [2]	
	UK		0.253% [2]	
Incarceration rate, % population	**U.S.**	**0.18%**	**0.74%** [1]	
	Canada	0.08%	0.14% [2]	7
	UK	0.05%	0.14% [1]	
Murder rate, per 100000 population per year	**U.S.**	**5.1**	**5.0** [1]	
	England & Wales	0.62	1.00 [1]	
	Australia	1.47	0.95 [2]	
	Canada	1.28	1.81 [1]	
Rape rate, per 100000 population per year	**U.S.**	**9.6**	**28.7** [1]	**8**
Aggravated assault rate, per 100000 population per year	**U.S.**	**86.1**	**262.8** [1]	
Presidential campaign spending, % GDP	**U.S.**	**0.005%**	**0.012%** [2]	
U.S. oil production, millions of barrels per day	**U.S.**	**7.0**	**5.3** [1]	
U.S. oil consumption, millions of barrels per day	**U.S.**	**9.4**	**16.6** [1]	
U.S. oil imports, millions of barrels per day	**U.S.**	**1.8**	**11.8** [1]	
U.S. proven oil reserves, billions of barrels	**U.S.**	**35.1**	**19.1** [2]	
U.S. CO_2 emissions, tons of CO_2 per capita per year	**U.S.**	**16.2**	**17.6** [1]	
U.S. copper consumption, million tons/year	**U.S.**	**1.23**	**2.02** [2]	
World copper production, million tons/year	**World**	**3.9**	**15.4** [2]	
Price of a gallon of unleaded gas, 2009 $	**U.S.**	**$2.37**	**$2.35** [1]	**9**
CO_2 air concentration, ppm	**World**	**315.00**	**388.59**	
Senate polarization score	**U.S.**	**0.49**	**0.88**	**10**
Divorce rate, per 1000 population	**U.S.**	**2.2**	**3.4** [1]	
Smoking rate, % of adults	**U.S.**	**42%**	**21%** [1]	
Olympic golds, % of total golds awarded	**U.S.**	**22%**	**12%** [2]	
	USSR/Russia	28%	8% [2]	
	China	0%	17% [2]	11

1: 2009 data.
2: 2008 data.
3: 2007 data.
4: 2006 data.
5: West Germany data is used for 1960.
6: Many tasks performed by lawyers in the U.S. are performed in Japan by "quasi-lawyers" not accounted for in this figure.
7: 1961 data is used for 1960.
8: Underreporting is likely to have been greater in 1960.
9: The price of leaded gas is assumed to be 95% of the price of unleaded.
10: Difference between average 1st dimension DW-NOMINATE scores for senators of each party.
11: China did not compete in the Olympics from 1956-1980.
* Assumption: 1960 = 100 local in currency units; Nov. 2010 = inflation-adjusted amount if you had invested the 100 local currency units in the corresponding country's major stock market index at end of Nov. 1960 and reinvested all dividends. Indexes: S&P 500 (U.S.); BCI Global Return Index (Italy); SBF-250 (France); FTSE All-Share (UK); CDAX (Germany).

Sources: Abrams and Settle; American Bar Association; Australian Bureau of Statistics; Bureau of Economic Analysis; Bureau of Justice; Bureau of the Census; Centers for Disease Control and Prevention; Correctional Service Canada; Correlates of War; Council of Bars and Law Societies of Europe; Cutler, Rosen, and Vijan; Energy Information Administration; FBI Uniform Crime Reports; Federal Election Commission; Global Financial Data; GMO; Home Office Research Development Statistics; House of Commons Library; IMF; International Olympic Committee; Japan Federation of Bar Associations; Justice Policy Institute; Ministry of Internal Affairs and Communications; National Oceanic and Atmospheric Administration; OECD; Poole and Rosenthal; Statistics Canada; TheCityUK; United States Geological Survey; World Bank.

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Dwight D. Eisenhower
Fairwell Address, January 17, 1961
(The Military-Industrial Complex Speech[1])

My fellow Americans:

Three days from now, after half a century in the service of our country, I shall lay down the responsibilities of office as, in traditional and solemn ceremony, the authority of the Presidency is vested in my successor.

This evening I come to you with a message of leave-taking and farewell, and to share a few final thoughts with you, my countrymen.

Like every other citizen, I wish the new President, and all who will labor with him, Godspeed. I pray that the coming years will be blessed with peace and prosperity for all.

Our people expect their President and the Congress to find essential agreement on issues of great moment, the wise resolution of which will better shape the future of the Nation.

My own relations with the Congress, which began on a remote and tenuous basis when, long ago, a member of the Senate appointed me to West Point, have since ranged to the intimate during the war and immediate post-war period, and, finally, to the mutually interdependent during these past eight years.

In this final relationship, **the Congress and the Administration have, on most vital issues, cooperated well, to serve the national good rather than mere partisanship, and so have assured that the business of the Nation should go forward**. So, my official relationship with the Congress ends in a feeling, on my part, of gratitude that we have been able to do so much together.

We now stand ten years past the midpoint of a century that has witnessed four major wars among great nations. Three of these involved our own country. Despite these holocausts America is today the strongest, the most influential and most productive nation in the world. Understandably proud of this pre-eminence, we yet realize that America's leadership and prestige depend, not merely upon our unmatched material progress, riches and military strength, but on how we use our power in the interests of world peace and human betterment.

Throughout America's adventure in free government, our basic purposes have been to keep the peace; to foster progress in human achievement, and to enhance liberty, dignity and integrity among people and among nations. To strive for less would be unworthy of a free and religious people. Any failure traceable to arrogance, or our lack of comprehension or readiness to sacrifice would inflict upon us grievous hurt both at home and abroad.

Progress toward these noble goals is persistently threatened by the conflict now engulfing the world. It commands our whole attention, absorbs our very beings. We face a hostile ideology – global in scope, atheistic in character, ruthless in purpose, and insidious in method. Unhappily the danger it poses promises to be of indefinite duration. To meet it successfully, there is called for, not so much the emotional and transitory sacrifices of crisis, but rather those which enable us to carry forward steadily, surely, and without complaint the burdens of a prolonged and complex struggle – with liberty the stake. Only thus shall we remain, despite every provocation, on our charted course toward permanent peace and human betterment.

Crises there will continue to be. In meeting them, whether foreign or domestic, great or small, there is a recurring temptation to feel that some spectacular and costly action could become the miraculous solution to all current difficulties. A huge increase in newer elements of our defense; development of unrealistic programs to cure every ill

[1] Public Papers of the Presidents, Dwight D. Eisenhower, 1960, p. 1035-1040. http://www.h-net.org/~hst306/documents/indust.html

in agriculture; a dramatic expansion in basic and applied research – these and many other possibilities, each possibly promising in itself, may be suggested as the only way to the road we wish to travel.

But each proposal must be weighed in the light of a broader consideration: the need to maintain balance in and among national programs – balance between the private and the public economy, balance between cost and hoped for advantage – balance between the clearly necessary and the comfortably desirable; balance between our essential requirements as a nation and the duties imposed by the nation upon the individual; balance between actions of the moment and the national welfare of the future. Good judgment seeks balance and progress; lack of it eventually finds imbalance and frustration.

The record of many decades stands as proof that our people and their government have, in the main, understood these truths and have responded to them well, in the face of stress and threat. But threats, new in kind or degree, constantly arise. I mention two only.

A vital element in keeping the peace is our military establishment. Our arms must be mighty, ready for instant action, so that no potential aggressor may be tempted to risk his own destruction.

Our military organization today bears little relation to that known by any of my predecessors in peacetime, or indeed by the fighting men of World War II or Korea.

Until the latest of our world conflicts, the United States had no armaments industry. American makers of plowshares could, with time and as required, make swords as well. But now we can no longer risk emergency improvisation of national defense; we have been compelled to create a permanent armaments industry of vast proportions. Added to this, three and a half million men and women are directly engaged in the defense establishment. We annually spend on military security more than the net income of all United States corporations.

This conjunction of an immense military establishment and a large arms industry is new in the American experience. The total influence – economic, political, even spiritual – is felt in every city, every State house, every office of the Federal government. We recognize the imperative need for this development. Yet we must not fail to comprehend its grave implications. Our toil, resources and livelihood are all involved; so is the very structure of our society.

In the councils of government, we must guard against the acquisition of unwarranted influence, whether sought or unsought, by the military-industrial complex. The potential for the disastrous rise of misplaced power exists and will persist.

We must never let the weight of this combination endanger our liberties or democratic processes. We should take nothing for granted. Only an alert and knowledgeable citizenry can compel the proper meshing of the huge industrial and military machinery of defense with our peaceful methods and goals, so that security and liberty may prosper together.

Akin to, and largely responsible for the sweeping changes in our industrial-military posture, has been the technological revolution during recent decades.

In this revolution, research has become central; it also becomes more formalized, complex, and costly. A steadily increasing share is conducted for, by, or at the direction of, the Federal government.

Today, the solitary inventor, tinkering in his shop, has been overshadowed by task forces of scientists in laboratories and testing fields. In the same fashion, the free university, historically the fountainhead of free ideas and scientific discovery, has experienced a revolution in the conduct of research. Partly because of the huge costs involved, a government contract becomes virtually a substitute for intellectual curiosity. For every old blackboard there are now hundreds of new electronic computers.

The prospect of domination of the nation's scholars by Federal employment, project allocations, and the power of money is ever present and is gravely to be regarded.

Yet, in holding scientific research and discovery in respect, as we should, **we must also be alert to the equal and opposite danger that public policy could itself become the captive of a scientific-technological elite**.

It is the task of statesmanship to mold, to balance, and to integrate these and other forces, new and old, within the principles of our democratic system – ever aiming toward the supreme goals of our free society.

Another factor in maintaining balance involves the element of time. **As we peer into society's future, we – you and I, and our government – must avoid the impulse to live only for today, plundering, for our own ease and convenience, the precious resources of tomorrow**. **We cannot mortgage the material assets of our grandchildren without risking the loss also of their political and spiritual heritage**. We want democracy to survive for all generations to come, not to become the insolvent phantom of tomorrow.

Down the long lane of the history yet to be written America knows that this world of ours, ever growing smaller, must avoid becoming a community of **dreadful fear and hate**, and be instead, a **proud confederation of mutual trust and respect**.

Such a confederation must be one of equals. The weakest must come to the conference table with the same confidence as do we, protected as we are by our moral, economic, and military strength. That table, though scarred by many past frustrations, cannot be abandoned for the certain agony of the battlefield.

Disarmament, with mutual honor and confidence, **is a continuing imperative**. Together we must learn how to compose differences, not with arms, but with intellect and decent purpose. Because this need is so sharp and apparent I confess that I lay down my official responsibilities in this field with a definite sense of disappointment. As one who has witnessed the horror and the lingering sadness of war – as one who knows that another war could utterly destroy this civilization which has been so slowly and painfully built over thousands of years – I wish I could say tonight that a lasting peace is in sight.

Happily, I can say that war has been avoided. Steady progress toward our ultimate goal has been made. But, so much remains to be done. As a private citizen, I shall never cease to do what little I can to help the world advance along that road.

So – in this my last good night to you as your President – I thank you for the many opportunities you have given me for public service in war and peace. I trust that in that service you find some things worthy; as for the rest of it, I know you will find ways to improve performance in the future.

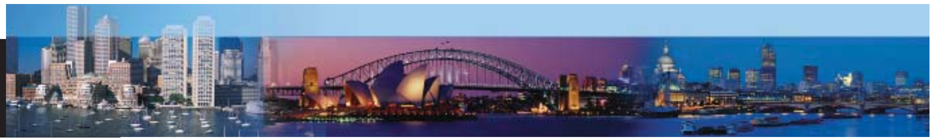
You and I – my fellow citizens – need to be strong in our faith that all nations, under God, will reach the goal of peace with justice. May we be ever unswerving in devotion to principle, confident but humble with power, diligent in pursuit of the Nation's great goals.

To all the peoples of the world, I once more give expression to America's prayerful and continuing aspiration:

We pray that peoples of all faiths, all races, all nations, may have their great human needs satisfied; **that those now denied opportunity shall come to enjoy it to the full**; that all who yearn for freedom may experience its spiritual blessings; that those who have freedom will understand, also, its heavy responsibilities; **that all** who are insensitive to the needs of others **will learn charity**; that the scourges of poverty, disease and ignorance will be made to disappear from the earth, and that, in the goodness of time, all peoples will come to live together in a peace guaranteed by the binding force of mutual respect and love.

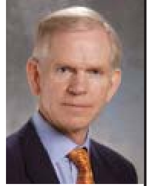
GMO

QUARTERLY LETTER



January 2011

Pavlov's Bulls



Jeremy Grantham

About 100 years ago, the Russian physiologist Ivan Pavlov noticed that when the feeding bell was rung, his dogs would salivate before they saw the actual food. They had been "conditioned." And so it was with "The Great Stimulus" of 2008-09. The market's players salivated long before they could see actual results. And the market roared up as it usually does. That was the main meal. But the tea-time bell for entering Year 3 of the Presidential Cycle was struck on October 1. Since 1964, "routine" Year 3 stimulus has helped drive the S&P up a remarkable 23% above any inflation. And this time, the tea has been spiced with QE2. Moral hazard was seen to be alive and well, and the dogs were raring to go. The market came out of its starting gate like a greyhound, and has already surged 13% (by January 12), leaving the average Year 3 in easy reach (+9%). The speculative stocks, as usual, were even better, with the Russell 2000 leaping almost 19%. We have all been well-trained market dogs, salivating on cue and behaving exactly as we are expected to. So much for free will!

Recent Predictions …

From time to time, it is our practice to take a look at our predictive hits and misses in an important market phase. I'll try to keep it brief: how did our prognostication skill stand up to Pavlov's bulls? Well, to be blunt, brilliantly on general principle; we foretold its broad outline in my 1Q 2009 *Letter*[1] and warned repeatedly of the probable strength of Year 3. But we were quite disappointing in detail.

The Good News …

For someone who has been mostly bearish for the last 20 years (of admittedly generally overpriced markets), I got this rally more or less right at the macro level. In my 1Q 2009 *Letter*, I wrote, "I am parting company with many of my bearish allies for a while ... we could easily get a prodigious response to the greatest monetary and fiscal stimulus by far in U.S. history ... we are likely to have a remarkable stock rally, far in excess of anything justified by either long-term or short-term economic fundamentals … [to] way beyond fair value [then 880] to the 1000-1100 level or so before the end of the year." As a consequence, in traditional balanced accounts, we moved from an all-time low of 38% in global equities in October 2008 to 62% in March 2009. (If only that had been 72%, though, as, in hindsight, it probably should have been.) In the same *Letter*, I said of the economy, "The current stimulus is so extensive globally that surely it will kick up the economies of at least some of the larger countries, including the U.S. and China, by late this year ..."

On one part of the fundamentals we were, in contrast, completely wrong. On the topic of potential problems, I wrote, "Not the least of these will be downward pressure on profit margins that for 20 years had benefited from rising asset prices sneaking through into margins." Why I was so wrong, I cannot say, because I still don't understand how the U.S. could have massive numbers of unused labor and industrial capacity yet still have peak profit margins. This has never happened before. In fact, before Greenspan, there was a powerful positive correlation between profit margins and capacity in the expected direction. It is one of the reasons that we in asset allocation strongly suspect the bedrock on which these fat profits rest. We still expect margins to regress to more normal levels.

[1] "The Last Hurrah and Seven Lean Years," 1Q 2009 *Quarterly Letter*.

On the topic of resource prices, my long-term view was, and still is, very positive. Not that I don't expect occasional vicious setbacks – that is the nature of the beast. I wrote in my 2Q 2009 *Letter*, "We are simply running out of everything at a dangerous rate ... We must prepare ourselves for waves of higher resource prices and periods of shortages unlike anything we have faced outside of wartime conditions."

In homage to the Fed's remarkable powers to move the market, I argued in successive quarters that the market's "line of least resistance" was up – to the 1500 range on the S&P by October 2011. That outlook held if the market and economy could survive smaller possibilities of double-dips. On fundamentals, I still believe that the economies of the developed world will settle down to growth rates that are adequate, but lower than in the past, and that we are pecking our way through my "Seven Lean Years." We face a triple threat in this regard: 1) the loss of wealth from housing, commercial real estate, and still, to some extent, the stock market, which stranded debt and resulted in a negative wealth effect; 2) the slowing growth rate of the working-age population; and 3) increasing commodity prices and periods of scarcity, to which weather extremes will contribute. To judge the accuracy of this forecast will take a while, but it is clear from the early phases that this is the worst-ever recovery from a major economic downturn, especially in terms of job creation.

And the Bad News …

We pointed out that quality stocks – the great franchise companies – were the cheapest stock group. Cheapness in any given year is often a frail reed to lean upon, and so it was in 2009 and again last year, resulting in about as bad a pasting for high quality as it has ever had. We have already confessed a few times to the crime of not being more open to the beauties of riskier stocks in a Fed-driven market. And in the name of value, we underperformed. Reviewing this experience, we feel that it would have been reasonable to have shifted to at least an increased percentage of risky investments after March 2009, because some of them, notably emerging market equities, did have estimates almost as high as quality. In fact, some were well within the range of our normal estimating error, although, of course, quality stocks were not only the least expensive, they were also the least risky, often a formidable combination. But even if we had made such a move at the lows, more extreme value discrepancies by early 2010 would have compelled us to move back to our present position – heavily overweight quality stocks – that we have carried for several years. Our sustained heavy overweight in quality stocks in 2009 was painful, intellectually and otherwise. Our pain in 2010 was more "business as usual," waiting for the virtues of value to be revealed. The saving grace is that, although value is a weak force in any single year, it becomes a monster over several years. Like gravity, it slowly wears down the opposition.

The fundamentals have also worked against quality, with lower quality companies and small caps posting better earnings. They typically respond better to Fed-type stimulus. But like other components of value, profit margins always move remorselessly back to their long-term averages, or almost always.

January 2011

So, where are we now? Although "quality" stocks are very cheap and small caps are very expensive (as are lower quality companies), we are in Year 3 of the Presidential Cycle, when risk – particularly high volatility, but including all of its risky cousins – typically does well and quality does poorly. Not exactly what we need! The mitigating feature once again is an extreme value discrepancy in our favor, but this never matters less than it does in a Year 3. This is the age-old value manager's dilemma: we can more or less depend on quality winning over several years, but it may well underperform for a few more quarters. We have always felt we should lean more heavily on the longer-term higher confidence.

As a simple rule, the market will tend to rise as long as short rates are kept low. This seems likely to be the case for eight more months and, therefore, we have to be prepared for the market to rise and to have a risky bias. As such, we have been looking at the previous equity bubbles for, if the S&P rises to 1500, it would officially be the latest in the series of true bubbles. All of the famous bubbles broke, but only after short rates had started to rise, sometimes for quite a while. We have only found a couple of unimportant two-sigma 40-year bubbles that broke in the midst of

declining rates, and that was nearly 50 years ago. The very famous, very large bubbles also often give another type of warning. Probably knowing they are dancing close to the cliff and yet reluctant to stop, late in bubbles investors often migrate to safer stocks, and risky stocks betray their high betas by underperforming. We can get into the details another time, but suffice it to say that there are usually warnings, sometimes several, before a bubble breaks. Overvaluation must be present to define a bubble, but it is not a useful warning in and of itself.

I fear that rising resource prices could cause serious inflation in some emerging countries this year. In theory, this could stop the progress of the bubble that is forming in U.S. equities. In practice, it is unlikely to stop our market until our rates have at least started to rise. Given the whiffs of deflation still lingering from lost asset values, the continued weak housing market, weak employment, and very contained labor costs, an inflationary scare in the U.S. seems a ways off.

Commodities, Weather, and Markets

Climate and weather are hard to separate. My recommendation is to ignore everything that is not off the charts and in the book of new records. The hottest days ever recorded were all over the place last year, with 2010 equaling 2005 as the warmest year globally on record. Russian heat and Pakistani floods, both records, were clearly related in the eyes of climatologists. Perhaps most remarkable, though, is what has been happening in Australia: after seven years of fierce drought, an area the size of Germany and France is several feet under water. This is so out of the range of experience that it has been described as "a flood of biblical proportions." More to the investment point: Russian heat affects wheat prices and Australian floods interfere with both mining and crops. Weather-induced disappointment in crop yield seems to be becoming commonplace. This pattern of weather extremes is exactly what is predicted by the scientific establishment. Snow on Capitol Hill, although cannon fodder for some truly dopey and ill-informed Congressmen, is also perfectly compatible. Weather instability will always be the most immediately obvious side effect of global warming.

One last story, which is far from hard science, but to me at least intriguing; I support research being done by the New England Aquarium on the right whale (so called because it was just perfect for catching, killing, and turning into whale oil). We had lunch with the right whale expert one month ago – hot off the press! – and were informed of a new development. Three hundred and fifty or so right whales (out of the remaining population of some 500, down from at least hundreds of thousands), have always shown up in late summer for several weeks of feeding in the Bay of Fundy. This year, for the first time in the 30 years of the study, they were "no shows." Calling up and down the coast, they were able to locate only 100 of them (all known by sight as individuals; none of which stayed more than a day or two anywhere). It is hoped that their food supply had simply moved to another location. The cause for this is unknown and may take years to be very confident of, but the most likely candidate is that extra cold fresh water run-off from melting ice, mainly Greenland, had shifted currents or interfered in other ways with the location of their food. If indeed the cause were accelerated run-off, then this would be completely compatible with another long-established hypothesis: that extra cold fresh water from Greenland might cool the Gulf Stream, the great conveyor of heat to Great Britain and Northern Europe. If this were in fact the case, then London would wake up and find itself feeling a lot more like Montreal – on about the same latitude – than it is used to, producing, for example, the winter there that all travelers are reading about today.

You read it here first, and conservative scientists will perhaps be writing it up in a learned journal in two or more years. It is, though, a wonderfully simple example of how a warm winter in the Northern ice might have destabilized systems, ultimately resulting in a frigid Northern Europe.

Resource Limitation Note

For my money, resource problems exacerbated by weather instability will be our biggest and most complicated investment problem for years to come. How should we prepare for it? First, we should all transfer more of our intellectual resources to the problem. Yes, we have already recommended forestry, agricultural land, and "stuff in the ground." It would be nice to back this up with more detail. To this end, we are starting to look more closely at

commodity cycles, both historically and currently. We will report back from time to time.

By the way, the good news is that our long-term bubble study, started in 1998, has become a monster. Formerly a study of the handfuls of famous, accepted investment bubbles, we are now well into a statistically rigorous review of primary, secondary, and possibly even tertiary bubbles, and now count a stunning 320 completed bubbles. For now, we do not intend to make our complete review generally available, but we will review some interesting "average" bubble behavior in a few months.

So, we do know some useful stuff about commodities. The complicating point is that in the recent few years, commodities seem to be making a paradigm shift. If this is so, it will be the most important paradigm shift to date. The bad news is that paradigm shifts cannot, by definition, be described well using history. It is all about judgment. Now there's a real problem.

Looking Forward

- Be prepared for a strong market and continued outperformance of everything risky.
- But be aware that you are living on borrowed time as a bull; on our data, the market is worth about 910 on the S&P 500, substantially less than current levels, and most risky components are even more overpriced.
- The speed with which you should pull back from the market as it advances into dangerously overpriced territory this year is more of an art than a science, but by October 1 you should probably be thinking much more conservatively.
- As before, in our opinion, U.S. quality stocks are the least overpriced equities.
- To make money in emerging markets from this point, animal sprits have to stay strong and not much can go wrong. This is possibly the last chapter in a 12-year love affair. Emerging equities seem to be in the early stages of the "Emerging, Emerging Bubble" that, 3½ years ago, I suggested would occur. How far a bubble expands is always anyone's guess, but from now on, we must be more careful.
- For those of us in Asset Allocation, currencies are presently too iffy to choose between. Occasionally, in our opinion, one or more get far out of line. This is not one of those occasions.
- Resource stocks, as in "stuff in the ground," are likely to be fine investments for the very long term. But short term, they can really ruin a quarter, and they have certainly moved a lot recently.
- We think forestry is still a good, safe, long-term play. Good agricultural land is as well.
- What to watch out for: commodity price rises in the next few months could be so large that governmental policies in emerging countries might just stop the global equity bull market. My guess, though, is that this is not the case in the U.S. just yet.

Things that Really Matter in 2011 and Beyond (in one person's view) for Investments and Real Life

- Resources running out, putting strong but intermittent pressure on commodity prices
- Global warming causing destabilized weather patterns, adding to agricultural price pressures
- Declining American educational standards relative to competitors
- Extraordinary income disparities and a lack of progress of American hourly wages
- Everything else.

Postscript

I was recently asked by a colleague on the GMO Board how I decide what to write about. Well, I'm most decidedly not trying to comment on all-important, or even all-interesting, topics. Readers are often surprised – quite reasonably, I might add – at what I avoid.

I have always tried to focus on the handful of issues about which I know a decent amount. This has been overwhelmingly about identifying hugely mispriced major sectors or asset classes among equities. This developed over the years into a study of bubbles and busts. As we built up our data and analysis, my (and our) knowledge and comfort zone extended to similar outlier events in other asset classes, including currencies, commodities, bonds, and some real estate markets. The rule, though, was not to stick our necks out unless the pricing is truly extreme for these non-equity price series, a policy that has given us, touch wood, a good safety margin. In equities, we have been a little braver and sometimes paid a high price for being early. But we missed very few, if any, major mispricings.

Second, we have studied all other equity market tendencies over the decades, from the sublime to (I confess) the ridiculous. Thus, Presidential Cycles and January Rules were considered fair game for research, along with theories for valuing everything and studying the effects of momentum and other factors on pricing behavior. In the end, for equities, this became a pretty inclusive question: how do markets work? Outside of equities or bubbles, I do not usually consider my understanding sufficient to justify my commenting seriously. Although I do occasionally.

Most other opinions I've offered have had this body of data as their source. For example, my strong views on the Fed hinged on their obvious missing of the significance and dangers of allowing asset bubbles to form and also, to a lesser degree, on our knowledge of the Year 3 Presidential effect, which they cause.

On some very rare occasions, I feel that I have some insight into a very small part of the general economic or financial picture, usually based on what I see as common sense as opposed to detailed knowledge. In general though, I feel that many investment pros make the mistake of thinking of themselves as economists or banking experts. Their feel for markets is often excellent, and should be enough to keep them happy.

This is my view, anyway, and it leads me to avoid comment (or serious comment, anyway) on any number of interesting and important issues. Such areas of avoidance today would include inflation versus deflation, how precisely to extricate ourselves from high debt without causing inflation, interest rates in general, credit in particular, subtleties of currency, any banking nuance, politics, health care, desirable trade policy, tax policy, etc., etc. So please don't think I believe it's unimportant if I ignore an issue. I don't.

Disclaimer: The views expressed are the views of Jeremy Grantham through the period ending January 25, 2011, and are subject to change at any time based on market and other conditions. This is not an offer or solicitation for the purchase or sale of any security and should not be construed as such. References to specific securities and issuers are for illustrative purposes only and are not intended to be, and should not be interpreted as, recommendations to purchase or sell such securities.

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SPECIAL TOPIC

January 2011

*Letters to the Investment Committee XVII**

Speech at the Annual Benjamin Graham and David Dodd Breakfast (Columbia University, October 7, 2009), edited for reading.

Part 2: On the Importance of Asset Class Bubbles for Value Investors and Why They Occur

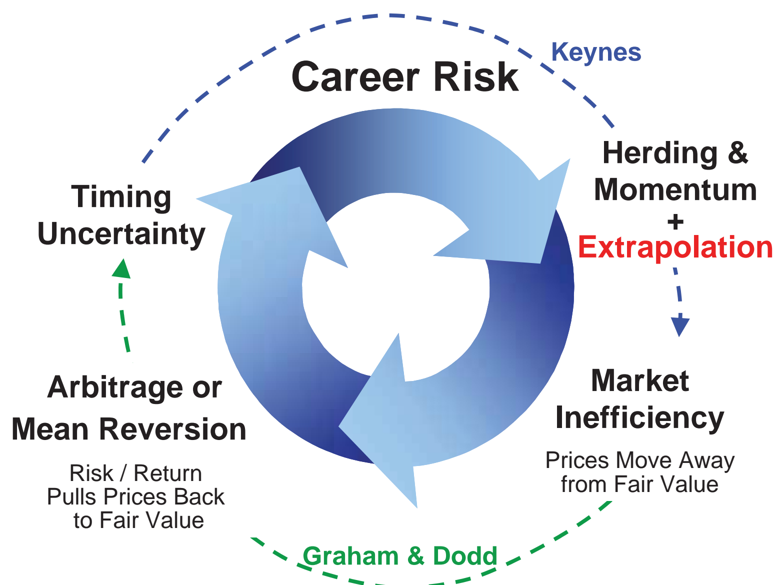
Jeremy Grantham

To set the scene for Part 2, let me repeat some of my opening paragraph from Part 1: "I've also been pretty irritated by Graham-and-Doddites because they have managed to deduce from a great book of 75 years ago, Security Analysis, that somehow bubbles and busts can be ignored. You don't have to deal with that kind of thing, they argue, you just keep your nose to the grindstone of stock picking. They feel there is something faintly speculative and undesirable about recognizing bubbles. It is this idea, in particular, that I want to attack today, because I am at the other end of the spectrum: I believe the only things that really matter in investing are the bubbles and the busts. And here or there, in some country or in some asset class, there is usually something interesting going on in the bubble business."[1]

Moving on to asset bubbles and how they form brings us to Exhibit 1. It shows how I think the market works. Remember, when it comes to the workings of the market, Keynes really got it. Career risk drives the institutional world. Basically, everyone behaves as if their job description is "keep it." Keynes explains perfectly how to keep your job: never, ever be

Exhibit 1

The Way the Investment World Goes Around:
They Were Managing Their Careers, Not Their Clients' Risk



* The Letters to the Investment Committee series is designed for a very focused market: members of institutional committees who are well informed but non-investment professionals.

[1] Part 1: "Friends and Romans, I come to tease Graham and Dodd, not to praise them," appears in Jeremy Grantham's 1Q 2010 *Quarterly Letter*, which is available in the Library at www.gmo.com.

wrong on your own. You can be wrong in company; that's okay. For example, every single CEO of, say, the 30 largest financial companies failed to see the housing bust coming and the inevitable crisis that would follow it. Naturally enough, "Nobody saw it coming!" was their cry, although we knew 30 or so strategists, economists, letter writers, and so on who all saw it coming. But in general, those who danced off the cliff had enough company that, if they didn't commit other large errors, they were safe; missing the pending crisis was far from a sufficient reason for getting fired, apparently. Keynes had it right: "A sound banker, alas, is not one who foresees danger and avoids it, but one who, when he is ruined, is ruined in a conventional and orthodox way along with his fellows, so that no one can really blame him."[2] So, what you have to do is look around and see what the other guy is doing and, if you want to be successful, just beat him to the draw. Be quicker and slicker. And if everyone is looking at everybody else to see what's going on to minimize their career risk, then we are going to have herding. We are all going to surge in one direction, and then we are all going to surge in the other direction. We are going to generate substantial momentum, which is measurable in every financial asset class, and has been so forever. Sometimes the periodicity of the momentum shifts, but it's always there. It's the single largest inefficiency in the market. There are plenty of inefficiencies, probably hundreds. But the overwhelmingly biggest one is momentum (created through a perfectly rational reason, Paul Woolley[3] would say): acting to keep your job is rational. But it doesn't create an efficient market. In fact, in many ways this herding can be inefficient, even dysfunctional.

Keynes also had something to say on extrapolation, which is very central to the process of momentum. He said that extrapolation is a "convention" we adopt to deal with an uncertain world, even though we know from personal experience that such an exercise is far from stable. In other words, by definition, if you make a prediction of any kind, you are taking career risk. To deal with this risk, economists, for example, take pains to be conservative in their estimates until they see the other guy's estimates. One can see how economists cluster together in their estimates and, even when the economy goes off the cliff, they will merely lower their estimates by 30 basis points each month, instead of whacking them down by 300 in month one. That way, they can see what the other guy is doing. So they go down 30, look around, go down another 30, and so on. And the market is gloriously inefficient because of this type of career-protecting gamesmanship.

But there is a central truth to the stock market: underneath it all, there is an economic reality. There is arbitrage around the replacement cost. If you can buy a polyethylene plant in the market for half the price of building one, you can imagine how many people will build one. Everybody stops building and buys their competitors' plants via the stock market. You run out of polyethylene capacity, the price eventually rises and rises until you sharpen your pencil and find you can build a new plant, with a safety margin and a decent return, and the cycle ends. Conversely, if you can lay fiber-optic cable and have it valued in the marketplace at three times the price that it cost you to install, then you will sell a few shares and lay some more cable, until you drown in fiber-optic cable, which is exactly what happened in 2001 and 2002.

The problem is that some of these cycles happen really fast, and some happen very slowly. And the patience of the client is three point zero zero years. If you go over that time limit, you are imperiled, and some of these cycles do indeed exceed it. You lose scads of business, as GMO did in 1998 and 1999. This timing uncertainty is what creates career and business risk. This is really a synopsis of Keynes' Chapter 12 without the elegance. Exhibit 1 also divides the process into the Keynes part and the Graham and Dodd part.

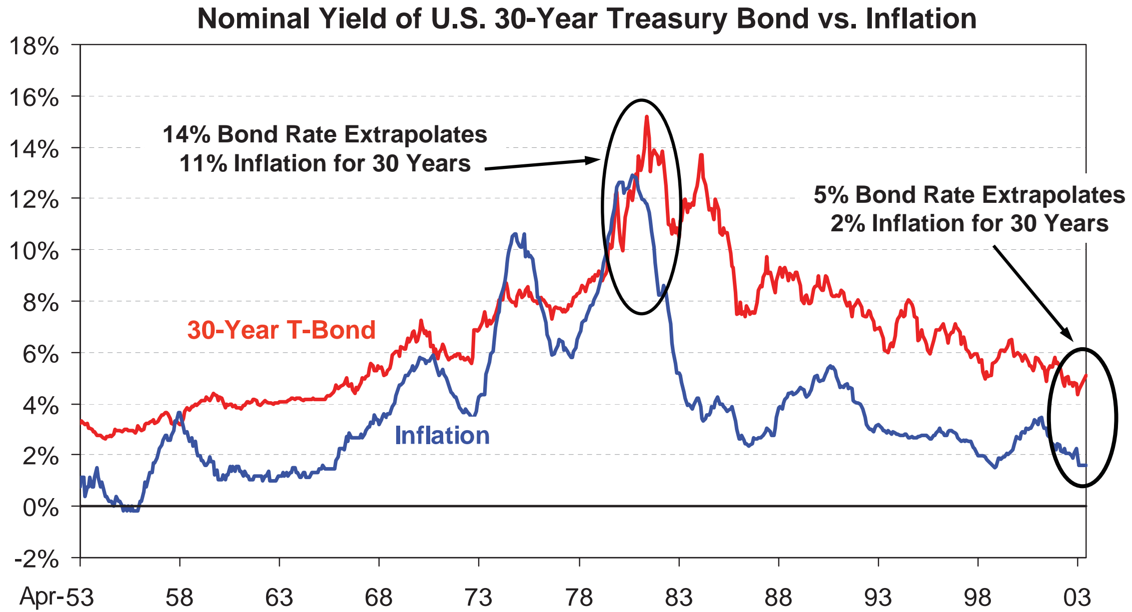
Another word about extrapolation. Extrapolation is another way of understanding the market. Exhibit 2 (Bond Market and Inflation) is my favorite extrapolation exhibit. It shows how the long Government Bond has traditionally extrapolated the short-term inflation rate into the distant future. You can see how inflation peaked at 13% in 1982. Now, with inflation at 13%, you would expect the T-bill to yield around 15%. It did. How about the 30-year Bond? It yielded 16%. The 30-year Bond took an extreme point in inflation (13%) that existed for all of about 20 minutes and extrapolated it for 30 years! Of course, with an added 3% for a real return. Volcker was snorting flames that he was going to crush inflation or die in the attempt, and they still extrapolated 13% for 30 years. Then, in 2003, inflation was down to 2% and the 30-year Bond was down to 5%. 2% inflation plus three points of real return again. Oh, it was going to stay at 2% for 30 years this time? It's incredibly naïve extrapolation, isn't it? And, in a way, the stock market is even worse. Exhibit 3 shows the ebb and flow of P/E. In an efficient world, it would be far more stable. Andrew

[2] John Maynard Keynes, "Treatise on Money," 1930.

[3] Paul Woolley and Dimitri Vayanos, "Capital market theory after the efficient market hypothesis," www.voxeu.org, October 5, 2009.

Exhibit 2

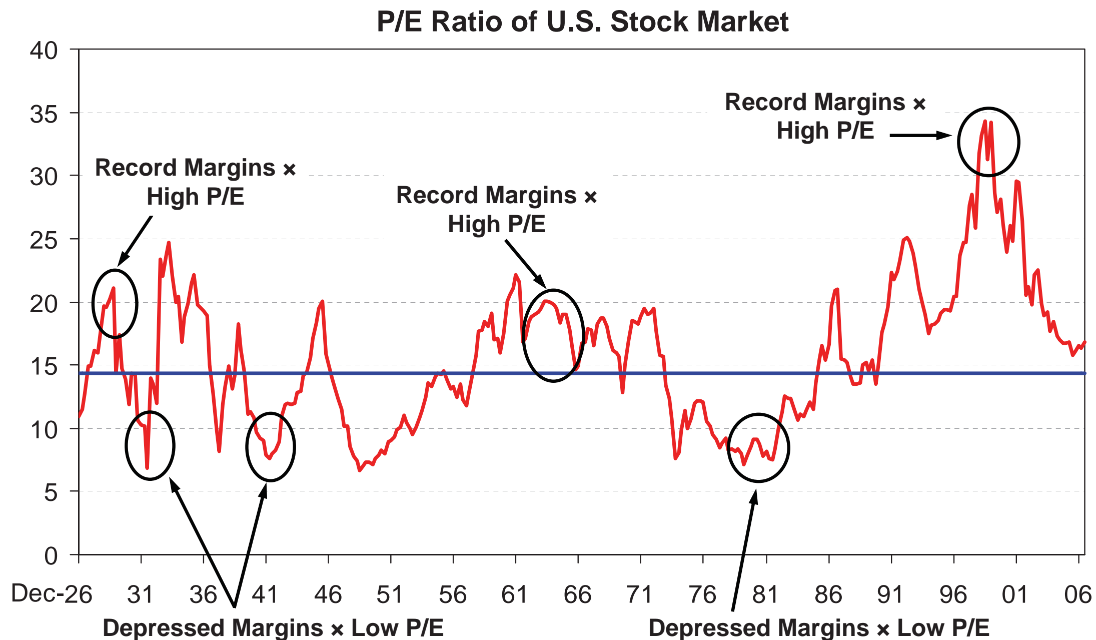
Long-Term Bond Yields – Extrapolation at its Best



Source: GMO   As of 9/30/04

Exhibit 3

P/Es and Profit Margins: Double-Counting at its Worst (Why Shiller Is Right)



Actual correlation between profit margins and P/Es is positive 31.8%

Source: GMO, Standard & Poor's   As of 6/30/07

Lo of MIT said that the market has two phases: a lot of the time it is efficient and then – bang! – it will become crazy for a while. This is not at all how I see it. Every time the market crosses fair value, it's efficient. For a few seconds every five or six or seven years, it's efficient. The rest of the time, it is spiking up or spiking down, and is inefficient.

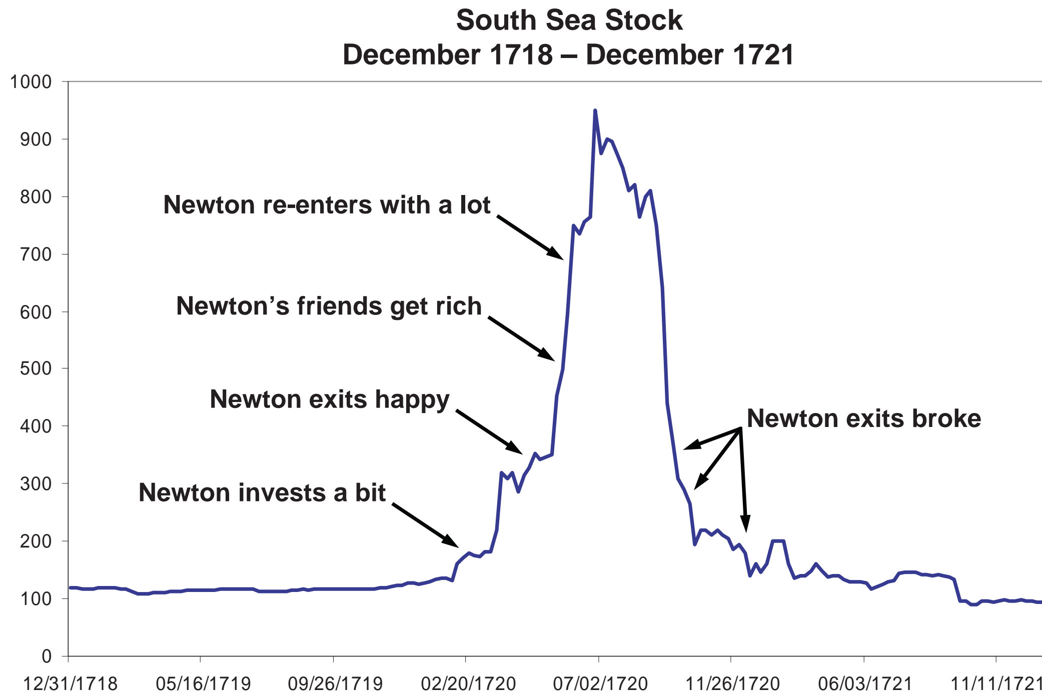
Now, the market should equal replacement cost, which means the correlation between profit margins and P/Es should be −1. Or, putting it in simpler terms, if you had a huge profit margin for the whole economy, capitalism being what it is, you would want to multiply it by a low P/E because you know high returns will suck in competition, more capital, and bid down the returns (conversely at the low end). But what actually happens? Instead of having a correlation of −1, our research shows it has a correlation of +.32. The market can't even get the sign right! High profit margins receive high P/Es and vice versa, and the correlation is much greater than +.32 at the peaks and the troughs. Right at the peak in 1929, we had record profit margins and record P/Es. In 1965, there were new record profit margins and record P/Es (21 times). Now, think about 2000. We had a new high in stated profit margins and decided to multiply it by 35 times earnings, a level so much higher than anything that had preceded it. In complete contrast, in 1982 we had half-normal profits times half-normal P/Es (8 times). I mean, give me a break. We were getting nearly one-third of replacement cost at the low, and almost three times replacement cost at the high in 2000. This double counting is, for me, the great driver of market volatility and, basically, it makes no sense. Once profit margins start to roll, investors look around at the competition, who are all going along for the ride, and we get overpricing as a result. It is a classic fallacy of composition. For an individual company, having an exceptional profit margin deserves a premium P/E against its competitors. But for the market as a whole, for which profit margins are beautifully mean reverting, it is exactly the reverse. This apparent paradox seems to fool the market persistently.

The process we've been looking at – career risk, herding momentum, extrapolation, and double counting – allows, even facilitates, the process of asset class bubbles forming. But asset bubbles don't spring out of the ground entirely randomly. They usually get started based on something real – something new and exciting or impressive, like unusually strong sales, GDP, or profits, which allow the imagination to take flight. Then, when the market is off and running, momentum and double counting (among other factors) allow for an upward spiral far above that justified by the fundamentals. There is only one other requirement for a bubble to form, and that is a generous supply of money. When you have these two factors – a strong, ideally nearly perfect economy and generous money – you are nearly certain to have a bubble form.

Forecasting bubbles, though, is problematic. It is hard work and involves predictions and career risk. Whether bubbles will break, though, is an entirely different matter. Their breaking is certain or very nearly certain, and that sort of prognosticating is much more appealing to me as a job description. Any value manager worth his salt can measure when there is a large bubble. To avoid exploiting bubbles is intellectual laziness or pure chickenry and is a common failing, in my opinion, in otherwise sensible and suitably brave Graham and Doddites.

I unabashedly worship bubbles. One of the very early ones – the famous South Sea Bubble – is shown in Exhibit 4. It's beautiful, isn't it? The shape is perfect. The average of all of the bubbles we have studied, by the way, is that they go up in three and a half years, and down in three. Let me just say a word about that: 34 bubbles is not a surprising number to an efficient market believer. Randomly, one would expect some outliers. So, we have a nice little body of 34 to study. But here's the problem: in the efficient market view, when a bubble forms, it is seen as a paradigm shift – a genuine shift in the very long-term value of an asset class or an industry. If that were the reason – a fundamental change, not the package of basically behavioral factors we've described – then what would happen following these peaks in an efficient world? Why, the prices would wander off on an infinite variety of flight paths, half of them upwards and half downwards with, I suppose, one or two nearly sideways. What happens exactly in our inconvenient real world? All of them go back to the original trend, the trend that was in place before the bubble formed. Take the U.S. housing bubble, for example. Based on its previous history of price and volatility, it was a three-sigma, 100-year bubble. What were the odds that it would be followed by a beautiful-looking bust of equal and opposite form? Why, 1 in 100, of course. So a three-sigma bubble should form randomly and burst every 100 x 100 years, or every 10,000 years, like clockwork. And the more frequent two-sigma, 40-year completed bubbles would occur every 1,600 years. Yet we have had 34 out of 34 complete bubble cycles, which would allow several universes to grow cold before occurring randomly.

Exhibit 4
Isaac Newton's Nightmare



Marc Faber, Editor and Publisher of "The Gloom, Boom & Doom Report."

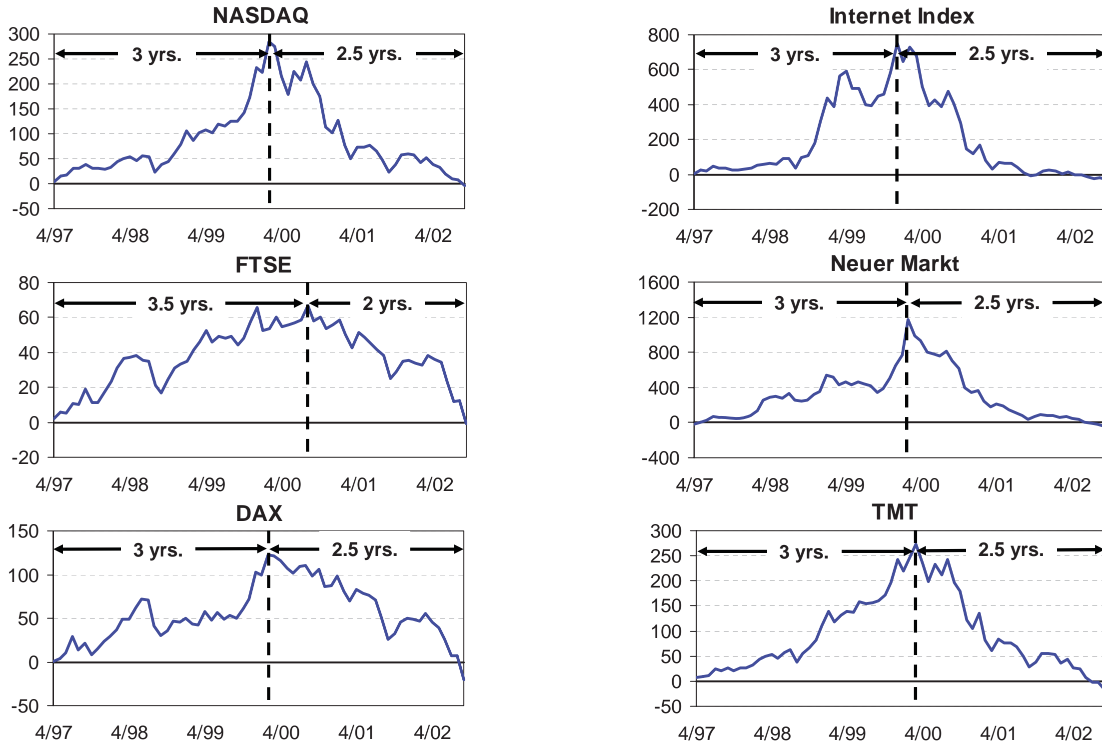
This is one of the many reasons that I am wildly enthusiastic about both rational expectations and the efficient market hypothesis. (Yes, I know we are still waiting for the aberrant U.K. and Aussie housing bubbles to break. And one day they will. Even with their variable rate mortgages to support them in bad times as the rates drop. I recently met a Brit paying ¾ of 1%. No kidding.)

Exhibit 4 also tells you a little bit about Isaac Newton, which may be true and, in any case, is a great story. Newton had the great good luck to get into the South Sea Bubble early. He made a really decent investment and a very quick killing, which mattered to him. It was enough to count. He then got out, and suffered the most painful experience that can happen in investing: he watched all of his friends getting disgustingly rich. He lost his cool and got back in, but to make up for lost time, he got back in with a whole lot more (some of it borrowed), nicely caught the decline, and was totally wiped out. And he is reported to have said something like, "I can calculate the movement of heavenly bodies but not the madness of men."

Exhibit 5 shows six bubbles from 2000. You can see how perfect they are. My favorite is not the NASDAQ, even though it went up two and a half times in three years and down all the way in two and a half years. My favorite is the Neuer Markt in Germany, which went up twelve times in three years, and lost every penny of it in two and a half years. That is pretty impressive. It's even better than the South Sea Bubble. Whatever we English could do, the Germans could do better...

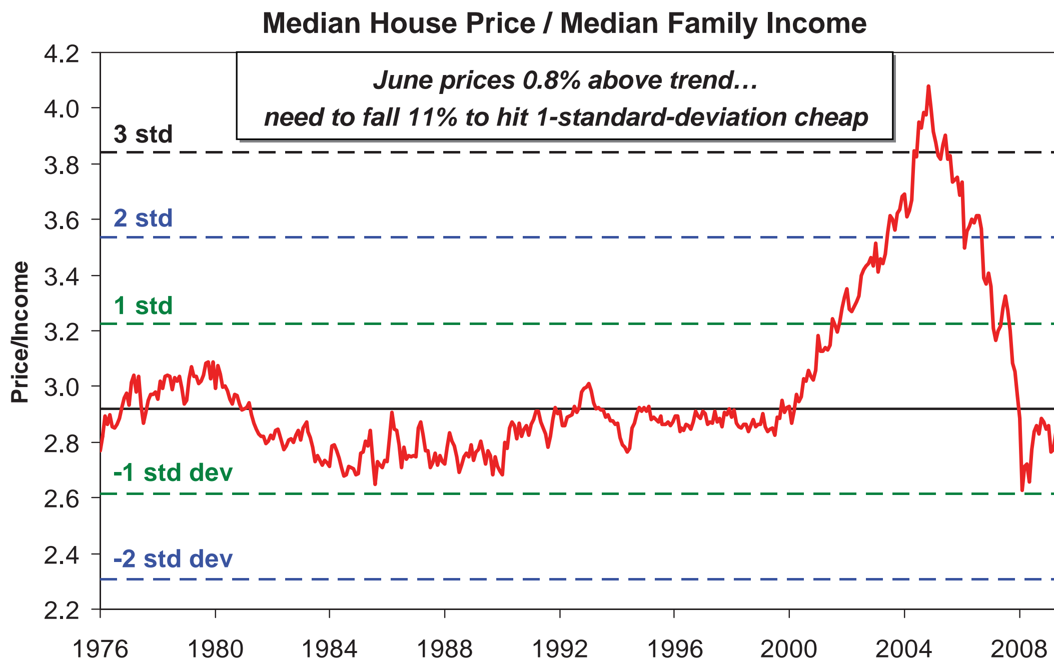
Exhibit 6 is the U.S. housing bubble. We were showing this exhibit (cross my heart and hope to die) half way up that steep ascent. One reason we were so impressed with it is that there had never been a housing bubble in American history, as Robert Shiller pointed out and was clear in the data. Previously, Chicago would boom, but Florida would bust. There was always enough diversification. It took Greenspan. It took zero interest rates. It took an amazing repackaging of mortgage instruments. It took people begging other people to take equity out of their houses to buy another one down in Florida. (We had neighbors who ended up with three…) It was doomed, but, right at the peak (October 2006), Bernanke said, "The U.S. housing market largely reflects a strong U.S. economy ... the U.S. housing market has never declined." (Meaning, of course, that it never would.) What the hell was he thinking?! This is the

Exhibit 5
Perfect Bubbles of 2000



Source: GMO, Datastream As of 9/30/02

Exhibit 6
U.S. Housing Bubble Has Burst



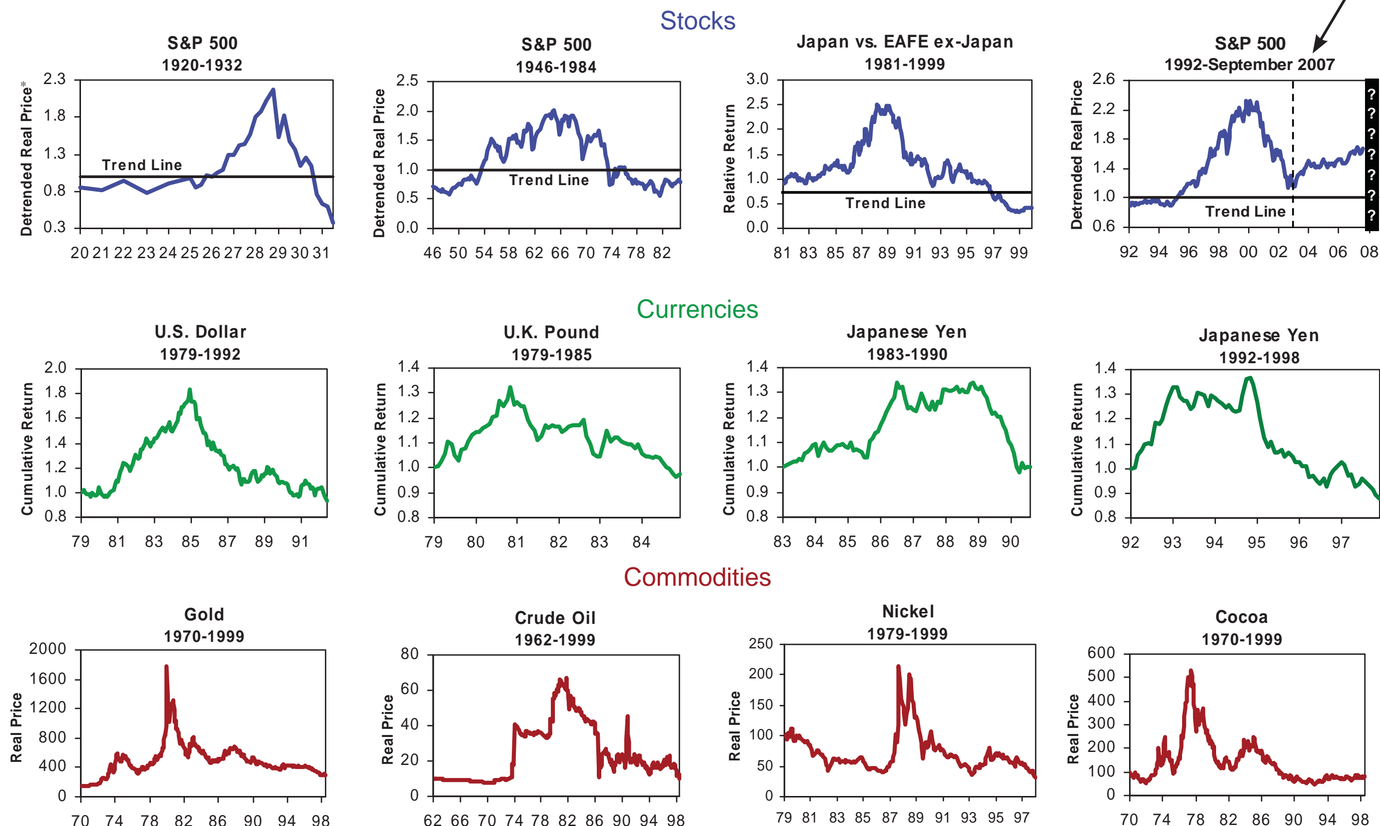
Source: National Association of Realtors, U.S. Census Bureau, GMO As of 6/30/10

guy who got reappointed. Surrounded by statisticians, he could not see a three-sigma housing bubble in a market that previously had never had one lousy bubble at all. I say it is akin to the Chicago story where two economics professors cross the quadrangle, pass a $10 bill on the ground, and don't pick it up because they know, in an efficient world, it wouldn't be there since it would already have been picked up. Bernanke couldn't see a housing bubble because he knew we don't have housing bubbles – bubbles don't exist in big asset classes because the market is efficient. As Kindleberger, the well-regarded economics historian said, the efficient market people (like Fama, French, Cochrane, Lucas, and Malkiel) "ignore the data in defense of a theory."

The twelve famous bubbles we always list are shown in Exhibit 7. The top row shows various stock markets: 1929, 1965, Japan, and 2000. Regarding 2000, we can see that, until 2008, the U.S. market did not get to trend. It has an interesting shape, including a wonderful several-year rally. I am pleased to say that in 2004 and 2005, I described the market's ascent as "the greatest sucker rally in history," so I was very relieved that it wiped out and completed the bubble cycle by bursting in 2009, with interest, as shown in Exhibit 8. So, in the end, Uncle Alan and his interest rate heroics only postponed the inevitable. Perhaps it will be the same again. The surge of bailout money certainly prevented the market from going as low this time as would have been justified by the severity of the crisis. Based on history, an appropriate decline would have been into the 400s or 500s on the S&P.

Stock market sectors have also bubbled unfailingly – growth stocks, value stocks, Japanese growth stocks, etc. In fact, they've been very dependable. To ignore them, I believe, is to avoid one of the best, easiest ways of making money. At Batterymarch we invested in small cap value in 1972-73 because we had created a chart of the ebb and flow of the relative performance of small cap that went back to 1925, and we could see this big cycle of small caps. We saw the

Exhibit 7
All Bubbles Break... **...Except**



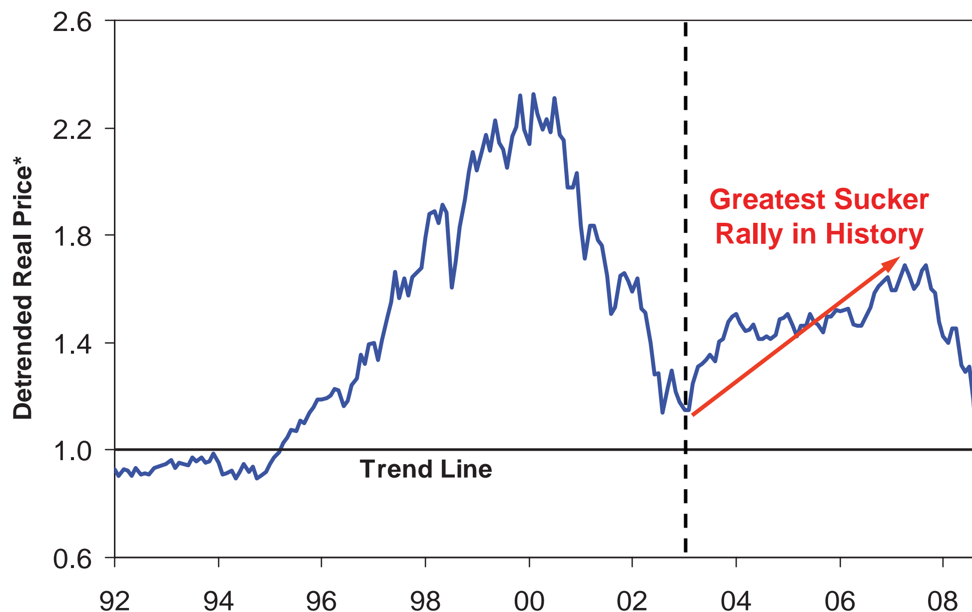
Note: For S&P charts, trend is 2% real price appreciation per year.

** Detrended Real Price is the price index divided by CPI+2%, since the long-term trend increase in the price of the S&P 500 has been on the order of 2% real.*

Source: GMO Data through 9/30/07

Exhibit 8

The 2000 S&P 500 Bubble Finally Breaks!



Note: Trend is 2% real price appreciation per year.

** Detrended Real Price is the price index divided by CPI+2%, since the long-term trend increase in the price of the S&P 500 has been on the order of 2% real.*

Source: GMO As of 10/10/08

same ebbing and flowing with value. We made a ton of dough: in just eight years, Batterymarch went from $45 million under management in late 1974 to being one of the largest, if not the largest, independent counseling firm by 1982. It did so mostly without my help, since I left in 1977, although I did bequeath my best-ever idea – small cap value. Small cap value didn't merely win; it won by over 200 percentage points. Small cap itself won by over 100 points (+322% versus +204%). Batterymarch and GMO, which continued that tradition, won by over 100 points. <u>But we didn't keep up with small cap value</u>, and that has been a lesson that has echoed through my life: we hit the most mammoth of home runs, and yet couldn't beat the small cap value benchmark. (One reason was that we were picking higher quality stocks – the real survivors. From its bottom in 1974, the index was supercharged by a small army of tiny stocks selling at, say, $1⅞ a share. These stocks, which were ticketed for bankruptcy if the world stayed bad for two more quarters, instead quadrupled in price in the six months following the market turn.) Picking the right sector was, in that case, more powerful than individual stock picking. Such themes are very, very hard to beat.

Let me end by emphasizing that responding to the ebbs and flows of major cycles and saving your big bets for the outlying extremes is, in my opinion, easily the best way for a large pool of money to add value and reduce risk. In comparison, waiting on the railroad tracks as the "Bubble Express" comes barreling toward you is a very painful way to show your disdain for macro concepts and a blind devotion to your central skill of stock picking. The really major bubbles will wash away big slices of even the best Graham and Dodd portfolios. Ignoring them is not a good idea.

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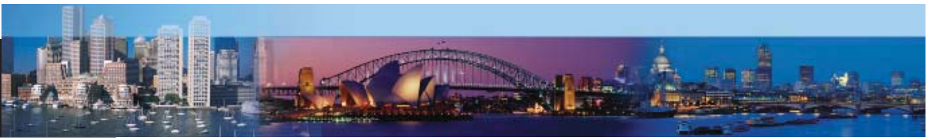
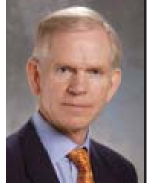


April 2011

Time to Wake Up: Days of Abundant Resources and Falling Prices Are Over Forever



Jeremy Grantham

Summary of the Summary

The world is using up its natural resources at an alarming rate, and this has caused a permanent shift in their value. We all need to adjust our behavior to this new environment. It would help if we did it quickly.

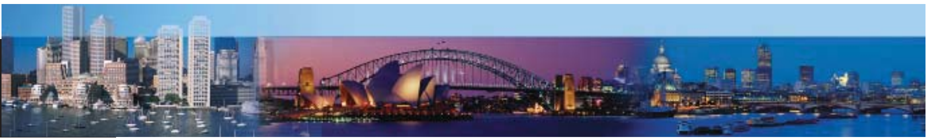
Summary

- Until about 1800, our species had no safety margin and lived, like other animals, up to the limit of the food supply, ebbing and flowing in population.
- From about 1800 on the use of hydrocarbons allowed for an explosion in energy use, in food supply, and, through the creation of surpluses, a dramatic increase in wealth and scientific progress.
- Since 1800, the population has surged from 800 million to 7 billion, on its way to an estimated 8 billion, at minimum.
- The rise in population, the ten-fold increase in wealth in developed countries, and the current explosive growth in developing countries have eaten rapidly into our finite resources of hydrocarbons and metals, fertilizer, available land, and water.
- Now, despite a massive increase in fertilizer use, the growth in crop yields per acre has declined from 3.5% in the 1960s to 1.2% today. There is little productive new land to bring on and, as people get richer, they eat more grain-intensive meat. Because the population continues to grow at over 1%, there is little safety margin.
- The problems of compounding growth in the face of finite resources are not easily understood by optimistic, short-term-oriented, and relatively innumerate humans (especially the political variety).
- The fact is that no compound growth is sustainable. If we maintain our desperate focus on growth, we will run out of everything and crash. We must substitute qualitative growth for quantitative growth.
- But Mrs. Market is helping, and right now she is sending us the Mother of all price signals. The prices of all important commodities except oil declined for 100 years until 2002, by an average of 70%. From 2002 until now, this entire decline was erased by a bigger price surge than occurred during World War II.
- Statistically, most commodities are now so far away from their former downward trend that it makes it very probable that the old trend has changed – that there is in fact a Paradigm Shift – perhaps the most important economic event since the Industrial Revolution.
- Climate change is associated with weather instability, but the last year was exceptionally bad. Near term it will surely get less bad.
- Excellent long-term investment opportunities in resources and resource efficiency are compromised by the high chance of an improvement in weather next year and by the possibility that China may stumble.
- From now on, price pressure and shortages of resources will be a permanent feature of our lives. This will increasingly slow down the growth rate of the developed and developing world and put a severe burden on poor countries.
- We all need to develop serious resource plans, particularly energy policies. There is little time to waste.

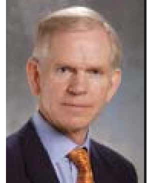
GMO

QUARTERLY LETTER

April 2011



Time to Wake Up: Days of Abundant Resources and Falling Prices Are Over Forever



Jeremy Grantham

Introduction

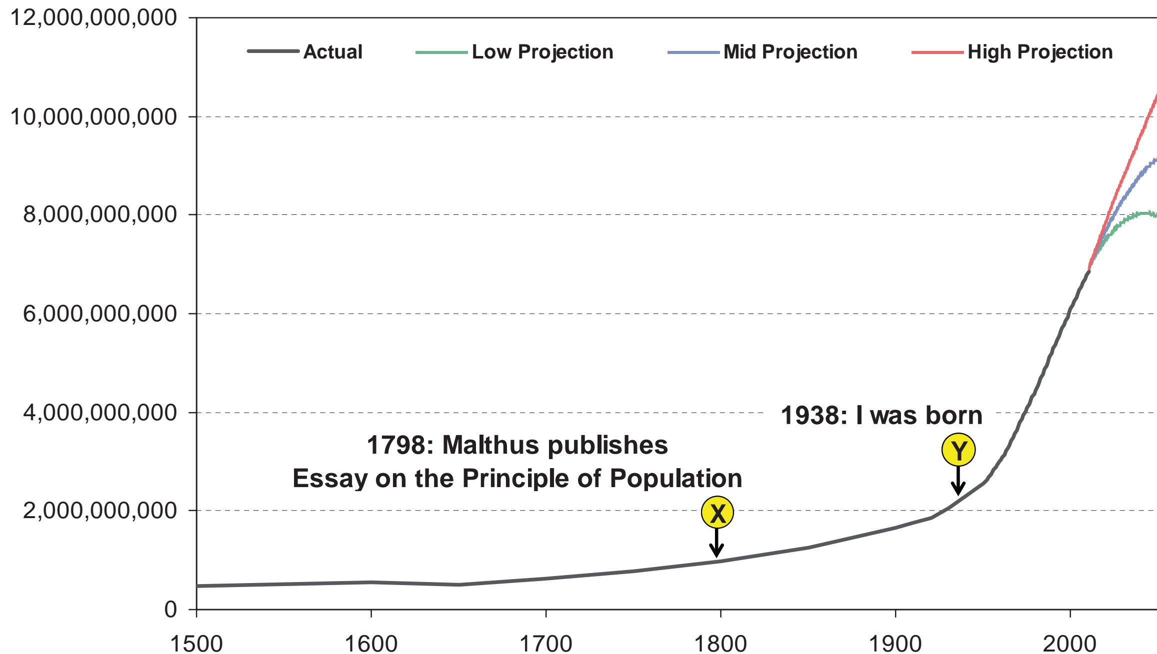
The purpose of this, my second (and much longer) piece on resource limitations, is to persuade investors with an interest in the long term to change their whole frame of reference: to recognize that we now live in a different, more constrained, world in which prices of raw materials will rise and shortages will be common. (Previously, I had promised to update you when we had new data. Well, after a lot of grinding, this is our first comprehensive look at some of this data.)

Accelerated demand from developing countries, especially China, has caused an unprecedented shift in the price structure of resources: after 100 hundred years or more of price declines, they are now rising, and in the last 8 years have undone, remarkably, the effects of the last 100-year decline! Statistically, also, the level of price rises makes it extremely unlikely that the old trend is still in place. If I am right, we are now entering a period in which, like it or not, we must finally follow President Carter's advice to develop a thoughtful energy policy and give up our carefree and careless ways with resources. The quicker we do this, the lower the cost will be. Any improvement at all in lifestyle for our grandchildren will take much more thoughtful behavior from political leaders and more restraint from everyone. Rapid growth is not ours by divine right; it is not even mathematically possible over a sustained period. Our goal should be to get everyone out of abject poverty, even if it necessitates some income redistribution. Because we have way overstepped sustainable levels, the greatest challenge will be in redesigning lifestyles to emphasize quality of life while quantitatively reducing our demand levels. A lower population would help. Just to start you off, I offer Exhibit 1: the world's population growth. X marks the spot where Malthus wrote his defining work. Y marks my entry into the world. What a surge in population has occurred since then! Such compound growth cannot continue with finite resources. Along the way, you are certain to have a paradigm shift. And, increasingly, it looks like this is it!

Malthus and Hydrocarbons

Malthus' writing in 1798 was accurate in describing the past – the whole multi-million year development of our species. For the past 150,000 years or so, our species has lived, pushed up to the very limits of the available food supply. A good rainy season, and food is plentiful and births are plentiful. A few tough years, and the population shrinks way back. It seems likely, in fact, that our species came close to extinction at least once and perhaps several times. This complete link between population and food supply was noted by Malthus, who also noticed that we have been blessed, or cursed, like most other mammals, with a hugely redundant ability to breed. When bamboo blooms in parts of India every 30 years or so, it produces a huge increase in protein, and the rat population – even more blessed than we in this respect – apparently explodes to many times its normal population; then as the bamboo's protein bounty is exhausted, the rat population implodes again, but not before exhibiting a great determination to stay alive, reflected in the pillaging of the neighboring villages of everything edible. What hydrocarbons are doing to us is very similar. For a small window of time, about 250 years (starting, ironically, just in time to make Malthus' predictions based on the past look ridiculously pessimistic), from 1800 to, say, 2050, hydrocarbons partially removed the barriers to rapid population growth, wealth, and scientific progress. World population will have shot up from 1 to at least 8, and possibly 11, billion in this window, and the average per capita income in developed countries has already increased perhaps a hundred-fold (from $400 a year to $40,000). Give or take.

Exhibit 1
World Population: 1500-2050



Source: U.S. Census Bureau, United Nations   *Actual data as of 12/31/10*

As I wrote three years ago, this growth process accelerated as time passed. Britain, leading the charge, doubled her wealth in a then unheard of 100 years. Germany, starting later, did it in 80 years, and so on until Japan in the 20th century doubled in 20 years, followed by South Korea in 15. But Japan had only 80 million people and South Korea 20 million back then. Starting quite recently, say, as the Japanese surge ended 21 years ago, China, with nearly 1.3 billion people today, started to double every 10 years, or even less. India was soon to join the charge and now, officially, 2.5 billion people in just these two countries – 2.5 times the planet's entire population in Malthus' time – have been growing their GDP at a level last year of over 8%. This, together with a broad-based acceleration of growth in smaller, developing countries has changed the world. In no way is this effect more profound than on the demand for resources. If I am right in this assumption, then when our finite resources are on their downward slope, the hydrocarbon-fed population will be left far above its sustainable level; that is, far beyond the Earth's carrying capacity. How we deal with this unsustainable surge in demand and not just "peak oil," but "peak everything," is going to be the greatest challenge facing our species. But whether we rise to the occasion or not, there will be some great fortunes made along the way in finite resources and resource efficiency, and it would be sensible to participate.

Finite Resources

Take a minute to reflect on how remarkable these finite resources are! In a sense, hydrocarbons did not have to exist. On a trivially different planet, this incredible, dense store of the sun's energy and millions of years' worth of compressed, decayed vegetable and animal matter would not exist. And as for metals, many are scarce throughout the universe and became our inheritance only through the death throes of other large stars. Intergalactic mining does not appear in so many science fiction novels for nothing. These are truly rare elements, ultimately precious, which, with a few exceptions like gold, are used up by us and their remnants scattered more or less uselessly around. Scavenging refuse pits will no doubt be a feature of the next century if we are lucky enough to still be in one piece. And what an irony if we turned this inheritance into a curse by having our use of it alter the way the environment fits together. After millions of years of trial and error, it had found a stable and admirable balance, which we are dramatically disturbing.

Setting the Scene: A World Without Hydrocarbons

To realize how threatening it would be to start to run out of cheap hydrocarbons before we have a renewable replacement technology, we have only to imagine a world without them. In 17th and 18th century Holland and Britain, there were small pockets of considerable wealth, commercial success, and technological progress. Western Europe was just beginning to build canals, a huge step forward in transportation productivity that would last 200 years and leave some canals that are still in use today. With Newton, Leibniz, and many others, science, by past standards, was leaping forward. Before the world came to owe much to hydrocarbons, Florence Nightingale – a great statistician, by the way – convinced the establishment that cleanliness would save lives. Clipper ships were soon models of pre-steam technology. A great power like Britain could muster the amazing resources to engage in multiple foreign wars around the globe (not quite winning all of them!), and all without hydrocarbons or even steam power. Population worldwide, though, was one-seventh of today's population, and life expectancy was in the thirties.

But there was a near fatal flaw in that world: a looming lack of wood. It was necessary for producing the charcoal used in making steel, which in turn was critical to improving machinery – a key to progress. (It is now estimated that all of China's wood production could not even produce 5% of its current steel output!) The wealth of Holland and Britain in particular depended on wooden sailing ships with tall, straight masts to the extent that access to suitable wood was a major item in foreign policy and foreign wars. Even more important, wood was also pretty much the sole producer of energy in Western Europe. Not surprisingly, a growing population and growing wealth put intolerable strains on the natural forests, which were quickly disappearing in Western Europe, especially in England, and had already been decimated in North Africa and the Near East. Wood availability was probably the most limiting factor on economic growth in the world and, in a hydrocarbonless world, the planet would have hurtled to a nearly treeless state. Science, which depended on the wealth and the surpluses that hydrocarbons permitted, would have proceeded at a much slower speed, perhaps as little as a third of its actual progress. Thus, from 1800 until today science might have advanced to only 1870 levels, and, even then, advances in medicine might have exceeded our ability to feed the growing population. And one thing is nearly certain: in such a world, we would either have developed the discipline to stay within our ability to grow and protect our tree supply, or we would eventually have pulled an Easter Island, cutting down the last trees and then watching, first, our quality of life decline and then, eventually, our population implode. Given our current inability to show discipline in the use of scarce resources, I would not have held my breath waiting for a good outcome in that alternative universe.

But in the real world, we do have hydrocarbons and other finite resources, and most of our current welfare, technology, and population size depends on that fact. Slowly running out of these resources will be painful enough. Running out abruptly and being ill-prepared would be disastrous.

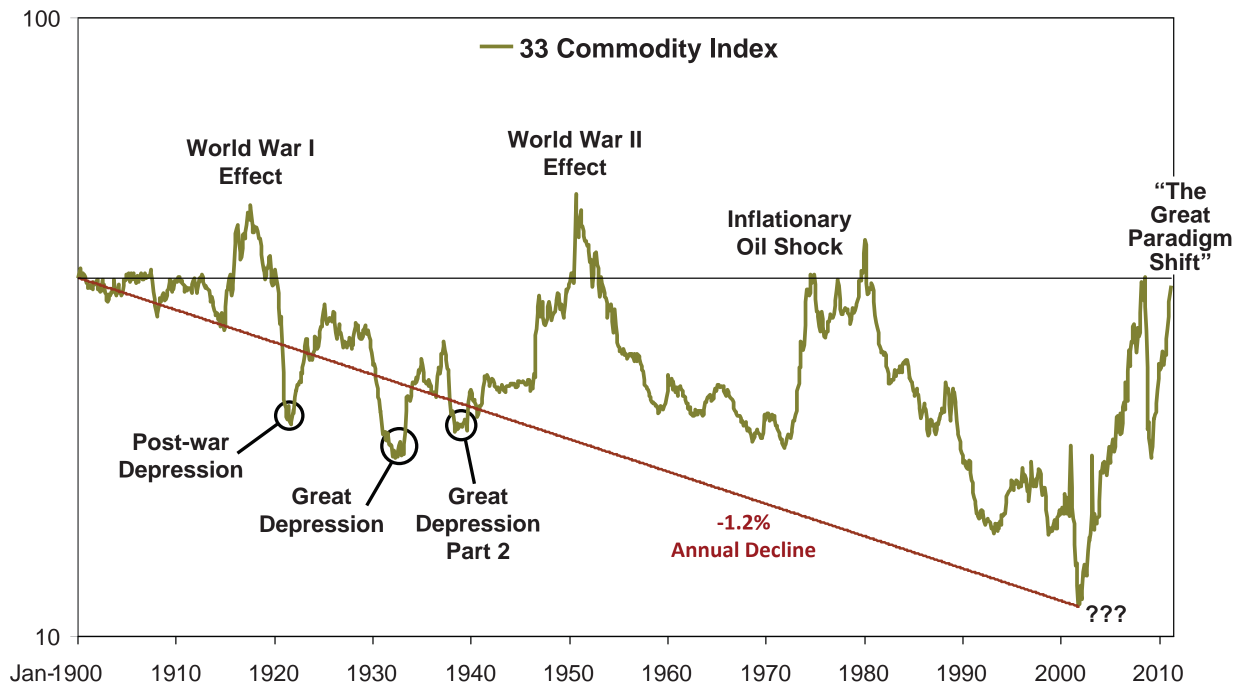
The Great Paradigm Shift: from Declining Prices…

The history of pricing for commodities has been an incredibly helpful one for the economic progress of our species: in general, prices have declined steadily for all of the last century. We have created an equal-weighted index of the most important 33 commodities. This is not designed to show their importance to the economy, but simply to show the average price trend of important commodities as a class. The index shown in Exhibit 2 starts 110 years ago and trends steadily downward, in apparent defiance of the ultimately limited nature of these resources. The average price falls by 1.2% a year after inflation adjustment to its low point in 2002. Just imagine what this 102-year decline of 1.2% compounded has done to our increased wealth and well-being. Despite digging deeper holes to mine lower grade ores, and despite using the best land first, and the best of everything else for that matter, the prices fell by an average of over 70% in real terms. The undeniable law of diminishing returns was overcome by technological progress – a real testimonial to human inventiveness and ingenuity.

But the decline in price was not a natural law. It simply reflected that in this particular period, with our particular balance of supply and demand, the increasing marginal cost of, say, 2.0% a year was overcome by even larger increases in annual productivity of 3.2%. But this was just a historical accident. Marginal rates could have risen

Exhibit 2

GMO Commodity Index: The Great Paradigm Shift



Note: The GMO commodity index is an index comprised of the following 33 commodities, equally weighted at initiation: aluminum, coal, coconut oil, coffee, copper, corn, cotton, diammonium phosphate, flaxseed, gold, iron ore, jute, lard, lead, natural gas, nickel, oil, palladium, palm oil, pepper, platinum, plywood, rubber, silver, sorghum, soybeans, sugar, tin, tobacco, uranium, wheat, wool, zinc.

Source: GMO   As of 2/28/11

faster; productivity could have risen more slowly. In those relationships we have been lucky. Above all, demand could have risen faster, and it is here, recently, that our luck has begun to run out.

… to Rising Prices

Just as we began to see at least the potential for peak oil and a rapid decline in the quality of some of our resources, we had the explosion of demand from China and India and the rest of the developing world. Here, the key differences from the past were, as mentioned, the sheer scale of China and India and the unprecedented growth rates of developing countries in total. This acceleration of growth affected global demand quite suddenly. Prior to 1995, there was (remarkably, seen through today's eyes) no difference in aggregate growth between the developing world and the developed world. And, for the last several years now, growth has been 3 to 1 in their favor!

The 102 years to 2002 saw almost each individual commodity – both metals and agricultural – hit all-time lows. Only oil had clearly peeled off in 1974, a precursor of things to come. But since 2002, we have the most remarkable price rise, in real terms, ever recorded, and this, I believe, will go down in the history books. Exhibit 2 shows this watershed event. Until 20 years ago, there were no surprises at all in the sense that great unexpected events like World War I, World War II, and the double inflationary oil crises of 1974 and 1979 would cause prices to generally surge; and setbacks like the post-World War I depression and the Great Depression would cause prices to generally collapse. Much as you might expect, except that it all took place around a downward trend. But in the 1990s, things started to act oddly. First, there was a remarkable decline for the 15 or so years to 2002. What description should be added to our exhibit? "The 1990's Surge in Resource Productivity" might be one. Perhaps it was encouraged by the fall of the Soviet bloc. It was a very important but rather stealthy move, and certainly not one that was much remarked on in investment circles. It was as if lower prices were our divine right. And more to the point, what description do we

put on the surge from 2002 until now? It is far bigger than the one caused by World War II, happily without World War III. My own suggestion would be "The Great Paradigm Shift."

The primary cause of this change is not just the accelerated size and growth of China, but also its astonishingly high percentage of capital spending, which is over 50% of GDP, a level never before reached by any economy in history, and by a wide margin. Yes, it was aided and abetted by India and most other emerging countries, but still it is remarkable how large a percentage of some commodities China was taking by 2009. Exhibit 3 shows that among important non-agricultural commodities, China takes a relatively small fraction of the world's oil, using a little over 10%, which is about in line with its share of GDP (adjusted for purchasing parity). The next lowest is nickel at 36%. The other eight, including cement, coal, and iron ore, rise to around an astonishing 50%! In agricultural commodities, the numbers are more varied and generally lower: 17% of the world's wheat, 25% of the soybeans (thank Heaven for Brazil!) 28% of the rice, and 46% of the pigs. That's a lot of pigs!

Exhibit 3
China's Share of World Commodity Consumption

Commodity	China % of World
Cement	**53.2%**
Iron Ore	**47.7%**
Coal	**46.9%**
Pigs	**46.4%**
Steel	**45.4%**
Lead	**44.6%**
Zinc	**41.3%**
Aluminum	**40.6%**
Copper	**38.9%**
Eggs	**37.2%**
Nickel	**36.3%**
Rice	**28.1%**
Soybeans	**24.6%**
Wheat	**16.6%**
Chickens	**15.6%**
PPP GDP	**13.6%**
Oil	**10.3%**
Cattle	**9.5%**
GDP	**9.4%**

Source: Barclays Capital (2010), Credit Suisse (2010), Goldman Sachs, United States Geological Survey (2009), BP Statistical Review of World Energy (2009), Food and Agriculture Organization of the United Nations (2008), International Monetary Fund (2010)

Optimists will answer that the situation that Exhibit 3 describes is at worst temporary, perhaps caused by too many institutions moving into commodities. The Monetary Maniacs may ascribe the entire move to low interest rates. Now, even I know that low rates can have a large effect, at least when combined with moral hazard, on the movement of stocks, but in the short term, there is no real world check on stock prices and they can be, and often are, psychologically flakey. But commodities are made and bought by serious professionals for whom today's price is life and death. Realistic supply and demand really is the main influence.

Exhibit 4 shows how out of line with their previous declining trends most commodities are. We have stated this in terms of standard deviations, but for most of us, certainly including me, a probabilistic – 1-in-44-year event, etc. – is more comprehensible. GMO's extended work on asset bubbles now covers 330 completed bubbles, including even quite minor ones. These bubbles have occurred only 30% or so more than would be expected in a perfectly random world. In a world where black swans are becoming very popular, this is quite a surprise.

Exhibit 4
The Mother of All Paradigm Shifts

	z-score*	Probability**
Iron Ore	4.9	1 in 2,200,000
Coal	4.1	1 in 48,000
Copper	3.9	1 in 17,000
Corn	3.8	1 in 14,000
Silver	3.7	1 in 9,300
Sorghum	3.5	1 in 4,300
Palladium	3.4	1 in 3,000
Rubber	3.3	1 in 2,100
Flaxseed	3.3	1 in 2,100
Palm Oil	3.2	1 in 1,500
Soybeans	3.1	1 in 1,000
Coconut Oil	3.0	1 in 740
Nickel	2.7	1 in 290
Gold	2.6	1 in 210
Oil	2.5	1 in 160
Sugar	2.5	1 in 160
Platinum	2.4	1 in 120
Lead	2.4	1 in 120
Wheat	2.4	1 in 120
Coffee	2.3	1 in 85
Diammonium Phosphate	2.1	1 in 56
Jute	2.1	1 in 56
Cotton	2.0	1 in 44
Uranium	1.9	1 in 35
Tin	1.9	1 in 35
Zinc	1.9	1 in 35
Potash	1.9	1 in 35
Wool	1.7	1 in 22
Aluminum	1.4	1 in 12
Lard	0.9	1 in 5
Pepper	0.5	1 in 3
Natural Gas	0.2	1 in 2
Plywood	-0.1	1 in 2
Beef	-0.1	1 in 2
Cocoa	-0.1	1 in 2
Tobacco	-3.3	1 in 2000

* *z-score: difference between current price and long-term trend, expressed in standard deviations*

** *Probability: implied probability under assumption of normal distribution of valuations*

Source: GMO As of 2/28/11

Exhibit 4 is headed by iron ore. It has a 1 in 2.2 million chance that it is still on its original declining price trend. Now, with odds of over a million to one, I don't believe the data. Except if it's our own triple-checked data. Then I don't believe the trend! The list continues: coal, copper, corn, and silver … a real cross section and all in hyper bubble territory if the old trends were still in force. And look at the whole list: twelve over 3-sigma, eleven others in 2-sigma territory (which we have always used as the definition of a bubble), four more on the cusp at 1.9, two more over 1.0, and three more up. Only four are down, three of which are insignificantly below long-term trend, and the single outlier is not even an economic good – it's what could be called an economic "bad" – tobacco. This is an amazing picture and it is absolutely not a reflection of general investment euphoria. Global stocks are pricey but well within normal ranges, and housing is mixed. But commodities are collectively worse than equities (S&P 500) were in the U.S. in the tech bubble of 2000! If you believe that commodities are indeed on their old 100-year downward trend, then their current pricing is collectively vastly improbable. It is far more likely that for most commodities the trend has changed, just as it did for oil back in 1974, as we'll see later.

Aware of the finite nature of our resources, a handful of economists had propounded several times in the past (but back in the 1970s in particular) the theory that our resources would soon run out and prices would rise steadily. Their work, however, was never supported by any early warning indicators (read: steadily rising prices) that, in fact, this running out was imminent. Quite the reverse. Prices continued to fall. The bears' estimates of supply and demand were also quite wrong in that they continuously underestimated cheap supplies. But now, after more than another doubling in annual demand for the average commodity and with a 50% increase in population, it is the price signals that are noisy and the economists who are strangely quiet. Perhaps they have, like premature bears in a major bull market, lost their nerve.

Why So Little Fuss?

I believe that we are in the midst of one of the giant inflection points in economic history. This is likely the beginning of the end for the heroic growth spurt in population and wealth caused by what I think of as the Hydrocarbon Revolution rather than the Industrial Revolution. The unprecedented broad price rise would seem to confirm this. Three years ago I warned of "chain-linked" crises in commodities, which have come to pass, and all without a fully-fledged oil crisis. Yet there is so little panicking, so little analysis even. I think this paradox exists because of some unusual human traits.

The Problem with Humans

As a product of hundreds of thousands, if not millions, of years of trial and error, it is perhaps not surprising that our species is excellent at many things. Bred to survive on the open savannah, we can run quite fast, throw quite accurately, and climb well enough. Above all, we have excellent spatial awareness and hand/eye coordination. We are often flexible and occasionally inventive.

For dealing with the modern world, we are not, however, particularly well-equipped. We don't seem to deal well with long horizon issues and deferring gratification. Because we could not store food for over 99% of our species' career and were totally concerned with staying alive this year and this week, this is not surprising. We are also innumerate. Our typical math skills seem quite undeveloped relative to our nuanced language skills. Again, communication was life and death, math was not. Have you not admired, as I have, the incredible average skill and, perhaps more importantly, the high minimum skill shown by our species in driving through heavy traffic? At what other activity does almost everyone perform so well? Just imagine what driving would be like if those driving skills, which reflect the requirements of our distant past, were replaced by our average math skills!

We also became an optimistic and overconfident species, which early on were characteristics that may have helped us to survive and today are reaffirmed consistently by the new breed of research behaviorists. And some branches of our culture today are more optimistic and overconfident than others. At the top of my list would be the U.S. and Australia. In a well-known recent international test,[1] U.S. students came a rather sad 28/40 in math and a very mediocre eighteenth in language skills, but when asked at the end of the test how well they had done in math, they were right at the top of the confidence list. Conversely, the Hong Kongers, in the #1 spot for actual math skills, were averagely humble in their expectations.

Fortunately, optimism appears to be a real indicator of future success. A famous Harvard study in the 1930s found that optimistic students had more success in all aspects of their early life and, eventually, they even lived longer. Optimism likely has a lot to do with America's commercial success. For example, we attempt far more ventures in new technologies like the internet than the more conservative Europeans and, not surprisingly, end up with more of the winners. But optimism has a downside. No one likes to hear bad news, but in my experience, no one hates it as passionately as the U.S. and Australia. Less optimistic Europeans and others are more open to gloomy talk. Tell a Brit you think they're in a housing bubble, and you'll have a discussion. Tell an Australian, and you'll have World War III. Tell an American in 1999 that a terrible bust in growth stocks was coming, and he was likely to have told

[1] P.I.S.A. Test 2003, OECD.

you that you had missed the point, that 65 times earnings was justified by the Internet and other dazzling technology, and, by the way, please stay out of my building in the future. This excessive optimism has also been stuck up my nose several times on climate change, where so many otherwise sensible people would much prefer an optimistic sound bite from Fox News than to listen to bad news, even when clearly realistic. I have heard several brilliant contrarian financial analysts, siding with climate skeptics, all for want of, say, 10 or 12 hours of their own serious analysis. My complete lack of success in stirring up interest in our resource problems has similarly impressed me: it was like dropping reports into a black hole. Finally, in desperation, we have ground a lot of data and, the more we grind, the worse, unfortunately, it looks.

Failure to Appreciate the Impossibility of Sustained Compound Growth

I briefly referred to our lack of numeracy as a species, and I would like to look at one aspect of this in greater detail: our inability to understand and internalize the effects of compound growth. This incapacity has played a large role in our willingness to ignore the effects of our compounding growth in demand on limited resources. Four years ago I was talking to a group of super quants, mostly PhDs in mathematics, about finance and the environment. I used the growth rate of the global economy back then – 4.5% for two years, back to back – and I argued that it was the growth rate to which we now aspired. To point to the ludicrous unsustainability of this compound growth I suggested that we imagine the Ancient Egyptians (an example I had offered in my July 2008 *Letter*) whose gods, pharaohs, language, and general culture lasted for well over 3,000 years. Starting with only a cubic meter of physical possessions (to make calculations easy), I asked how much physical wealth they would have had 3,000 years later at 4.5% compounded growth. Now, these were trained mathematicians, so I teased them: "Come on, make a guess. Internalize the general idea. You know it's a very big number." And the answers came back: "Miles deep around the planet," "No, it's much bigger than that, from here to the moon." Big quantities to be sure, but no one came close. In fact, not one of these potential experts came within one billionth of 1% of the actual number, which is approximately 10^{57}, a number so vast that it could not be squeezed into a billion of our Solar Systems. Go on, check it. If trained mathematicians get it so wrong, how can an ordinary specimen of Homo Sapiens have a clue? Well, he doesn't. So, I then went on. "Let's try 1% compound growth in either their wealth or their population," (for comparison, 1% since Malthus' time is less than the population growth in England). In 3,000 years the original population of Egypt – let's say 3 million – would have been multiplied 9 trillion times! There would be nowhere to park the people, let alone the wealth. Even at a lowly 0.1% compound growth, their population or wealth would have multiplied by 20 times, or about 10 times more than actually happened. And this 0.1% rate is probably the highest compound growth that could be maintained for a few thousand years, and even that rate would sometimes break the system. The bottom line really, though, is that no compound growth can be sustainable. Yet, how far this reality is from the way we live today, with our unrealistic levels of expectations and, above all, the optimistic outcomes that are simply assumed by our leaders.

Now no one, in round numbers, wants to buy into the implication that we must rescale our collective growth ambitions. I was once invited to a monthly discussion held by a very diverse, very smart group, at which it slowly dawned on my jet-lagged brain that I was expected to contribute. So finally, in desperation, I gave my first-ever "running out of everything" harangue (off topic as usual). Not one solitary soul agreed. What they did agree on was that the human mind is – unlike resources – infinite and, consequently, the intellectual cavalry would always ride to the rescue. I was too tired to argue that the infinite brains present in Mayan civilization after Mayan civilization could not stop them from imploding as weather (mainly) moved against them. Many other civilizations, despite being armed with the same brains as we have, bit the dust or just faded away after the misuse of their resources. This faith in the human brain is just human exceptionalism and is not justified either by our past disasters, the accumulated damage we have done to the planet, or the frozen-in-the-headlights response we are showing right now in the face of the distant locomotive quite rapidly approaching and, thoughtfully enough, whistling loudly.

Hubbert's Peak

Let's start a more detailed discussion of commodities on by far the most important: oil. And let's start with by far the largest user: the U.S. In 1956, King Hubbert, a Shell oil geologist, went through the production profile of every major

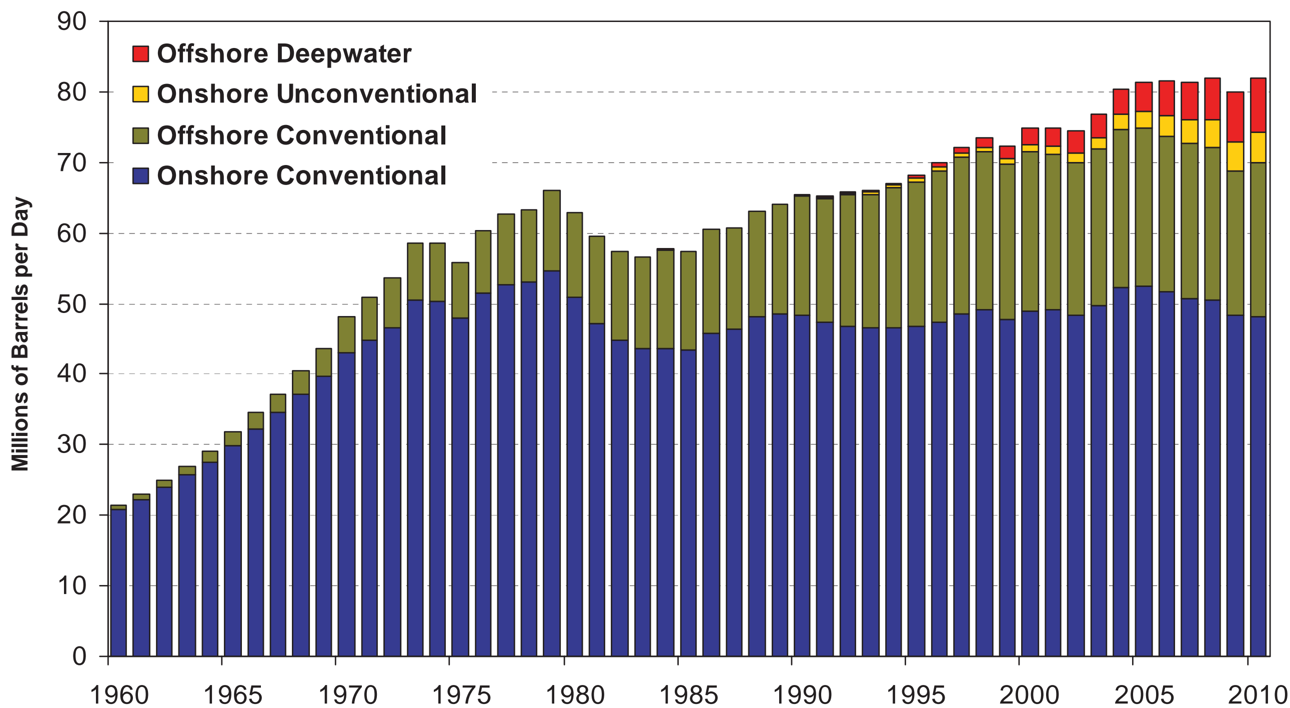
U.S. oil field and concluded that, given the trend of new discoveries and the rate of run-off, U.S. oil production was likely to peak in around 1970. Of course, vested interests and vested optimism being what they are, his life was made a total misery by personal attacks – it was said that he wasn't a patriot, that he was doing it all to enhance his own importance, and, above all, that he was an idiot. But he was right: U.S. production peaked in 1971! This, typically enough, did not stop the personal attacks. There is nothing more hateful in an opponent than his being right. In 1956, Hubbert also suggested that a global peak would be reached in "about 50 years," but after OPEC formed in 1974 and prices jumped, he said it would probably smooth out production and extend the peak by about 10 years, or to 2016, give or take. Once again, this could be a remarkably accurate estimate!

The U.S. peak oil event of 1971 is important in rebutting today the same arguments that he faced in the 1960s. This time, these arguments are used against the idea that global oil is nearing its peak. The arguments back then were that technological genius, capitalist drive, and infinite engineering resourcefulness would always drive back the day of reckoning. But wasn't the U.S. in the 1960s full of the most capitalist of spirits, Yankee know-how, and resourcefulness? Didn't the U.S. have the great oil service companies, and weren't there far more wells drilled here than anywhere? All true. But, still, production declined in 1971 and has slowly and pretty steadily declined ever since. Even if we miss the inherent impossibility of compound growth running into finite resources, how can we possibly think that our wonderful human attributes and industriousness will prevent the arrival of global peak oil when we have the U.S. example in front of us?

Exhibit 5 shows that global traditional onshore oil, in fact, peaked long ago in 1982, and that only much more expensive offshore drilling and tertiary recovery techniques allowed for even a modest increase in output, and that at much higher prices. Exhibit 6 shows that since 1983, every year (except one draw) less new conventional oil was found than was actually pumped!

Exhibit 5

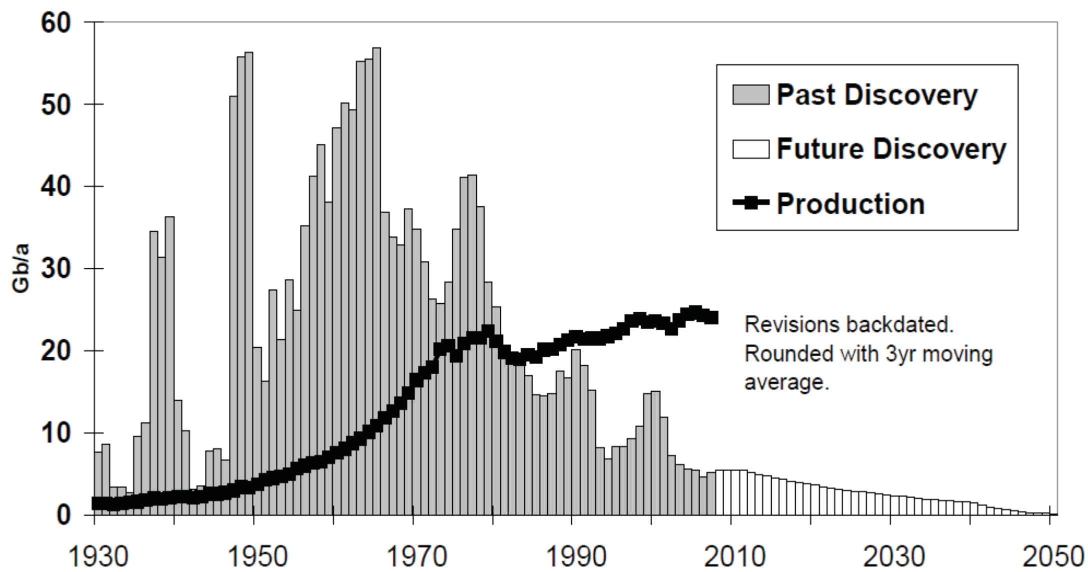
Global Oil Production – Onshore and Offshore, Conventional and Unconventional



Source: Energyfiles, Energy Information Administration, BP Statistical Review of World Energy, Wood Mackenzie As of 12/31/10

Exhibit 6

The Growing Gap – Regular Conventional Oil



Note: "Regular Conventional Oil" excludes heavy oil (tar sands, oil shale, etc.), deepwater oil, polar oil, NGLs and refinery gain.

Source: Association for the Study of Peak Oil and Gas

Global Oil Prices, the First Paradigm Shift

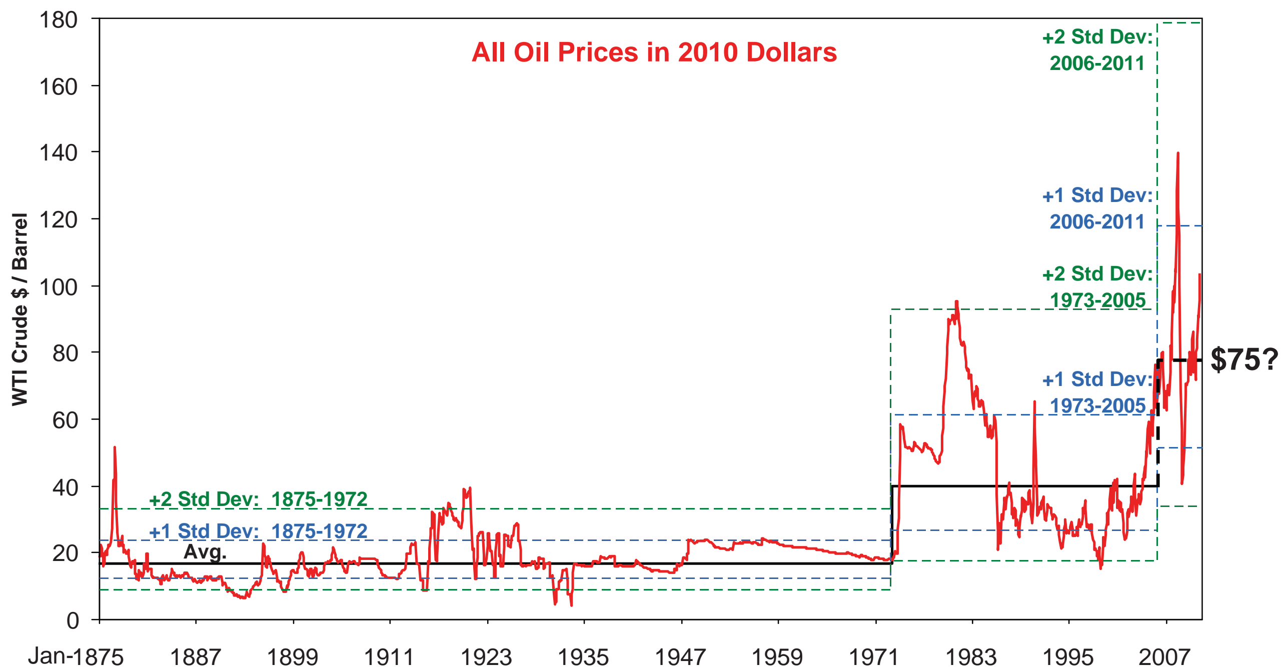
We have seen how broad-based commodity prices declined to a trough from 2000-03. Oil however, was an exception and, given its approximate 50% weight by value, a very important exception. In 1974, it split off from other commodities, which continued to decline steeply. It was in 1974 that an oil cartel, OPEC, was formed. What better time could there be for a fast paradigm shift than during a cartel forming around a finite resource?

Exhibit 7, which may be familiar to you, was developed when the penny first dropped for me five years ago, and was soon after reproduced in the Sunday *New York Times*. It shows that for 100 years oil had a remarkably flat real price of around $16/barrel in today's currency, even as all other commodities declined. It was always an exception in that sense. Oil has a volatile price series, which is not surprising given supply shocks, the difficulty of storage, and, above all, the very low price elasticity of demand in the short term. Normal volatility is, relative to trend, more than a double and less than a half, so that around the $16 trend we would normally expect to see price spikes above $32 and troughs below $8. Drawing in the dotted lines of 1 and 2 standard deviations, it can be seen that the series is well behaved: it should breach the 2-sigma line about 2.5 times up and 2.5 times down in a 100-year period (because 2-sigma events should occur every 44 years), and it does pretty much just that. It is also clear that this well-behaved $16 trend line was shifted quite abruptly to around $35/barrel in 1974, the year OPEC began. And OPEC began in a very hostile and aggressive mood, resulting in unusual solidarity among its members. Oil prices remained very volatile around this new higher trend, peaking in 1980 at almost $100 in today's currency (confirming, to some degree, the new higher trend) and falling back to $16 in 1999.

Today, looking at the oil price series from about 2003, it seems likely that a second paradigm jump has occurred, to about $75 a barrel, another doubling. Around this new trend, a typical volatile oil range would be from over $150 to under $37. The validity of this guess will be revealed in, say, another 15 to 20 years. Stay tuned. There is, though, a different support to this price analysis, and that is cost analysis. We are not (yet, anyway) experts in oil costs, but as far as we are able to determine, the full cost of finding and delivering a major chunk of new oil today is about $70 to $80 a barrel. If true, this would make the idea of a second paradigm jump nearly certain.

Exhibit 7

At Last, a Paradigm Shift: Oil in 1974



Source: Global Financial Data, GMO As of 3/31/11

The Great Paradigm Shift

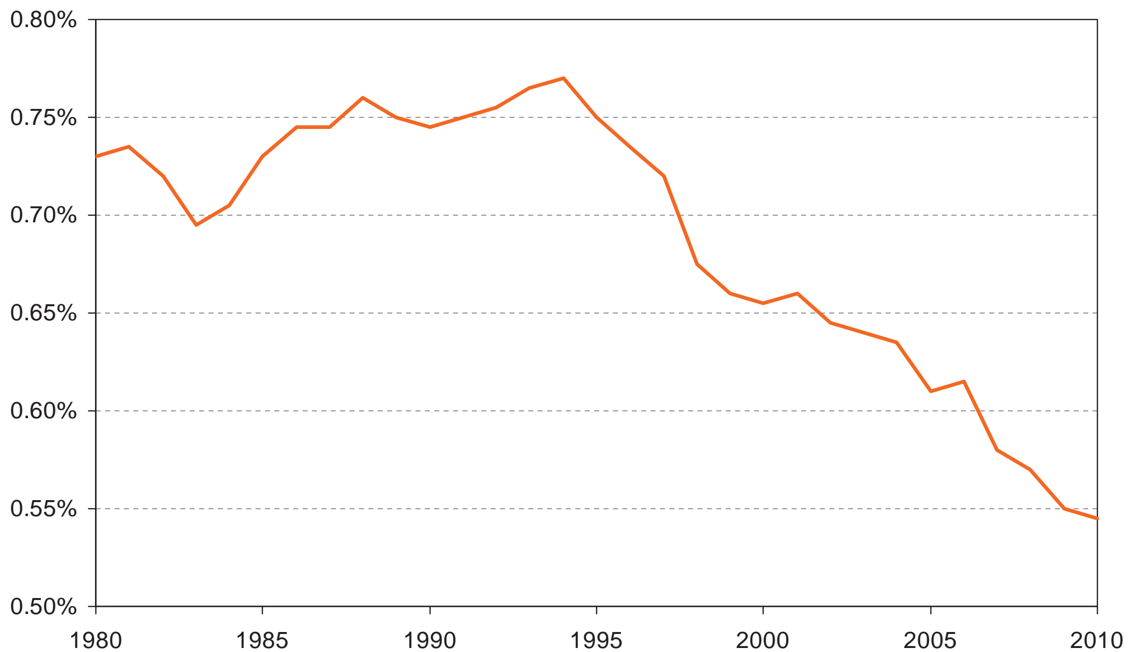
So, oil caused my formerly impregnable faith in mean reversion to be broken. I had always admitted that paradigm shifts were theoretically possible, but I had finally met one nose to nose. It did two things. First, it set me to thinking about why this one felt so different to those false ones claimed in the past. Second, it opened my eyes to the probability that others would come along sooner or later.

The differences in this paradigm shift are obvious. All of the typical phantom paradigm shifts are optimistic. They often look more like justifications for high asset prices than serious arguments. They are also usually compromised by the source. It is simply much more profitable for the financial services business to have long bull markets that overrun and then crash quite quickly than it is to have stability. Imagine how little money would be made by us if the U.S. stock market rose by its dreary 1.8% a year adjusted for inflation, its trend since 1925. Volume would dry up, as would deals, and we'd die of boredom or get a different job. In short, beware a broker or a sell side "strategist" offering arguments as to why overpriced markets like today's are actually cheap. Finally, the public in general appears to like things the way they are and always seems eager to embrace the idea of a new paradigm. The oil paradigm shift and the "running out of everything" argument is the exact opposite: it is very bad news and, like all very bad news, ordinary mortals and the bullishly-biased financial industry seriously want to disbelieve it or completely ignore it. (Just as is the case with climate warming and weather instability.) It is in this sense a classic contrarian argument despite being a paradigm shift.

Metals

On the second point – looking for other resources showing signs of a paradigm shift – the metals seemed the next most obvious place to start: they are finite, subject to demand that has been compounding (that is, more tonnage is needed each year), and, after use, are mostly worthless or severely reduced in value and expensive to recycle. Copper, near the top of the standard deviation list, has an oil-like tendency for the quality of the resource to decline and the cost of production to rise. Exhibit 8 shows that since 1994 one has to dig up an extra 50% of ore to get the same ton of copper.

Exhibit 8
Recoverable Copper Ore Yield Grade



Source: Barclays Capital As of 12/31/10

And all of this 150% effort has to be done using energy at two to four times the former price. These phenomena of declining ore quality and rising extraction costs are repeated across most important metals. The price of all of these metals in response to rising costs and rising demand has risen far above the old declining trend, at least past the 1-in-44-year chance. (There is a possibility, I suppose, that some of the price moves are caused by a cartel-like effect between the few large "miners." There just might have been some deliberate delays in expansion plans, which would have resulted in extra profits, but it seems unlikely that this possible influence would have caused much of the total price rises. These very high prices are compatible with such possibilities, but I am in no position to know the truth of it.) There also might be some hoarding by users or others, but given the extent of the price moves, it is statistically certain that hoarding could not come close to being the only effect here. Once again, the obvious primary influence is increased demand from developing countries, overwhelmingly led by China; and that we are dealing with a genuine and broad-based paradigm shift.

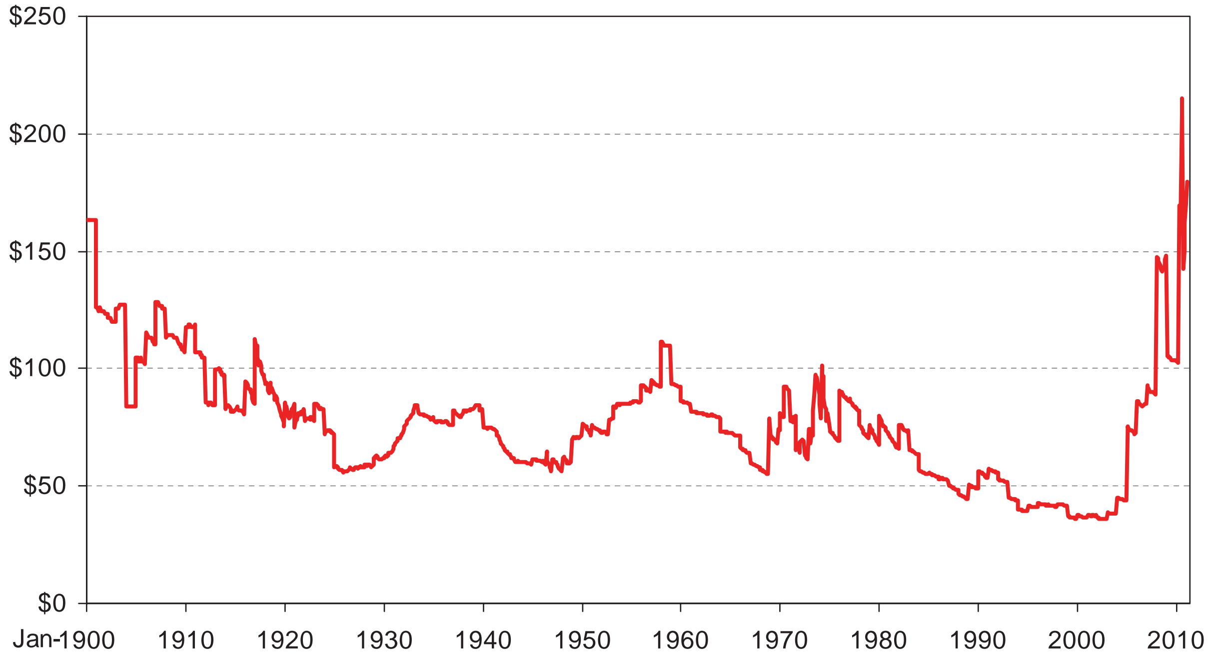
The highest percentage of any metal resource that China consumes is iron ore, at a barely comprehensible 47% of world consumption. Exhibit 9 shows the spectacular 100-year-long decline in iron ore prices, which, like so many other commodities, reach their 100-year low in or around 2002. Yet, iron ore hits its 110-year high a mere 8 years later! Now that's what I call a paradigm shift! Mining is clearly moving out of its easy phase, and no one is trying to hide it. A new power in the mining world is Glencore (soon to be listed at a value of approximately $60 billion). Its CEO, Ivan Glasenberg, was quoted in the *Financial Times* on April 11, describing why his firm operates in the Congo and Zambia. "We took the nice, simple, easy stuff first from Australia, we took it from the U.S., we went to South America… Now we have to go to the more remote places." That's a pretty good description of an industry exiting the easy phase and entering the downward slope of permanently higher prices and higher risk.

Agricultural Commodities

Moving on to agriculture, the limitations are more hidden. We think of ourselves as having almost unlimited land up our sleeve, but this is misleading because the gap between first-rate and third-rate land can be multiples of output, and only Brazil, and perhaps the Ukraine, have really large potential increments of output. Elsewhere, available

Exhibit 9

Iron Ore Prices (2011 $/dry metric ton)

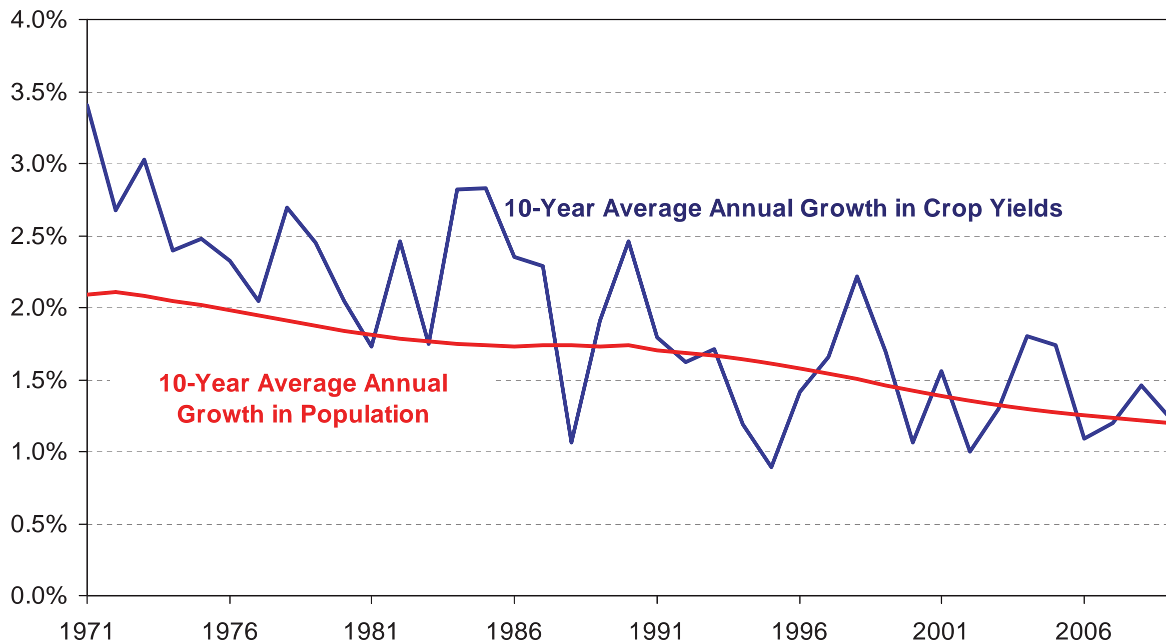


Source: Global Financial Data   As of 12/31/10

land is shrinking. For centuries, cities and towns have tended to be built not on hills or rocky land, but on prime agricultural land in river valleys. This has not helped. We have, though, had impressive productivity gains per acre in the past, and this has indeed helped a lot. But, sadly, these gains are decreasing. Exhibit 10 shows that at the end of the 1960s, average gains in global productivity stood at 3.5% per year. What an achievement it was to have

Exhibit 10

10-Year Average Annual Growth in Crop Yields

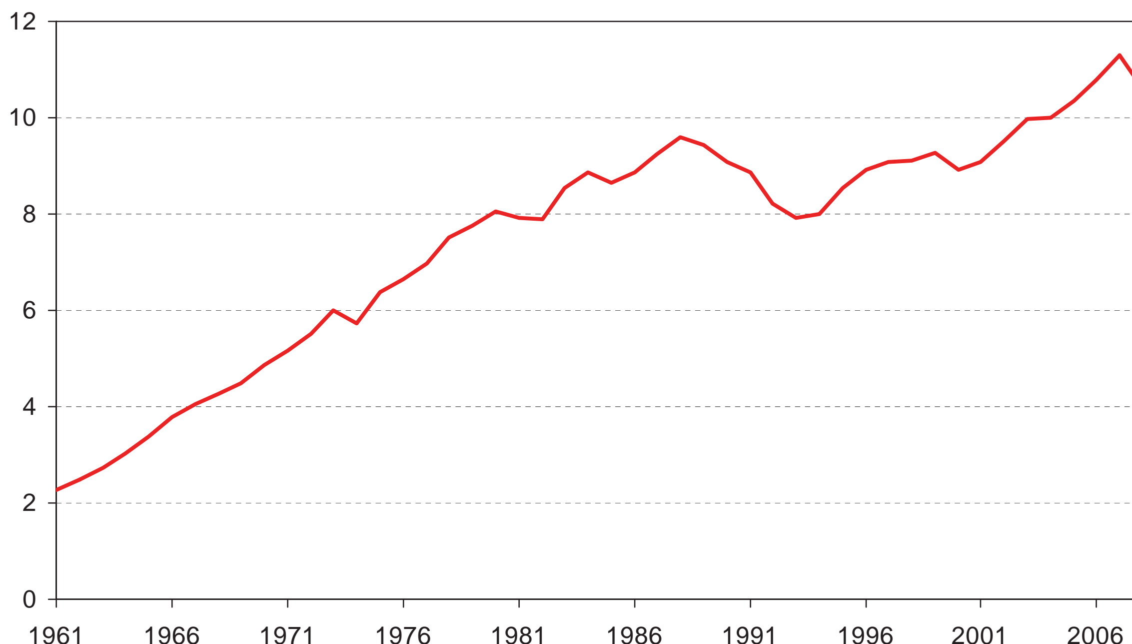


Source: Food and Agriculture Organization of the United Nations   As of 12/31/09

maintained that kind of increase year after year. It is hardly surprising that the growth in productivity has declined. It runs now at about one-third of the rate of increase of the 1960s. It is, at 1.25% a year, still an impressive rate, but the trend is clearly slowing while demand has not slowed and, if anything, has been accelerating. And how was this quite massive increase in productivity over the last 50 years maintained? By the even more rapid increase in the use of fertilizer. Exhibit 11 shows that fertilizer application per acre increased five-fold in the same period that the growth rate of productivity declined. This is a painful relationship, for there is a limit to the usefulness of yet more fertilizer, and as the productivity gains slow to 1%, it bumps into a similar-sized population growth. The increasing use of grain-intensive meat consumption puts further pressure on grain prices as does the regrettable use of corn in ethanol production. (A process that not only deprives us of food, but may not even be energy-positive!) These trends do not suggest much safety margin.

Exhibit 11

Tons of Fertilizer Used Annually (per sq km of cropland)



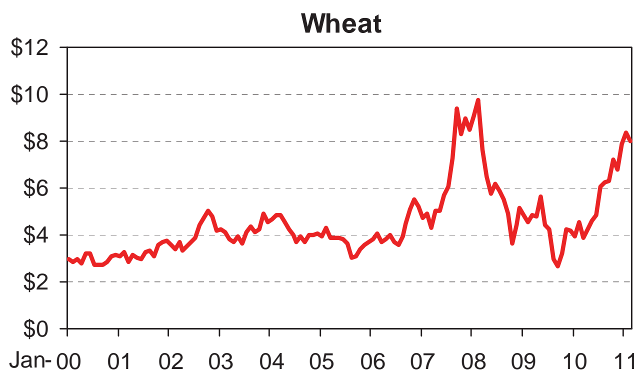
Source: Food and Agriculture Organization of the United Nations As of 12/31/08

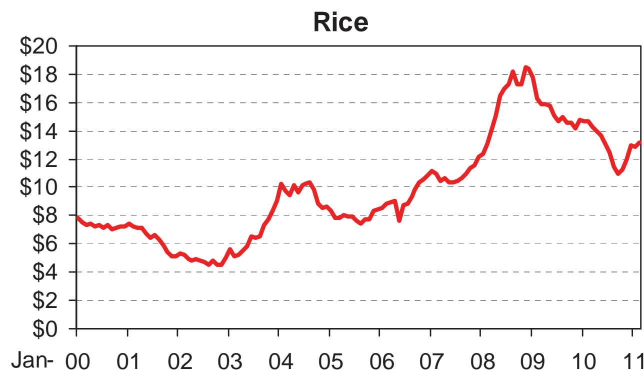
The fertilizer that we used is also part of our extremely finite resources. Potash and phosphates are mined and, like all such reserves, the best have gone first. But the most important fertilizer has been nitrogen, and here, unusually, the outlook for the U.S. really is quite good for a few decades because nitrogen is derived mainly from natural gas. This resource is, of course, finite like all of the others, but with recent discoveries, the U.S. in particular is well-placed, especially if in future decades its use for fertilizer is given precedence.

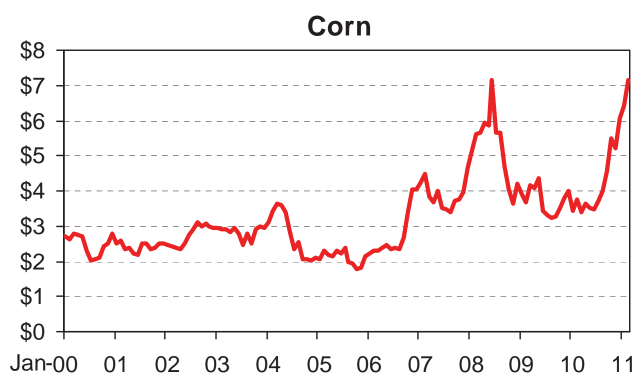
More disturbing by far is the heavy use of oil in all other aspects of agricultural production and distribution. Of all the ways hydrocarbons have allowed us to travel fast in development and to travel beyond our sustainable limits, this is the most disturbing. Rather than our brains, we have used brute energy to boost production.

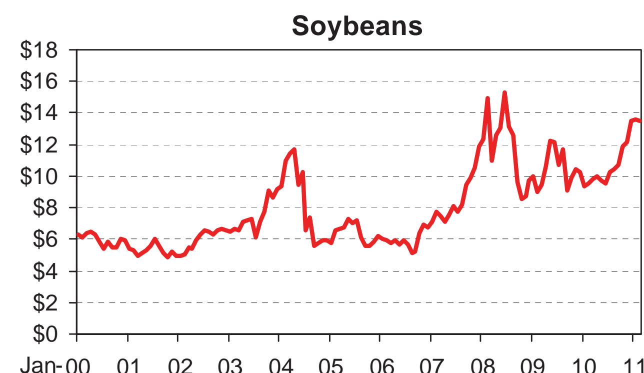
Water resources both above and below ground are also increasingly scarce and are beginning to bite. Even the subsoil continues to erode. Sooner or later, limitations must be realized and improved techniques such as no-till farming must be dramatically encouraged. We must protect what we have. It really is a crisis that begs for longer-term planning – longer than the typical horizons of corporate earnings or politicians. The bottom line is, as always, price, and the recent signals are clear. Exhibit 12 shows the real price movements of four critical agricultural commodities – wheat,

Exhibit 12
Real Grain Prices (2011 $/bushel)









Source: Global Financial Data As of 2/28/11

rice, corn, and soybeans – in the last few years. Unlike many other commodities, these four are still way below their distant highs, but from their recent lows they have all doubled or tripled.

Bulls will argue that these agricultural commodities are traditional bubbles, based on euphoria and speculation, and are destined to move back to the pre-2002 prices. But ask yourselves what happens when the wheat harvest, for example, comes in. Only the millers and bakers (actually the grain traders who have them as clients) show up to buy. Harvard's endowment doesn't offer to take a million tons and store it in Harvard Yard (although my hero, Lord Keynes, is famously said to have once seriously considered stacking two months' of Britain's supply in Kings College Chapel!). The price is set by supply and demand, and storage is limited and expensive. All of the agricultural commodities also interact, so, if one were propped up in price, farmers on the margin would cut back on, say, soybeans and grow more wheat. For all of these commodities to move up together and by so much is way beyond the capabilities of speculators. The bottom line proof is that agricultural reserves are low – dangerously low. There is little room in that fact for there to be any substantial hoarding to exist.

Weather Instability and Price Rises

But there is one factor big enough, on rare occasions, to move all of the agricultural commodities together, and that is weather, particularly droughts and floods. I don't think the weather instability has ever been as hostile in the last 100 years as it was in the last 12 months. If you were to read a one-paragraph summary of almost any agricultural commodity, you would see weather listed as one of the causes of the price rising. My sick joke is that Eastern Australia had average rainfall for the last seven years. The first six were the driest six years in the record books, and the seventh was feet deep in unprecedented floods. Such "average" rainfall makes farming difficult. It also makes

investing in commodities difficult currently, for the weather this next 12 months is almost certain to be less bad than the last, and perhaps much less bad.

The Unusual Entry Risk Today in Commodity Investing: Weather …

For agricultural commodities, it is generally expected that prices will fall next year if the weather improves. Because global weather last year was, at least for farming, the worst in many decades, this seems like a good bet. The scientific evidence for climate change is, of course, overwhelming. A point of complete agreement among climate scientists is that the most dependable feature of the planet's warming, other than the relentless increase in the parts per million of CO_2 in the atmosphere, is climate instability. Well, folks, the last 12 months were a monster of instability, and almost all of it bad for farming. Skeptics who have little trouble rationalizing facts will have no trouble at all with weather, which, however dreadful, can never in one single year offer more than a very strong suggestion of long-term change.

Unfortunately, I am confident that we should be resigned to a high probability that extreme weather will be a feature of our collective future. But, if last year was typical, then we really are in for far more serious trouble than anyone expected. More likely, next year will be more accommodating and, quite possibly, just plain friendly. If it is, we will drown, not in rain, but in grain, for everyone is planting every single acre they can till. And why not? The current prices are either at a record, spent just a few weeks higher in 2008, or were last higher decades ago. The institutional and speculative money does not, in my opinion, drive the spot prices higher for reasons given earlier, but they do persistently move the more distant futures contracts up. Traditionally, farmers had to bribe speculators to take some of the future price risk off of their hands. Now, Goldman Sachs and others have done such a good job of making the case for commodities as an attractive investment (on the old idea that investors were going to be paid for risk-taking), that the weight of money has pushed up the slope of the curve. This not only destroys the whole reason for investing in futures contracts in the first place, but, critically for this current argument, it lowers the cost to the farmers of laying off their price risk and thus enables, or at least encourages, them to plant more, as they have in spades. Ironically, institutional investing facilitates larger production and hence lower prices! Should both the sun shine and the rain rain at the right time and place, then we will have an absolutely record crop. This would be wonderful for the sadly reduced reserves, but potentially terrible for the spot price. (Although wheat might be an exception because the largest grower by far – China – is looking to be in very bad shape for its upcoming harvest.)

… and China

Quite separately, several of my smart colleagues agree with Jim Chanos that China's structural imbalances will cause at least one wheel to come off of their economy within the next 12 months. This is painful when traveling at warp speed – 10% a year in GDP growth. The litany of problems is as follows:

a) An unprecedented rise in wages has reduced China's competitive strength.

b) The remarkable 50% of GDP going into capital spending was partly the result of a heroic and desperate effort to keep the ship afloat as the Western banking system collapsed. It cannot be sustained, and much of the spending is likely to have been wasted: unnecessary airports, roads, and railroads and unoccupied high-rise apartments.

c) Debt levels have grown much too fast.

d) House prices are deep into bubble territory and there is an unknown, though likely large, quantity of bad loans.

You have heard it all better and in more detail from both Edward Chancellor[2] and Jim Chanos. The significance here is that given China's overwhelming influence on so many commodities, especially in terms of the percentage China represents of new growth in global demand, any general economic stutter in China can mean very big declines in some of their prices.

You can assess on your own the probabilities of a stumble in the next year or so. At the least, I would put it at 1 in 4, while some of my colleagues think the odds are much higher. If China stumbles or if the weather is better than

2 Edward Chancellor, "China's Red Flags," GMO White Paper, March 23, 2010.

expected, a probability I would put at, say, 80%, then commodity prices will decline a lot. But if both events occur together, it will very probably break the commodity markets en masse. Not unlike the financial collapse. That was a once in a lifetime opportunity as most markets crashed by over 50%, some much more, and then roared back. Modesty should prevent me from quoting from my own July 2008 *Quarterly Letter,* which covered the first crash. "The prices of commodities are likely to crack short term (see first section of this letter) but this will be just a tease. [Editor's Note: the section referred to is titled "Meltdown! The Global Competence Crisis," which discusses the aftermath of the global financial crisis.] In the next decade, the prices of all raw materials will be priced as just what they are, irreplaceable." If the weather and China syndromes strike together, it will surely produce the second "once in a lifetime" event in three years. Institutional investors were too preoccupied staying afloat in early 2009 to have obsessed much about the first opportunity in commodities and, in any case, everything else was also down in price. A second commodity collapse in the next few years may also be psychologically hard to invest in for it will surely bring out the usual bullish argument: "There you are, its business as usual. There are plenty of raw materials, so don't listen to the doomsayers." Because it will have broad backing, this argument will be hard to resist, but should be.

Residual Speculation

Finally, there is some good, old-fashioned speculation, particularly in the few commodities that can be stored, like gold and others, which are costly per pound. I believe this is a small part of the total pressure on prices, and the same goes for low interest rates, but together they have also helped push up prices a little. Putting this speculation into context, we could say that: a) we have increasing, but still routine, speculation in commodities; b) this comes on top of the much more important effects of terrible weather; and c) most important of all, we have gone through a profound paradigm shift in almost all commodities, caused by a permanent shift in the underlying fundamentals.

The Creative Tension in Investing in Resources Today

As resource prices rise, the entire system loses in overall well-being, but the world is not without winners. Good land, in short supply, will rise in price, to the benefit of land owners. Technological progress in agriculture will add to the value of land holdings. Fertilizer resources – potash and potassium – will become particularly precious. Hydrocarbon reserves will, of course, also increase in value. In general, owners or controllers of all limited resources, certainly including water, will benefit. But everyone else will be worse off, and a constrained-resource world will increase in affluence per capita more slowly than it would have otherwise, and more slowly than in the past. Remember, this is not simply a recycling of income and wealth as it was when Saudi Arabia stopped some of its pumping for political reasons. Then, we paid a few extra billion and they put money in the bank for recycling. There was no net loss. But now when they pump the last of the cheapest $5/barrel of oil and we replace it with a $120/barrel from tortured Canadian Tar Sands, the cost differential is a deadweight loss. GDP accounting can make it look fine, and it certainly creates more jobs but, like a few thousand men digging a hole with teaspoons, it adds jobs but no incremental value compared to the original cheap oil.

How does an investor today handle the creative tension between brilliant long-term prospects and very high short-term risks? The frustrating but very accurate answer is: with great difficulty. For me personally it will be a great time to practice my new specialty of regret minimization. My foundation, for example, is taking a small position (say, one-quarter of my eventual target) in "stuff in the ground" and resource efficiency. Given my growing confidence in the idea of resource limitation over the last four years, if commodities were to keep going up, never to fall back, and I owned none of them, then I would have to throw myself under a bus. If prices continue to run away, then my small position will be a solace and I would then try to focus on the more reasonably priced – "left behind" – commodities. If on the other hand, more likely, they come down a lot, perhaps a lot lot, then I will grit my teeth and triple or quadruple my stake and look to own them forever. So, that's the story.

The Position of the U.S….

The U.S. is, of course, very well-positioned to deal with the constraints. First, it starts rich, both in wealth and income per capita, and also in resources, particularly the two that in the long run will turn out to be the most precious: great

agricultural land and a pretty good water supply. The U.S. is also well-endowed with hydrocarbons. Its substantial oil and gas reserves look likely to prove unexpectedly resilient, buoyed by improving skills at fracking and lateral drilling. And, by any standard, U.S. coal reserves are very large. All other countries should be so lucky. Second, we are the most profligate or wasteful developed country and this fact, paradoxically, becomes a great advantage. We in the U.S. can save resources by the billions of dollars and actually end up feeling better for it in the end, like someone suffering from obesity who succeeds with a new diet.

The slowing growth in working age population has reduced the GDP growth for all developed countries. Adding resource limitations is further reducing it. If our GDP in the U.S. grew 2% for the next 20 years, I think we would be doing very well. Dropping to 1.5% would not surprise me, nor would it be a disaster. In the past 28 years, we have increased our GDP by 3.0% per year with only a 0.9% increase in energy required. That is, we increased our energy efficiency by 2.1% without a decent energy policy and despite some very inefficient pockets like autos and residential housing. This would suggest that at a reduced 2% GDP growth rate, we might expect little or no incremental demand for energy, even without an improved effort. If in addition we halved our deficit in energy efficiency compared with Europe and Japan in the next 20 years, then our energy requirements might drop at 1.5% a year. Given the plentiful availability of low-hanging fruit in the U.S., this is achievable.

… as for the Rest

Other countries will not be so lucky. Almost all will suffer lower growth, but resource-rich countries will have a relative benefit as the terms of trade continue to move in their favor. Less obviously, those countries that are particularly energy efficient will also benefit. If the Japanese, for example, can produce over twice the GDP per unit of energy than the Chinese, then, other things being equal, the terms of trade will move in their favor as oil prices rise. At the bottom of the list, poor countries with few resources and little efficiency, which already use up to 50% of their income on the commodity "necessities," will suffer. The irony that they suffered the most having used up the least will probably not make their misery less. Limited resources create a win-lose proposition quite unlike the win-win we are accustomed to in global trade. Theoretically, we all gain through global trade as China grows. But with limited resources, the faster they grow and the richer they get (and, particularly, the more meat rather than grain that they eat), the more commodity prices rise and the greater the squeeze on the poorer countries and the relatively poor in every country. It's a gloomy topic. Suffice it to say that if we mean to avoid increased starvation and international instability, we will need global ingenuity and generosity on a scale hitherto unheard of.

Conclusion

The U.S. and every other country need a longer-term resource plan, especially for energy, and we need it now! (Shorter-term views on the market and investment recommendations will be posted shortly.)

Disclaimer: The views expressed are the views of Jeremy Grantham through the period ending April 25, 2011, and are subject to change at any time based on market and other conditions. This is not an offer or solicitation for the purchase or sale of any security and should not be construed as such. References to specific securities and issuers are for illustrative purposes only and are not intended to be, and should not be interpreted as, recommendations to purchase or sell such securities.

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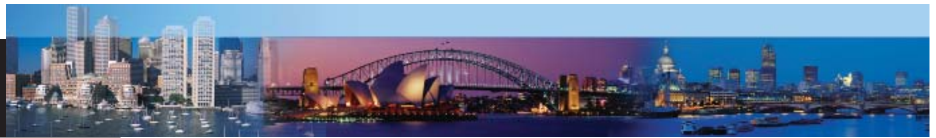
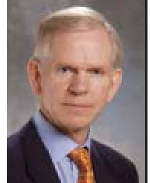
GMO

Quarterly Letter



May 2011

Part 2: Time To Be Serious (and probably too early) Once Again



Jeremy Grantham

The Bottom Line

Lighten up on risk-taking now and don't wait for October 1 as previously recommended. But, as always, if you listen to my advice, be prepared to be early!

A word on being too early in investing: if you are a value manager, you buy cheap assets. If you are very "experienced," a euphemism for having suffered many setbacks, you try hard to reserve your big bets for when assets are very cheap. But even then, unless you are incredibly lucky, you will run into extraordinarily cheap, even bizarrely cheap, assets from time to time, and when that happens you will have owned them for quite a while already and will be dripping in red ink. If the market were feeling kind, it would become obviously misvalued in some area and then, after you had taken a moderate position, it would move back to normal. That would be very pleasant and easy to manage. But my career, like most of yours, has been filled with an unusual number of real outliers. That certainly makes for excitement, but it also delivers real pain for even a disciplined value manager. Following is a snapshot of some of those outliers. In 1974, the U.S. market fell to seven times earnings and the U.S. value/growth spread hit what looked like a 3-sigma (700-year) event. U.S. small caps fell to their largest discount in history, yet by 1984 U.S. small caps sold at a premium for the first time ever. By 1989, the Japanese market peaked at 65 times earnings, having never been over 25 times before that cycle! In 1994, emerging market debt yielded 14 points above U.S. Treasuries, and by 2007 had fallen to a record low of below 2 points. By 1999, the S&P was famously at 35 times peak earnings; in 2000, the value/growth spread equaled its incredible record of 1974 (that I, at the time, would have almost bet my life against ever happening again). Equally improbable, in 2000, the U.S. small/large spread beat its 1974 record and emerging market equities had a 12 percentage point gap over the S&P 500 on our 10-year forecast (+10.8 versus -1.1%). Further, as the S&P 500 peaked in unattractiveness, the yield on the new TIPS (U.S. Government Inflation Protected Bonds) peaked in attractiveness at over 4.3% yield and REIT yields peaked at 9.5%. Truly bizarre. By 2007, the whole world was reveling in a risk-taking orgy and U.S. housing had experienced its first-ever nationwide bubble, which also reached a 3-sigma, 1-in-700-year level (still missed, naturally, by "The Ben Bernank"). Perhaps something was changing in the asset world to have caused so many outliers in the last 35 years. Who knows? The result, though, for value players, or at least those who wanted to do more than just tickle the problem, was overpriced markets that frightened them out and then, like the bunny with the drum, just kept going and going.

Well, those dramatic opportunities certainly hooked me, and I jumped enthusiastically into every one and was, of course, too early. Some of them went from looking like 1-in-40-year opportunities to 1-in-700!

So, I have had a long and ignoble history of being early on market calls, and on two occasions damaged the financial well-being of two separate companies – Batterymarch and GMO. On the other hand, at long and bloody last (in the figurative, not the British, sense), the big bets we made have all been won, with quality and cash still pending. But, as I like to say, we often arrive at the winning post with good long-term results and less absolute volatility than most, but not necessarily with the same clients that we started out with. Our bets have been part of the public record for the last 20 years and before that the bets (including those made while I was at Batterymarch) were so big that no one could have missed them: while at Batterymarch in 1972, betting (two years too early) on small cap value against the "nifty-fifty" IBM types (and with 100% of the portfolio!); betting against Japan three years too early in 1986 (as in zero percent Japan

against 60% in the benchmark!); betting against the Tech bubble, two and a half years too early, and against the recent Housing and Risk-taking Bubble, much less painfully but, once again, two years too early. But, what I really want to emphasize today is my current opportunity to be two years too early once again by betting against the broad U.S. market.

As readers know, driven by my increasing dislike for being early by such substantial margins, I have been experimenting recently with going with the flow. In defense of this improper behavior, rest assured that it was motivated not by chasing momentum, but by my growing recognition of the immense power – sometimes the thoroughly dangerous power – of the Fed. Nowhere is this power more clearly revealed than in the ease with which it can move asset prices, particularly stock prices, and nowhere is this revealed more clearly than in Year 3 of the Presidential Cycle. I will not inflict on you once again the amazingly lopsided results of the Cycle, but will take this opportunity to introduce my new pet variant of Year 3 power: "Sell in May and go away." This nugget came up recently, so we tested it. Bingo! In the first seven months of the third year since 1960, Year 3 has returned 2.5% per month for a total of 20% real (after inflation adjustment). In contrast, the second five months after May have delivered an average return of 0.5% per month, as does the fourth year of the cycle. Now, 20% is perilously close to the total for the whole 48-month cycle of 21%. This means, of course, that the remaining 41 months collectively return a princely 1%. This offers a brilliant, lazy investor's rule: "Sell in May of Year 3 and go away for 41 months." Whoopee! The unfortunate caveat is that there are only 11 entries for this analysis so it may well be pure luck. Still, it's intriguing, especially if you like sitting on the beach for 41 months.

In addition to entering Year 3 last October, we also had Bernanke's QE2 … a kind of underlining of the seemingly eternal promise of a bailout should something go wrong, as if Noah had been sent not just one rainbow, but two! So, even though the market was substantially overpriced by last October 1, I found myself atypically writing that it was likely that the market would race up to the 1400 to 1600 range on the S&P 500 by October 1. Of course – I hasten to add – I emphasized the caveat that more serious, risk-averse, long-term investors would not want to play fast and loose with a market then worth only 900 on the S&P. I also added that GMO played pretty strictly by the value book for our clients, shading only a little here and a little there. But I personally (no doubt driven mad by the too-early syndrome) took a little more risk in honor, as it were, of the Fed's behavior. Behavior I, of course, completely disapprove of. But that's an old story.

Well, believe it or not, the third year has behaved perfectly for the first seven months. At the end of April, the S&P had offered up 21% in total return. And the market at 1360 needs just a 3% rise to reach my lower limit of 1400 in the five months remaining.

All of this has occurred as if everything is normal: as if the economy is recovering strongly, as if the housing market has started to regroup after an unprecedented two years flat on its back, and, most importantly, as if special and exogenous shocks have not tried to tag-team Year 3. Yet, all of those presumptions are at least partly wrong. In fact, it is beginning to feel like an unfair contest. One minute we have the Year 3 effect chugging along, with us Pavlovian investors responding faithfully to the Fed. The next minute we are dealing with not one, but two, exogenous shocks: the Tunisia-Egypt-Libya-Yemen-Syria shock and the dreadful tsunami shock. In general, exogenous shocks famously have little effect after the first few days (or occasionally weeks) of exaggerated psychological sell-offs. The painful exception to this rule is, unfortunately for us now, an oil shock. (Happily, there have been only two bad ones – in 1974 and 1979 – as well as two or three scares.) An oil shock is like a tax on business and a tax on consumers. It quickly transfers wealth to often undesirable government coffers and poses a "recycling" of wealth problem. It will usually depress consumer demand quite quickly as gasoline prices rise; it will usually depress GDP growth, generally a little later; and it will always unsettle business confidence. The stock market, perhaps anticipating this, has declined rapidly and severely when it has sensed a serious oil crisis.

Yet this time the market bounced back with the Year 3 effect winning handily. But doesn't the current situation there clearly reduce any certainties about the Mediterranean Arab world (which have, in any case, never been that high)? Can't this crisis clearly spread to Saudi Arabia or other Gulf states sooner or later? For once, in my opinion, the short-term effect is underestimating the potential for trouble – a real testimonial to the Year 3 confidence (and speculation) effect.

Immediately after the market bounced back from the oil shock, it was met by the Japanese disaster. Bear in mind that catastrophes of this type historically have particularly little negative long-term effects on markets. They do, however, have a greater impact than the so-called broken window effect: disasters can galvanize politicians, governments, and the general public far beyond the short-term job-creating replacement effort. Immediately after 9/11, I wrote that the actual GDP effect (as compared to the human cost) would be negligible and that the Fed's response would almost certainly cause the economy to be stronger than it would otherwise have been. I think, with hindsight, that this was correct. But, and this is a big "but," the Japanese damage is unprecedentedly high and some of it will be long-lasting. More importantly for the rest of the world, Japan has long tentacles and we are now rediscovering just how interconnected and interrelated the world has become. The Japanese are important, near-monopoly suppliers of certain small parts, without which whole production lines can be brought to a standstill. And the global industrial system does not have the resilience it once had: the Japanese have taught us all to have lean and mean "just-in-time" inventories, just in time for deliveries to be cut off, revealing one of the troubling vulnerabilities of that approach.

In reaction to this second shock, the market shook its head like a prizefighter after having taken a thunderous right to the chin, and rallied back once again to its high. But we have at least another round to go as we must now face what might be called "the Bill Gross" effect. Bill invites us to consider the consequences of QE2 ending on June 30 and, perhaps with more impact, lets us know that he at least is nervous enough to completely bail out of U.S. government bonds, not wanting to find out who will replace the Fed as the most recent buyer of last resort.

As if even that wasn't enough, the relentless rise in resource prices is beginning to act as an economic drag as a primary effect and, as a secondary effect, it is causing inflation pressures to increase, particularly in developing countries. This inflationary pressure is being met in those countries by efforts to cool economies down, notably by interest rate increases. These more restrictive moves in developing countries might soon begin to affect business confidence in the developed world. But, even given all of this, the S&P merely wobbles a bit and then moves on to new recovery highs, helped perhaps by (finally!) some better news on hiring. The U.S. market's strong performance under these pressures leads us to the question as to whether it would have been even higher had it not had to absorb these several blows? I would guess it might be up to 5% higher had it been left alone, and no one will ever prove me wrong!

So, we have four factors working against the Fed effect (or 4¼, counting my more lightweight "sell-in-May" factor, which suggests that all of the normal Year 3 exceptional performance may have been delivered already). With these headwinds, I do not feel the same degree of confidence that I did, which was considerable, that the Fed could carry all before it until October 1 of this year. A third round of quantitative easing would very probably keep the speculative game going. But without a QE3, there seem to be too many unexpected (indeed unexpectable) special factors weighing against risk-taking in these overpriced times. I had recommended taking a little more risk than was justified by value alone in honor of Year 3, QE2, and the Fed in general. Risk now should be more reflective of an investment world that has stocks selling at 40% over fair value (about 920 on the S&P 500) and fixed income, manipulated by the Fed, also badly overpriced.

Although the taking of some "extra" risk by riding the Fed's coattails has been profitable for six months, I admit to being a bit disappointed: I really felt the market had the Fed's wind in its sails and would move up deep into the 1400 to 1600 range by October 1, where it would be, once again, over a 2-sigma 1-in-44-year event, or, officially, a bubble. (At least in a world where GMO is the official.) At such a level, I was ready to be a real hero and absolutely batten down the hatches, become extremely conservative, and be prepared to tough out any further market advance (which, with my record, would be highly likely!). The market may still get to, say, 1500 before October, but I doubt it, especially without a QE3, although the chance of going up a little more by October 1 is probably still better than even. And whether it will reach 1500 or not, the environment has simply become too risky to justify prudent investors hanging around, hoping to get lucky. So now is not the time to float along with the Fed, but to fight it. Investors should take a hard-nosed value approach, which at GMO means having substantial cash reserves around a base of high quality blue chips and emerging market equities, both of which have semi-respectable real imputed returns of over 4% real on our 7-year forecast. The GMO position has also taken a few more percentage points of equity risk off the table.

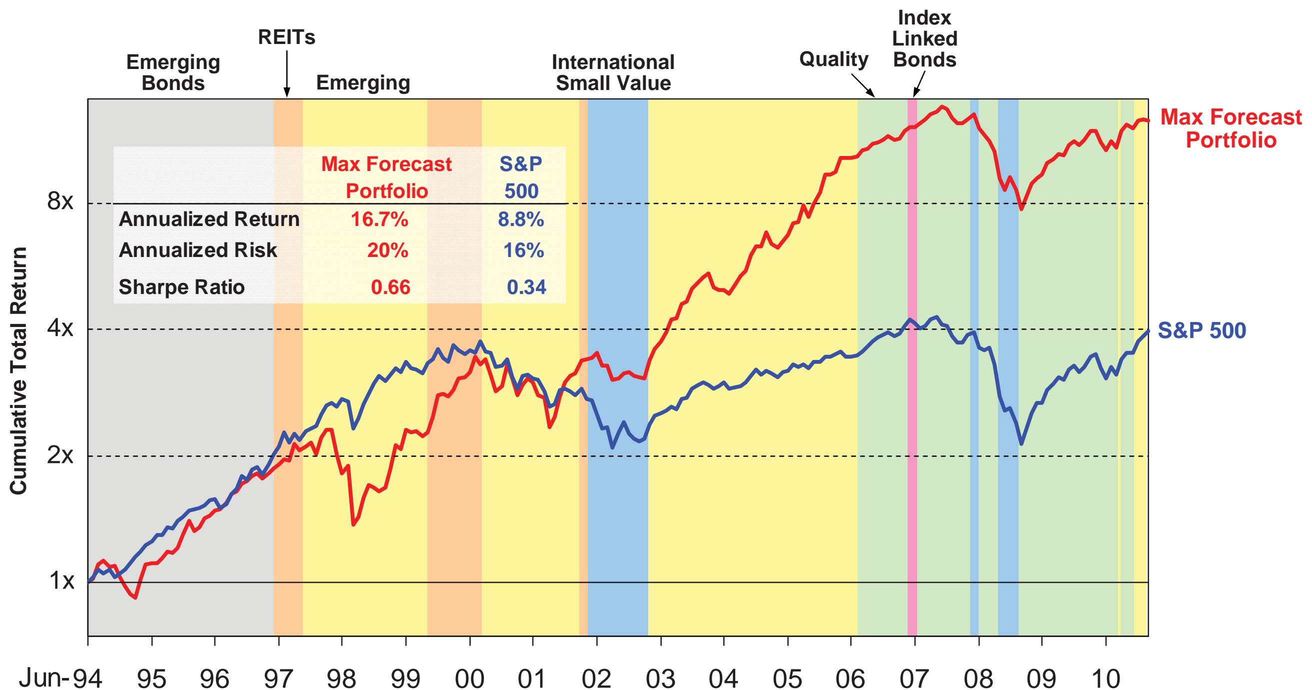
Japan

GMO also has, in asset allocation accounts where it is appropriate, increased exposure to Japan, which we had thought, pre-troubles, was relatively attractive. More precisely, we had thought it was at least average if nothing much changed, but that it represented some free options on several promising changes: improved attitude to shareholders, more focus on improving profitability, and, in particular, less casual capital overinvestment. There are some favorable signs that a change could be beginning. The tsunami also presented a typical short-term overreaction. The ensuing write-down of assets may equal the equivalent of up to 5% of Japan's GDP (which would be far more than usual), but even such a large cost would lower the present value of Japanese stocks by substantially less than that, let alone the 20% discount that was offered. Critically, the recent disasters may, just may, act as a psychological and economic shock, which, 30 years from now, may be seen as a turning point for the better.

Yet More on GMO Forecasts

I miss not having an exhibit so this is it. It shows a very crude way of using GMO's forecasts from their starting point in 1994. It assumes that every month, with nerves of steel and no committee to report to (Heaven indeed!), you put all of your money in the single asset class with GMO's highest forecast with no transaction costs. You then change 100% every time a new asset comes to the top of the list, which happens to be about once a year, a turnover level that actually seems acceptable. Obviously, such a strategy would not be tolerable for much more than 5 or 10% of one's money, rebalanced each year. Anyway, doing so generates a knock-out annualized performance of +16.7% (increasing your money 13x over this period) using the respective asset class benchmarks. Returns using GMO funds

Asset Allocation the Simple Way: GMO Max Forecast Theoretical Portfolio



	Max Forecast Portfolio	S&P 500
Annualized Return	16.7%	8.8%
Annualized Risk	20%	16%
Sharpe Ratio	0.66	0.34

Hypothetical performance is not predicative of future results. The results reflect performance an investor would have obtained had it invested in the MANNER DESCRIBED BELOW and do not represent returns that any investor actually attained. Hypothetical results are calculated by the retroactive application of a model constructed on the basis of historical data and based on assumptions integral to the model, which may or may not be testable. General assumptions include: GMO weighting the previous month's top asset class based on GMO's 7-year asset class forecast with a 100% weight and re-balanced each month. Changes in these assumptions may have a material impact on the hypothetical returns presented. Certain assumptions have been made for modeling purposes and are unlikely to be realized. No representations and warranties are made as to the reasonableness of the assumptions.

Hypothetical performance is developed with the benefit of hindsight and has inherent limitations. Specifically, hypothetical results do not reflect actual trading or the effect of material economic and market factors on the decision-making process. Since trades have not actually been executed, results may have under- or over-compensated for the impact, if any, of certain market factors, such as lack of liquidity, and may not reflect the impact that certain economic or market factors may have had on the decision-making process. Actual performance may differ significantly from hypothetical performance.

Hypothetical results are adjusted to reflect the reinvestment of dividends and other income and, except where otherwise indicated, are presented gross of fees, and do not include the effect of hypothetical transaction costs, management fees, performance fees, or expenses, if any.

Source: GMO, Standard and Poor's As of 2/28/11

are complicated by the need to account for transaction costs, but they would be approximately 2 percentage points a year higher. Although the portfolio is, not surprisingly, volatile, the Sharpe Ratio (risk over return) is way above that for the S&P. This is not a recommendation and we have never run a strategy on this basis. It is here just for fun (and, of course, to get in my one exhibit).

Quality

Careful readers will remember that I mentioned the odd characteristic that usually, late in very substantial bull markets, boring blue chips start to win as investors get nervous but can't bring themselves to stop dancing. Well, since March 31 the S&P is up by 2%, the Russell 2000 is down by 1%, and our Quality Strategy is up by 5%![1] I know that one swallow ordinarily doesn't make a summer, but I wish this time that it would.

Longer-term Recommendations: No Change

My very long-term personal recommendations remain the same: forestry and good agricultural land, "stuff in the ground," and resource efficiency plays. The caveats on entry point risk have recently been mentioned.[2] Should commodities crash in the near term because of good weather, problems in China, or both, I think it will create another "investment opportunity of a lifetime," much like the several we have had in recent years.

Post Script: Financial Skullduggery

As a postscript, I would like to recommend one movie and one magazine article. The movie, "Inside Job," was directed by Charles Ferguson and won this year's Oscar for best documentary. It covers the financial crash and in it you will see some of the highest-quality squirming in the history of film. I cheered and booed the cast of characters, the first time I've done so since my Saturday morning movie club when I was seven. In my opinion, it is nearly spot-on and absolutely priceless, but just a little hard on Martin Feldstein, who seems an innocent bystander. The rest deserve what they get. Ferguson's Oscar acceptance speech basically asked, "Why has no one gone to jail?" Good question.

Matt Taibbi, the *Rolling Stone Magazine* journalist of vampire squid fame, has written a jaw-dropping piece on some of the sloppiness of the Fed's bailout money. (More Fed transparency seems an excellent idea to me too.) It tells, among other things, of some "Wall Street wives" getting loans of some $220 million from the Fed, and using the borrowed money to make investments guaranteed by the Fed – essentially risk free. Why, you may well ask? The chutzpah of these powerful guys is admirable. Their ethics less so. At least they are nice to their wives; probably their dogs, too.[3] GMO has not checked the data in any detail.

Finally, the recent Senate report on the financial crash quoted me, to my extreme satisfaction, on this very topic of ethics – a theme that has resonated with Carl Levin, Tom Coburn, and their obviously hard-working staff (it's 650 pages long). The quote is taken from my pleadings of last summer for banks to get out of proprietary trading, which I believe is unethical, unnecessary, a conflict of interest, and costs institutions, including our clients, a ton of dough. The quote (one whole paragraph!) is on page 637.

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[1] Data is as of May 4, 2011.

[2] Jeremy Grantham, "Time to Wake Up: Days of Abundant Resources and Falling Prices Are Over Forever," 1Q 2011 *Quarterly Letter*, April 2011. (Available at www.gmo.com.)

[3] Matt Taibbi, "The Real Housewives of Wall Street," *Rolling Stone Magazine*, April 12, 2011.

Performance data quoted represents past performance and is not predictive of future performance.. Returns are presented after the deduction of management fees and incentive fees if applicable. Net returns include transaction costs, commissions and withholding taxes on foreign income and capital gains and include the reinvestment of dividends and other income, as applicable. A GIPS compliant presentation of composite performance has preceded this presentation in the past 12 months or accompanies this presentation, and is also available at www.gmo.com. Actual fees are disclosed in Part II of GMO's Form ADV and are also available in each strategy's compliant presentation. The above information is based on a representative account within the strategy selected because it has the least number of restrictions and best represents the implementation of the strategy. The information above is supplemental to the GIPS compliant presentation that was made available on GMO's website in April of 2011.

Disclaimer: The views expressed are the views of Jeremy Grantham through the period ending May 11, 2011, and are subject to change at any time based on market and other conditions. This is not an offer or solicitation for the purchase or sale of any security and should not be construed as such. References to specific securities and issuers are for illustrative purposes only and are not intended to be, and should not be interpreted as, recommendations to purchase or sell such securities.

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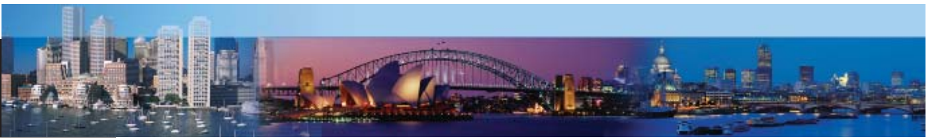
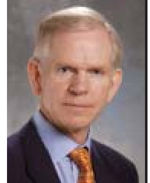


July 2011

Resource Limitations 2:
Separating the Dangerous from the Merely Serious



Jeremy Grantham

"You and I, and our government must avoid the impulse to live only for today, plundering, for our own ease and convenience, the precious resources of tomorrow." Dwight D. Eisenhower, 1961[1]

"[They] would have us believe that there is no cause for anxiety, that reserves [of oil] will last thousands of years, and that before they run out science will have produced miracles. Our past history and security have given us the sentimental belief that the things we fear will never really happen – that everything turns out right in the end. But prudent men will reject these tranquilizers and prefer to face the facts so that they can plan intelligently…" Admiral Hyman Rickover, 1957[2]

"The nation that destroys its soil destroys itself." Franklin Delano Roosevelt, 1937 [3]

Introduction

Last quarter I tried to make the case that the inevitable mismatch between finite resources and exponential population growth had finally shown its true face after many false alarms. This was made manifest through a remarkably bubble-like explosion of prices for raw materials. Importantly, prices surged twice in four years, which is a most unbubble-like event in our history book. The data suggested to us that rarest of rare birds; a new paradigm. And a very uncomfortable one at that. (In general, though, I have tried here not to repeat arguments or data used last quarter.)

This quarter, I would like to focus on the most dangerous parts of the coming shortages. I will try to separate those that, for us rich countries, are merely going to slow down the growth rate of our wealth through rising prices, and those that will do not only that, but will actually be a threat to the long-term viability of our species when we reach a population level of 10 billion. In all cases, poorer countries will be the most threatened. Situations that will irritate some of us with higher prices will cause others to starve. Situations that will cause some of us to go hungry will be for others a real disaster, and I believe this, unfortunately, will not be in the dim and distant future.

Obviously, experts have written books on subtopics that I reduce to one sentence. I might add that these books and a myriad of articles by these experts – who have decades of experience – absolutely do not agree with each other. In fact, they differ probably as widely as any scientific topic around, often by a literal order of magnitude and often with heat. Unlike many scientific differences, some of those concerning our resources in the long run may actually be a matter of life and death. I have tried to start from a weighted-average position and then have allowed for a safety margin tilted in favor of protecting our long-term well-being. By definition, plenty of experts will disagree with each statement made here. My hope is that "our" experts are those that are more rigorous, intelligent, and protective.

Capitalism does not address these very long-term issues easily or well. It seems to me that capitalism's effectiveness moves along the spectrum of time horizons, brilliant at the short end but lost, irrelevant, and even plain dangerous at the very long end.

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1 Dwight D. Eisenhower, Farewell Address, January 17, 1961. (Also see, Jeremy Grantham's "I Like Ike: A Powerful Warning Ignored," January 14, 2011; located in the Library of GMO's website, registration required.)

2 Admiral Hyman Rickover, "Energy Resources and our Future," remarks delivered in 1957.

3 Franklin Delano Roosevelt, Letter to all State Governors on a Uniform Soil Conservation Law, February 26, 1937.

Summary

- We humans have the brains and the means to reach real planetary sustainability. The problem is with us and our focus on short-term growth and profits, which is likely to cause suffering on a vast scale. With foresight and thoughtful planning, this suffering is completely avoidable.
- Although we will have energy problems with peak oil, this is probably an area where human ingenuity will indeed eventually triumph and in 50 years we will have muddled through well enough, despite price problems along the way.
- Shortages of metals and fresh water will each cause severe problems, but in the end we will adjust our behavior enough to be merely irritated rather than threatened, although in the case of metals, the pressure from shortages and higher prices will slowly increase forever.
- Running out completely of potassium (potash) and phosphorus (phosphates) and eroding our soils are the real long-term problems we face. Their total or nearly total depletion would make it impossible to feed the 10 billion people expected 50 years from now.
- Potassium and phosphorus are necessary for all life; they cannot be manufactured and cannot be substituted for. We depend on finite mined resources that are very unevenly scattered around the world.
- Globally, soil is eroding at a rate that is several times that of the natural replacement rate. It is probable, although not certain, that the U.S. is still losing ground. The world as a whole certainly is.
- The one piece of unequivocal good news can be found in the growth of no-till farming. In no-till, the residue of the previous crop is left on the ground and new seeds are planted without plowing. This technique reduces erosion by around 80%, reduces fertilizer run-off, preserves moisture, improves the soil (and, quite possibly, the quality of the food), and reduces the emissions of heat trapping gasses.
- The growth of no-till has been very rapid in South America, rapid in the U.S. (which is now at 35%), and moderate in many other developed countries. But it is used on only about 5% of farms globally.
- Overall, the best farms will have no erosion problems but, on average, soil will continue to be lost across the globe. Together with increased weather extremes and higher input prices (perhaps much higher), there will be increasing problems in feeding the world's growing population.
- In particular, a significant number of poor countries found mostly in Africa and Asia will almost certainly suffer from increasing malnutrition and starvation. The possibility of foreign assistance on the scale required seems remote.
- The many stresses on agriculture will be exacerbated at least slightly by increasing temperatures, and severely by increased weather instability, especially more frequent and severe droughts and floods.
- These types of slow-burning problems that creep up on us over decades and are surrounded by a lack of scientific precision hit both our capitalist system and our human nature where it hurts.
- Capitalism, despite its magnificent virtues in the short term – above all, its ability to adjust to changing conditions – has several weaknesses that affect this issue.
  - It cannot deal with the tragedy of the commons, e.g., overfishing, collective soil erosion, and air contamination.
  - The finiteness of natural resources is simply ignored, and pricing is based entirely on short-term supply and demand.
  - More generally, because of the use of very high discount rates, modern capitalism attributes no material cost to damage that occurs far into the future. Our grandchildren and the problems they will face because of a warming planet with increasing weather instability and, particularly, with resource shortages, have, to the standard capitalist approach, no material present value. [4]

4 An expanded discussion on the failings of capitalism will be in next quarter's letter. In addition, a discussion on the current market, including any investment implications from this piece, will be posted in two weeks.

Perspective

With hindsight, there are a few additions and qualifications I would like to make regarding my letter on resources of last quarter. I will start with an overview of the prospects for our collective well-being: there is nothing about the resource limitation problem that we cannot resolve. We have the brain power and, especially, the inventiveness. We have some nearly infinite resources: the sun's energy and the water in the oceans. We have some critically finite resources, but they can be rationed and stretched by sensible, far-sighted behavior to fill the gap between today, when we live far beyond a sustainable level, and, say, 200 years from now, when we may have achieved true long-term sustainability. Such sustainability would require improved energy and agricultural technologies and, probably, a substantially reduced population. With intelligent planning, all of this could be reasonably expected. A population reduction could be arrived at by a slow and voluntary decline (perhaps with some encouragement of smaller family size achieved, for example, through greater education). Such a reduction might leave us with a world population of anywhere from 1.5 billion to 5 billion, depending on the subtleties and interactions of many complicated variables. We would then be in long-term balance with our resources, including what will remain by then of our current biodiversity, which will hopefully be as much as one-half to three-quarters of what we have today.

The problem is not what we are capable of, but how we will actually behave. The wasteful status quo has powerful allies in the present corporate and political system. We do not easily accept bad news, nor do we easily deal with long-horizon problems. As mentioned last quarter, we are not particularly good with numbers, especially when it comes to probabilities, compound growth, and discount rates. We have a capitalist system that reflects our weaknesses; one that is fine-tuned only for the present and immediate future. Because of these factors, we will probably wait to deal with the obvious problems of living well beyond our means until the signs are powerful and clear that we must change; until, that is, it is basically too late. Too late in the sense of failing to protect much of what we enjoy and value today. Too late to have avoided plundering our grandchildren's resources. It's a shame, but it's the bet a well-informed gambler, observing from another planet, would probably make. It's why, in the environmental business, which shares many of the same problems with resource management, it can be honestly said that there are old environmentalists and optimistic environmentalists, but no old, optimistic environmentalists. I'm probably as close as you're going to get. The following argument looks at the resource problems we face in order of declining optimism. I think what follows is reasonable rather than apocalyptic. And, there is one remarkable piece of good news – the steady rise of no-till farming. In this, the developed world at least seems to have truly lucked out! However, with the pressures of short-term profit maximizing, there is some chance that we will not capitalize on our good luck.

A Possible Hierarchy of Problems

1. Energy

The transition from oil will give us serious and sustained problems. We passed peak oil per capita long ago and we are within 30 years, possibly within 10, of peak oil itself. The price will be volatile beyond our wildest dreams (or nightmares), and the price trend will rise, although at times this will be difficult to discern through the volatility. Transportation will be difficult in general and air transportation in particular. But behind oil, there is a relative plenty of natural gas and coal, which can, although with cost and difficulty, be substituted for oil. Even with coal and gas, however, we are dealing with only many decades of supply, not centuries. But beyond hydrocarbons there really is good news. Within 50 years or so, I believe we will have made spectacular progress in the science and engineering of solar, wind, tidal, and other energy sources, together with storage. One simple storage management idea for the nearer term, for example, is that every electric car would have two easily-exchangeable battery packs, with one in the garage, storing solar from your roof while you drive to work. Whenever possible, all such batteries would be attached to an intelligent grid that would be able to raid batteries or deposit into them, giving massive flexibility by today's standards. It is also possible (although, unfortunately, I believe improbable) that we will have a new, large-scale burst of activity in nuclear fission, perhaps stimulated by some technological improvements. Further out, completely new forms of commercial energy are likely, perhaps from nuclear fusion of some kind, or perhaps from something completely off of our current radar screen. This is where my optimism comes in, for I believe that in 50 or so years

– after many and severe economic and, possibly, social problems – we will emerge with sufficient, reasonably-priced energy for everyone to live a decent life (if we assume other non-energy problems away for a moment) even if we don't radically improve our behavior and make true sustainability our number one goal. In other words, current capitalist responses to higher prices should get the job done. We should realize, though, that reasonably-priced does not mean the nearly give-away prices of oil in the post war period, which serves as a real testimonial to the failure of standard free-market practices to recognize that a vital resource being finite changes everything in the long run. "Reasonably-priced" fuel would be where prices rise steadily faster than the CPI rather than ruinously so.

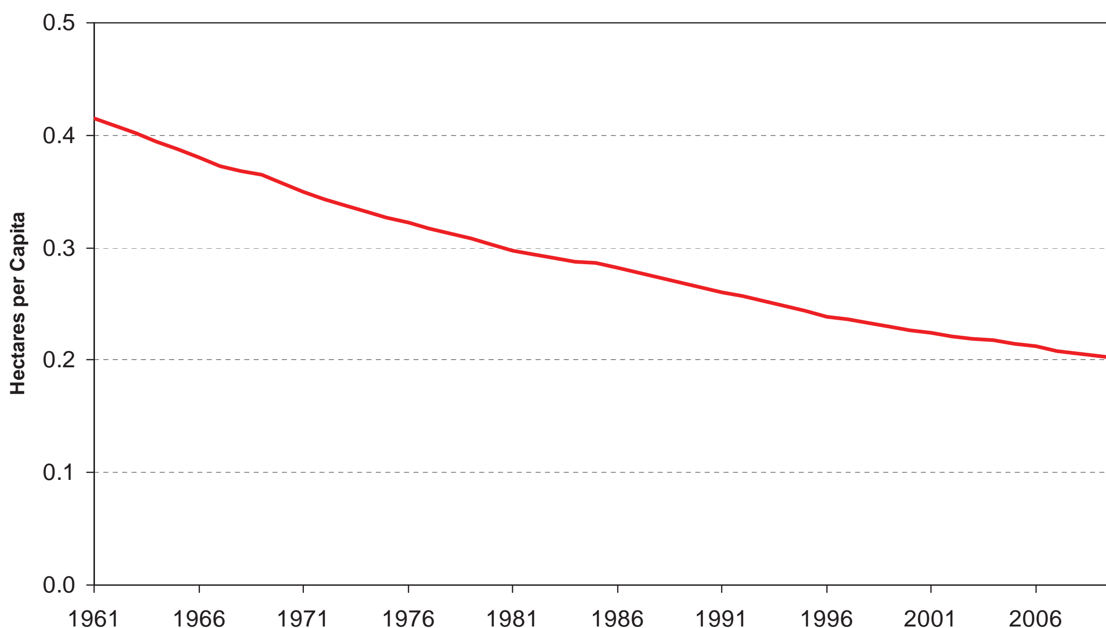
2. Metals

Metals are, of course, a bigger long-term problem than energy. They are entropy at work ... from wonderful metal ores to scattered waste. Even the best recycling will have slippage. Entropy is impressive; everything really does run downhill, iron really does rust. So our future will undoubtedly be increasingly constrained, particularly if our population and its wealth both grow steadily. Eventually, the growth of both population and wealth will be limited and possibly even stopped by a lack of metals, but that should, with luck, be a long time away. If we respond to increasing price pressures, as I'm sure we will, with a greater emphasis on quality and small scale along with an increasingly sensible and non-wasteful lifestyle, then we can push these serious constraints out for well over a hundred years. This is assuming, once again, no radical shift in attitudes and behavior other than those elicited by higher prices.

3. Agriculture

The trouble really begins with agriculture. This is the factor that I believe almost guarantees that we end up with a world population between 1.5 and 5 billion. The only question for me is whether we get there in a genteel, planned manner with mild, phased-in restraints, or whether we run head down and at considerable speed into a brick wall. There are three particular aspects of agriculture where the shoe pinches the most: water, fertilizer, and soil. All three must be seen in the context of a rapidly growing population. To set the scene, Exhibit 1 shows arable land per person. Unlike us, suitable land for agriculture has not increased since farming started some 10,000 years ago. In fact, with our help it has declined considerably, perhaps by as much as half or more!

Exhibit 1
World Hectares of Arable Land per Capita



Source: United Nations Food and Agriculture Organization, U.S. Census Bureau As of 12/31/10

A. Water

There is no doubt that water shortages will be a source of economic and social trouble forever. Countries will rattle sabers or, worse, go to war over access to river waters. That is certain. But viewed as a problem for the U.S. or for the planet as a whole, it does not seem to be a game stopper. The surface of our planet is, after all, mostly water. For our direct use and for our crops, we need a derisorily small fraction of Earth's supply of water. The entire planet's current wasteful use of fresh water is equal to only 80% of the flow of the Amazon. We also use our existing supplies of renewable fresh water with desperate inefficiency and wastefulness. As prices rise, we can save not just a few percent but a great majority of our water by growing the right things in the right places and by sensibly sharing and recycling the resource. Further out, with likely sources of reasonably cheap energy, we could supplement our supply with desalinated ocean water for coastal populations. Other than shifting crops, the main effect on agriculture will be a steady increase in the cost of water as we move slowly to recognizing the real costs of supplying water to farming. However, come back in 50 or 100 years and we will, I believe, have been persistently irritated by water problems but never seriously threatened as a species.

For farming productivity, one of the greatest irritants for the next 50 years will be the depletion of fossil water: the great underground lakes of fresh water that receive little or no replenishment by rainfall. By bad luck, such vast deposits underlie and make possible some of the planet's great bread baskets, including parts of the U.S. plains, parts of the Northwest of the Indian subcontinent, and parts of Northeastern China. If these very large areas are to stay in production, and they will certainly be needed, then major water transfer systems – canals of 500 to 2,000 miles in length – will have to be developed and the water taken from elsewhere. But even this, although it spells investment and environmental troubles in a big way, sounds ultimately doable, at a price. (The nastiest near-term problem of this kind will be in Yemen, where there is almost total dependence on underground fossil water, which is beginning to run out as I write!)

B. Fertilizers

Fertilizers are, I believe, less tractable. The three major macro nutrient fertilizers are the well-known N-P-K of lawn fertilizer: nitrogen, phosphorus, and potassium. Nitrogen, the most urgently needed of the three every year, is found in the greatest quantity so is happily the least problematical. Many crops, such as soya and alfalfa, supply or "fix" nitrogen for our main cereal production. Bioengineering is likely to increase this ability as well as broaden the range of plants that are able to do this. Electrical storms provide large quantities of nitrogen fertilizer out of the very air itself. (This provides about 5% of all nitrogen fixation, while modern agriculture accounts for about 50%). More dependable man-made, or rather man-processed, nitrogen fertilizer is very efficiently made with natural gas, which is being found, fortunately, in increased quantities in many different regions of the world. Several of these regions – notably the U.S. and China – are major grain producers. Therefore, if we don't go out of our way to waste our natural gas on less important products, we should be fine at least through this century. Nitrogen is the largest component of air and just needs energy to be converted into fertilizer. So, longer-term availability of nitrogen-based fertilizer is, as with water, about cost, not availability. But, starting with today's almost ridiculously low prices for natural gas (20% BTU equivalency of oil – just about the lowest in history), farmers should count on seeing increasing multiples of the price for nitrogen fertilizer in the next 10 to 15 years.

Potassium (potash)

Potassium is in a less favorable situation. Today's known resources are shown in Exhibit 2. Although it is found widely, very large and high grade (i.e., cheap) deposits are concentrated to quite a remarkable degree in two areas: one in Russia and Belarus and the other, happily for North America if we all stay friendly, in Canada. Unless there is considerable cartel-like behavior, which is certainly not unheard of these days with some commodities, then we have plenty of time to study the very long-term shortage problem. Luckily for us, potassium is a generously supplied element in the Earth's crust.

Exhibit 2

World Potash Production and Reserves

(thousands of metric tons)		
	2010 Production	Reserves
United States	900	130,000
Belarus	5,000	750,000
Brazil	400	300,000
Canada	9,500	4,400,000
Chile	700	70,000
China	3,000	210,000
Germany	3,000	150,000
Israel	2,100	40,000
Jordan	1,200	40,000
Russia	6,800	3,300,000
Spain	400	20,000
Ukraine	12	25,000
United Kingdom	400	22,000
Other Countries	-	50,000
World Total (rounded)	33,000	9,500,000

Source: U.S. Geological Survey As of 12/31/10

Nevertheless, it is worth pointing out that both potassium and phosphorus (phosphates) have some characteristics that we are not accustomed to dealing with in our neat and short-term-oriented investment world. They are characteristics that make energy problems seem trivial because energy can be extracted in so many different ways.

- Potassium and phosphorus cannot be made. They are basic elements.
- No substitutes will do. Both potassium and phosphorus are required for all living matter, animal and vegetable. Most notably, us. We humans are, for example, approximately 1% phosphorus by body weight.
- Modern high-production, single-crop agriculture today is very dependent on finite mined resources, which, if used wastefully, could easily cause a severe problem within 50 years and, if used sensibility and sparsely, could last for perhaps 200 years. And then what? You must recycle and farm super intelligently, as if your life depended on it. And it will.

Phosphorus (phosphates)

The reserve situation for phosphorus is shown in Exhibit 3. Admittedly, there are big arguments over reserves of both potash and phosphates because neither has been explored as comprehensively as have oil reserves. Here, too, we are quite lucky because the reserve life gives us time to plan sensibly for the rest of our lives (as a species, that is). But here again, the reserves are not evenly distributed and this time the skew is more, shall we say, interesting. It is thought that between 50% and 75% of the reserves are in Morocco and "associated" Western Sahara. Morocco's share of phosphates makes Saudi Arabia's share of oil look like small potatoes and, in the end, who values heating more than eating?

The existing high quality reserves shown in Exhibit 3 look, superficially, very satisfactory. There are reserves equal to 369 years of current production. Even allowing for 2% growth to help maintain productivity, these reserves would not run out for about 200 years. But, without Morocco and at 2% growth, reserves would be totally depleted in under 50 years. So with or without new reserves being located, some substantial gamesmanship should be expected within a few decades. Or, put it this way: if the phosphates were in my kingdom, I would try to make some hay.

Exhibit 3

World Phosphorus Production and Reserves

(thousands of metric tons)	2010 Production	Reserves
United States	26,100	1,400,000
Algeria	2,000	2,200,000
Australia	2,800	82,000
Brazil	5,500	340,000
Canada	700	5,000
China	65,000	3,700,000
Egypt	5,000	100,000
Israel	3,000	180,000
Jordan	6,000	1,500,000
Morocco and Western Sahara	26,000	50,000,000
Russia	10,000	1,300,000
Senegal	650	180,000
South Africa	2,300	1,500,000
Syria	2,800	1,800,000
Togo	800	60,000
Tunisia	7,600	100,000
Other Countries	9,500	620,000
World	176,000	65,000,000
World excluding Morocco	150,000	15,000,000

Source: U.S. Geological Survey   As of 12/31/10

The long-term phosphorus supply is probably the trickiest and most threatening issue to date. There may be a lot of lower-grade reserves that have not been listed or even looked for. (Why pay money to do that when there are decades' worth of low-cost, very high-quality reserves?) But there may not be. We are currently ferreting out as much of the limited data there is available. (Data on this and the many other conundrums raised in several of the topics discussed in this letter will be relayed from time to time as we can dig them out.) Serious scientific experts at this point are mostly "supposing" that, as is the case with many other resources, there are more, often much more, lower-quality reserves that are currently unrecorded than there are known high-quality reserves. But this is not always the case. The U.K., for example, had a lot of high-quality anthracite and bituminous coal reserves, which propelled them into the Industrial Revolution, but today all of its anthracite is gone, most of its bituminous is gone, and there are no very large reserves of brown coal or lignite as there are, for example, in Germany.

Most, if not all, of the potash and phosphate deposits are associated with former oceans or salty seas, or that is believed by many to be the case. Well, if you wanted to be pessimistic, you could argue that you either have a dried up former ocean due to the ground rising over aeons, or you don't. Perhaps you don't have masses of smaller dried up bodies of water, which normally would be salt-free. In any case, we are all speculating at this point. Despite its potential importance, reliable data is just not available.

Let us imagine for a minute what might happen in 50 or 150 years when the last affordable phosphorus is delivered and Morocco is, quite sensibly, charging thousands of dollars a ton for the last one-third of its resources. We might be developing offshore recovery from the continental shelf at a little less than Morocco's price, but still a gaspingly high price that would not be even remotely affordable by poorer countries. But mostly we would be recycling, a word with which our grandchildren will get awfully bored. It's how crops were grown in the pre-commercial fertilizer age, at least wherever farmers could not engage in slash and burn and move on. Chinese farmers in particular successfully maintained the productivity of their fields for thousands of years by almost religiously recycling: off to the town market with two buckets of beans and back with two buckets of "night soil." Human and animal waste, as well as

vegetable waste, was scrupulously reused. Countries that pushed their production or were not so careful in recycling depleted their soils. Eastern Europe in particular had recurrent crop failures and starvation as late as the 1880s. And, we could do it better now than the Chinese did in the old days, for science has marched on. We have learned to reduce nutrient loss considerably in the last 50 years. There is also much more that we could do, and we had better get moving: the last time the world depended mainly on recycling, the global population was a mere one billion. The next time it may be 10 billion – cross your fingers it's not more. Could a world based on recycling nutrients, even one supplemented by very high-priced remnants of our mined fertilizer resources, really feed 10 billion? Or even 5 billion? I think the answer is certainly no if we do not get our act together in the next very few decades. Even then, it is more likely that true sustainability will be a much lower number than 10 billion.

C. Soil Erosion

Finally, there is the real bugbear: soil erosion. The Earth is a wonderful place that obligingly creates new soil from bedrock, using the wear and tear of weather plus bacterial and microbial action. Perhaps even more remarkably, this new soil arrives with a good complement of phosphorus and potassium. This is pretty good treatment from a very generous planet. Before humans appeared, the rains would dissolve and wash away the soil and its associated nutrients just as fast as it was produced, but no faster. That's a pretty neat balancing trick too. We can record the steady, modest rate of erosion in ancient lake beds. Humans, alas, with their tree lust, initially for heat and shelter and later for arable space and fertilizer (burning the forest sheds its store of fertilizer and other nutrients), began to cut forests down so fast that the erosion rate increased. Nothing increases erosion and net nutrient loss faster than deforestation. (And, ironically, nothing encourages deforestation like erosion, because erosion decreases productivity and, hence, increases the pressure to bring on new land to fill the gap in a rather vicious feedback loop.) As our population grew, the forests were thus diminished in size, and the arable land increased. Even plowing savannahs, where trees had seldom or never grown, increased erosion by a large multiple. Sometimes these factors would accumulate with predictable results. In Panama, for example, it is common to see very hilly land that was once totally forested being used for cattle grazing. The cattle create paths that form gullies that funnel the tropical rains, which in turn denude whole hillsides in a few decades.

What the precise situation is today is hard to tell: First, erosion varies widely from region to region by type of soil and agricultural practice. Second, its measurement must also be difficult, for scientists have widely different views as to the best methodology. At one extreme, the reports are almost terrifying. A group of scientists from Cornell University writing in Science magazine[5] summarized their findings as follows: "Soil erosion is a major environmental threat to the sustainability and productive capacity of agriculture. During the last 40 years, nearly one-third of the world's arable land has been lost by erosion and continues to be lost at a rate of more than 10 million hectares per year ... In the U.S. an estimated 40 billion tons of soil ... are lost each year." Unfortunately, Cornell's Agricultural School has high standing in its field – reading their summary, one's instinct is to say, "Well that's it then. In a hundred years, everyone starves." Fortunately, there are also those at the other extreme who think we'll muddle through just fine, at least in the U.S. And, as we will see, the rise of no-till farming has the potential to help a lot.

The brief nitty-gritty on erosion and replacement is that somewhere between 50 and 1,000 years is needed to naturally replace one inch (25mm) of subsoil, depending on local conditions and who is doing the research. Different soil has different weights, but averages about 5 tons per acre per millimeter or 125 tons per acre per inch. Therefore, the natural replacement rate is equal to 2.5 to 0.125 tons per acre per year, rather than the 5 tons per acre per year that the U.S.D.A. has been using as an acceptable erosion rate. To state this very conservatively, current U.S. soil losses are very probably higher than natural replacement and possibly considerably higher. In Australia too, where records go back into the nineteenth century, it is also clear that more than 70% of arable land has been degraded to some considerable degree. For the planet as a whole, soil losses are certainly higher than replacement, and for some areas, notably in Africa, they are disastrously higher.

5 David Pimentel, et al., "Environment and Economic Costs of Soil Erosion and Conservation Benefits," *Science*, New Series, Volume 267

Further offsetting any of the more favorable data in the U.S. is a recent report from Iowa State University.[6] The report, which claims new accuracy levels, holds that typical erosion is not the issue, but that the rare extreme storm can cause one to several years' erosion in a single night as new gullies form in a way totally unlike those that form during regular rain storms. These outlier storms have unfortunately become much more common globally in recent years, with formerly rare weather events having become more frequent as a consequence of a warming climate.

History of Erosion

We now know that population density in the Fertile Crescent and some of the other centers of early civilization often dropped precipitously as their soils, due mainly to plowing, eroded. By the time they were finally disposed of by invaders, they were often shells of their former might with tiny fractions of their original populations left. North Africa was home to empires such as Carthage, which were powerful enough to challenge Rome and, in other cases, fertile enough to help feed Rome, which was the case of ancient Libya and Tunisia. Most of this territory has lost the great majority of its former agricultural capacity. Ancient Greece, Central Italy under the Romans, Syria, Iraq, and many others all suffered from the effects of subsoil erosion over a period of one thousand or more years, thus limiting their populations and reducing their economic and military power. In its later years, Rome, once at the center of fertile plains, abandoned farms everywhere and was totally dependent on imports from Egypt and Syria. Syria's history is one in which whole cities, with their dozens of surrounding villages, were later completely abandoned to the desert as their soil disappeared due to unsustainable agricultural practices. Fifteen hundred years ago in the Americas, civilizations such as the Mayans overtaxed their soils and provably lost enough soil to make it impossible to reliably feed their peak populations. (Two readable books for the summer that cover this topic in detail are: Dirt: The Erosion of Civilizations, by David R. Montgomery and Collapse: How Societies Choose to Fail or Succeed by Jared Diamond.) The academic study previously cited,[7] claims the loss of one-third of our soil globally in just a few decades. It is easy to believe that since the beginning of human history it might be fully one-half, or even more.

The history of soil erosion bringing ancient empires down might have served as a powerful warning, but it does not seem to have done so. Since Colonial times, the U.S. is thought to have lost one-third to one-half of its topsoil, and today is still losing at a rate faster than replacement, although at a recently much-reduced rate. Yet, as recently as the 1920s, the 1930s of Dust Bowl fame, and the 1940s, U.S. farms were eroding at disastrous rates – well over 10 times replacement, despite the historical warnings.

Globally, the situation has been, and remains, much worse than in the U.S. It is not clear what it will take to drive home the message that erosion is perhaps the single largest threat to our long-term well-being. It is certainly one of them. But erosion is insidious in that it has always crept up very slowly on both ancient and modern civilizations alike. Syrian farmers in 100 A.D. were concerned with supplying Rome in a year when prices were high. We can be sure that slow (even if steady) losses of productivity seemed to them to be academic abstractions in contrast. Today, what we might call the tyranny of the discount rate guarantees the same behavior. Damage far out has little value, and there is no adjustment factor for damage to all of us collectively. Only the gain of the individual or the corporation appears in the spreadsheet. This is a severe, perhaps even fatal, flaw in traditional free-market capitalism, and there are others that relate to this general topic: capitalism has not easily handled the finiteness of our resources. This topic – deficiencies in capitalism – is a big one and I will try to do it justice next quarter. For now, to link the current topic of erosion with that of next quarter's on capitalism, I offer a brief story of the Devil and the Farmer.

The Devil and the Farmer

The Devil, disguised as an innocent agent of a large agricultural company, arrives at a typical Midwestern farm. He has come to suggest to the farmer that he engage in more aggressive farming, and he comes, as usual, with a contract. The contract, if signed, pledges the farmer to farm aggressively and pledges the Devil to guarantee that the farmer's profits will be multiplied five-fold. But, as always, there is a catch: Footnote 23 is a clause that informs the farmer

6 Craig Cox, Andrew Hug, and Nils Bruzelius, "Losing Ground," April 2011; http://static.ewg.org/reports/2010/losingground/pdf/losingground_report.pdf
7 Ibid.

that squeezing out maximum short-term output will result in the loss of just 1% per year of his soil. The Devil's deal is dangerously reasonable, and therefore I would guess that 90% of farmers would feel that their families' well-being requires that they accept it. The Devil has included a spreadsheet that accurately lays out the profits and also lays out the steady decline in the soil's productivity and, fiendishly, does it honestly. By the end of the 40-year contract, the farm's productivity is down by barely 5%, and the farmer's net financial gains are enormous.

So successful has this period been that the farmer re-ups for another 40 years. Once again, the Devil does not cheat. By the 80-year mark, the soil depth after some natural replacement is almost precisely half of its year 1 level (and, remember, it also lost one-third to one-half of its soil on average in the first 150 years of farming), but the farm has prospered enormously. And, even after the soil loss, it is still by no means particularly sub-average because it turns out that all of the local farmers have made the same deal. All of their productivities have dropped by 20% to 25% but, because of global pressures on grain prices, the deal still looks attractive. The spreadsheets, which have not lied in the past, still accurately and honestly show how profitable it will be for great-grandson and all of his neighbors to re-up yet again. In this way, by always adopting the plan with the optimal present value and by following strict capitalist principles, the Midwest and the planet marches off the edge of the cliff, as farmers, prosperous almost to the very end, are finally overwhelmed by armies of starving city dwellers!

(Note: Appendix 2 shows the back-up material. It is not even close. Normal farmers, using any reasonable discount, would sign and re-sign until soil and productivity go to zero!)

Finally, the Good News

So as not to end too gloomily, I have saved the best news for the end; news so good that Cornucopians can jump for joy and gloomy Malthusians can think "What undeserved luck!" Most huge improvements in anything take equally huge investments of time, energy, and capital. This one, which reduces erosion rates from way over sustainability to acceptable levels, requires very little except a willingness to change one's ways, a characteristic not always in great supply in any group, including farmers. No-till farming, developed in recent decades has, after a slow start, been spreading very rapidly in South America. It is now used in more than 50% of all arable land there, which, given the heavy rains in much of the area, is just as well. In the U.S., the adoption of no-till has very recently accelerated and it now accounts for more than 35% of farmland according to the U.S.D.A. In general, it is growing elsewhere, albeit slowly, and hardly at all in Africa. The bad news is that globally, despite its advantages, it makes up only a 5% share of grain production. Just as it sounds, no-till leaves the crop residue on the field and the following year, instead of plowing up the ground, a rotating wheel pierces the ground every few inches and plants a seed, sometimes together with a precisely measured dose of fertilizer. After a few years, the mat of ground cover massively reduces the erosion caused by heavy rains: the average academic study reports more than an 80% reduction, with the highest being 98% and the lowest 50%. In one fell swoop, the erosion problem can be effectively resolved.

Protecting the soil may be the biggest single advantage of no-till, but there are several other important ones. When soil is washed or blown away, it is the very top soil that goes, and this is the soil that carries much of the nutrients that have been added at no small cost. About one-third of the fertilizer is wasted. This was an irritant when potash was $175 a ton five years ago. At the more recent price of $420 a ton, it is a serious saving – enough to get farmers' attention. With no-till, there are incremental nutrients in the accumulated stubble, which further reduces costs and, more importantly, reduces the load on critical limited fertilizer resources.

Water retention in the soil also greatly increases because the effects from full-scale plowing, which exposes the moist soil to the sun, are mitigated by no-till. When rain is plentiful and evenly spaced, there is little difference between the two systems in this respect, but when rains are scarce or there is full-scale drought, the extra moisture protected by the ground cover can make a big difference to productivity. So life is easier for the soil, whether it is a flood or a drought; a particularly compelling case in these days of increased weather instability.

Finally, the quality of the relatively undisturbed soil improves as the number of microbes, bacteria, fungi, and other living critters steadily multiplies. This in turn arguably increases the carbon density of the soil and definitely further

increases the water retention capacity and the amount of micronutrients, which, under full plowing, basically fall to zero. It is widely believed that micronutrients make food healthier and that their chronic absence in modern food has not been healthy for us, molded as we are by tens of thousands of years of eating more complicated foods.

All in all, no-till is like a gift from Ceres and single-handedly would remove or long postpone most of our long-term productivity problems. With no-till, productivity typically drops slightly in the first few years, but then slowly increases. Conversely, with high-erosion plowing, it slowly decreases, with potentially severe consequences over very long periods. Another disadvantage of no-till is that it requires more insecticide, especially in the first few years, which has environmental and financial costs. Researchers, though, increasingly believe that most of this increase can be removed by fine-tuning crop rotation, cover crops, and other "engineering" tricks. The bottom line seems to be that if we adopted no-till globally for a great majority of our grain crops, the only serious threat to agricultural productivity would be from the very long-term shortage of mined fertilizers, with even that threat much postponed. Additional efforts with soil enhancement and full-scale organic farming could further improve fertility and lower the need for "outside" fertilizer, but that is a topic too complicated and controversial to be covered here.

Conclusion

None of this changes the ultimate equation that we have a finite carrying capacity. As the population continues to grow, we will be stressed by recurrent shortages of hydrocarbons, metals, water, and, especially, fertilizer. Our global agriculture, though, will clearly bear the greatest stresses. It may have the responsibility for feeding an extra two to three billion mouths, an increase of 30% to 40% in just 40 years. The availability of the highest quality land will almost certainly continue to shrink slowly, and the quality of typical arable soil will continue to slowly decline globally due to erosion despite increased efforts to prevent it. This puts a huge burden on increasing productivity. Such increases have to contend not only with thinner soils, but also with increasing climate instability, rising costs of all inputs, and long-term availability limitations of fertilizer. In a way that has not applied to the last one or two hundred years but certainly did to many ancient civilizations, we will need to protect and nurture our resources – particularly our farms – if we do not intend to follow them into sand and rocks and depopulation. Encouraged by higher prices, we will become more frugal and more sensible and stretch out our resources, buying us more time for a natural decline in population to eventually bring us into balance. (Leading candidates for greater frugality in grain consumption, for example, would be reduced meat consumption and the banning of the use of quality farmland to produce gasoline substitutes. The U.S. ethanol program is, on a global level, a callous trade-off between unnecessary help to U.S. farmers on the one hand and increasing malnutrition and outright starvation in some of the poorest countries on the other hand.)

Here, the discussion is about the pain and time involved in getting to long-term sustainability as well as trying to separate the merely irritating from the real, often surreptitious, threats to the long-term viability of our current affluent but reckless society. The moral however, is clear. As Jim Rogers likes to say: be a farmer not a banker – the world needs good farmers! I might add: or become a resource efficiency expert and help the world save some of them for our grandchildren. Farming will be a satisfying and enriching experience if, on a global basis, we rise to the long-term agricultural challenges. And, if good old short-term profit maximizing continues as it did for the Syrian, Greek, and Roman farmers before us, then at least today's farm owners will go down with the ship, travelling in first class.

Appendix 1: Malthusians and Cornucopians: the Ehrlich-Simon Bet

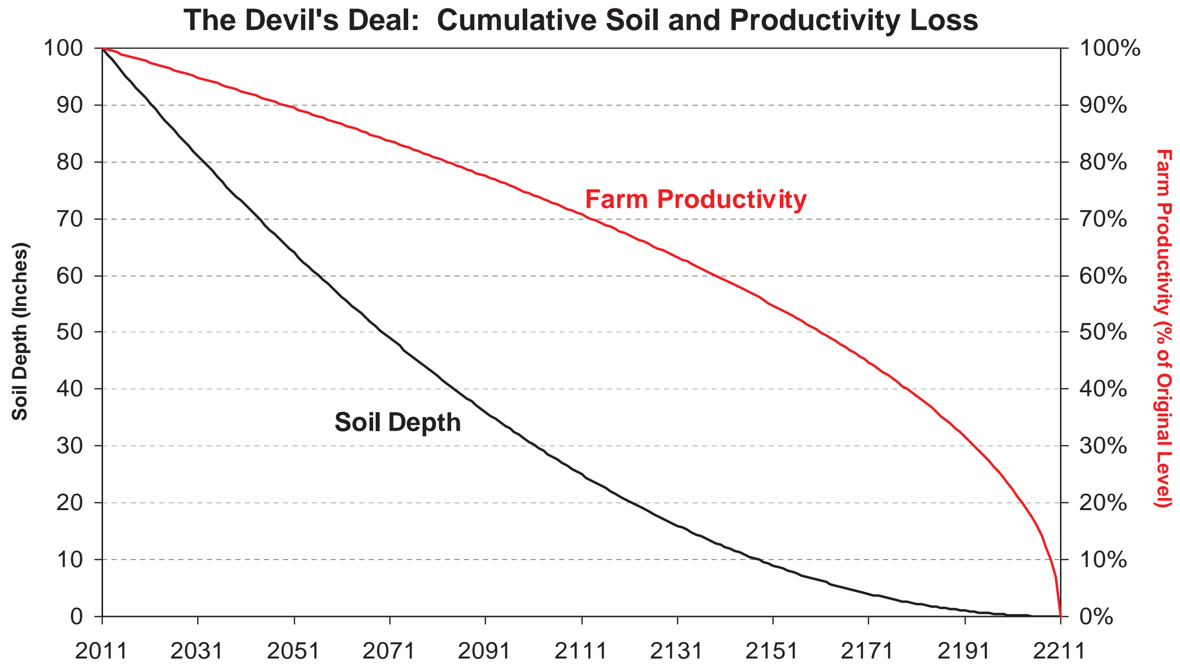
While still on the topic of resources, there are a few points I'd like to make on the subject of the famous bet made between Paul Ehrlich and Julian Simon in 1980, which is so often mentioned by opponents of any ideas regarding resource limits. They have been called Cornucopians, which I think is a great term for them. Ehrlich believed that we were beginning to run out of resources; we might call him a Malthusian. He reflected the Club of Rome's thinking and the famous book entitled *The Limits to Growth*.[8] Simon on the other hand, who worked at the Cato Institute for many years, was a classic super-Cornucopian: everything will always be fine because of our species' boundless resourcefulness; population increases are to be welcomed because they cause growth, which in turn stimulates invention so that there will always be plenty. The Cato Institute generally supports any theory that will result in less government and fewer restraints on corporations. (They were grubstaked by the Koch family, they of the hydrocarbon empire, who, not surprisingly, profoundly agree with those beliefs.) The argument that mankind might seriously endanger the long-term productivity of the planet by wasteful overconsumption or by unnecessarily large emissions of carbon dioxide is a dangerous "idea" for libertarians and Cornucopians (we might, I think, reasonably call such things "facts") that might open the door to regulation. Ergo, the facts must be disputed. And every argument along the way, large or small, must be grimly defended, especially the ideal of limitless growth.

And defend it Mr. Simon did, and very effectively. He engaged Ehrlich in a bet on this topic, which he famously won, and the Cornucopians have never let anyone in this field forget it. The essence of the bet was that Ehrlich believed that compound growth could not be sustained in a world of finite resources, and therefore the real price of raw materials would rise. Simon argued that, regardless of the rate of growth, real prices would fall. Of course, the spirit of this bet has no time limit – 40 years is better than 10, and 100 is better than 40. But a bet like this between humans of middle age is one that both would like to collect on. So, the bet was set at 10 years and five commodities[9] were chosen by mutual agreement. Here again, all commodities would have represented the spirit of the bet better than five, but five was easier to monitor. Simon won all five separate bets fair and square at the 10-year horizon. But let's admit that this is a very unsatisfactory time period for the rest of us who are really interested in this contest of ideas. So, let's take an equally arbitrary but much more satisfactory bet: from then, 1980, until now, and include all of the most important commodities. Ehrlich would have won posthumously, and by a lot! (Even of the original five, he is four for five, having lost on the least significant of the five: tin.) So, please "Cornucopians," let's not hear any more of the Ehrlich-Simon bet, which proves, in fact, both that man is mortal and must make short-term bets, and, more importantly, that Ehrlich's argument was right (so far).

8 Donella H. Meadows, Dennis L. Meadows, Jørgen Randers, and William W. Behrens, III, The Limits to Growth, Universe Books, New York, 1972.

9 Copper, chromium, nickel, tin, and tungsten.

Appendix 2: The Devil and the Farmer



Source: GMO

Appendix 2: The Devil and the Farmer

Our Midwestern farmer starts with a soil depth of 16 inches*, producing $100 of crops. He has a profit margin of 3% on his crops - the average operating profit margin for U.S. farms is 11% (2010 Family Farm Report, USDA Economic Research Service), but our farmer is completely sustainable and cleaner than clean, incurring no erosion or pollution.

The Devil approaches him and asks if he will allow his soil to deplete at just under 0.16 inches per year - 1% of his soil** - for forty years. In return the Devil will multiply the farmer's profit margin by 5 times, from 3% to 15%. We assume, and the farmer is told by the Devil, that the productivity of his soil and therefore the size of his crop, will fall proportionally to the fourth root of the soil depth (this is approximately in line with empirical studies of soil depth and productivity).

The first time the farmer is approached, taking the Devil's deal will multiply the present value of the next forty years' profits by 4.83 times (at a 6% discount rate). He takes the deal. Forty years later he only has 64% of his soil left…

	First Forty Years			
	Devil's Deal		No Deal	
	Soil Depth	Profits	Soil Depth	Profits
First Year	15.8	$14.96	16.0	$3.00
Tenth Year	14.4	$14.62	16.0	$3.00
Twentieth Year	13.0	$14.23	16.0	$3.00
Thirtieth Year	11.6	$13.83	16.0	$3.00
Fortieth Year	10.2	$13.42	16.0	$3.00
NPV of Profits (6% discount rate)		$217.94		$45.14

The Devil approaches the farmer again after the first forty years. This time signing the deal will multiply the present value of his profits by 4.78 times. He takes the deal. Forty years later he only has 36% of his soil left…

	Second Forty Years			
	Devil's Deal		No Deal	
	Soil Depth	Profits	Soil Depth	Profits
First Year	10.1	$13.37	10.2	$2.68
Tenth Year	9.0	$12.99	10.2	$2.68
Twentieth Year	7.8	$12.55	10.2	$2.68
Thirtieth Year	6.8	$12.09	10.2	$2.68
Fortieth Year	5.8	$11.62	10.2	$2.68
NPV of Profits (6% discount rate)		$193.14		$40.37

The Devil approaches the farmer again. This time signing the deal will multiply the present value of his profits by 4.71 times. He takes the deal. Forty years later he only has 16% of his soil left…

	Third Forty Years			
	Devil's Deal		No Deal	
	Soil Depth	Profits	Soil Depth	Profits
First Year	5.7	$11.57	5.8	$2.32
Tenth Year	4.8	$11.12	5.8	$2.32
Twentieth Year	4.0	$10.61	5.8	$2.32
Thirtieth Year	3.2	$10.06	5.8	$2.32
Fortieth Year	2.6	$9.49	5.8	$2.32
NPV of Profits (6% discount rate)		$164.61		$34.96

The Devil approaches the farmer again. This time signing the deal will multiply the present value of his profits by 4.55 times. He takes the deal. Forty years later he only has 4% of his soil left…

	Fourth Forty Years			
	Devil's Deal		No Deal	
	Soil Depth	Profits	Soil Depth	Profits
First Year	2.5	$9.43	2.6	$1.90
Tenth Year	2.0	$8.87	2.6	$1.90
Twentieth Year	1.4	$8.22	2.6	$1.90
Thirtieth Year	1.0	$7.50	2.6	$1.90
Fortieth Year	0.6	$6.71	2.6	$1.90
NPV of Profits (6% discount rate)		$129.87		$28.55

The Devil approaches the farmer again. This time signing the deal will multiply the present value of his profits by only 3.97 times. He takes the deal. Even this fifth time, starting with only 4% of the soil, he will still make 77% more profits in this period by signing than if he had never signed at all.

	Fifth Forty Years			
	Devil's Deal		No Deal	
	Soil Depth	Profits	Soil Depth	Profits
First Year	0.6	$6.62	0.6	$1.34
Tenth Year	0.4	$5.81	0.6	$1.34
Twentieth Year	0.2	$4.74	0.6	$1.34
Thirtieth Year	0.04	$3.35	0.6	$1.34
Fortieth Year	0.000	$0.00	0.6	$1.34
NPV of Profits (6% discount rate)		$80.07		$20.19

After 200 years and five signings of the Devil's deal, there is no soil left at all. All of the farmer's future profits are zero - and what is more concerning to the rest of us, the farm's future food production is zero.

But the Devil's deal is profitable right up until that point. It is not until year 193 of the Devil's deal that the profits from signing with the Devil all along fall below the profits from never signing with the Devil at all. In fact, if the farmer were made to choose in year 1 between signing with the Devil permanently or never signing at all, his discount rate would need to be **0.17% or lower** for not signing to be the rational choice in NPV terms.

* *This refers to topsoil or "agriculturalist's soil," specifically, the A and B soil horizons.*

** *In fact the Devil's soil depletion will fall over time, from 0.16 inches in the first year to 0.13 inches in the fortieth year. It will continue to fall linearly to 0.08 inches in the one-hundredth year, and 0 inches in the two-hundredth year - because the Devil's deal is that the farmer's soil runs out in the two-hundredth year.*

Source: GMO

Appendix 2: The Devil and the Farmer

The Devil's offer of 5x profits is quite clearly too good for our farmer to pass up. But what if the farmer were much more profitable to start with? What if he had 7.5% profit margins - closer to the U.S. average of 11% - and the Devil could only offer to double his profits to 15%, in exchange for the same soil depletion schedule? Would this still be a good deal for the farmer?

The first time our (more profitable) farmer is approached, taking the Devil's deal will multiply the present value of the next forty years' profits by 1.93 times (at a 6% discount rate). He takes the deal. Forty years later he only has 64% of his soil left…

First Forty Years	Devil's Deal		No Deal	
	Soil Depth	Profits	Soil Depth	Profits
First Year	15.8	$14.96	16.0	$7.50
Tenth Year	14.4	$14.62	16.0	$7.50
Twentieth Year	13.0	$14.23	16.0	$7.50
Thirtieth Year	11.6	$13.83	16.0	$7.50
Fortieth Year	10.2	$13.42	16.0	$7.50
NPV of Profits (6% discount rate)		$217.94		$112.85

The Devil approaches the farmer again after the first forty years. This time signing the deal will multiply the present value of his profits by 1.91 times. He takes the deal. Forty years later he only has 36% of his soil left…

Second Forty Years	Devil's Deal		No Deal	
	Soil Depth	Profits	Soil Depth	Profits
First Year	10.1	$13.37	10.2	$6.71
Tenth Year	9.0	$12.99	10.2	$6.71
Twentieth Year	7.8	$12.55	10.2	$6.71
Thirtieth Year	6.8	$12.09	10.2	$6.71
Fortieth Year	5.8	$11.62	10.2	$6.71
NPV of Profits (6% discount rate)		$193.14		$100.93

The Devil approaches the farmer again. This time signing the deal will multiply the present value of his profits by 1.88 times. He takes the deal. Forty years later he only has 16% of his soil left…

Third Forty Years	Devil's Deal		No Deal	
	Soil Depth	Profits	Soil Depth	Profits
First Year	5.7	$11.57	5.8	$5.81
Tenth Year	4.8	$11.12	5.8	$5.81
Twentieth Year	4.0	$10.61	5.8	$5.81
Thirtieth Year	3.2	$10.06	5.8	$5.81
Fortieth Year	2.6	$9.49	5.8	$5.81
NPV of Profits (6% discount rate)		$164.61		$87.41

The Devil approaches the farmer again. This time signing the deal will multiply the present value of his profits by 1.82 times. He takes the deal. Forty years later he only has 4% of his soil left…

Fourth Forty Years	Devil's Deal		No Deal	
	Soil Depth	Profits	Soil Depth	Profits
First Year	2.5	$9.43	2.6	$4.74
Tenth Year	2.0	$8.87	2.6	$4.74
Twentieth Year	1.4	$8.22	2.6	$4.74
Thirtieth Year	1.0	$7.50	2.6	$4.74
Fortieth Year	0.6	$6.71	2.6	$4.74
NPV of Profits (6% discount rate)		$129.87		$71.37

The Devil approaches the farmer again. This time signing the deal will multiply the present value of his profits by only 1.59 times. He takes the deal. But the soil depletion has taken its toll: he will make only 71% of the profits over this period that he would have made had he never signed with the Devil.

Fifth Forty Years	Devil's Deal		No Deal	
	Soil Depth	Profits	Soil Depth	Profits
First Year	0.6	$6.62	0.6	$3.35
Tenth Year	0.4	$5.81	0.6	$3.35
Twentieth Year	0.2	$4.74	0.6	$3.35
Thirtieth Year	0.04	$3.35	0.6	$3.35
Fortieth Year	0.000	$0.00	0.6	$3.35
NPV of Profits (6% discount rate)		$80.07		$50.47

The deal is still too good to pass up if the Devil only offers to double his profits. Truth is, even doubling the farmer's profits is still a far better deal than the Devil needs to offer. It takes 200 years for the Devil to take all of the farmer's soil - and 200 years is a very long time to discount over.

In fact, if the farmer has a 6% discount rate, the Devil only needs to offer to boost his profits **by 4.3%** - that is, **from $7.50 to $7.82** in the first year - in order for the farmer to rationally take the deal.

Source: GMO

Disclaimer: The views expressed are the views of Jeremy Grantham through the period ending July 22, 2011, and are subject to change at any time based on market and other conditions. This is not an offer or solicitation for the purchase or sale of any security and should not be construed as such. References to specific securities and issuers are for illustrative purposes only and are not intended to be, and should not be interpreted as, recommendations to purchase or sell such securities.

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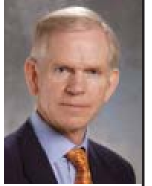
QUARTERLY LETTER

August 2011

Danger: Children at Play



Stop Press Addendum

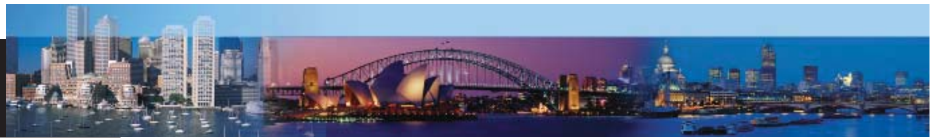
Jeremy Grantham

My worst fears about the potential loss of confidence in our leaders, institutions, "and capitalism itself" are being realized. We have been digging this hole for a long time. We really must be serious in our attempts to resuscitate the "average hour worked" and the fortunes of the average worker. Walking across the Boston Common this morning, I came to realize that the unpalatable (to me) option of some debt forgiveness on mortgages looks increasingly to be necessary as well as the tax changes I discuss here.

To go further, if we mean to prosper long term, I am sure we need to act to make debt less attractive to everybody: it really is a snare and a delusion.

GMO

QUARTERLY LETTER



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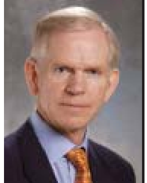


Jeremy Grantham

"Peace in our Time"[1] and the Art of Can-Kicking

Tough decision-making is never easy, and wishful thinking and trying to postpone the day of reckoning is always tempting. The British of the late 1930s probably hold the world record for wishful thinking, and the agreement signed in Munich in 1938 certainly provided the ugliest example of expensive can-kicking: Czechoslovakia was sold out to Hitler to, at best, buy a few months of peace. More recently, Japan has been the reigning world can-kicking champ for 20 consecutive years. But today Japan is suddenly being challenged by both the U.S. and the Euroblock. (The Brits, in contrast, with their draconian cost-cutting program at a time of acute economic weakness, look brave. Possibly recklessly conservative, and probably with rotten timing. But certainly very brave, Mr. Minister.)

Climbing the Greecey Pole

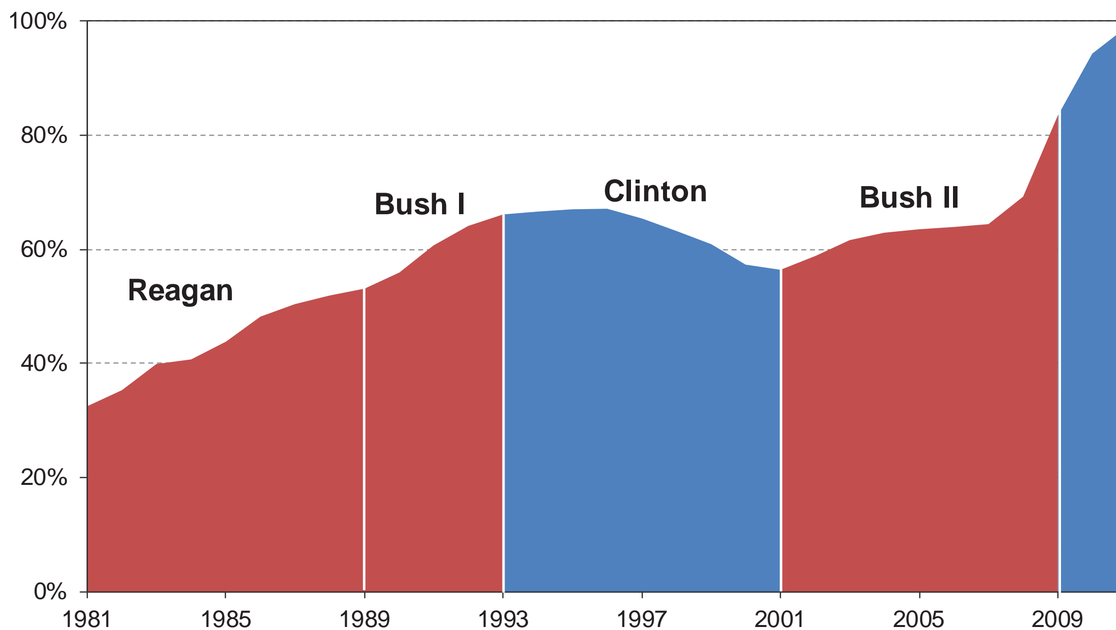
I am not an expert in euro finance by a wide margin. But I know one thing. Forget the debt for a second: the current uncompetitiveness of Greece, Ireland, Portugal, Spain, and Italy did not occur quickly. It took 10 long and obvious years. They had to work at it. The cure was always going to cause a lot of pain and threaten the well-being of the euro. So why didn't the bosses attempt to fix it early on when it would have been so much easier? There was no material squawking by the Germans or the ECB. In fact, the Germans back then were themselves busy weaseling on their own rules of good financial behavior. Along the way, the local bosses – just like Greenspan here – were cheerleaders for the disastrous behavior of excessive spending. Today these problems have become much tougher, but still the decisions are only half made and the cans get kicked and kicked again.

Also challenging strongly to assume the can-kicking title (having already snatched "The Most Dysfunctional Government" title from Argentina) is the United States. Exhibit 1 shows the build-up of U.S. gross national debt as a percentage of GDP. The shading shows the data by presidential term. The debt ratio rose rapidly under Reagan and Bush II and fell rapidly under Clinton. No doubt, there were extenuating circumstances for all of them: unnecessary wars, etc. (There certainly was for the current incumbent. By the way, where is the current incumbent? In any case, he definitely inherited a dreadful mess courtesy of Greenspan, Bernanke, Paulson, Bush II, Rubin, and an army of greedy corporate short-term profit maximizers.) To go with all of their other failings they were, above all, engaged in wishful thinking. For all of them there appeared to be no housing bubble, no need to regulate subprime, no fear of an extra million houses being built. But most importantly, there was no willingness to take preemptive and tough decisions. Everyone appeared to be hoping for the best. At the extreme there was Greenspan expecting responsible behavior from bankers! This is all old hat, but it is important to remember that most of the current problems for the U.S. stem from an earlier refusal to deal with the U.S. housing bubble at an early date.

So now (July 30), the U.S. – with a dysfunctional Congress – has to decide between two of the ugliest choices seen in a long time. Should they cut government expenditures and therefore cut aggregate demand at a time of a critically weak economy on the cusp, perhaps, of a double dip? Or should they do nothing and allow a technical default, compromising the integrity of the dollar and sending a powerful signal to the world that the U.S., at least for now,

1 "My good friends, this is the second time in our history that there has come back from Germany to Downing Street peace with honor. I believe it is peace in our time." Prime Minister Neville Chamberlain upon his return from Munich in September 1938 after he had met with Hitler and signed the Munich Pact, a treaty that he publicly represented as avoiding war.

Exhibit 1
U.S. Gross National Debt as % of GDP



Source: Office of Management and Budget As of 6/30/11

is not a serious country and is probably past its prime. Ouch! Nobly trying to resolve this impasse, a small chunk of Republicans has seized the mantle of blackmailers and turned out to be very good at it. Certainly too good for President No-Show. Come to think of it, the choice was between technical default and looking like a Banana Republic and technical blackmail and looking like a Banana Republic! Just different bananas perhaps?

Update on "Seven Lean Years"

I wrote in early 2009[2] that "we probably do face a period that will look and feel painfully like seven lean years." And "I expect that, at least for the seven lean years and perhaps longer, the developed world will have to settle for about 2% real GDP growth (perhaps 2.25%) down from the 3.5% to which we used to aspire in the last 30 years ... It makes it very unlikely … that we will get back to the old highs in the stock market … anytime soon." And perhaps most seriously: "We have all lost some confidence in the quality of our economic and financial leadership, the efficiency of our institutions, and perhaps even in capitalism itself." (Emphasis added.)

So here we are more than two years later, at the one-third mark in the seven lean years. Profit margins, as we will see later, are far above what I expected then. But everything else is perhaps at least a little worse. First, when I talked about 2% growth I was talking about a reduction in our trend line growth. I did not intend to count from the dead low of the economic recession. In fact, I argued that of course there would be an economic bounce with all of the spare capacity and unemployment. Had we averaged 2% growth from 2007 until now, GDP would be up 7% today. It is actually just under dead flat. To make up this 7% shortfall in the remaining 3.5 years (December 2007 to December 2014) would take an extra 2% a year, that is, 4% annual real GDP growth. Given our current headwinds, this would seem to need a miracle. Even to average 1.5% growth for the seven years from 2007 to 2014 would take 3% a year growth, which seems at the upper end of a reasonable range. So, unfortunately, at the end of the first period (in hockey terminology), my dismal seven-lean-year forecast looks all too accurate and, perhaps, even optimistic. To this point, there has never been such a weak and slow recovery from a steep decline. The revised numbers show that at the 2009 low we had had by far the biggest drawdown in GDP (-5.1%) since the Great Depression. The reasons that I thought it would take at least seven years to get back to normal are still mostly in place. Some have modestly improved, but many are worse.

2 Jeremy Grantham, "The Last Hurrah and Seven Lean Years," 1Q Letter, 2009.

"Seven Lean Years:" The Plus Side

- The growth rates and general economic well-being and resilience of emerging economies, especially China and India, have been nothing short of remarkable. Collectively they have resisted the financial crisis far better than expected, with only 17% of global government debt outstanding, compared to fully one-half of global GDP! They bounced back much faster economically and have basically supplied a lifeline to the developed world that has admittedly been grabbed more solidly by some – Germany in particular – than others.
- The scale of both the Chinese trade surplus and the U.S. trade deficit has declined: hopefully this is a down payment on a long-term project aimed at more sustainable trade relationships.
- There is a U.S. personal savings rate once again. It has jumped to 5% from 1% (first announced as negative but much later revised). This causes some short-term problems for everyone by reducing immediate demand, but in the long term dis-saving was not even close to a long-term equilibrium. Perhaps the current 5% savings rate will be just enough to muddle through, although it leaves retirement funds severely malnourished after a decade of little or no savings.
- Corporate profits are a bonanza that would allow in principle for substantially increased hiring and a consequent stimulus to GDP. President Hoover bitterly railed at senior businessmen in 1930 and 1931 for sitting on their cash. President Obama would have felt sympathetic. Corporations today are doing very little hiring despite unusually high cash reserves.

"Seven Lean Years:" The Negative Side

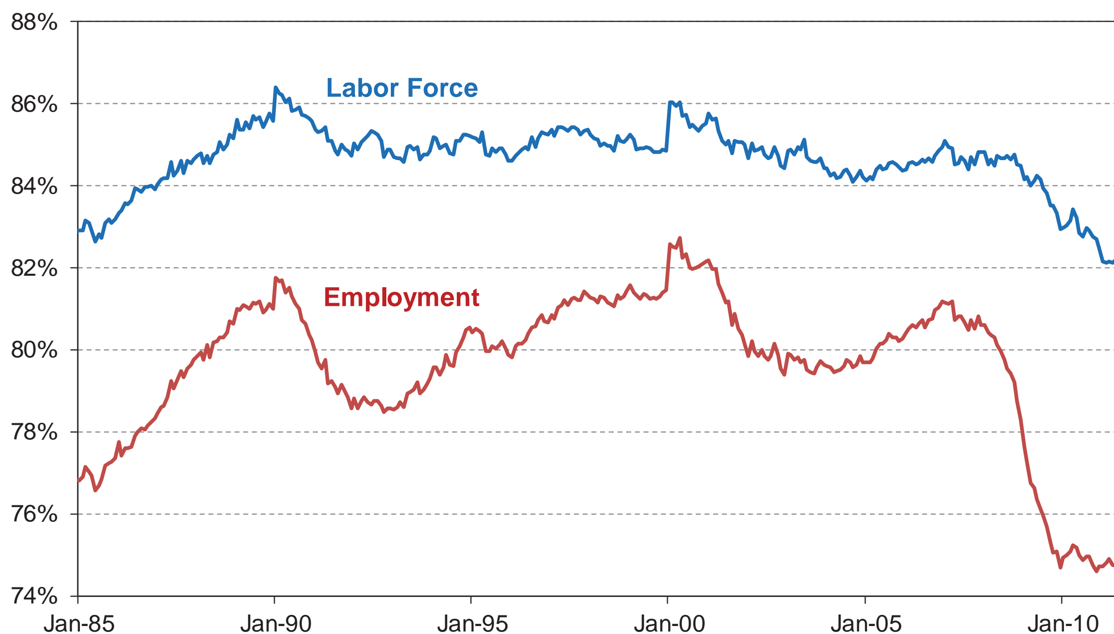
- Where to start? The disillusionment with institutions and "even capitalism itself" has increased, particularly disillusionment with Congress, whose dysfunctionality would be laughable if the stakes were not so high. This depresses animal spirits, which dampens the current recovery, and some of this effect (which for some of us reaches mild despair) might linger for years, persistently making growth a little more difficult than would normally be expected given all other economic inputs.
- Resource prices are even higher than I expected partly because China's growth has continued to be strong and partly because truly atrocious weather has continued for longer than I expected, even though I was counting on much-increased climate instability in the long run as the direct result of climate warming.
- Predictably, the developed world ages, the percentage increase in new workers declines, pensions and health benefits bloom, and balanced budgets clearly become mathematically impossible without either substantial reneging on commitments or tax increases or both. Any other pretense is beyond wishful thinking or weak math skills. It is either childish or gross and cynical politics: that is to say, even worse politics than usual. It is certainly kicking an enormous can down the road. The lower GDP forecasts inherent in the seven-lean-year environment would guarantee, if they materialize, much higher U.S. deficits than currently forecast.
- The overhang of a housing bust remains and will remain for years. The illusion that we had of great housing wealth was shattered. The extra housing stock must be absorbed. The extra 4% to 5% of home ownership that resulted from sustained overstimulation must revert to its economically justified level. The good news is that it is at least halfway there. It simply has to keep painfully plugging along for a few more years. House prices are unlikely to roar back because, with houses, "once bitten, twice shy" really does apply. In any case, home builders can produce decent houses at current prices and, in the long run, these lower prices are far more satisfactory for the critical new buyers, whose well-being we tend to forget in the heat of battle. (See Australia today where a typical young couple in Sydney cannot buy an average house.)

  Although we at GMO believe U.S. housing is at least back to trend prices and probably slightly below, we must admit that a multi-year sustained overrun on the downside has normally followed the breaking of a major bubble like the one just witnessed. Other than this historical observation, however, we know of no way to usefully guess at how deep and how long an overcorrection might be.

- Personal income progress is very modest. Productivity has been very high – remarkably so compared to the rest of the developed world average – but the U.S. continues its odd and long history of flowing all economic gains to corporations and the very rich and basically none to the average hour worked. Therefore, it should come as no surprise that we are facing weak demand. For 30 years to the year 2000, consumers compensated for their lack of progress in hourly wages partly by working harder and longer and in greater numbers (i.e., a higher participation rate) and partly by borrowing. But in the 10 years after 2000, the participation rate in the workforce has dropped dramatically (see Exhibit 2) and hours worked per person has flattened so that the only way for individuals to grow their consumption more recently was by borrowing even more and, to some extent, by speculating in housing. Rising house prices provided the (apparently) real backing for more debt and, even where that backing did not exist, the ingenuity (and, we must admit, greed) of the financial system still supplied the debt. And all of that has gone. And since creating and destroying illusions seems a wretched way to proceed, we can hope (non-mortgage brokers anyway) that it does not return. Today the artificial sugar-coating of increasing debt has been removed and we must live with the reality that an <u>average hour's work has not received a material increase for 40 years (see Exhibit 3). Without increased debt and without gains in hourly wages, how can there be sustained broad gains in consumption</u>? Only Chanel suits, Hermes scarves, BMWs, and their ilk have very strong sales, and these top-end items are just too small a fraction to carry the day. If we want to dig out of our current morass, don't we have to change this equation and isn't the most direct way of doing this to divide the pie more evenly? That would mean lower income and sales taxes for the bottom 75% of earners and <u>higher taxes for the top 10%</u>! We have allowed the vagaries of globalization and the plentiful supply of cheap Chinese labor to determine our income distribution, which has become steadily steeper, to the point where we <u>have become one of the least egalitarian developed societies</u>. Wouldn't it be better for us to decide deliberately and by ourselves that income distribution which creates the best balance of social justice and incentive to work? I am not suggesting that we become some goody two-shoes Scandinavian country. But how about going back to the levels of income equality that existed under the Presidency of that notable Pinko, Dwight Eisenhower (see Exhibit 4). And don't think for a second that this more equal income distribution somehow interfered with economic growth: the 50s and 60s were the heyday of sustained U.S. economic gains.

Exhibit 2

U.S. Civilian Employment and Labor Force, as % of Population Aged 20-64

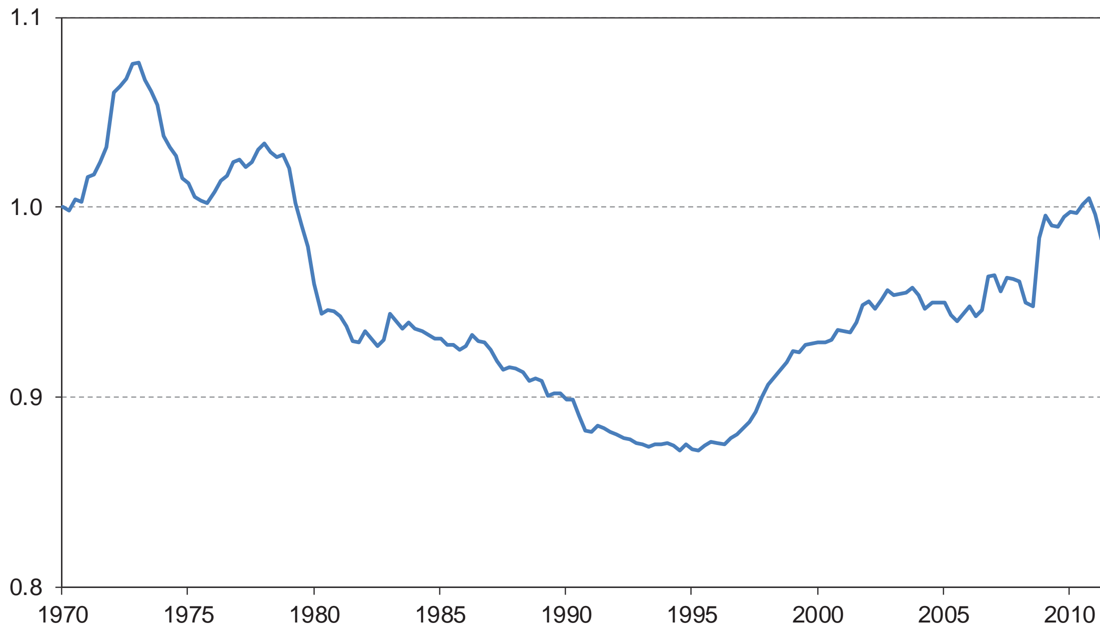


Source: Conference Board, U.S. Census, Bureau of Labor Statistics   As of 6/30/11

Exhibit 3

U.S. Real Average Hourly Earnings Index, Q1 1970 = 1

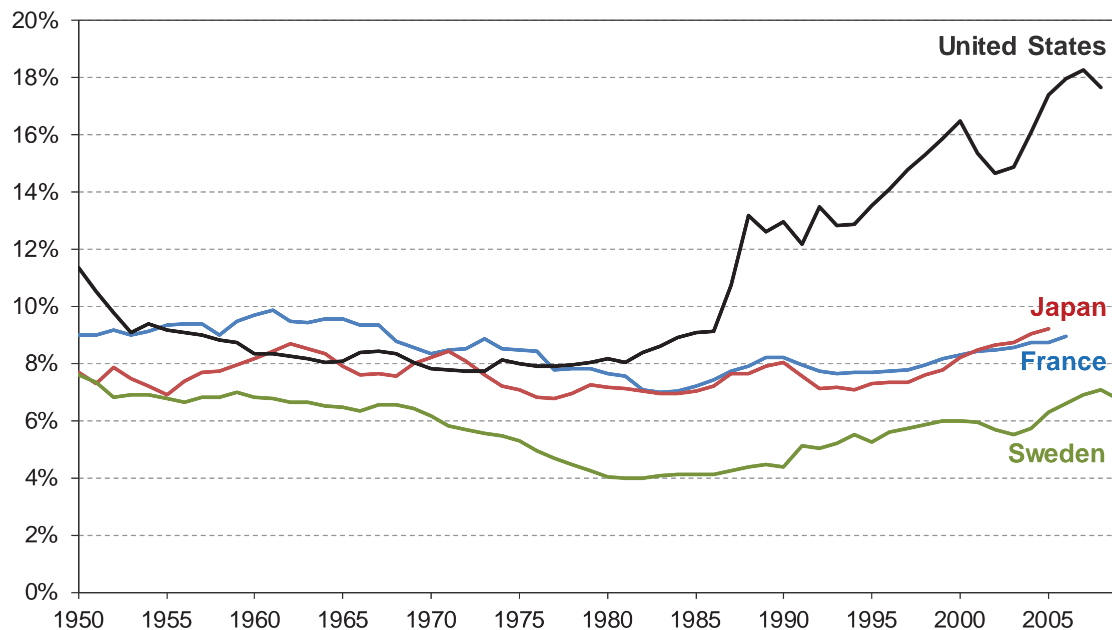
Down over 40 years!



Source: OECD Main Economic Indicators, IMF International Financial Statistics As of 6/30/11

Exhibit 4

Income Share of Top 1% as Percentage of Total Income



Source: World Top Incomes Database As of 12/31/09

- The problems with average workers and their limited progress in income is not just about raw income after tax. They have been neglected in many other ways: excellent basic education is now the exception rather than the rule by international standards, and post high school training and retraining is also sadly lacking compared to

best practices. Pensions also, as we'll see, have gone backwards. It is a very broad as well as a very depressing picture.

- It's not just that there is no increased debt to help consumption: individuals must also make an effort to increase savings and pay down existing household debt. This had peaked at 130% of income in 2007 and was clearly unsustainably high. It has been moderately reduced in the last three years, mostly by write-downs of the debt, but also by taking on less new debt. Net new debt was unprecedentedly negative for two years until two months ago when it moved up to just +1%. Loss of housing values has revealed how almost everybody has under saved for 20 years.
- The rapid abandonment of formerly widespread defined pension funds puts further pressure on lower and middle income families. 401(k) and defined contribution plans are desperately poor substitutes for defined benefit corporate plans, in which corporations guaranteed a percentage of retirement salaries. These traditional plans were remarkably generous and represented a high point in corporate responsibility to employees. The management of these over their first 20 years became highly professional, in my opinion, and cost effective. Management by the individual retirees themselves is, in contrast, typically very high cost and, of course, disastrously amateurish.
- Economic policy making has been stuck between half-hearted Keynesian stimulus, mostly chosen, apparently, to avoid projects with a high social return on investment, and ill-timed "Austrian" cut-backs. Clearly, this mishmash has not been effective at job creation. Conversely, we were great at job destruction: no other country laid off workers with such panic. Where Dutch and German companies, among others, tried to protect their workers' social capital by limiting firing, we protected short-term profits.
- If we continue to drift around rudderless, if we don't develop some real leadership soon, then seven lean years may be the least of it. When I was five years old there was a globe on my grandparents' landing. The British Empire and Commonwealth bits were in red. You have no idea how red the globe was ... India, Pakistan, Bangladesh, Burma, Malaysia, Africa from Egypt to South Africa, and so on. It was undeniably the largest Empire by far in history, both geographically and in population. And 20 years later it was gone. Too many wars, sloppy and sometimes very unenlightened management, not enough money in the till, and, simply, a changing world. So, been there, done that. I mention this not as a comparison between the British Empire and the U.S. and certainly not to defend imperialism, but merely to show how quickly things can change. It would be a shame to see my adopted country also fall away from a leadership position in which it has been a working demonstration not just of entrepreneurial drive and effective government, but also of social justice and international leadership and assistance. A model to which reasonable people could aspire.

Freakishly High Corporate Profits

Looking at corporate profit margins, one could argue the same for them – that they do not seem to be connected to economic reality. A sub average economic recovery, threatening to become painfully sub average, has not stopped corporate profits from quickly rising to a level that is about as high as they have ever gotten. The average worker, with flat wages for decades and with 16% to 18% of the workforce out of work (9%), discouraged to look for work (4%), or forced to work only part-time (5%), must feel as if he (or she) is in a depression (see Exhibit 2). It looks likely to take several years before normal employment is reached. Corporations are spending on capital equipment but are doing little in the way of domestic recruiting. Profit margins in the financial system were protected, along with bonuses, which in some cases set records last year despite the undeniable fact that these were the guys who helped bring the Western world to its knees. Ah, justice! There never was – and perhaps, with luck, never will be again – such a terrible comparison between the economic well-being of corporations and their officers and the economic ill-being of their ordinary employees. My colleague Ben Inker has written (as has Andrew Smithers in London) that, other things being equal, corporate profits will rise when government debt has risen. And, boy, has it risen! A more intuitive variant of this is that normally when you lay off everyone and cut your costs, your profits rise, if you do it alone. But when you all do it together, everyone's top line drops and you collectively cycle downwards. Here though, for a while anyway, a great surge in government spending made up the difference on the top line, making for the

temporary best of all possible worlds for corporate profits, an outcome that I must admit I never saw as even a faint possibility. It belongs, however, to the growing family of can-kicking maneuvers: when the government debt ratio inevitably falls (or even as it rises) at a decelerating rate, it will put offsetting pressure on margins. As individuals continue to restrict their spending and as commodity prices stay high, other pressures on profits also intensify. Lower margins are the great threat to market performance, even more so than the above long-term average P/Es. [Memo: the very long-term normal trailing P/E is about 15. We use 16 in our calculations because we're friendly. Those who use much higher numbers are looking at the shorter time periods, when the Greenspan-Bernanke regime created a long period of artificially above-normal stock prices. Be warned!]

Recent Predictions: Looking Promising

For a year I had personally been taking more risk than justified by our seven-year forecast. I had done so, respecting the awesome (and awful) power of the Fed to move stock prices when it wants to. And it certainly wanted to. Bernanke bragged about its success in raising stock prices to prove the point. But, with Libya et al., Japan wobbles, and resource prices, I felt the game was just getting too risky. So, last quarter I suggested it was time to finally fight the Fed and take less risk, a recommendation that I feel much better about today than three weeks ago when the market was unchanged.

Since then I realize that I had underestimated the risks of both the Greek (or better: the Mediterranean) debt problem and the U.S. debt limit. Both of these additional problems introduce a plentiful supply of new risks. So my advice for the last two months of the Presidential Third Year (typically the short seller's nightmare) is to continue to keep your head down. And, more to the point, keep it down for the foreseeable future. Maybe you can pop up again for some risk taking in the next Year 3! Of course, everything changes if the market pulls an '09 and gets down to fair value. And we're 10% closer to fair value than when I originally sat down to write this.

Market Tone Continues to Shift to Quality

Better yet for GMO and my predictions, the general drift to quality that began in April continued on a global basis. GMO's Quality Strategy today[3] is 4% ahead of the S&P with the Russell 2000, a crude proxy for the enemy, down 2.5% for a 6.5% spread. (It had been 5% the other way in early April, so this is not an insignificant move!) Quality-adjusted-value measures have also done much better in recent months. This perhaps is even better news for us and similar managers, for quality-adjusted-value has done poorly for quite a few years, with the notable exception of 2008 and early 2009. The return on the S&P is still ahead today by about 0.5%. For quality stocks to be winning more or less globally in an up year (and they were also winning two weeks ago with the market return up over 6%) makes it increasingly likely that we have been in a classic late bull market rally as described in earlier quarterlies. (In 1929, 1972, 1987 pre-crash, and the 12 months to September 2000, high quality stocks outperformed in the last leg of major bull markets.)

The bottom line is that we are glad to have cut back on risk-taking and we are very glad to see quality working. I am sufficiently impressed by the power of the Fed and low rates to influence stock prices, however, that I still think it's quite likely that the market will renew its fight to stay up for a few more months and, if the negative flow of data eases up for a minute, it will even rise. Three weeks ago when one looked at the long, long list of real fundamental problems one could only wonder (admiringly, or not, depending on your portfolio disposition) at how well the global markets, especially the U.S. market, had done. What a terrible mistake it always is to expect stock markets to reflect economic reality in the short term. Especially in Year 3 of the Presidential Cycle! But three weeks, as they say, is a long time in investing. Now the realities of the world suddenly loom much larger. The market has this always disturbing habit of ignoring the obvious and ignoring it some more, until, in the blink of an eye, it doesn't.

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3 Return data in this section is YTD as of August 2, 2011 and is net of fees. As of 6/30/2011, the GMO Quality Strategy has returned +26.8% (1-year), +5.2% (3-year), and +4.1% (5-year) net of fees.

What to Buy?

- For those with a long horizon, I am sure well-managed forestry and farmland will outperform the average of all global assets.
- I think it is likely that resources in the ground, hydrocarbons, metals, and fertilizer will also win on a 10-year horizon. I am not certain, though, because of the remarkable gains in so many of these in the last five years. I would put the odds at 2 to 1. As mentioned last quarter, many commodities have the potential for very sharp declines in the short term. If that occurs, then the odds would, of course, rise.
- On a regular time horizon, I would continue to overweight quality stocks, which may well be on a roll. They are not priced to make a fortune, but they are priced to give approximately 4.5% to 5% real return, which I think is acceptable for low-risk assets. They have also delivered dependable downside – risk off – relative performance for several years, which is a characteristic generally in short supply.
- Emerging markets are hard to evaluate because they are clearly going through many phases of development in a real hurry. So what is normal profitability? Probably not the old levels. They are moving toward developed status and probably toward our developed world's level of profitability. (Yes, James Montier, that would be a change and, therefore, I admit, far from certain.) In a global financial crisis it is also important to remember that their cumulative foreign reserves are remarkable, twice that of the developed countries. But, all things considered, I believe they will outperform other non-high-quality equities for the next seven years and are likely to produce a semi-respectable return for a risky group of about 4% to 5% a year real.
- We at GMO also believe that Japan is likely to "regress," in the mathematical sense, toward levels of profitability that would be considered normal in other developed countries. We expect the progress to be very slow and uneven. If it does not happen at all, then Japanese stocks are priced like the average of all other developed equities, or a bit cheaper. If, however, by some chance margins improve quite fast, then Japanese stocks will likely be the best performing stocks around and could hit double-digit real returns for seven years. Japan's remarkable resilience in the face of electricity shortages gives some inkling of what they are capable of. How quickly we have forgotten their obvious talents of 20 years ago. Can all of those talents really be lost forever?
- As for the rest of global equities, they range from unattractive (August 2) to very unattractive. The S&P 500, for example, is worth no more than 950 on our estimates.
- In general, risk avoidance looks like a good idea. Cash – despite its manipulated low rate, deliberately designed to make us reach for risk – should be seen as a safe haven replete with important optionality: dry powder to take advantage of possible opportunities.
- As mentioned in previous quarterlies, the main long-term risk is that after two massive bubbles and two equally massive resurrection programs, the Fed may be out of ammunition. Should more building blocks fall (government bond downgrade and further market declines have missed my deadline) and a serious global double-dip develop, then the pattern of market behavior this time may be more historically typical. That is, instead of quickly recovering, markets will become cheap and stay below long-term averages for several years as was the case pre-Greenspan. Twenty years is a long time, so most investors think that dipping to fair value for a minute and bouncing is normal. It is, in fact, highly aberrant historically. Markets staying down and washing away a whole generation's false expectations, high animal spirits, and excessive risk-taking – that would be normal. In the long run, a prolonged period of lower priced assets would lead to a much-improved, less risky, and less bubble-prone environment. In short, a more manageable world. It would also mean much higher returns from investing at lower prices. Long-term benefits from short-term pain. Just the kind of trade-off that the children in charge now would never make deliberately. But it may well happen anyway.

Stop Press

At the close on August 8, a slightly cheap equity portfolio could be put together comprised of U.S. high quality, emerging markets, Japan, Italy, and European growth stocks. On our data, the imputed 7-year return of the package today would be about 6.5% real!* Quality stocks, especially in the U.S. but almost everywhere, continue to handsomely outperform. Regrettably, this means that they have declined very considerably less than the indices. In its asset allocation accounts, GMO is modestly underweight equities, partly because of the desperately unattractive yields on fixed income. We are now very modest buyers for the first time since mid 2009.

Performance data quoted represents past performance and is not predictive of future performance. Returns are presented after the deduction of a model advisory fee, transaction costs, commissions and withholding taxes on foreign income and capital gains and include the reinvestment of dividends and other income, as applicable. Actual fees paid by accounts within the composite may be higher or lower than the model advisory fee used. A GIPS compliant presentation of composite performance has preceded this presentation in the past 12 months or accompanies this presentation, and is also available at www.gmo.com. Actual fees are disclosed in Part II of GMO's Form ADV and are also available in each strategy's compliant presentation.

*The forecast provided above is based on the reasonable beliefs of GMO and is not a guarantee of future performance. Actual results may differ materially.

Disclaimer: The views expressed are the views of Jeremy Grantham through the period ending August 9, 2011, and are subject to change at any time based on market and other conditions. This is not an offer or solicitation for the purchase or sale of any security and should not be construed as such. References to specific securities and issuers are for illustrative purposes only and are not intended to be, and should not be interpreted as, recommendations to purchase or sell such securities.

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QUARTERLY LETTER

December 2011

The Shortest Quarterly Letter Ever

Jeremy Grantham

I've been having one of those quarters where everything that can get in the way of writing and thinking does, notably our client conferences and unexpected travel requirements. Like many, I find it hard enough to write at the best of times. So sorry for the delay. But rather than skip a quarter, I thought I'd make a simple list of points that I'm thinking about.

Notes to Myself

- I have no particular insight into the problems plaguing the eurozone, but I can recognize a terrifying situation when I see one. The appropriate response is surely to be more cautious than usual.
- Sadly, I feel increasingly vindicated by my "seven lean years" forecast of 2½ years ago. The U.S., and to some extent the world, will not easily recover from the current level of debt overhang, the loss of perceived asset values, and the gross financial incompetence on a scale hitherto undreamed of.
- Separate from the "seven lean years" syndrome, the U.S. and the developed world have permanently slowed in their GDP growth. This is mostly the result of slowing population growth, an aging profile, and an overcommitment to the old, which leaves inadequate resources for growth. Also contributing to the slowdown, particularly in the U.S. and the U.K., is inadequate long-term savings. As I write, the U.S. personal savings rate has fallen once again below 4%.
- In addition, and sorry to harp on this, the U.S. in particular has rapidly acquired relative deficiencies over the last 20 years that will hamper the effective functioning and growth of its economy. Relative to other developed countries, and an increasing number of developing countries, we are sliding in some key areas that threaten loss of competitiveness:
  - Notably depleted infrastructure
  - Marked fall-off in the effectiveness of education and training
  - Much decreased effectiveness of government, particularly in its ability or even willingness to concern itself with long-term issues.
- Meriting a separate, special point are the drastic declines in both U.S. income equality – the U.S. has become quite quickly one of the least equal societies – and in the stickiness of economic position from one generation to another. We have gone from having been notably upwardly mobile during the Eisenhower era to having fallen behind other developed countries today, even the U.K.! The net result of these factors is a growing feeling of social injustice, a weakening of social cohesiveness, and, possibly, a decrease in work ethic. A healthy growth rate becomes more difficult.
- I also believe that having an economy in which the average worker makes little or no economic progress slowly erodes economic balance, leaving us (as mentioned last quarter) with strong sales of BMWs and other premium goods, and weak and erratic sales of what might be called ordinary goods, resulting in weaker and more unstable

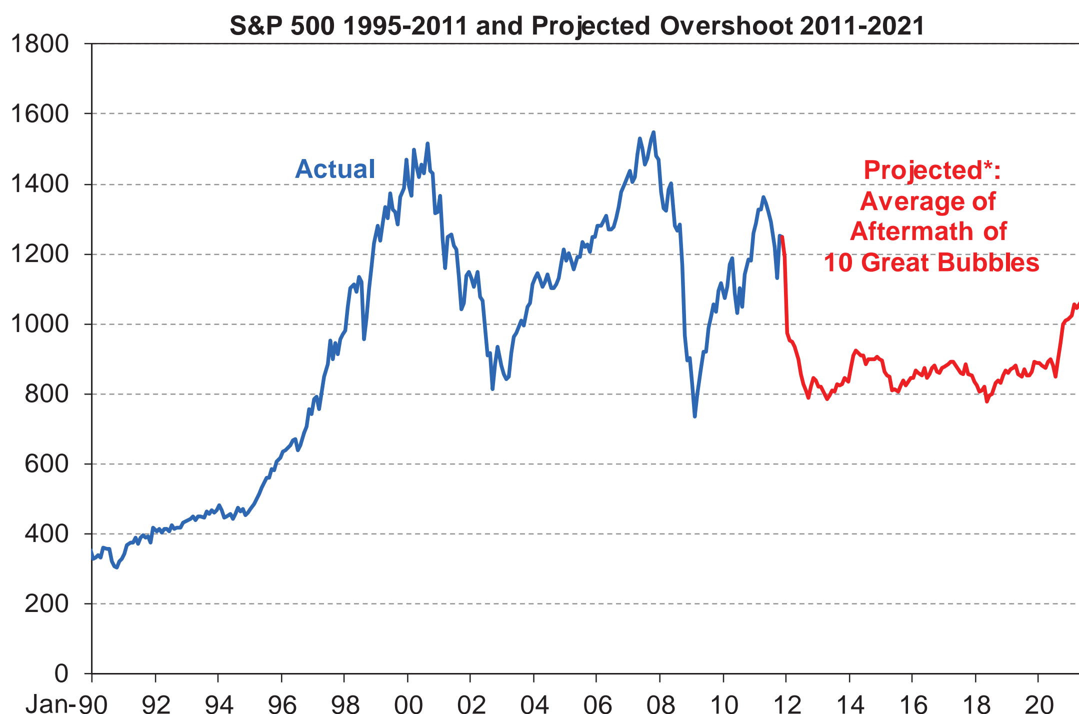
growth. Sales are erratic because, with little or no income progress, buying surges by the "middle class" depend increasingly on shifts in confidence and a willingness to go into debt.

- I despair that this country and its government have failed to take at all seriously the most important and the most dangerous issues: depleting resources, development of a comprehensive energy policy, and, yes, global warming. Wake up dudes!
- Sitting on planes over the last several weeks with nothing to do but read and think, I found myself worrying increasingly about the 1% and the 99% and the appearance we give of having become a plutocracy, and a rather mean-spirited one at that. And, one backed by a similarly mean-spirited majority on the Supreme Court. (I will try to post a letter addressed to the "Occupy … Everywhere" folks shortly.)
- Since the spring, the equity markets have been absolutely bombarded by bad news. This news is complicated and inter-related: how one factor, say, "Greek default," or "China stumbles," interacts with others such as double-dipping economies and generalized financial crises is just about impossible to know. One can only make more or less blind guesses. Looking out a year, the overall picture seems so much worse than the generally benign forecast of 4% global growth from the IMF. The probabilities of bad outcomes are not as high for us today as they were in early 2008 when, I'm pleased to say, as predictors, they looked nearly certain to us. But the possibility of extremely bad and long-lasting problems looks as bad to me now as it ever has.
- Yet the S&P 500, unlike other global equities, has hung in and staged rallies whenever the bad news has eased. Why? Well, 15 years ago, Ben Inker and I designed a model to explain (not predict) the ebbs and flows of the P/E ratio. It had a surprisingly high explanatory power. We found that everything that made investors feel comfortable worked. That is to say, it was a behavioral model. Fundamentals like growth rates did not work. The two (out of three) most important drivers were profit margins and inflation. Well, today we have (remarkably, even weirdly) record profit margins. And by historical standards, stable and low inflation. Because of this, the P/E level that one would normally expect to have in these conditions has been way in the top 5% since 1925, but today's market (not to mention the lows of September) is well below the explained level. It's depressed by a very obvious reason: the cloud of negatives, which generally and surprisingly have historically had very little effect individually on the market, but apparently do depress "comfort" when gathered into an army of negatives. So, whenever the negative news cools down for a week or so, the market tries to get back to its "normal" level, which is about 20% higher. (P.S. the "normal" level is based on a behavioral explanation. It is absolutely not justified by long-term value, which hinges on boring discount rates and long-term sustainable growth or, even more fundamentally, on "replacement cost" or Tobin's Q.)
- Profit margins dominate the P/E equation above, so that the market is unlikely to come down even to fair value, about 975-1000 on the S&P in our view, and stay there until profit margins decline. And the longer you look at these record and still-rising margins and compare them to the miserable unemployment and substantial spare capacity, the stranger these high margins look. They will come down to more normal levels eventually, of course, and when they do they will bring the market down with them. Probably by then, some of the negatives mentioned above will have resolved themselves. If not, then the market could decline a lot and test my "no market for young men" thesis that follows.
- **"No Market for Young Men."** Historians would notice that all major equity bubbles (like those in the U.S. in 1929 and 1965 and in Japan in 1989) broke way below trend line values and stayed there for years. Greenspan, neurotic about slight economic declines while at the same time coasting on Volcker's good work, introduced an era of effective overstimulation of markets that resulted in 20 years of overpriced markets and abnormally high profit margins. In this, Greenspan has been aided by Bernanke, his acolyte, who has continued his dangerous policy. The first of the two great bubbles that broke on their watch did not reach trend at all in 2002, and the second, in 2009 – known by us as the first truly global bubble – took only three months to recover to trend. This pattern is unique. Now, with wounded balance sheets, perhaps the arsenal is empty and the next bust may well be like the old days. GMO has looked at the 10 biggest bubbles of the pre-2000 era and has calculated that it

typically takes 14 years to recover to the old trend. An important point here is that almost no current investors have experienced this more typical 1970's-type market setback. When one of these old fashioned but typical declines occurs, professional investors, conditioned by our more recent ephemeral bear markets, will have a permanent built-in expectation of an imminent recovery that will not come. For the record, Exhibit 1 shows what the S&P 500 might look like from today if it followed the average flight path of the 10 burst bubbles described above. Not very pretty.

Exhibit 1

If the S&P Overcorrects Like the Average of 10 Great (pre-Greenspan) Equity Bubbles...



* Assuming 2.5% inflation

These forecasts are forward-looking statements based upon the reasonable beliefs of GMO and are not a guarantee of future performance. Actual results may differ materially from the forecasts above.

Source: Global Financial Data, GMO Actual data as of 9/30/11

- Two quarters ago, I advised ducking and avoiding risk and called off the normal positive expectations for Year 3 of the Presidential Cycle; first, because we had already had a good return by April and second, because negatives were building up in a scary way. For this advice I have no regrets: "Discretion is the better part of historical valor." The Presidential Cycle this year was indeed very unusually poor (-2.7%) – the second worst since the start of the game in 1932 – finishing very near the lows for the year on September 30. (The Presidential Cycle is October 1 to October 1.)
- One quarter ago (end July), I said that if you could avoid low quality U.S. stocks, global equities were getting cheap; the average growth estimate for EAFE, Emerging, and U.S. High Quality was almost 7% real on our seven-year forecast. Back then we became net buyers of equities – actually, better described as nervous nibblers – for the first time since the spring of 2009.
- At the end of July, we remained a little underweight equities despite this decent 7% real return forecast because we allowed ourselves a very small adjustment for a fundamentally scary outlook: thus we were two points

underweight in equities instead of, perhaps, two points overweight. No regrets here either, for despite the strong rally in October, things are really, really scary. Aren't they? (And, more recently, stock markets are once again in disarray.)

- My longer-term advice in April was to stay ducked until either the equity markets get to be cheap or, for the speculatively inclined, until we enter the next Year 3 in October 2015, whichever comes first. This still looks like good general advice.
- Meanwhile GMO is having a better year. Our largest equity strategy, GMO Quality, is 9.1% ahead of the S&P year-to-date in an almost flat market (net, as of November 30)† and is well on its way to delivering a healthy positive absolute return. We would normally count on winning in this strategy in a big down year, but in a nearly flat year this difference is a testimonial to how risk-averse investors have been at the U.S. stock level. Better yet, U.S. High Quality stocks are, according to us, still relatively cheap.
- Our major asset allocation account (GMO Global Balanced Asset Allocation Strategy), helped along by this "Quality" effect, has done relatively well (though not great, +4.2% net against its benchmark year-to-date as of November 30)† despite the absence of longer duration U.S. treasuries, which have been tigers, and a moderate overweighting in emerging equities, which have definitely not. (Although the economic fundamentals and financial condition of emerging countries remain so much better than those of their developed counterparts, the world still fears their traditionally high beta – which can and has become a self-fulfilling belief – and the strong possibility of some weakness in China.)

Recommendations

- Avoid lower quality U.S. stocks but otherwise have a near normal weight in global equities.
- Tilt, where possible, to safety.
- Try to avoid duration risk in bonds. For the long term they are desperately unattractive. Don't be too proud (or short-term greedy) to have substantial cash reserves. Admittedly, this is the point where we at GMO try to be clever and do a little better than the minus 1% real from real cash – and, so far, with decent success.
- I like (personally) resources in the ground on a 10-year horizon, but I am nibbling in very slowly because, as per my Quarterly Letter on resources in April 2011, I fear a major short-term decline in commodities based on a combination of less bad weather – which has been bad, but indeed less bad – and economic weakness, especially in China. Prices have declined, often quite substantially, since that letter. However, I believe chances for further price declines in resources are still better than 50/50 as China and the world slow down for a while, and the weather becomes a bit more stable.

† The performance numbers are preliminary and subject to change. Final performance numbers are generally available 5-10 business days after month-end. Performance over other periods may differ significantly from that of the time period corresponding to these performance numbers. Performance data quoted represents past performance and is not predictive of future performance. Returns are presented after the deduction of management fees and incentive fees if applicable. Net returns include transaction costs, commissions and withholding taxes on foreign income and capital gains and include the reinvestment of dividends and other income, as applicable. A GIPS compliant presentation of composite is available at www.gmo.com. Actual fees are disclosed in Part II of GMO's Form ADV and are also available in each strategy's compliant presentation. The performance information contained herein is supplemental to the GIPS compliant presentation that was made available on GMO's website in April of 2011.

Disclaimer: The views expressed are the views of Jeremy Grantham through the period ending December 5, 2011, and are subject to change at any time based on market and other conditions. This is not an offer or solicitation for the purchase or sale of any security and should not be construed as such. References to specific securities and issuers are for illustrative purposes only and are not intended to be, and should not be interpreted as, recommendations to purchase or sell such securities.

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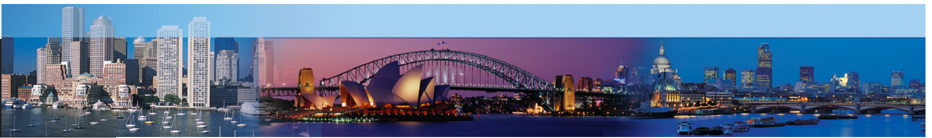

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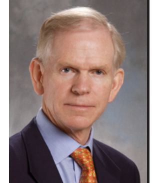


Investment Advice from Your Uncle Polonius
Your Grandchildren Have No Value (And Other Deficiencies of Capitalism)
Market Review

Jeremy Grantham

Part I: Investment Advice from Your Uncle Polonius[1]

For individual investors setting out on dangerous investment voyages.

1. Believe in history. In investing Santayana is right: history repeats and repeats, and forget it at your peril. All bubbles break, all investment frenzies pass away. You absolutely must ignore the vested interests of the industry and the inevitable cheerleaders who will assure you that this time it's a new high plateau or a permanently higher level of productivity, even if that view comes from the Federal Reserve itself. No. Make that, especially if it comes from there. The market is gloriously inefficient and wanders far from fair price but eventually, after breaking your heart and your patience (and, for professionals, those of their clients too), it will go back to fair value. Your task is to survive until that happens. Here's how.
2. "Neither a lender nor a borrower be." If you borrow to invest, it will interfere with your survivability. Unleveraged portfolios cannot be stopped out, leveraged portfolios can. Leverage reduces the investor's critical asset: patience. (To digress, excessive borrowing has turned out to be an even bigger curse than Polonius could have known. It encourages financial aggressiveness, recklessness, and greed. It increases your returns over and over until, suddenly, it ruins you. For individuals, it allows you to have today what you really can't afford until tomorrow. It has proven to be so seductive that individuals en masse have shown themselves incapable of resisting it, as if it were a drug. Governments also, from the Middle Ages onwards and especially now, it seems, have proven themselves equally incapable of resistance. Any sane society must recognize the lure of debt and pass laws accordingly. Interest payments must absolutely not be tax deductible or preferred in any way. Governments must apparently be treated like Polonius's children and given limits. By law, cumulative government debt should be given a sensible limit of, say, 50% of GDP, with current transgressions given 10 or 20 years to be corrected.) But, back to investing …
3. Don't put all of your treasure in one boat. This is about as obvious as any investment advice could be. It was learned by merchants literally thousands of years ago. Several different investments, the more the merrier, will give your portfolio resilience, the ability to withstand shocks. Clearly, the more investments you have and the more different they are, the more likely you are to survive those critical periods when your big bets move against you.
4. Be patient and focus on the long term. Wait for the good cards. If you've waited and waited some more until finally a very cheap market appears, this will be your margin of safety. Now all you have to do is withstand the pain as the very good investment becomes exceptional. Individual stocks usually recover, entire markets always do. If you've followed the previous rules, you will outlast the bad news.

[1] Polonius, a character in Hamlet, a verbose, self-important advisor to the King, was clearly intended to be a real loser, but curiously in the end Shakespeare couldn't resist making most of his ponderous advice actually useful and memorable. His famous speech to his son Laertes who is embarking on a dangerous sea voyage to France (from Denmark) is reproduced as an Appendix. (Hamlet makes genocidal if rather unintentional war on the Polonius family, accounting for Laertes, his sister Ophelia, and poor Polonius himself: a clean sweep.)

5. Recognize your advantages over the professionals. By far the biggest problem for professionals in investing is dealing with career and business risk: protecting your own job as an agent. The second curse of professional investing is over-management caused by the need to be seen to be busy, to be earning your keep. The individual is far better-positioned to wait patiently for the right pitch while paying no regard to what others are doing, which is almost impossible for professionals.
6. Try to contain natural optimism. Optimism has probably been a positive survival characteristic. Our species is optimistic, and successful people are probably more optimistic than average. Some societies are also more optimistic than others: the U.S. and Australia are my two picks. I'm sure (but I'm glad I don't have to prove it) that it has a lot to do with their economic success. The U.S. in particular encourages risk-taking: failed entrepreneurs are valued, not shunned. While 800 internet start-ups in the U.S. rather than Germany's more modest 80 are likely to lose a lot more money, a few of those 800 turn out to be today's Amazons and Facebooks. You don't have to be better; the laws of averages will look after it for you. But optimism comes with a downside, especially for investors: optimists don't like to hear bad news. Tell a European you think there's a housing bubble and you'll have a reasonable discussion. Tell an Australian and you'll have World War III. Been there, done that! And in a real stock bubble like that of 2000, bearish news in the U.S. will be greeted like news of the bubonic plague; bearish professionals will be fired just to avoid the dissonance of hearing the bear case, and this is an example where the better the case is made, the more unpleasantness it will elicit. Here again it is easier for an individual to stay cool than it is for a professional who is surrounded by hot news all day long (and sometimes irate clients too). Not easy, but easier.
7. But on rare occasions, try hard to be brave. You can make bigger bets than professionals can when extreme opportunities present themselves because, for them, the biggest risk that comes from temporary setbacks – extreme loss of clients and business – does not exist for you. So, if the numbers tell you it's a real outlier of a mispriced market, grit your teeth and go for it.
8. Resist the crowd: cherish numbers only. We can agree that in real life as opposed to theoretical life, this is the hardest advice to take: the enthusiasm of a crowd is hard to resist. Watching neighbors get rich at the end of a bubble while you sit it out patiently is pure torture. The best way to resist is to do your own simple measurements of value, or find a reliable source (and check their calculations from time to time). Then hero-worship the numbers and try to ignore everything else. Ignore especially short-term news: the ebb and flow of economic and political news is irrelevant. Stock values are based on their entire future value of dividends and earnings going out many decades into the future. Shorter-term economic dips have no appreciable long-term effect on individual companies, let alone the broad asset classes that you should concentrate on. Leave those complexities to the professionals, who will on average lose money trying to decipher them.

   Remember too that for those great opportunities to avoid pain or make money – the only investment opportunities that really matter – the numbers are almost shockingly obvious: compared to a long-term average of 15 times earnings, the 1929 market peaked at 21 times, but the 2000 S&P 500 tech bubble peaked at 35 times! Conversely, the low in 1982 was under 8 times. This is not about complicated math!
9. In the end it's quite simple. Really. Let me give you some encouraging data. GMO predicts asset class returns in a simple and apparently robust way: we assume profit margins and price earnings ratios will move back to long-term average in 7 years from whatever level they are today. We have done this since 1994 and have completed 40 quarterly forecasts. (We started with 10-year forecasts and moved to 7 years more recently.) Well, we have won all 40 in that every one of them has been usefully above random and some have been, well, surprisingly accurate. These estimates are not about nuances or PhDs. They are about ignoring the crowd, working out simple ratios, and being patient. (But, if you are a professional, they would also be about colossal business risk.) For now, look at the latest of our 10-year forecasts that ended last December 31 (Exhibit 1). And take heart. These forecasts were done with a robust but simple methodology. The problem is that though they may be simple to produce, they are hard for professionals to implement. Some of you individual investors, however, may find it much easier.

Exhibit 1

10-year forecasts from December 31, 2001 vs. actual as of December 31, 2011*

Asset Class	Estimated Rank	GMO 10-Yr Forecast Dec-01 (% Real Return/Yr)		10-Yr Real Return* Dec-11		Actual Rank
Emerging Market Equities	1	9.4	+7.6	11.4	+8.3	1
U.S. REITs	2	9.1		6.8		3
Emerging Country Debt	3	6.8		8.3		2
International Small Cap	4	5.2		6.7		4
U.S. TIPS	5	3.5	+3.0	5.0	+4.6	6
Barclays Capital U.S. Gov't. Debt	6	2.9		3.1		8
Foreign Bonds	7	2.6		5.9		5
U.S. Small	8	2.2	+1.4	4.0	+1.6	7
EAFE	8 (tie)	2.2		2.6		9
U.S. T-Bills	10	2.1		-0.6		11
S&P 500	11	-1.0		0.4		10

Correlation of rank order: 94.5%

The accuracy of these forecasts does not guarantee that current or future predictions will be accurate either with respect to the ranking of those asset classes over a 10-year period, the absolute levels of real return, or results over shorter periods. The accuracy of forecasted rankings in the asset class forecasts generally varies from period to period.

* *Average error ±1.1%* *Source: GMO* *As of 12/31/11*

10. "This above all: to thine own self be true." Most of us tennis players have benefited from playing against non-realists: those who play to some romanticized vision of that glorious September day 20 years earlier, when every backhand drive hit the corner and every drop shot worked, rather than to their currently sadly atrophied skills and diminished physical capabilities. And thank Heavens for them. But doing this in investing is brutally expensive. To be at all effective investing as an individual, it is utterly imperative that you know your limitations as well as your strengths and weaknesses. If you can be patient and ignore the crowd, you will likely win. But to imagine you can, and to then adopt a flawed approach that allows you to be seduced or intimidated by the crowd into jumping in late or getting out early is to guarantee a pure disaster. You must know your pain and patience thresholds accurately and not play over your head. If you cannot resist temptation, you absolutely MUST NOT manage your own money. There are no Investors Anonymous meetings to attend. There are, though, two perfectly reasonable alternatives: either hire a manager who has those skills – remembering that it's even harder for professionals to stay aloof from the crowd – or pick a sensible, globally diversified index of stocks and bonds, put your money in, and try never to look at it again until you retire. Even then, look only to see how much money you can prudently take out. On the other hand, if you have patience, a decent pain threshold, an ability to withstand herd mentality, perhaps one credit of college level math, and a reputation for common sense, then go for it. In my opinion, you hold enough cards and will beat most professionals (which is sadly, but realistically, a relatively modest hurdle) and may even do very well indeed.

    Good luck. Uncle Polonius

Part II: Your Grandchildren Have No Value (And Other Deficiencies of Capitalism)

The *Financial Times* has had a plethora of recent articles examining possible deficiencies in capitalism. The general opinion is that this is not capitalism's finest hour. The financial crash revealed a chronic weakness in establishment economic theory, whose trust in efficiency of capital markets encouraged deregulation and helped land us in our present trouble. Hyman Minsky's work that suggested that recurrent financial crises were "well-nigh inevitable" could not have been more completely forgotten. Only a handful of the hundreds of senior economists and bankers seemed to see what was coming.

Debt has also proven troublesome, with both governments and individuals allowing debt ratios to become unmanageable at great risk to the economy, while government policies and taxes in particular encouraged the slide rather than moved to control it.

In the last 20 years, corporate ownership began to look odd. The nominal owners – stockholders – typically traded every few months and took on the part of institutions, with little or no interest in corporate affairs, with the result that corporate officers appeared to own the companies and behaved accordingly. Stock option programs transferred ownership from shareholders to managers in giant dollops and were awarded on short-term results. One consequence of this was a distorted incentive that encouraged leverage and other forms of going for broke with other people's money. Boards of Directors demonstrated little timely intervention and typically only found their claws in situations of complete disaster, when it was too late. Total remuneration in the U.S. for senior officers, unopposed by typical boards, rose as a percentage of the average worker's pay from 40 times in Eisenhower's era to over 600 times today, with no indication of any general improvement in talent. Few rewards were carefully related to long-term results. Pretax income inequality rose in most countries and was offset by tax adjustments in very few. In the U.S., oddly, the tax changes accentuated the shift. Such an increase in inequality was caused by all of the benefits of the substantial productivity flowing to a few, while the average hour's pay stayed unprecedentedly unchanged for 40 years! This risks making economic progress both slower and bumpier as the stressed average worker reaches for debt and then, in a crisis, is forced to retrench.

This far from exhaustive list is still impressively long but it seems to me to be basically business as usual, and most of it worse in the U.S. than in other capitalist countries. Scandinavian countries, for example, seem to struggle with their set of problems reasonably satisfactorily. Presumably, economists will slowly digest the lessons of the last few years and will develop realistic and useful theories. We can at least hope. Trial and error, reform, and common sense seem reasonably likely to be a match for all of these problems eventually. They are irritating and debilitating problems today but they will not bring us to our knees. There are some problems, though, that have surfaced seldom or never in the *Financial Times* discussions that very well may. In my opinion, they threaten even our survival and it is these problems I would like to concentrate on.

Capitalism has gone through a Darwinistic series of trials and errors, which still continues. For the time being, capitalism has tuned itself to rapid growth at almost any cost. Circumstances such as the hydrocarbon revolution and the ensuing population explosion have allowed for both high growth and high profit margins to sustain the growth. Sustained high margins have in turn trained capitalists – or corporate executives if you prefer – to set high hurdles for all investments. The 14% hurdle for discount rates that was considered a minimum in the late 1990s, for example, halves the future value of a dollar every 5 years, so that in 10 years today's dollar is worth 25¢; in 20 years 6¢; and in 50 years one tenth of one cent! It is hardly surprising that any event out that far is ignored.

For example, let us say that a firm's current actions are going to cost society at large a billion dollars' worth of harm in 50 years. Further, let us agree that all of the costs will definitely be imposed on the company. The company would feel that pain today as equivalent to only a mere $1 million hit to earnings. Why should they care?

In contrast, the income of typical individuals is likely to compound at most at 1.5% a year, their risk-free investments at an imputed zero % (today's 30-year bond minus inflation), and an equity investment at perhaps 4%, net of inflation and tax. To take the highest of these three rates, the billion dollar pain at a 4% discount rate is going to feel to the average citizen, who faces the bill in 50 years, not like $1 million, but like $100 million. And for some societal

purposes, 4% real is far too high. Surely, for example, shouldn't the value, and hence cost, of a child's life in 50 years be identical to the value and cost today? The reader can easily see how a corporation's outlook on potential future damage might be a painful mismatch with that of ordinary individuals and society at large. The consequences of this not only can be disastrous but probably will be. A few painstaking readers might remember my "Farmer and The Devil" story of last July. In it I showed how a good capitalist farmer had to sign a contract in which the Devil guaranteed a quadrupling of the farmer's income through very aggressive farming practices at the hidden cost of 1% a year of his soil. The farmer would enormously profit and eagerly re-up through the first several 20-year contracts only to end up with no soil, no food, and no people at about 100 years out. Yet each time the farmer re-upped, he did the sensible capitalist thing. In this case, Adam Smith's "invisible hand" failed, and fatally so.

Damage to the "commons," known as "externalities" has been discussed for decades, although the most threatening one – loss of our collective ability to feed ourselves, through erosion and fertilizer depletion – has received little or no attention. There have been no useful tricks proposed, however, for how we will collectively impose sensible, survivable, long-term policies over problems of the "commons." To leave it to capitalism to get us out of this fix by maximizing its short-term profits is dangerously naïve and misses the point: capitalism and corporations have absolutely no mechanism for dealing with these problems, and seen through a corporate discount rate lens, our grandchildren really do have no value.

To move from the problem of long time horizons to the short-term common good, it is quickly apparent that capitalism in general has no sense of ethics or conscience. Whatever the Supreme Court may think, it is not a person. Why would a company give up a penny for the common good if it is not required to by enforced regulation or unless it looked like that penny might be returned with profit in the future because having a good image might be good for business? Ethical CEOs can drag a company along for a while, but this is an undependable and temporary fix. Ethical humans can also impose their will on corporations singly or en masse by withholding purchases or bestowing them, and companies can anticipate this and even influence it through clever brand advertising, "clean coal" being my favorite. But that is quite different from corporate altruism. Thus, we can roast our planet and firms may offer marvelous and profitable energy-saving equipment, but it will be for profit today, not planet saving tomorrow.

It gets worse, for what capitalism has always had is money with which to try to buy influence. Today's version of U.S. capitalism has died and gone to heaven on this issue. A company is now free to spend money to influence political outcomes and need tell no one, least of all its own shareholders, the technical owners. So, rich industries can exert so much political influence that they now have a dangerous degree of influence over Congress. And the issues they most influence are precisely the ones that matter most, the ones that are most important to society's long-term well-being, indeed its very existence. Thus, taking huge benefits from Nature and damaging it in return is completely free and all attempts at government control are fought with costly lobbying and advertising. And one of the first victims in this campaign has been the truth. If scientific evidence suggests costs and limits be imposed on industry to protect the long-term environment, then science will be opposed by clever disinformation. It's now getting to be an old and obvious story, but because their propaganda is good and despite the solidness of the data, half of the people believe the problem is a government run wild, mad to control everything. So the "industrial complex" (or parts of it) fights to increase the inherent weaknesses of capitalism. They deliberately make it ever harder to reach the very long-term decisions that will serve us all. The influence of the Tobacco companies in deliberately obscuring the science to protect profits at a huge cost to society in health costs and lives is a perfect analogy to the energy industries that work hard to confuse the public on scientific measures of damage to health and the environment. Yet it is one that is surprisingly forgotten.

Of all the technical weaknesses in capitalism, though, probably the most immediately dangerous is its absolute inability to process the finiteness of resources and the mathematical impossibility of maintaining rapid growth in physical output. You can have steady increases in the quality of goods and services and, I hope, the quality of life, but you can't have sustainable growth in physical output. You can have "growth" – for now – or you can have "sustainable" forever, but not both. This is a message brought to you by the laws of compound interest and the laws of nature. However, you can try to have both. But many, when given the choice, select "Growth, and to hell with

the consequences." Alternatively they adopt a hear-no-evil approach to life and listen exclusively to good news. The good news for such people is that there are always a few experts lacking in long-horizon vision, simple common sense, or whose co-operation has been rented, like "expert" witnesses at a murder trial, who can be dragged out to reliably say that everything will always work out fine. (One famous professor went seamlessly from saying tobacco smoking was just fine to saying continuously pumping out greenhouse gases would also be without consequences). The optimists offer as evidence that we will always be in the best of all possible worlds, not our species' tough million or so years of trial and painful error, but only the last 200 years, when hydrocarbon and other resources have given us a temporary reprieve. This reprieve does not make the finite magically infinite, but the 250 years of the hydrocarbon intermission can feel like forever. Capitalism certainly acts as if it believes that rapid growth in physical wealth can go on forever. It appears to be hooked on high growth and avoids any suggestion that it might be slowed down by limits. Thus, it exhibits horror at the thought (and occasional reality) of declining population when in fact such a decline is an absolute necessity in order for us to end up gracefully, rather than painfully, at a fully sustainable world economy. Similarly with natural resources, capitalism wants to eat into these precious, limited resources at an accelerating rate with the subtext that everyone on the planet has the right to live like the wasteful polluting developed countries do today. You don't have to be a PhD mathematician to work out that if the average Chinese and Indian were to catch up with (the theoretically moving target of) the average American, then our planet's goose is cooked, along with most other things. Indeed, scientists calculate that if they caught up, we would need at least three planets to be fully sustainable. But few listen to scientists these days. So, do you know how many economic theories treat resources as if they are finite? Well, the researchers at the O.E.C.D say "none" – that no such theory exists. Economic theory either ignores this little problem or assumes you reach out and take the needed resources given the normal workings of supply and demand and you can do it indefinitely. This is a lack of common sense on a par with "rational expectations," that elegant theory that encouraged the ludicrous faith in deregulation and the wisdom of free markets, which brought us our recent financial fiascos. But this failure in economic theory – ignoring natural limits – risks far more dangerous outcomes than temporary financial crashes.

Let me pose a simple question. If there were an extra thousand years of oil supply – of onshore traditional oil – available at, say, a production cost of $200 a barrel in addition to the actual 40 years of mixed-cost reserves that we have today, what difference would it make in today's price? Remarkably, the answer is "none." Today's price is concerned only with the intermediate-term workings of current costs of current barrels and current demand. Yet every rational reader knows that this should not be the case: that the existence of huge reserves (or the lack thereof) should indeed influence today's price in a world concerned about its very long-term well-being. In addition to ignoring the depleting supplies of high quality materials, no concern at all is shown for our current devastatingly erosive and resource-intensive global farming practices.

As described above, the current U.S. capitalist system appears to contain some potentially fatal flaws. Therefore, we should ask what it would take for our system to evolve in time to save our bacon. Clearly, a better balance with regulations would be a help. This requires reasonably enlightened regulations, which are unlikely to be produced until big money's influence in Congress, and particularly in elections, decreases. This would necessitate legal changes all the way up to the Supreme Court. It's a long haul, but a handful of other democratic countries in northern Europe have been successful, and with the stakes so high we have little alternative but to change our ways.

It would certainly help if the general public were better educated, especially in science. The same applies, unfortunately, to Congress itself. This body is desperately short of scientists and basic familiarity with things scientific. Our key problems need to be addressed by people very familiar and comfortable with science. It is said that eight of the nine senior leaders in China's government are scientists. At that high a level, of our 535 Congressmen and the President and Vice President, less than a handful – arguably only two or three – would pass the test. (I suppose you could throw in the Supreme Court Justices if you wanted to.) It is said, on the other hand, that about 100 Congressmen do not believe in evolution. Without a respect for science in Congress and with science in the general public declining as an interest, some of the painful new issues are going to be hard to address. (The percentage of students graduating with degrees in science as a proportion of total U.S. graduates is the 60th highest by country these days!) This lack of scientific familiarity is made worse by the fact that everyone loves to hear good news, Americans more than most.

The tough news we must sooner or later grasp is made tougher by the skilled, energetic denials, well-funded by powerful industries that fear their profits would be threatened. Libertarians seem to feel that even if the bad news were true, the necessary regulations would be so distasteful that they would really prefer that the science were different, and they deem it so, putting desired political theory over science.

Meanwhile, China gets on with it and science is accepted in what used to be our normal way until the last decade or two. And I suppose they have some unfair advantages, among them leaders with scientific backgrounds and higher science scores for the general public, but they also have the luxury of a leadership that does not face election campaigns. Lucky them. The critical consequences are that they waste no time in challenging climate problems (the same is true of India) and, even more importantly perhaps, they begin to really worry, almost panic, about their long-term access to crucial resources. In contrast to our political log jam and failure to face long-term issues, they have moved rapidly to exploit new sustainable energy sources, to tie down resource deals, and to promote improved resource efficiency.

The U.S. and Canada are blessed with natural advantages that are unrivalled (at least if you include security, which, in a desperate, resource-constrained, warming world might hurt New Zealand, that otherwise would look hard to beat). Yet the relatively uncontrolled variety of capitalism that exists in the U.S. today may negate many of our advantages. Solutions to these issues – far more important than any others – need a delicate mix of capitalism and wise, democratically-controlled government regulation. That might sound like an oxymoron to far too many people. If we can't make it sound, plausible, and acceptable in the next few decades, then we are in deep trouble for the world really, really needs U.S. leadership on these critical issues.

Karl Marx went on and on about the tendency of capitalism to so fixate on growth that in time it would forget the need to put on a friendly face for society and would drive home too clearly and brutally its advantage over labor. Ironically, in some way he and Engels looked forward to globalization and the supranational company because they argued it would make capitalism even more powerful, over reaching, and eventually reckless. It would, they claimed, offer the capitalists more rope to hang themselves with or, rather, to be hung with, in the workers' revolution. The rope for the job, they suggested with black humor, would be bought from briskly competing capitalists, eager till the end for a good deal. Well, time marches on and it's going to be hard to have a workers' revolution with no workers. Organizing robotic machine tools will not be easy. However, Marx and Engels certainly got the part right about globalization and the supranational company increasing the power of capital at the expense of labor. To interfere with Marx's apocalyptic vision, we need some enlightened governmental moderation of the new globalized Juggernaut (even slightly enlightened would be encouraging) before capitalism gets so cocky that we have some serious social reaction.

But for me capitalism's complete fixation on growth at all cost that Marx concentrated on is not as important as the other issues discussed here. Capitalism, by ignoring the finite nature of resources and by neglecting the long-term well-being of the planet and its potentially crucial biodiversity, threatens our existence. Fifty and one-hundred-year horizons are important despite the "tyranny of the discount rate," and grandchildren do have value. My conclusion is that capitalism does admittedly do a thousand things better than other systems: it only currently fails in two or three. Unfortunately for us all, even a single one of these failings may bring capitalism down and us with it.

Part III: Investment Observations for the New Year

Looking Backwards and Forwards (2011 and 2012)

After a year of Sturm und Drang – powerful responses to important problems and a non-stop sense of urgency – most markets did not cover that much ground. Currencies bounded around viciously but ended strangely close to where they started. Even the euro was down only 3.5% for the year. The U.S. market was the perfect example, bouncing around but going nowhere. One day all stocks were up and the next they were all down as if the Camp Director was calling on the bullhorn "Everyone in!" "Everyone out!" "Risk on!" "Risk off!" All that excitement and no net change! Boringly, even our current investment advice is pretty much what it was last year.

It is always exciting for an asset allocator to work in a world where all assets are badly mispriced. Regrettably, this is not now the case at all. The majority of global equities are within spitting distance (a technical term) of fair value. Only the S&P 500 is materially overpriced, with an imputed return on our 7-year forecast of about 1% real, and because the high quality quarter of the S&P is priced to deliver 5.5% real (about a fair return), the 75% balance of the S&P has a slightly negative return. The rest of the world's equities were (when I sat down to write this in January) on average slightly cheap at close to 7% real, so that non U.S. equities plus U.S. quality stocks offered a slightly higher average return than normal (a normal mix is about 6.1% real). (Today, after a dazzling rally, the forecast for the same global equity mix has dropped by 1.1%, to very slightly expensive.) This is not exactly whoopee time, but compared to the typical overpricing of the last 20 years, it's not bad at all.

The interesting overpricing that exists in global markets is in debt markets – those that are seen to be lower risk than the rest (e.g., most developed market government bonds ex the usual suspects: Greece, Portugal, Spain, and Italy). In some markets like the U.S. and the U.K., the long bonds can be so murdered by inflation that holders should end up concerned about return of capital and forget about being paid for the risk. On the plus side, if economies collapse, the bonds with some duration may protect your money in the short term. This is a trade-off between possible short-term safety against probable long-term risk and negative return.

So in asset allocation there is one great opportunity – avoiding duration in fixed income – and one pretty good opportunity – down weighting most of the U.S. market. Not such a bad opportunity set, really.

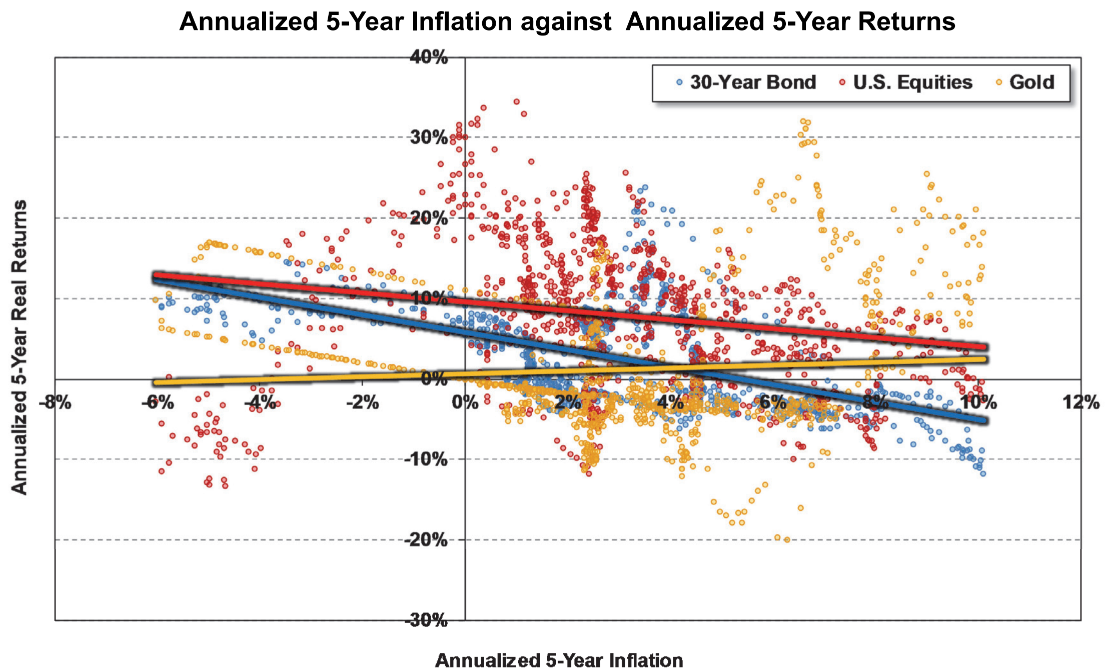
Inflation Hedges

The 800-pound gorilla (the one that prefers bond holders to bamboo) is not in the room yet, but you can hear him thumping his chest up in the hills. He will come eventually, and before he does, you should remember that stocks are underrated inflation hedges. The underlying corporations have real assets, employ real people, and sometime even make real things, although a good idea embedded in a small thing (like an iPad) or a service is just as good. Equities have been tested over and over again in different places and in different decades and they have always been found to be very effective hedges. Serious resources – oil and copper in the ground and forestry and farmland – will almost certainly also be good and very probably much better than broad stocks in the short run. Gold may be good too. Who knows? But for stocks to work dependably as inflation hedges one has to have a several-year time horizon: in the short term, rising inflation can hurt stocks badly, for as mentioned last quarter, inflation is usually a powerful negative behavioral input. Investors hate jumps in inflation because they sharply raise the levels of uncertainty. Fairly quickly, though, earnings always catch up, and after multi-year surges in inflation (as in Brazil in the '80s) we end up with the total market value in its normal range as a percentage of GDP while regular bonds if they exist, get destroyed.

Exhibit 2 shows the co-incident 5-year relationship between the return for stocks, bonds, and gold, respectively, against the CPI since 1919 in the U.S. As inflation picks up, the real price of gold goes up, the real price of bonds declines a lot, and equities decline also, but significantly less. Exhibit 3 looks at exactly the same inflation data but adds the next 5 years of real returns for the three assets. Now, over 10 years, there is only a very slight relationship between either gold or equities with the original 5 years of change in the CPI. In the case of bonds however, there is still a strong tendency for bonds to continue to lose ground. The conclusion from that time period is that surges in inflation have been a very slight issue for holders of equities (and gold) on a 10-year basis, but a very serious one for

Exhibit 2

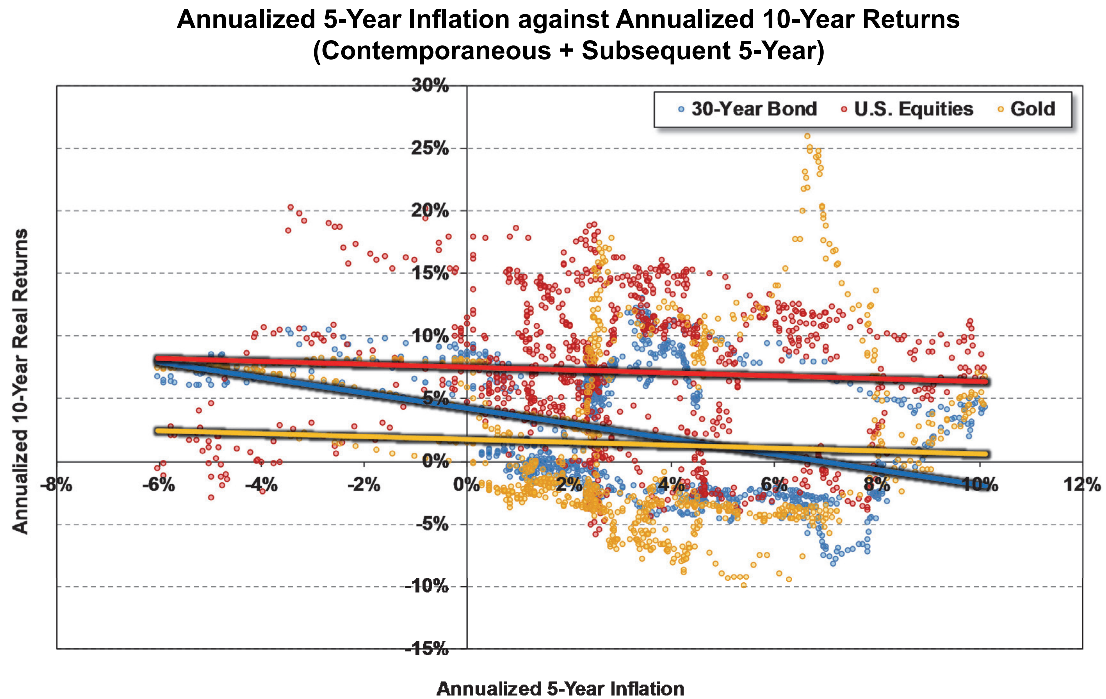
Inflation against Real Stock, Bond, and Gold Returns



Source: Global Financial Data, GMO   As of 1/31/12

Exhibit 3

Inflation against Real Stock, Bond, and Gold Returns



Source: Global Financial Data, GMO   As of 1/31/12

bond holders. We must also remember that previous inflationary periods in the U.S have mostly followed a pattern of rising several years to a single peak and then falling. The next one may be different. It may move up and then fall back several times, creating more of a range of hills than a single Himalayan peak like 1981. In such a bumpy ride, stocks are likely to adjust more quickly each time while long bonds will see their values steadily eroded.

The short-term correlations between stocks and inflation in the past have been quite high, but short-term correlations are for traders, not investors. I'd advise not getting too carried away with them. In general, I also much prefer to have stocks and other real assets in a longer-term approach than to have complicated hedges and options. Murphy's Law of complexity is powerful: things will go badly if they can and when you least need them to, but complex things will go bad first, and worst given half a chance, as we saw in the mortgage market a few years ago. Keep it simple when you can. And owning stocks is very simple indeed.

Resources

We now have a capability to invest in "stuff in the ground." As I argued last April, resources had gone up a lot and in a hurry. Every paradigm shift must, almost by definition, attract momentum players and a speculative component, and this was no exception. Production has responded to the higher prices very quickly for agricultural output and more slowly for infrastructure-related coal and mining. Farmers in particular, I wrote, were planting acres that had never seen corn or grain in order to capitalize on the opportunity. Given less bad weather I argued, prices could fall a lot. Since last spring, there has been some terrible weather in Thailand (the world's largest exporter of rice), in the Southern U.S., and in parts of Argentina. But, on average, the weather has indeed been less bad than the previous year and world grain output is likely to be up quite a lot. As a consequence, prices, which had weakened an average 25% plus since the early summer peak (before the recent rally), will likely come down some more. I am, though, more convinced than ever that the biggest of several substantial problems we face is that of feeding the 9 or 10 billion people that are likely to exist one day, with finite land, finite soil, and, perhaps above all, finite mined fertilizer. And, not to forget, the very, very finite long-term vision on the part of most governments and capitalism itself. GMO has long had a significant presence in timber investing and, I think it's fair to say, has built a successful forestry investing group. Recently, we have spent some considerable time expanding their capability in order to deal with global farmland. While some farmland in the U.S. has appreciated rapidly and perhaps by too much, farmland is an extremely varied and complicated market both in the U.S. and globally, and one that is inefficiently priced. With care and experience, reasonable investments can be made, although a sell-off would of course make for even more attractive opportunities. I am happy that GMO is developing a growing (ouch!) competence in this area.

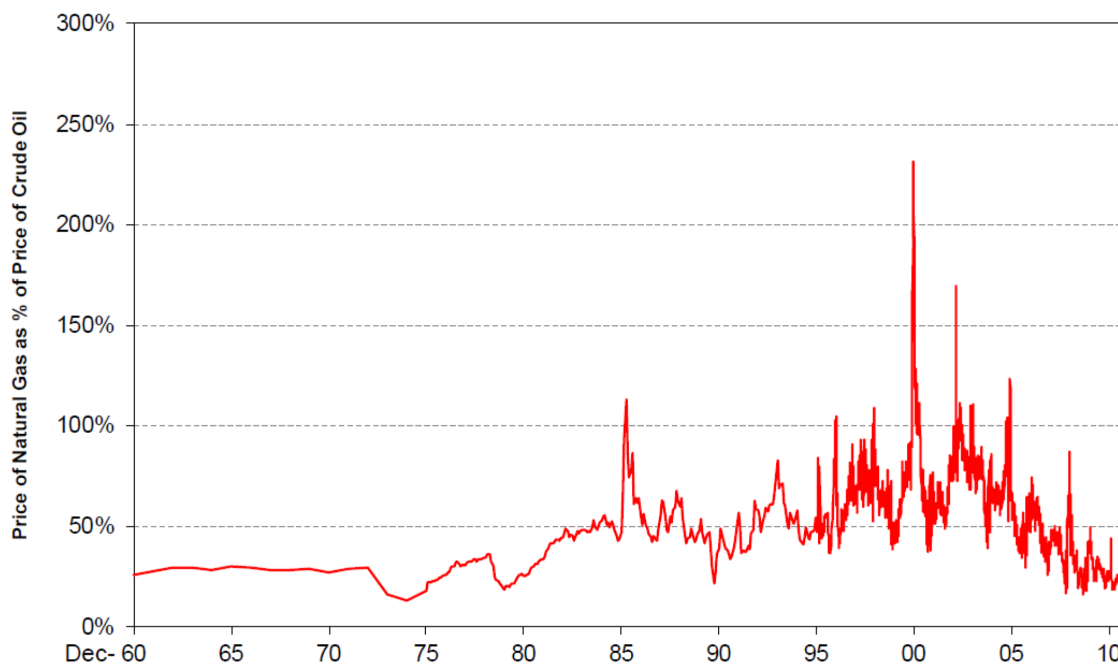
At the opposite end of the resource spectrum to record-priced Iowa farmland is natural gas. Natural gas is, for most purposes like home heating and electric utility plants, a better and cleaner fuel than oil or coal, but is for technical reasons in distress: there have been several recent decades in which the BTU equivalent price for natural gas did, at least for a second, reach parity with oil. But now it is at just 14% of BTU equivalency, the lowest in almost 50 years. Everyone who has a brain should be thinking of how to make money on this in the longer term. Exhibit 4 shows the ratio.

Metals producers were down almost a third from their high until the recent rapid rally. They are now (February 9) down about 20% to 25%. Some may still be vulnerable. Gold producers, though, look cheaper than the metal itself after badly underperforming the metal last year, reaching one of their weaker ratios for a while. Still, my old recommendation from April holds: these are all great long-term investments that are dangerous short term. There are two investment approaches that work. My choice is to average in. (It is what I personally have been doing.) An alternative is to know the markets short term better than the market does, which is tough; although probably a few experts can do it. The third approach, which I definitely don't recommend, is to just follow the herd up and down (although of course some small numbers do this well, too).

European Complexity

A philosophical note. Each investment group at GMO has its different strengths. In Asset Allocation, ours is in the study and understanding of asset class bubbles. That made it so much easier for us to spot the coming problems in 2000 and 2008. The 2000 problem originated from the forming and breaking of the U.S. tech and growth stock bubble.

Exhibit 4
Natural Gas / Crude Oil Energy Equivalent Price Ratio



Source: Global Financial Data, GMO   As of 2/8/12

The 2008 problems were precipitated by a deflating U.S. housing bubble. In contrast, the European debt problem has no asset bubble at its heart (although housing busts have added to problems in Ireland and Spain). This problem seems to stem from original design flaws in the euro currency and the lack of necessary regulations to guarantee helpful behavior by individual countries. It has also gathered steam due to broad and persistent incompetence and delay on the part of political leaders, although given the political complexities I am a little sympathetic.

This type of sovereign debt-regulation-political-monetary mess is absolutely not our forte. When I read the 120 contradictory bits of advice in the Financial Times alone, I find myself asking the question: who is an expert? To the extent that anyone has profitably specialized in this type of problem, I suppose it is George Soros. There are also, in my opinion, one or two investment management groups that seem to talk sense (which groups will go nameless for weasely competitive reasons). This is the problem: these probable experts are much more worried than the general market. This fact is giving rise to a new, tentative but definitely uncomfortable theory: perhaps the default assumption when dealing with ignorance or lack of confidence and skill is to assume everything will muddle through okay. Certainly we were amazed by this attitude generally displayed by the world (and most competitors) in the build-up to the 2000 and 2008 bubbles. Now we at GMO are calmly sitting around playing equities by the numbers, which are not too bad, and the market in general seems quite relaxed, while those few who look like experts on this crisis are pulling out their hair in fright. As I said, this is just a theory. But it is scary.

GMO Performance in 2011 Was Quite Good

In Asset Allocation, being overweight in emerging hurt us, as did lack of duration and underweighting the U.S. But a massive overweight in global quality stocks, 80% of which are in the U.S., was huge. They outperformed the U.S. market by about 10% (and the non-quality component by almost 14%), for in the end it was indeed a risk-off year. During the year, it was steadily three steps forward, two and a half steps back for these quality stocks relative to the rest. We also got a lot of little things right so in the end, despite a cluster of things where we could have been smarter or luckier, we did decently enough. In asset allocation (dragged along mostly, I admit, by quality) most of our allocation

strategies won against their benchmarks, with our flagship Global Balanced Asset Allocation Strategy adding 3.9% relative, net of fees. Far more of our equity strategies outperformed their benchmarks than underperformed. As usual, we tend to do better in tougher years, which is the way we like it. This was especially noticeable in the sharp summer decline. It was in all an interesting year. I look forward to this one.

Summary of Recommendations (with apologies for the lack of changes)

- Heavily underweight U.S equities, but not the high quality quartile, which is almost fair price. Non-quality equities, in contrast, have a negative imputed 7-year return after their handsome rally in the last 3 months through to mid-February.
- Slightly overweight other global equities, which are almost fair price, down from a little cheap at year end.
- In total, be about neutral in global equities. Yes, there is more than our normal fair share of potential negatives lurking around, but on our data: a) most of the negatives are reflected in stock prices; and b) all fixed income duration is dangerously overpriced. This last situation is, of course, engineered by the Fed, which hopes to drive us all into taking more risk, notably by buying more equities. I hate to oblige, but at current equity prices it just makes sense to do what they want. As mentioned earlier, equities are also good long-term hedges against inflation.
- Underweight as much as you dare long-term bonds, especially higher-grade sovereign bonds.
- In the long term, resources in the ground, forestry, and agricultural land are attractive, but come with the usual caveats of the risk of short-term over pricing, so average in.

"When You've Got it, Flaunt it." GMO's 10-year Forecast to December 31, 2011

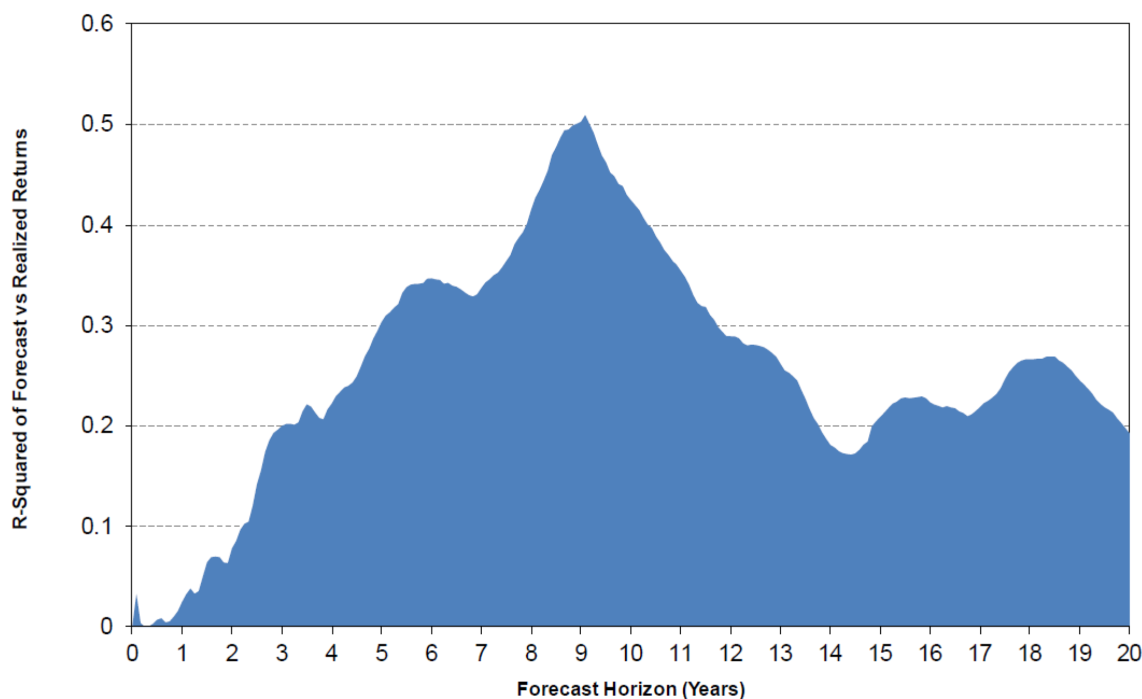
The GMO 10-year forecast ending on December 31 last year is shown on page 3. As Zero Mostel says in "The Producers" as he looks down at a yellow Rolls Royce outside his window, "That's the way baby. When you've got it, flaunt it!" As you can see, the rank correlation number for the last 10-year forecast was, well, ridiculously high. Now if we could only get the T-Bill right. Ten years ago, minus 2% real for 10 years would have seemed crazy. But the Greenspan-Bernanke team had this plot to ruin our forecasts. Unfortunately, the negative 2% – which stirred up the first U.S. housing bubble in history – ruined a few other things along the way.

We had by far the lowest estimates back then for the S&P 500, perhaps no surprise. But we also had the highest estimate for emerging market equities. The forecast gap between these two was 10.4% a year, which would turn $100 in the S&P into $270 in Emerging. The actual result was $280! These two asset classes had short-term correlation that started out high, at .5, and rose to the even higher level of .6. This correlation did not, however, prevent a huge gap in performance. This is an indicator of the limited usefulness of short-term correlations. Yet, all we were saying was that the abnormally high P/E on the S&P (about 30 times) would decline to a normal 15 times, and the depressed emerging markets at 13 times would rise.

Our recent 10-year forecast is also ammunition to use against the "notorious bear" label that a journalist gave me recently. Dude, give me a break! The U.S. market was terrible for the last 10 years, gaining a pathetic 0.5% per year overall, after inflation adjustments and even including dividends. Without dividends, the index itself has not gone up a penny in real terms from mid-1997 to end-2011, or 14½ years. This is getting to be a long time! Are we expected to be bullish out of patriotism? You might think so given the flood of optimistic views for the last 10 years (or is it 100?). The industry so much prefers bullishness. It is much, much better for business. So, in general, does the press, and I do sympathize – optimism really does make for more compelling reading. I'll tell you what. Try taking it out on the army of well-known bulls who blew the trumpets in 1999 and 2007 and waved everyone into the rather bloody breach. (Did you know that trumpeters were killed out of hand in the Middle Ages because of their pernicious role? How about that for a precedent when we get to the next burst bubble?) Also, we were, as you can see, very bullish indeed on emerging market equities and have been for 15 years, occasionally quite painfully. This optimism on emerging, though, has generally carried little weight in counter balancing our firm's reputation (mine in particular) as bears because emerging equities are considered to be a very minor affair relative to the main event – the U.S. equity market – at least in this country.

By the way, I used our original 10-year forecast rather than our 7-year forecast for a very complicated mathematical reason: it did better. (Although the 7-year forecast had a perfectly respectable rank correlation of .42.) In fact, 10-year forecasts, on a reasonably long test seem to work a little better than 7 years. This is partly because longer time periods give mean reversion longer to work. By way of illustrating this point, our 1-year results tend to look like a random number generator, and our 1-day would, of course, look the same. Value is a very mild but very determined influence. It gets you there in the end but can break you and your clients' hearts along the way. Exhibit 5 shows some new research we have done that suggests that 9 years would, data mined, have been the best in the last few decades, at least for one (obviously very important) asset class, the S&P 500.

Exhibit 5
S&P 500 Forecast Accuracy by Time Horizon



Source: GMO   As of 1/31/12

P.S. Defending Last Quarter's Letter

Due to the shortage of time, I clutched at material from our conference in November and managed, by breaking up the thesis into bullet points, to confuse my point and many readers: some thought I was a crazy bear, some bullish, and some in between. Ironically, the point in a nutshell was precisely that: stock market opinions must be read with a careful understanding of the time period being used. Apparently contradictory opinions are often wholly or partially the result of using different times periods. As an extreme example I gave three very different views of the market, all of which I find useful, that draw their differences from their time horizons. Here are the three:

1) Financial historians interested in the very long term would notice that all of the great bull markets before Greenspan ended by going below their trend line for several years. In the Greenspan-Bernanke era, declines were aggressively curtailed as policy. We should all be aware that the possibility exists of an old fashioned bear market overcorrection. Few have experienced a 1970's type bear market and therefore it would be found particularly difficult to deal with. The usual expectations of long rallies would be serially disappointed.

2) In the very short term, the Inker-Grantham "comfort" model for explaining P/E points out that the "normal" response (over response would be better) both to current high profit margins and to current low inflation would call for a substantially higher market than existed three months ago (the gap has been half closed in the intervening

months). To me this suggests that just like last year, the U.S. market will fight bad news and try to go up and that it is unlikely to go down much until either the current, extremely high profit margins decline or some very big wheels fall off: Europe, China, or the U.S. That is to say, in the near term, periodic moderate bad news of any kind, except about profit margins and inflation, is unlikely to keep the market down.

3) In the intermediate term – seven years – the GMO forecast suggests that global equity prices on December 31 were, boringly, about normal, if you avoid lower quality companies in the U.S. (today they are modestly overpriced). Our GMO forecasts do not allow for overruns (point 1) or behavioral inputs (point 2) but have had a good record. So, you see, we had something for everyone: bullish, bearish, or fair value. You just had to pick your time frame.

Performance data quoted represents past performance and is not predictive of future performance. Returns are presented after the deduction of management fees and incentive fees if applicable. Net returns include transaction costs, commissions and withholding taxes on foreign income and capital gains and include the reinvestment of dividends and other income, as applicable. A GIPS compliant presentation of composite performance has preceded this presentation in the past 12 months or accompanies this presentation, and is also available at www.gmo.com. Actual fees are disclosed in Part II of GMO's Form ADV and are also available in each strategy's compliant presentation. The performance information for the Global Balanced Asset Allocation Strategy is supplemental to the GIPS compliant presentation that was made available on GMO's website in April of 2011.

Disclaimer: The views expressed are the views of Jeremy Grantham through the period ending February 24, 2012, and are subject to change at any time based on market and other conditions. This is not an offer or solicitation for the purchase or sale of any security and should not be construed as such. References to specific securities and issuers are for illustrative purposes only and are not intended to be, and should not be interpreted as, recommendations to purchase or sell such securities.

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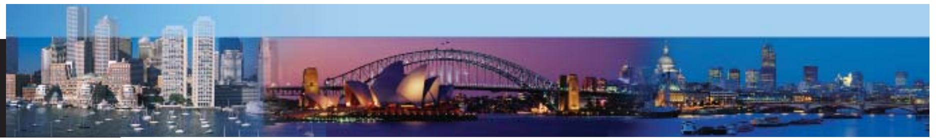
Appendix

Hamlet, Act 1, Scene III

Polonius: Yet here, Laertes? Aboard, aboard, for shame!
The wind sits in the shoulder of your sail,
And you are stay'd for. There, my blessing with thee.
And these few precepts in thy memory
See thou character. Give thy thoughts no tongue,
Nor any unproportion'd thought his act.
Be thou familiar, but by no means vulgar.
Those friends thou hast, and their adoption tried,
Grapple them to thy soul with hoops of steel;
But do not dull thy palm with entertainment
Of each new-hatch'd, unfledged comrade. Beware
Of entrance to a quarrel; but being in,
Bear't that the opposed may beware of thee.
Give every man thy ear, but few thy voice;
Take each man's censure, but reserve thy judgment.
Costly thy habit as thy purse can buy,
But not express'd in fancy; rich, not gaudy;
For the apparel oft proclaims the man,
And they in France of the best rank and station
Are of a most select and generous, chief in that.
Neither a borrower nor a lender be;
For loan oft loses both itself and friend,
And borrowing dulls the edge of husbandry.
This above all: to thine own self be true,
And it must follow, as the night the day,
Thou canst not then be false to any man.
Farewell. My blessing season this in thee!

GMO

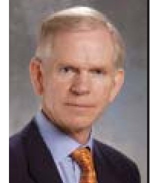
QUARTERLY LETTER



April 2012

My Sister's Pension Assets and Agency Problems

(The Tension between Protecting Your Job or Your Clients' Money)



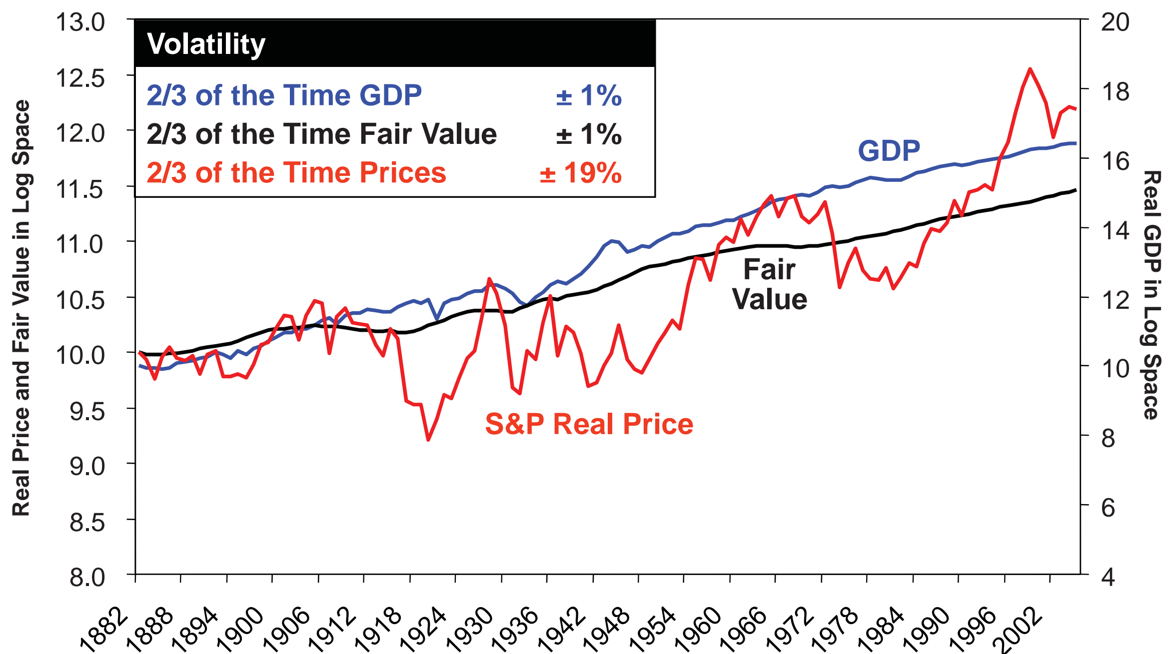
Jeremy Grantham

The central truth of the investment business is that investment behavior is driven by career risk. In the professional investment business we are all agents, managing other peoples' money. The prime directive, as Keynes[1] knew so well, is first and last to keep your job. To do this, he explained that you must never, ever be wrong on your own. To prevent this calamity, professional investors pay ruthless attention to what other investors in general are doing. The great majority "go with the flow," either completely or partially. This creates herding, or momentum, which drives prices far above or far below fair price. There are many other inefficiencies in market pricing, but this is by far the largest. It explains the discrepancy between a remarkably volatile stock market and a remarkably stable GDP growth, together with an equally stable growth in "fair value" for the stock market. This difference is massive – two-thirds of the time annual GDP growth and annual change in the fair value of the market is within plus or minus a tiny 1% of its long-term trend as shown in Exhibit 1. The market's actual price – brought to us by the workings of wild and wooly individuals – is within plus or minus 19% two-thirds of the time. Thus, the market moves 19 times more than

Exhibit 1

Long-Term Corporate Profits Are Very Stable and Seem to Offer Little Long-Term Risk

Real S&P price vs. perfect foresight fair value*: 1882 – 2005



* Shiller model Source: GMO, Standard & Poor's, Federal Reserve As of 12/31/05

1 John Maynard Keynes, The General Theory of Employment, Interest and Money, 1936.

is justified by the underlying engines! This incredible demonstration of the behavioral dominating the rational and the "efficient" was first noticed by Robert Shiller over 20 years ago and was countered by some of the most tortured logic that the rational expectations crowd could offer, which is a very high hurdle indeed. Shiller's "fair value" for this purpose used clairvoyance. He "knew" the future flight path of all future dividends, from each starting position of 1917, 1961, and all the way forward. The resulting theoretical value was always stable (it barely twitched even in the Great Depression), but this data was widely ignored as irrelevant. And ignoring it may be the correct response on the part of most market players, for ignoring the volatile up-and-down market moves and attempting to focus on the slower burning long-term reality is simply too dangerous in career terms. Missing a big move, however unjustified it may be by fundamentals, is to take a very high risk of being fired. Career risk and the resulting herding it creates are likely to always dominate investing. The short term will always be exaggerated, and the fact that a corporation's future value stretches far into the future will be ignored. As GMO's Ben Inker has written,[2] two-thirds of all corporate value lies out beyond 20 years. Yet the market often trades as if all value lies within the next 5 years, and sometimes 5 months.

Ridiculous as our market volatility might seem to an intelligent Martian, it is our reality and everyone loves to trot out the "quote" attributed to Keynes (but never documented): "The market can stay irrational longer than the investor can stay solvent." For us agents, he might better have said "The market can stay irrational longer than the client can stay patient." Over the years, our estimate of "standard client patience time," to coin a phrase, has been 3.0 years in normal conditions. Patience can be up to a year shorter than that in extreme cases where relationships and the timing of their start-ups have proven to be unfortunate. For example, 2.5 years of bad performance after 5 good ones is usually tolerable, but 2.5 bad years from start-up, even though your previous 5 good years are well-known but helped someone else, is absolutely not the same thing! With good luck on starting time, good personal relationships, and decent relative performance, a client's patience can be a year longer than 3.0 years, or even 2 years longer in exceptional cases. I like to say that good client management is about earning your firm an incremental year of patience. The extra year is very important with any investment product, but in asset allocation, where mistakes are obvious, it is absolutely huge and usually enough.

What Keynes definitely did say in the famous chapter 12 of his General Theory is that "the long-term investor, he who most promotes the public interest … will in practice come in for the most criticism whenever investment funds are managed by committees or boards." He, the long-term investor, will be perceived as "eccentric, unconventional and rash in the eyes of average opinion … and if in the short run he is unsuccessful, which is very likely, he will not receive much mercy." (Emphasis added.) Reviewing our experiences of being early in several extreme outlying events makes Keynes's actual quote look painfully accurate in that "mercy" sometimes was as limited as it was at a bad day at the Coliseum, with a sea of thumbs down. But his attribution, in contrast, has proven too severe: we appear to have survived.

You apparently can survive betting against bull market irrationality if you meet three conditions. First, you must allow a generous Ben Graham-like "margin of safety" and wait for a real outlier before you make a big bet. Second, you must try to stay reasonably diversified. Third, you must never use leverage. In my personal opinion (and with the benefit of hindsight, you might add), although we in asset allocation felt exceptionally and painfully patient at the time, we did not in the past always hold our fire long enough or be patient enough. It is the classic failing of value managers (and poker players for that matter) to get impatient and bet too hard too soon. In addition, GMO was not always optimally diversified. We are generally more cautious (or, if you prefer, "more experienced") now than in 1998 with respect to, for example, both patience and diversification, and at least we in asset allocation always stayed away from leverage.[3] The U.S. growth and technology bubble of 2000 was by far the biggest market outlier event in U.S. market history; we had previously survived the 65 P/E market in Japan, which was perhaps the greatest outlier in all important equity markets anywhere and at any time. These were the most stringent tests for managers, and we were 2 to 3 years early in our calls in both cases. Yet we survived, although not without some battle scars, with the great help that we did, in the end, win these bets and by a lot. Hypothetically, resisting the temptation to invest too

2 Ben Inker, "Valuing Equities in an Economic Crisis," April 6, 2009.

3 Leverage can be interpreted quite broadly. For our asset allocation strategies, it means no borrowed money.

soon in 1931 may have been a tougher test of survival in bucking the market. Luckily we, and all value managers, were not around to be tempted by that one. (Although Roy Neuberger – who died in December 2010, unfortunately – was, and he could talk about it as lucidly as any investor ever.)

This exemplifies perfectly Warren Buffett's adage that investing is simple but not easy. It is simple to see what is necessary, but not easy to be willing or able to do it. To repeat an old story: in 1998 and 1999 I got about 1100 full-time equity professionals to vote on two questions. Each and every one agreed that if the P/E on the S&P were to go back to 17 times earnings from its level then of 28 to 35 times, it would guarantee a major bear market. Much more remarkably, only 7 voted that it would not go back! Thus, more than 99% of the analysts and portfolio managers of the great, and the not so great, investment houses believed that there would indeed be "a major bear market" even as their spokespeople, with a handful of honorable exceptions, reassured clients that there was no need to worry.

Career and business risk is not at all evenly spread across all investment levels. Career risk is very modest, for example, when you are picking insurance stocks; it is therefore hard to lose your job. It will usually take 4 or 5 years before it becomes reasonably clear that your selections are far from stellar and by then, with any luck, the research director will have changed once or twice and your deficiencies will have been lost in history. Picking oil, say, versus insurance is much more visible and therefore more dangerous. Picking cash or "conservatism" against a roaring bull market probably lies beyond the pain threshold of any publicly traded enterprise. It simply cannot take the risk of being seen to be "wrong" about the big picture for 2 or 3 years, along with the associated loss of business. Remember, expensive markets can continue on to become obscenely expensive 2 or 3 years later, as Japan and the tech bubble proved. Thus, because asset class selection packs a more deadly punch in the career and business risk game, the great investment opportunities are much more likely to be at the asset class level than at the stock or industry level. But even if you know this, dear professional reader, you will probably not be able to do too much about it if you value your job as did the nearly 1100 analysts in my survey. Except, perhaps, with your own assets or, say, your sister's pension assets.

My Sister's Pension Assets

All of this brings me to my longest-lived investment: the pension of one of my sisters, which started very modestly in 1968, just after I got my first job in the investment business. Partly because the value of the assets was small and partly because I was more aggressive (or unimaginative) then, her pension assets were invested 100% in those equity mutual funds (always value and mostly small cap value) that I was involved with. However, the allocations within the portfolio changed from time to time, sometimes quite significantly. For example, as we entered the Greenspan-Bernanke over-stimulated market in the 1990s and onwards, she was notably underweight stocks on average, and hugely tilted to emerging markets and away from the U.S. after 1998 (as were all GMO strategies within their respective operational constraints).

Later, as GMO started to crank out 10-year forecasts in 1994 and build up a body of experience in asset allocation, my sister's pension faithfully followed the forecasts, but I'm a little embarrassed to admit that on a risk-adjusted basis she has done a little better than our first dedicated institutional asset allocation client. There are two principal reasons for this. The first very large advantage for her is that I have only had to consider absolute return without the investment constraints some investors impose. I have felt absolutely no career risk. She is not going to fire me easily after 43 years as a mostly effective manager. In any case, she does not ask nor has she been told about investment changes or short-term performance for several years, and she is, after all, my sister. The complete lack of investment constraints and pressure from being fired gives me the greatest of all investment freedoms – the freedom to make very big asset bets when the numbers call for it as they did most notably from 1998 to 1999 and in 2007. For an institutional client, these conditions are impossible to match. (Before moving on I should tell you of my one experiment in investment communication with my sister. After a painful losing experience in emerging market equities, I felt I should mention it along with my confidence that it would eventually work out fine. On hearing of the loss and before I could provide any details, she very quickly cried out, "Sell! Sell!" right out of some 1929 movie. In spite of her pleas, I did no selling and, in the nature of emerging, it came storming back quite rapidly to brilliant new highs. So, to balance the

old bad news, I told her of our lightning-like gain only to be admonished with the same instantaneous exclamation, "Sell! Sell!" End of experiment.)

In dealing with clients as opposed to sisters, we have tried to adopt a range of asset allocation moves that, even when we are 2.5 years too early in extreme bull markets (bear markets tend to be much quicker), will leave the portfolio looking at least faintly normal and leave the clients' pain just tolerable. Too big a safety margin and we are leaving too much money on the table; we are probably protecting our job rather than attempting to maximize our clients' return. Too narrow a safety margin and clients may fire us, as some have done in the past. I believe this is not good for us or our clients, who tend to rebound into much different portfolios, often, given the circumstances of an extremely mispriced market, at a very inauspicious time. It is, of course, a central dilemma of investing.

In the first 15 years of our asset allocation experience, our attempt to address this dilemma was to limit the range of our global equity shifts in our flagship Global Asset Allocation Strategy (formerly known as Global Balanced Asset Allocation Strategy) between a minimum of 50% and a maximum of 75%. We had tried to imagine what the typical investor – both individual and institutional – would consider to be at least faintly normal so that they would hang in when we would inevitably be too early in our market moves. That range – 50% to 75% – had seemed very conservative in theory but not so in practice as we learned in 1998 and 1999. It was then that P/E ratios, which had previously peaked at 20 times in 1929 and 19 times in 1964, moved up to an astonishing 33 times in early 1999. Failing to follow the crowd in this environment turned out to be uncomfortably beyond the tolerance of about 40% of our clients. Basically, they thought that we had been left behind because of our inability to see Greenspan's new high plateau – a golden era in which he claimed that the internet and other technology would permanently change profitability and "probably" valuation levels as well. (Many of the largest asset allocation funds in the market today had the notable good sense to bypass this ultimate stress test by not existing in 1998 and 1999.)

But 60% of our clients stayed. With hindsight, a philosopher might argue that if in a test of that magnitude – statistically over a 3-sigma event, or about a 1 in 1000 chance if it were a normally distributed world – you did not lose business, you were being too timid in general. That sounds reasonable, but few would volunteer to go through that bloodletting too often. For GMO, however, winning the bet attracted a flood of new business from 2003 to 2006 and, despite proving Keynes's point about receiving "no mercy," we seemed to have disproved the general thesis that rational investing could not survive an irrational market. Keynes himself, by the way, had not seen such irrational markets as those that occurred in the U.S. in 2000 or in Japan in 1989, either in person or in the history books.

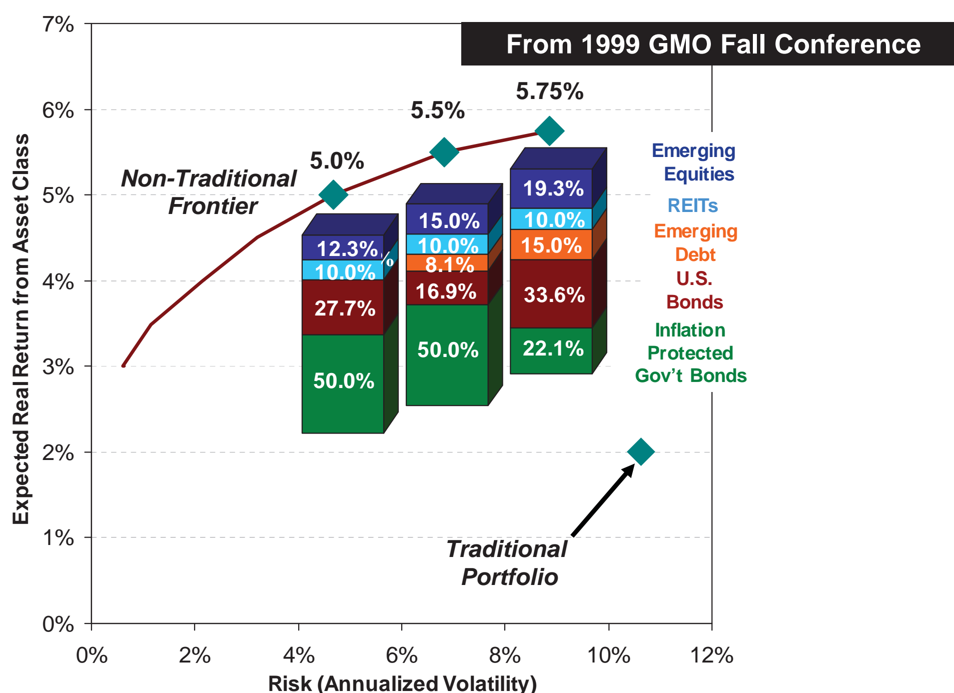
Encouraged by those two experiences and by the intensity and breadth of overpricing in the next bubble of 2007, which was truly global in nature, we pushed successfully to have the equity minimum moved down to 45% in our Global Asset Allocation Strategy, and we also made sure that our equities were, on average, more conservative. This time, our timing was better as the market moved down reasonably quickly to fair value in early 2009, resisting the temptation to repeat the crazy overpricing of 1999 and early 2000, despite the usual encouragement and over-stimulation from the Fed. Consequently, 2008 was a year of healthy outperformance against the strategy's benchmark (+6.9% net of fees). Yet it still left us feeling quite dissatisfied, for our absolute return was -20.8% and it came in a year when we had felt extremely confident of a financial crunch and a severe market decline. By July 2008, for example, I had even thrown in the towel for my beloved emerging market equities and had advised our clients to "take as little risk as possible." I suggested ignoring benchmark or career risk by reducing equity holdings to rock-bottom. I was, I wrote, "officially scared," and I confessed to finding fundamentals far worse than I had expected. With such dire warnings and with real life turning out perhaps even worse, one can imagine we were a little unsatisfied with strong relative gains but painful actual losses. And salt was rubbed into my wounds by two other events. First, my sister's pension assets, driven by exactly the same inputs as our professional accounts but carrying zero career risk and no benchmark at all – I perceived my job description for her was to make money when opportunities were good and protect money when opportunities were poor – was already down to 20% equities by late 2007. By July 2008, this allocation had ducked down to zero equities and not unreasonably so, in my opinion, because GMO's highest 7-year forecast for any equity subset in October 2007 was a dismal 1.9% a year real and this number rose only slowly in the first few months of 2008.

The second and more important factor that increased our dissatisfaction with our 2008 "relative" win was the existence of our own professional version of an asset allocation strategy with "no benchmark," a shorthand way for saying, I suppose, a strategy attempting to show much reduced benchmark risk, for surely every investment strategy (except perhaps my sister's) has to make some comparisons somewhere.

In 1999 we offered a suite of asset allocation strategies that had no official benchmarks. One was deemed high risk, one medium risk, and one low risk. The original 1999 exhibit from our client conference is shown as Exhibit 2. It shows the imputed real returns (from our 10-year forecasts at that time) were in the range of 5% to 6% real, compared to the S&P 500 imputed return of 2.2%. Yet, such was the enthusiasm back then for all things bullish that we could sign no one up until 2001, and even then our approach was deemed so unusual that we were asked to match it up with a static 20% allocation to our conservative Multi-Strategy. This combined strategy was offered to institutions and was closed because of capacity concerns in 2004. But the 80% long-only component was, for accounting purposes, also run as a separate portfolio (GMO Benchmark-Free Allocation Strategy). It did well, handsomely beating our flagship Global Asset Allocation Strategy (see Exhibit 3). The main reason for this outperformance was precisely its freedom

Exhibit 2

Achieving a 5% to 5.75% Real Return Using a Non-Traditional Portfolio



	Traditional Portfolio	Non-Traditional Portfolios		
	(65% Global Equities, 35% U.S. Bonds)	5.0% Real Return	5.5% Real Return	5.75% Real Return
Return	2.0%	5.0%	5.5%	5.8%
Risk	10.4%	4.7%	6.8%	8.8%
Probability <0% return:				
over 3 year	36.9%	2.6%	7.0%	11.7%

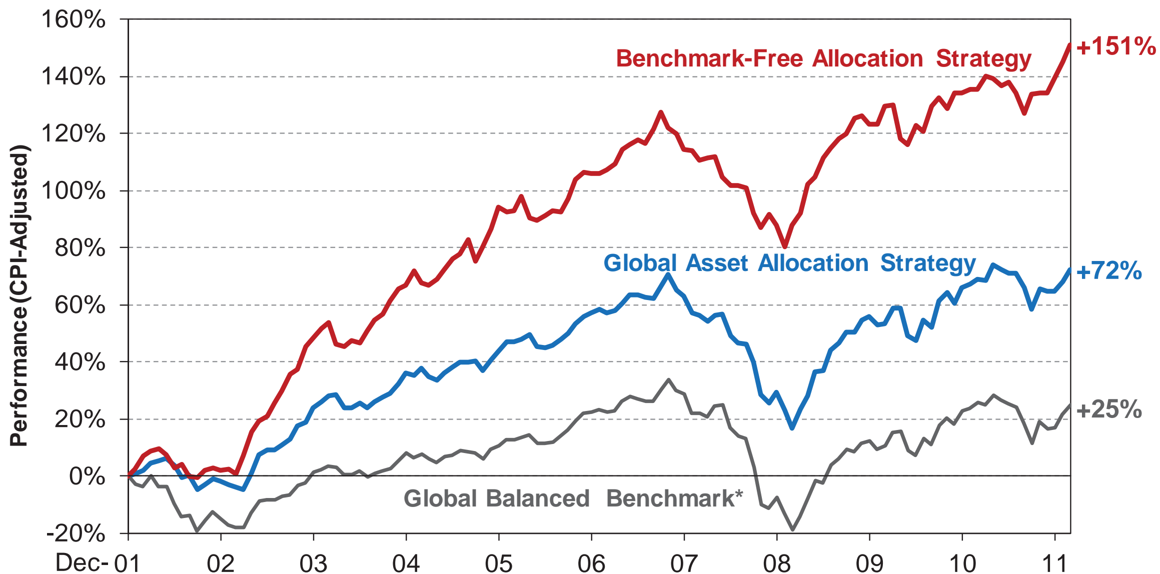
Note: Based on GMO's 10-year asset class return forecasts. These forecasts above were, at the time they were made, forward-looking statements based upon the reasonable beliefs of GMO and were not a guarantee of future performance. Forward-looking statements speak only as of the date they are made, and GMO assumes no duty to and does not undertake to update forward-looking statements. Forward-looking statements are subject to numerous assumptions, risks and uncertainties, which change over time. Actual results could differ materially from those anticipated in forward-looking statements.

Source: GMO   As of 9/30/99

to be much less invested when the market was overpriced (remember, our 7-year-forecasts for equities were very low). I will point out that this last decade was a very favorable one: bumpy enough, as in 2008, to give asset allocation something to play against, but not really crazy, as the tech bubble had been. Alternatively, this strategy could not hope to do very well in a quiet decade, absent several wild over- or under-valuations, should there indeed be such a decade again. It would also have been badly beaten by aggressive portfolios during the tech bubble of 2000. You will also note the usual GMO tendency to do most of its heavy lifting when investment times are bad.

Exhibit 3

Global Asset Allocation Strategy and Benchmark-Free Allocation Strategy Performance



The performance of the Benchmark-Free Allocation Strategy appearing in the chart above shows the past performance of the Benchmark-Free Allocation Composite (the "Composite") which consists of accounts and/or mutual funds managed by Grantham, Mayo, Van Otterloo & Co. LLC ("GMO"). The Composite is comprised of those fee-paying accounts under discretionary management by GMO that have investment objectives, policies and strategies substantially similar to the other accounts included in the Composite. Prior to January 1, 2012, the accounts in the Composite served as the principal component (approximately 80%) of a broader real return strategy** (which has its own GIPS composite) pursued predominantly by separate account clients of GMO. The Benchmark-Free Allocation Strategy is not expected to differ significantly from that component of the broader real return strategy. It is expected that the strategy's investment exposures will not differ significantly from the allocations the strategy would have had as a component of the broader real return strategy, although the strategy will likely allocate a greater percentage of its assets to the strategies that have cash-like benchmarks. Not all of the accounts included in the Composite may be mutual funds; however, all the accounts have invested their assets in other mutual funds. All of the accounts that make up the Composite have been managed by the Asset Allocation Division. Although the mutual funds and the client accounts comprising the Composite have substantially similar investment objectives and strategies, you should not assume that the mutual funds or the client accounts will achieve the same performance as the other accounts in the Composite. The client accounts in the Composite can change from time to time. The performance of each account may differ based on client specific limitations and/or restrictions and different weightings among the mutual funds.

Performance data quoted represents past performance and is not predictive of future performance. Net returns for the Benchmark-Free Allocation Strategy are presented after the deduction from the composite's gross-of-fee returns of a model management and shareholder service fee. For the Global Asset Allocation Strategy, net returns represent the weighted average of the net-of-fee returns of all accounts within the composite. Net returns include transaction costs, commissions and withholding taxes on foreign income and capital gains and include the reinvestment of dividends and other income, as applicable. A GIPS compliant presentation of composite performance has preceded this presentation in the past 12 months or accompanies this presentation, and is also available at www.gmo.com. Actual fees are disclosed in Part II of GMO's Form ADV and are also available in each strategy's compliant presentation. The information above is supplemental to the GIPS compliant presentation that was made available on GMO's website in April of 2011.

* The Global Balanced Benchmark was (i) until 6/28/02, the MSCI All Country World Index (ACWI); (ii) from 6/28/01 until 3/30/07, 48.75% S&P 500, 16.25% MSCI ACWI, 35% Barclays Capital U.S. Aggregate Bond Index; and (iii) from 3/30/07 to present, 65% MSCI ACWI, 35% Barclays U.S. Aggregate Bond Index.

** For the broader real return strategy, as of 2/29/12: Net cumulative return = 175.18%. Net year-end performance is: 12/31/01: 0.16%; 12/31/02: 8.80%; 12/31/03: 34.20%; 12/31/04: 15.29%; 12/31/05: 13.54%; 12/31/06: 11.01%; 12/31/07: 9.99%; 12/31/08: -6.61%; 12/31/09: 13.41%; 12/31/10: 2.72%; 12/31/11: 4.22%.

Source: GMO As of 2/29/12

So, how does the Benchmark-Free Allocation Strategy compare to our original Global Asset Allocation Strategy? This is where I must take yet another detour to talk about measures of investment efficiency, or, Sharpe Ratios.

Sharpe Ratio

Managing Sharpe Ratios at the portfolio level has been Portfolio Management 101 for most of my investment career, but in real life it has been used to a negligible degree. The Sharpe Ratio is a measure of how many units of price volatility an investor has received in the past per unit of return. Exhibit 3 shows that the benchmark for our Global Asset Allocation Strategy, which is 65% global equities and 35% U.S. bonds, delivered a net real return for the last 10 years of 2.7% per year and had a volatility of ±11.6% (at 1 standard deviation or two-thirds of the time). It is therefore considered to have a Sharpe Ratio of under .25 – that is to say, it delivers more than 4 units of volatility for 1 unit of return. The Global Asset Allocation Strategy, in contrast to its benchmark, returned +5.4% net of fees, with a volatility that was 20% less, or ±9.2% a year. It has had, therefore, a Sharpe Ratio of 0.6, or less than 2 units of volatility per unit of return. This means that the strategy has been more than twice as efficient, if you will, as its benchmark, delivering over twice the return per unit of volatility (often referred to, rather dangerously, in my opinion, as "risk"). With this as background, for the last 10 years the Benchmark-Free Allocation Strategy has delivered 1.7 times the yearly return of Global Asset Allocation Strategy with 10% less volatility. This gives it a Sharpe Ratio of 1.1, or nearly twice the efficiency of the Global Asset Allocation Strategy and over four times that of the balanced benchmark. I will add that I believe that clients' enthusiasm for all long-only investment products has been geared almost entirely to the "raw" return. That part of the increased efficiency that is due to lower volatility has been, in my experience, more or less ignored. This obviously makes it commercially dangerous to offer a strategy that can be caught out twice as badly as an existing strategy on those occasions when the market rallies a lot from an already overpriced level, which it can quite easily do from time to time. A theoretical example of such pain would have been a 2008 that was up another very unexpected 30% before collapsing, say, in 2009. A real example was 1999, when the market really did rally strongly from an already record overpriced level. That said, I believe the concept of the Sharpe Ratio is one of the few aspects of "modern portfolio management" that is useful at the level of a global balanced portfolio. It is a reasonable, although short-term, measure of the chance of real loss of money. "Information Ratio" or "benchmark risk" is, in contrast, very widely used. These measure how much you deviate from the benchmark per unit of extra return. In other words, it measures career risk: the risk of embarrassing your boss and losing your job. It is no wonder, perhaps, that the Sharpe Ratio – the risk to the ultimate beneficiary, the pensioner, say – is more or less ignored.

In a nutshell, I am pleased to say that we can now offer an investment strategy that reflects little career risk. It is the Benchmark-Free Allocation Strategy, and it is now available on a stand-alone basis, independent of the real return strategy of which it has been a part for the past 10 years. Our willingness to make asset class bets has enabled this strategy in this past particularly dangerous decade to do very well because it won its big bets. To state the obvious in the interests of very full disclosure, there was clearly some risk that it would not have won its big bets, in which case, of course, performance would have been considerably worse. To make such big bets, it is vitally important to have real confidence in the very strong historical tendency for extremes in financial enthusiasm or pessimism to move back to normal. Which confidence, thankfully, we have.

At this point, a good question from any reader who has been paying close attention is: why do we think this strategy can survive the client's standard patience test? Well, an accurate answer is that it may not. We have tried to improve the odds by branding the strategy as benchmark-free. It is intended to protect capital first and yet still make good money. But Keynes knew, as I know, that in a 1999-type frenzy it would be all too easy to imagine someone at the client end looking down the performance list and seeing the +47%, +31%, and +24% of bullish competitors and then GMO's +12%. In the heat of the battle, his memory of longer-term performance and job descriptions fades, and the response, "Who hired that +12% guy and why is he in the portfolio?" could easily be heard. We, perhaps fondly, hope that our surviving and eventually winning previous tests might be remembered. And, who knows? But even if frequently fired on occasion, it is probably worth it. After all, the great opportunities only exist because career

and business risk really, really matter and they only matter because of the pain that accompanies them. So, in the end, the urge to have the best long-term record that we can have and the feeling that this is the highest and best use of our patience, forecasting ability, and, yes, willingness to lose business along the way, has won out, giving us the conviction to offer Benchmark-Free Allocation Strategy as a stand-alone strategy. This is, I believe, the first time I have written specifically and in some detail about a single GMO strategy and it is likely to be the last. My excuse is that of all of the investment issues close to my heart, this one – career risk – is in my opinion the most important.

The existence of the strategy will do at least two things. First, it will substantially replace my own efforts to manage my sister's pension assets. (Although I will retain the ability to go, on rare occasions, the extra 10% short, using futures, if only to rub it in that she has absolutely no career risk.) Second, it can, by virtue of its willingness to make occasional very big bets against markets that appear very overpriced, give clients great opportunities to fire us enthusiastically from time to time when our timing is off. Bear in mind – as such clients will not – that although we are taking enormous career or business risk (and, admittedly, passing it on to clients … ah, there's the rub), the extra risk, I believe, is career risk, or benchmark risk, not real risk. I believe that this strategy, like roughly 90% of GMO's long-only strategies relative to their benchmarks, takes considerably less real risk. This is reflected in its (and their) high Sharpe Ratio. Its "risk" has been that of bad underperformance in bull markets. Real risk is the risk of a permanent loss of capital as my colleague James Montier likes to call it. The cardinal rule is to not underperform in bear markets. And though it may be a cardinal rule, there are, as we all know, no useful guarantees in our business.

Investment Outlook

From now on, my letter will focus on a particular issue every quarter as it has increasingly over the last few years. Sometimes I have also covered a broad investment outlook, but sometimes I have given only cursory comments on nearer-term bread and butter issues, which can be unsatisfactory for some readers. To remedy this, Ben Inker, the leader of our asset allocation group and general portfolio manager, will take up this role. So I will comment on whatever I like, and he will attempt to make sure we cover most, if not all, of the important investment issues. Some people get the good jobs and some people don't! Ben's comments follow as a separate section of this letter.

PS: False Pretenses

It is easy for a spokesperson to receive credit for the work of a team, and this has often been the case for me. GMO's asset allocation process has always been a team effort; indeed, for much of our history, the ability of the individual GMO strategies to beat their benchmarks contributed more to the success of our asset allocation strategies than did our movement of the assets.

In the allocation piece itself we have always depended on the portfolio management skills, particularly sizing and risk control, of Ben Inker and he has been commander in chief of our group for more than 10 years. (My attitude toward work has always been to delegate early and often.) In the idea generation part of asset allocation, we have always tried to be a democratic, idea-driven group and as our aspirations grew, so did our need for brain cells and expertise: our asset allocation brainstorming team has grown from 4 to 25 members over the last 5 years. We want to be well-informed on almost every opportunity to make or save money by moving assets.

Performance data quoted represents past performance and is not predictive of future performance. Returns are presented after the deduction of management fees and incentive fees if applicable. Net returns include transaction costs, commissions and withholding taxes on foreign income and capital gains and include the reinvestment of dividends and other income, as applicable. A GIPS compliant presentation of composite performance has preceded this presentation in the past 12 months or accompanies this presentation, and is also available at www.gmo.com. Actual fees are disclosed in Part II of GMO's Form ADV and are also available in each strategy's compliant presentation. The performance information for the Global Balanced Asset Allocation Strategy is supplemental to the GIPS compliant presentation that was made available on GMO's website in April of 2011.

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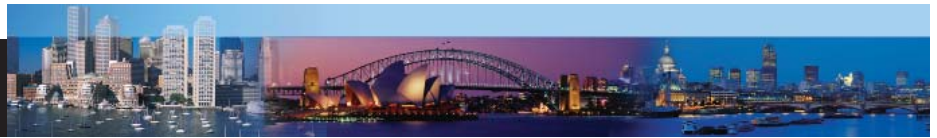
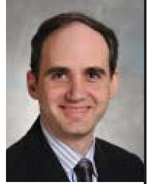
COMMENTARY



April 2012



Force Fed

Ben Inker

Over the years, we at GMO have certainly done our share of Fed bashing. Most of our complaints have centered on the way in which overly accommodative monetary policy and a refusal to see the dangers of, or even the existence of, asset bubbles can lead to economic problems. We're about to pile on the Fed again, but this time it's personal. Our major complaint about Fed policy is not about the risks today's ultra-loose monetary policy imposes on the global economy (which are considerable[1]), but rather the fact that Fed policy makes it tricky for us to know whether we are doing the right thing on behalf of our clients.

One thing that we can say about the 2000 and 2007 asset bubbles is that, while they may have done significant damage to the economy and investors' wealth, it was at least simple for us to know what to do with our portfolios. If we avoided the overvalued assets (which in 2007 was pretty much everything risky) we knew we were doing the right thing. Of course, even when investing is simple, it isn't necessarily easy. In both episodes, but particularly 2000, the conservative portfolios we were running underperformed until the bubbles burst, causing plenty of consternation for our clients in the process.

Today, the Fed has engineered a situation in which the really unattractive asset classes are the ones we have always thought of as low risk: government bonds and cash. And unlike the internet and housing bubbles, this time it isn't a quasi-inadvertent side effect of Fed policies, but a basic aim of them. The Fed has repeatedly said that a central part of the goal of low rates and quantitative easing is the creation of a wealth effect by pushing up the price of risky assets. By keeping rates very low and taking government bonds out of circulation, the Fed is trying to entice investors into buying risky assets. The question we are grappling with today is whether we should take the bait.

So what makes this different from 2007? We've got some very unattractive assets and some others that look a good deal better by comparison. The trouble is that if those unattractive assets are cash and bonds today, moving to the relatively attractive assets involves increasing portfolio risk, whereas in 2007, moving away from risky assets lowered portfolio risk. In 2007, we could hold a portfolio that, whether assets took 7 years to revert to fair value or reverted tomorrow, we would still outperform. This was reassuring, because even though we use a 7-year reversion period in our forecasts, we know that the timing of mean reversion is highly uncertain. Today, the portfolio you would want to hold if assets were going to mean revert immediately is quite different from the one you would hold if you believed it would take 7 years to get back to fair value.

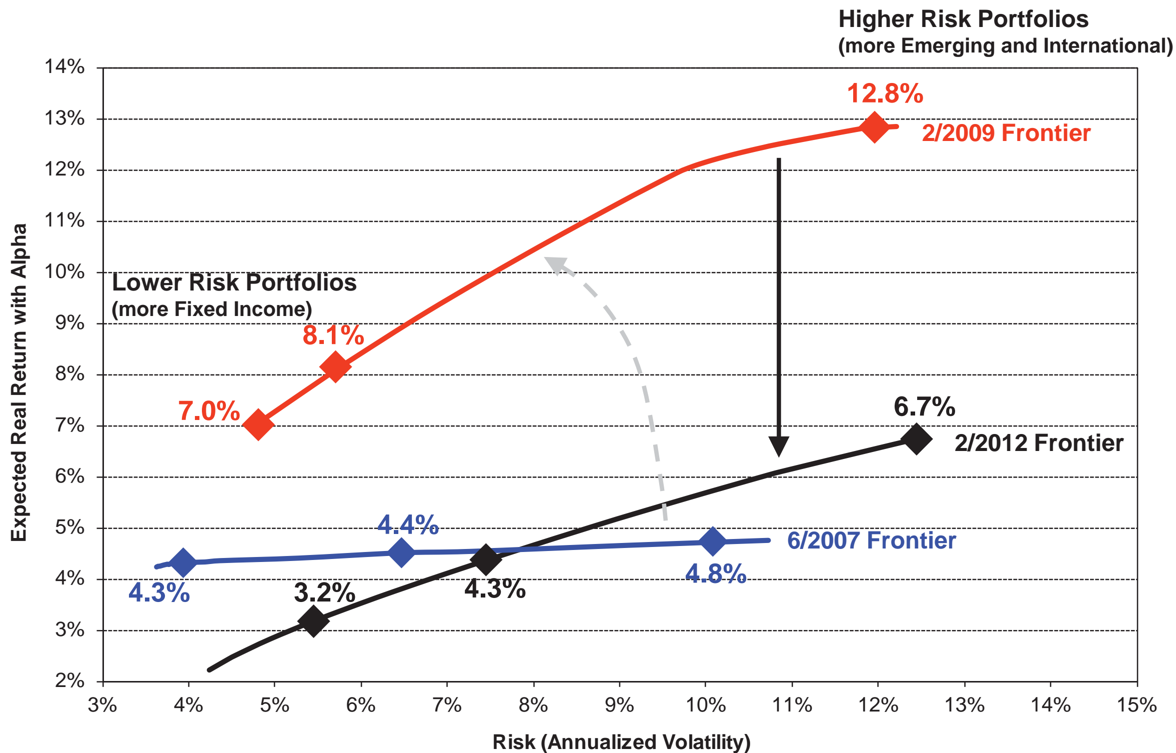
Perhaps the easiest way to think about the problem is to look at the efficient frontier for long-only absolute return portfolios, which we have reviewed on a number of occasions over the years (see Exhibit 1).

By their nature, efficient frontiers are upward sloping with regard to risk. The major ways in which they change over time is the slope of the line and the level of the line. As investors, we all want the frontier to be high on the chart, which will occur when asset classes are generally priced to give strong returns. When the line is steep, it means you are getting paid a lot for taking on additional risk. Today's line (in black) is very low, but reasonably steep. That

1 Specifically, the Fed's policy of zero short rates and quantitative easing creates the potential for an inflation problem if they cannot remove the accommodation fast enough when the financial system is back to functioning normally. In the meantime, the extremely low cost of leverage encourages speculation, the misallocation of capital, and encourages the formation of asset price bubbles in the U.S. and around the world.

Exhibit 1

Absolute Return Portfolios Over Time



Note: Based on GMO's 7-year asset class return forecasts. These forecasts are forward-looking statements based upon the reasonable beliefs of GMO and are not a guarantee of future performance. Forward-looking statements speak only as of the date they are made, and GMO assumes no duty to and does not undertake to update forward-looking statements. Forward-looking statements are subject to numerous assumptions, risks and uncertainties, which change over time. Actual results could differ materially from those anticipated in forward-looking statements.

Source: GMO As of 2/29/12

means you are getting paid to take risk, but the reason is not very high returns to risky assets but very low returns to low risk assets.

Traditional quantitative analysis tends to assume that the level of the line is irrelevant. You might wish that the line was higher, but you can't do anything about that. All you can do is decide how far out on the frontier you want to be, which is a function of your risk tolerance and the slope of the line. So, if we believe in our 7-year asset class forecasts, some reasonable forecast of volatility, and nothing else, we should be pushing out on the frontier, which is what Bernanke wants us to do.

In reality, the portfolios we are running for our clients are not particularly far out on the frontier. We are running at "normal" levels of risk or slightly lower than that. Why? You could chalk it up to a knee-jerk reluctance to do what a central banker is telling us, but when the asset allocation team is debating the appropriate level of risk to take in our portfolios, Bernanke's name does not generally come up. The reason for our reticence to move out on the risk spectrum really comes from our idea of what drives portfolio risk. We believe strongly that the risk of an asset rises with its valuation. Stocks at fair value are less risky than stocks trading 30% above fair value because the expensive stocks give you the risk of loss associated with falling back to fair value. That risk – "valuation risk" to use my colleague James Montier's terminology – leads to losses that should not be expected to reverse themselves anytime soon. A cheap asset can certainly go down in price, but when it does, you should expect either high compound returns from there, which make your money back steadily, or a reasonably sharp recovery when the conditions that drove prices down dissipate, which will make your money back quickly. The loss is therefore temporary, although it may

seem unpleasant while it is occurring. When an expensive asset falls back to fair value, subsequent returns should only be assumed to be normal, which means that the loss of wealth versus expectations is permanent.

Today, stocks are expensive relative to our estimate of long-term fair value. The trouble is, so are bonds and cash. If everything was guaranteed to revert to the mean over 7 years, we would hold equity-heavy portfolios, because the gap between stocks and either bonds or cash is wider than normal. But we don't know that it will take 7 years. Because cash and (most) bonds have a shorter duration with regard to changes in their discount rate than stocks do, fast reversion would lead to smaller losses for them than for equities. Holding a portfolio where we are crossing our fingers that mean reversion will be slow is difficult to be excited about and, as a result, we are lighter on equities than the 7-year forecasts would otherwise suggest. That leaves us around 63% to 64% in equities for a portfolio managed against a 65% equities/35% bonds benchmark and 48% to 58% in equities for absolute return oriented portfolios, depending on their aggressiveness and opportunity set. On the government bond side, given the incredibly low yields around, the only bonds we have much fondness for are Australian and New Zealand government bonds, because only those countries give a combination of a decent real yield and government spending policies that are sustainable in the long run. But our appetite for even these bonds is not great, leaving us with significant holdings of cash and "other."

If our 7-year forecasts play out exactly to plan, we are leaving some money on the table by not moving more heavily into stocks. However, our positioning does leave us in a place where we need not fear the circumstance whereby asset classes revert to fair value faster than expected, and that does help us sleep better at night.

Mr. Inker is the head of asset allocation.

Disclaimer: The views expressed herein are those of Ben Inker as of April 18, 2012 and are subject to change at any time based on market and other conditions. This is not an offer or solicitation for the purchase or sale of any security and should not be construed as such.

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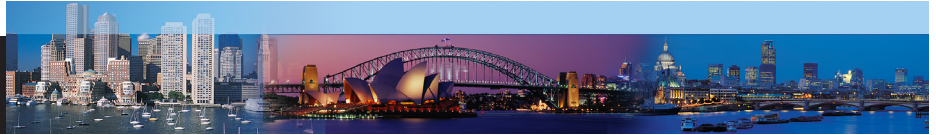

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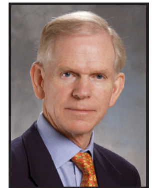

Welcome to Dystopia!
Entering a long-term and politically dangerous food crisis

Jeremy Grantham

(pages 2-18)

When Bad Things Happen to Cheap Assets

Ben Inker

(pages 19-22)

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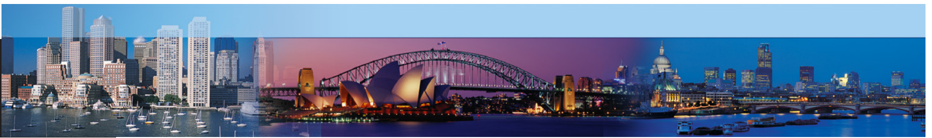
QUARTERLY LETTER



July 2012

Welcome to Dystopia![1]
Entering a long-term and politically dangerous food crisis[2]

Jeremy Grantham

"Them belly full but we hungry ...
… A hungry man is a angry man ...
… A hungry mob is a angry mob."

—Bob Marley, "Them Belly Full"

"Anyone who believes exponential growth can go on forever
in a finite world is either a madman or an economist."

—Kenneth Boulding, Economist

Summary of the Summary

We are five years into a severe global food crisis that is very unlikely to go away. It will threaten poor countries with increased malnutrition and starvation and even collapse. Resource squabbles and waves of food-induced migration will threaten global stability and global growth. This threat is badly underestimated by almost everybody and all institutions with the possible exception of some military establishments.

Summary

1. Last year we reported the data that showed that we are 10 years into a paradigm shift or phase change from falling resource prices into quite rapidly rising real prices.
2. It now appears that we are also about five years into a chronic global food crisis that is unlikely to fade for many decades, at least until the global population has considerably declined from its likely peak of over nine billion in 2050.
3. The general assumption is that we need to increase food production by 60% to 100% by 2050 to feed at least a modest sufficiency of calories to all 9 billion+ people plus to deliver much more meat to the rapidly increasing middle classes of the developing world.

1 Dystopia: a society characterized by human misery, disease, oppression, and overcrowding.

2 This report is an update and extension of "Time to Wake Up," April 2011 and "Resource Limitations 2: Separating the Dangerous from the Merely Serious," July 2011. Each is available with registration at www.gmo.com.

4. It is also widely assumed that at least the lower end of this target will be achieved. I believe that this is substantially optimistic. At very best, if we reach that level we will not be able to hold it. Much more likely, we will not come close because there are too many factors that will make growth in food output increasingly difficult where it used to be easy:
   - Grain productivity has fallen decade by decade since 1970 from 3.5% to 1.5%. Quite probably, the most efficient grain producers are approaching a "glass ceiling" where further increases in productivity per acre approach zero at the grain species' limit (just as race horses do not run materially faster now than in the 1920s). Remarkably, investment in agricultural research has steadily fallen globally, as a percent of GDP.
   - Water problems will increase to a point where gains from increased irrigation will be offset by the loss of underground water and the salination of the soil.
   - Persistent bad farming practices perpetuate land degradation, which will continue to undermine our long-term sustainable productive capacity.
   - Incremental returns from increasing fertilizer use will steadily decline on the margin for fertilizer use has increased five-fold in the last 50 years and the easy pickings are behind us.
   - There will be increased weather instability, notably floods and droughts, but also steadily increasing heat. The last three years of global weather were so bad that to draw three such years randomly would have been a remote possibility. The climate is changing.
   - The costs of fertilizer and fuel will rise rapidly.
5. Even if we could produce enough food globally to feed everyone satisfactorily, the continued steady rise in the cost of inputs will mean increasing numbers will not be able to afford the food we produce. This is a key point that is often missed.
6. On the positive side, scientists are now very optimistic that they will be able to engineer more efficient photosynthesizing "C4" genes (corn belongs to that family) into relatively inefficient but vital "C3" plants such as rice and wheat, in 20 to 30 years. If successful this would increase output up to 50% and would buy time for a less painful transition to a sustainable population.
7. Many of these increasing difficulties were reflected in the original 2008 food crisis and the 2011 rebound. The last six weeks' price rise is more threatening because it occurred despite very much larger plantings than were available in 2008. Global demand is now so high and rising so fast and reserves are so low that price sensitivity to weather setbacks has become extreme.
8. It seems likely that several countries dependent on foreign grain imports have in fact never recovered from the 2008 shock. Countries like Egypt saw the percent of their consumer budget for food rise to 40%. At this level, social pressures may be at an extreme and probably have already contributed to the Arab Spring. Any price increases from here may cause social collapse and a wave of immigration on a scale never before experienced in peacetime. Another doubling in grain prices would be catastrophic.
9. Strong countermeasures to prevent a food crisis would be effective in curtailing the current crisis and preventing the development of a much greater crisis, but these measures will likely not be taken. This is because the price signals for the rich countries are too weak – they can afford the higher price – and there is inertia in all parts of the system. Also, the problems of malnutrition in distant countries are not generally felt as high-order priorities in the richer countries.
10. If food pressures recur and are reinforced by fuel price increases, the risks of social collapse and global instability increase to a point where they probably become the major source of international confrontations. China is particularly concerned (even slightly desperate) about resource scarcity, especially food.

11. The general public, the media, the financial markets, and governments badly underestimate these risks. Only the military of some countries, including the U.S. and the U.K., seem to appreciate them appropriately.
12. Natural gas supply increases buy some time, mainly for the U.S., but seem more likely to create complacency and continued dependence on hydrocarbons. The energy situation is less pressing globally in the short term than is the food problem. Supplies are sufficient to cause merely a slow and erratic price increase. The main problem with oil is in its contribution to the food problem through higher farming costs and generally increasing cost pressures on poorer countries.
13. In the longer term, in contrast, energy costs and absolute shortage in the case of oil form a serious problem second only to food shortages and will result in prices so high that they will impact global growth and even the viability of modern, rather fragile, economies.
14. On paper, though, the energy problem can be relatively easily addressed through very large investments in renewables and smart grids. Those countries that do this will, in several decades, eventually emerge with large advantages in lower marginal costs and in energy security. Most countries including the U.S. will not muster the political will to overcome inertia, wishful thinking, and the enormous political power of the energy interests to embark on these expensive programs. They risk being left behind in competiveness.
15. Availability of metals is, in contrast, a minor problem in the next few decades. The prices will steadily rise but the consequences will be less. In the long run though, metals are the most intractable problem. There is no brain-intensive solution as there is for agriculture (i.e., organic farming), nor is there any capital-intensive or technology-intensive solution as there is for energy. We will just slowly run out and prices will rise.
16. The results of these problems will be felt mainly as price pressure in rich countries. The need to obtain adequate resources will squeeze national budgets, profit margins, and economic growth. For poor countries, though, it is literally a matter of survival.
17. We are badly designed to deal with this problem: regrettably we are not the efficient species of investment theory, but ill-informed, manipulated, full of inertia, and corruptible. Only once in a blue moon – like World War II – do we perform anywhere near our theoretical capabilities and this time the enemy is amorphous and delivers its attack very, very slowly. But the stakes globally are very high indeed. We must try harder.
18. The following comments on this topic are mine personally and reflect my Foundation's portfolio (and a total lack of career risk!). These comments are based on a time horizon of 10 years and beyond. The portfolio investment implications are that investors should expect resource stocks – those with resources in the ground – to outperform over the next several decades as real prices of the resources rise. Farming and forestry, though, are at the top of the list. Serious long-term investors should have a very substantial overweighting in a resource package. I suggest for long-term investors a resource position of at least 30%. Another relative beneficiary of resource pressure is the quality group of equities. Resources are a smaller fraction of final sales than average and higher profit margins make them more resilient to margin pressures.
19. Perhaps more importantly, the resource squeeze, coupled with other growth-reducing factors (to be discussed next quarter), is likely to reduce the return from the balance of the portfolio.

P.S. A 24-minute video of similar material from a recent interview at University of Cambridge, Programme for Sustainability Leadership, can be accessed at www.gmo.com; however, only those qualified investors with client IDs will be able to access it.

Introduction

In the 15 months since my letter on resource shortage, "Time to Wake Up," I have tried to keep up on the current details and to catch up on the historical background since the ground-breaking "Limits to Growth" was published in 1972. Disturbingly, the more research I did the worse things looked: we indeed seem to be running out of cheap resources, and everywhere – even including China – the problem is underestimated. The consequences are that we continue to squander those lower-cost resources that remain and suffer from the large, unnecessary increase in the associated output of waste, particularly CO2 – which has already begun to have significant effects on our weather stability and, hence, our ability to grow enough food. The price of corn (maize), wheat, and soy in just the last five weeks rallied 30 to 50% to reach and exceed the 2008 crisis levels, this time despite enormously increased planting. Social reaction in poor countries will not be far behind.

The New Food Crisis

Last year's letter showed that 10 years ago we entered a new era of rising resource prices after at least 100 years of steadily falling prices. It now appears that about five years ago we also entered a period of sustained food crisis for several of the poorest countries. This situation seems likely to continue for the indefinite future. If it does, it will cause the social structure of several countries to break down, resulting in waves of immigration on a scale unknown in modern times, outside of major wars. In the drive for resources, particularly food but also energy, country relationships are also likely to be destabilized, causing risks to global security. China, more concerned with future resource security than others, will find it particularly tempting to throw its increasing economic and military weight around. This risk also seems to be ignored or underestimated by national governments, although the military arms of several, including the U.S., seem to be exceptions. Not needing to be re-elected, military leaders have far longer time horizons than other branches of government and can afford to pay attention to both the long-term consequences of resource shortages – particularly food and water – as well as the growing effects of increasing temperatures and weather instability on the long-term security and well-being of their countries.

The vulnerabilities from food pressure can be easily demonstrated and are already beginning to play out beneath our noses. In developed countries, food accounts for only 10 or 12% of our total budget. For several poorer countries though, including Egypt, food costs have risen to 40% and above of their total expenditures following the surge in global grain prices since 2002. (Wheat is the critical source of calories in Egypt and the rest of North Africa and much of their wheat is imported so they are directly exposed to global price moves.) Global grain prices almost <u>tripled</u> in the last <u>10</u> years. If they were to <u>double</u> in the next <u>20 years</u> it would be painful indeed even for rich countries, but simple arithmetic will show you how impossible the situation becomes for those poorer countries that start out with a 40% share of food in their budget. It is not even clear that the existing 40% share can be easily tolerated: grain prices are thought to have already played a substantial role in the Arab Spring, particularly in Egypt. <u>Any</u> material increases in real grain prices from here on are unlikely to be easily manageable.

Egypt heads into food trouble

Why focus on Egypt? Because it is treated as a more or less serious country by the U.S. for geopolitical reasons whereas Somalia or Sudan, for example, can be easily ignored and are. Egypt was home to three million people when Napoleon invaded in 1800. Today it crowds 84 million into the limited arable land around the River Nile! Its population age profile and its current family planning practices (which are not particularly bad, merely not particularly good) more or less guarantee that by 2050 the population will swell to a staggering 140 million! Today they feed about 55 million of their people with their own food (with the benefit of several doubts). By 2050, if they behave very sensibly and if their society stays reasonably stable, they might optimistically move this number up to 80 million. But today they already run a $25 billion trade deficit, basically importing food, critically, wheat. With their recent meetings with the IMF and a little help from their friends, no doubt they will finesse this recent year. But as the population grows so will their trade deficit. Who will pay for their increasing need for imported food as the years go by? <u>I believe the short answer is no one</u>. To survive in one piece, let alone thrive, they need <u>inspired</u> sustainable

agriculture – it is already very productive by normal standards – and a shift in their fertility rate. They do not appear to have the time to wait for the typical reduction in fertility caused by advancing wealth. In the short term the only possible ace up their sleeve may be undeveloped conventional oil and gas, which might, if developed rapidly, be used to buy them, say, a decade or two of time. If you realize that several countries are in this position and quite a few are worse off, then you realize how perilously thin the veneer of global stability is. The global food crisis is not just a prospect for the distant future, it seems to be well on its way already and better weather in the future would seem unlikely to buy it more than a year or two of reprieve. Food scarcity is the product of many sub factors, each complex issues on their own. Let's update since last year and expand a little on several of them.

Water shortages

Water constraints are worse than I thought a year ago. Squabbles or even wars over the division of rivers that flow through different countries seem more likely: Ethiopia, Sudan, and Egypt over the Nile; China and India, Pakistan, Bangladesh, Cambodia, and practically all of South East Asia over the flow of Himalayan rivers. Over pumping is also a bigger problem than I represented. About 300 million Chinese and Indians (125 and 175 million, respectively) among many others are fed through the use of declining aquifers. When entirely depleted, these perhaps then half a billion people will be thrown back onto already overstressed surface water. As with some other resource problems, there is an easy enough solution – desalination. And as with other easy solutions, it comes with a dreadful drawback – ultra high cost. (Singapore, ahead of the curve as usual, has addressed its critical water problem correctly: by pricing all of its water at the cost of the next marginal liter. Uniquely, their next liter of water is from desalination plants, so they are paying many multiples of the water price that is paid by the rest of the world, drowning as it is in subsidies. Even then, despite their Draconian policy with locally generated water, Singapore still benefits from the hugely underpriced water used to produce the majority of their food, which is imported. And Singapore is not representative of our problems with water in one very important way. They are now just about the richest people around with incomes per capita of more than $50,000 U.S.!) That changes from the old normal climate patterns exacerbate water problems seem to be revealed by the week: unpredictable monsoons (that as this year are sometimes weaker), less snow cover to run off in the spring, and unnervingly common severe droughts that we must hope are at least partly non-recurring.

Erosion

Erosion, at least, is as I thought: it can be remedied through massive adoption of no-till agriculture, but with a starting point currently at under 10% globally, can it be adopted rapidly enough (say, in 40 years) to prevent further critical loss of arable land, every inch of which will be needed? With current unchanged practices and with 1% loss of soil per year the math at least is quite simple: we run through all of our soils in 100 years and starve.

Potential fertilizer crisis and possible organic solution

The risk of phosphate and potash fertilizer running out is the one area in our report of last year that has improved. This is fortunate for you will remember, I hope, how intimidating was the story told then: potassium (potash) and phosphorus (phosphate) are necessary for the growth of all living matter; they cannot be made or substituted for and are mined and depleted. This recitation still gives me goose bumps! But the good news is that there are at least the substantial reserves we showed a year ago and it is likely that there is considerably more. Thus, even with our current prodigal ways, we have 100 years or more to see the light. More importantly there is a very good chance that existing reserves can be greatly stretched out by the adoption of organic farming, which, when done well, can reduce the need for extra doses of potash and phosphates to a very small fraction of that used in current "Big Ag." Perhaps at its very best, say at least some soil experts, organic farming could totally remove the problem. If true, this would be very good news for if current practices continue, even if it took us 200 years, we would simply run through the onshore reserves and, as with erosion, end up very badly off indeed. Although, with phosphorus and potassium at least, the very rich at that point could retrieve them from the ocean and the ocean bed. My hope – and actually my belief – is that as fertilizer prices rise in the longer term (and they could certainly fall considerably in the short term) we would

be forced to be more resourceful and open-minded about organic farming and then would never need the last resort of ocean-based recovery.

Some pros and cons of organic farming

We have talked before about the essence of organic farming. It is the nurturing of the soil's complexity in microorganisms, insect life, worms, and nutrients without the use of chemical insecticides and pesticides, which have the effect of sterilizing all of the above, leaving just dirt, which is then completely dependent on the new application of all three major fertilizers each year, especially the energy-intensive nitrogen. We have spent considerable time trying to determine the possible reduction in output in the short and intermediate term that you might get from moving to organic farming. The majority opinion (I am not arguing for this as a way of settling research issues, merely passing on facts and opinions) is that immediate output of grains and soy would be reduced by 20 to 30% by moving to fully organic farming. The higher range is applied to irrigated land and the lower range to rain-fed land because organic soil retains more moisture and holds up better as conditions get drier – a very useful trait these days. In a long-term war of attrition, though, because organic soil holds up in quality and even improves, and because it resists erosion better than standard farming, the equation shifts and in several decades may close much or all of the gap, given the starting assumptions.

But to make matters more complicated, some researchers in organic farming[3] believe that when organic farming is done well – fine-tuned by both trial and error and scientific research – it can (and has in their 20+ year tests) reach parity with current standard-practice farming. Because the use of increasingly expensive fertilizers in particular is much reduced with organic practices, such farming can be equally profitable also, even without the considerable premium now paid for the modest quantities of organic grain produced. But the key weakness in this argument is the brain intensity required of this kind of farming: it has to be fine-tuned for each crop and each type of soil and there is a skimpy body of existing knowledge, available advice, experienced practitioners, or even good training programs. To compare the best organic farming with ordinary conventional farming is obviously an unfair comparison. And how would you persuade the typical farmer, a 60-year-old, to adopt a much more complex system that is therefore riskier at least initially and harder to insure? The bad news is that to gear up for 100% organic farming is a herculean task that will take decades of effort, including government participation and considerable research. The worse news is that this is a task for which there is absolutely no alternative in the long run for the status quo will guarantee that we will run out of potash and phosphorus as mentioned earlier and eventually come to a very bad end. The good news, though, is that this vital job can without doubt be done and when done would guarantee for the first time a sustainable basis of food production.

The Moroccan quandary: a sting in the fertilizer tail

On the topic of phosphate reserves, last year I mentioned another snag with long-term availability – the extreme concentration of resources in Morocco. Follow-up research confirms that given currently known reserves, as much as 70% of all high-quality, low-cost reserves are in their hands, a number far in excess of the whole of OPEC collectively for oil. (The best dream of the Saudi oil minister is that they would be in that position rather than having so many obstreperous colleagues to deal with.) So, yes, we may have up to 200 years of phosphate reserves even if we continue in our present ultra-wasteful ways. But if we do so, Morocco, already increasingly considered to be the price setter, will have in a relatively few decades the most important quasi-monopoly in the history of man! We should at the very least be very prepared, I believe, for a steady rise in the price of phosphates, and how that will steadily shift the cost benefits toward the more frugal organic farming.

Grain productivity gains slow

A year ago I mentioned the declining rate of increases in yearly productivity per acre for grains. It had fallen from an astonishing 3.5% a year in the Green Revolution, say, 1970, to a still considerable 1.5% in 2010. This rate of increase, I pointed out, was disturbingly close to the same as the growth in global population. The good news here,

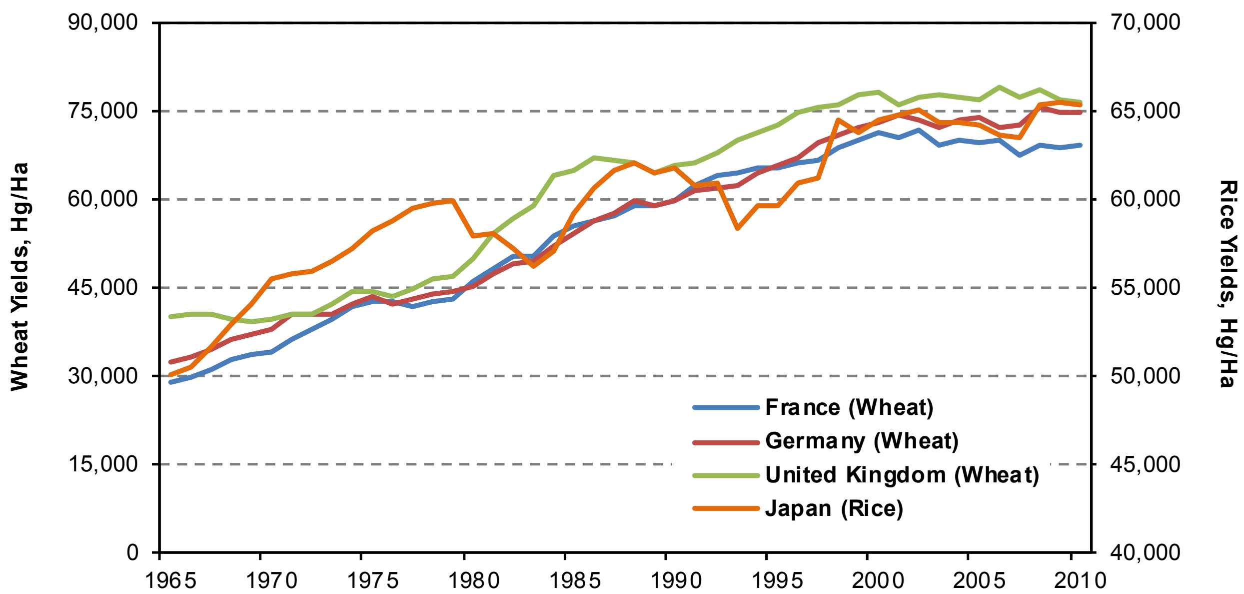
[3] Rodale Institute.

as we update, is the near certainty that population growth will continue to slow. Indeed, the number of new babies born each year has already leveled off and the global population continues to grow only because earlier cohorts of babies who are now, say, 60-year-olds, were much smaller than more recent ones. This is not because they have died off, but primarily because they had never been born. As the new, larger but now stable cohorts of babies grow old, in 80 years the population approaches a peak of 9 to 10 billion (in 2090). There is also a good probability that fertility (reproduction rate) will continue to decline beyond the current stabilization and that the number of births will start to decline (even without possible help from chronic food scarcity). And it had better do so, for currently we are well beyond the long-term carrying capacity of our planet. The bad news is first that the increases in grain productivity are also likely to decline, and second that as the very rapidly increasing middle class of the developing world continues to demand more meat – one pound of dressed beef currently replaces 30 pounds of grain! – the safety margin between potential supply and future demand would disappear. Indeed, it may have disappeared already.

Glass ceiling

In grain productivity there is an unexpected problem known as the "glass ceiling." Each species has a theoretical limit. A real life example is that of race horses, bred for over 5,000 years for speed – nothing was more macho for a chief than a fast horse! Well, horses have apparently reached a ceiling. Despite the ingenuity and expenditures of horse breeders, horses do not run measurably or dependably faster today than they did in the 1920s. They break more legs trying and they get more chemical encouragement, but they just can't run any faster. Disturbingly, there are signs that this may be happening with grains. Not surprisingly, you would look for this glass ceiling – it is called this because you can't see it coming until you get there – amongst the farmers who have the greatest output per acre. Exhibit 1 shows the yield per acre for wheat in England, France, and Germany and the yield for rice in Japan. These top-producing countries for the two most important cereals for direct human consumption have failed in the last 10 or more years to increase productivity. This puts the burden of major increased production on the poorer producers, and there is indeed on paper much more room for improvement. It is important to remember, though, that many of these under-producing acres have been suboptimal more or less forever. If it were easy to correct, it would have been corrected. Yet capitalism has some great virtues: one of them is that high price is probably the best teacher of all.

Exhibit 1
Crop Yields (5-year moving average)
Wheat – France, Germany, United Kingdom; Rice – Japan



Source: UN Food and Agriculture Organization   As of 12/31/10

Diminishing returns from increasing fertilizer use

Commercial fertilizer use has increased globally by five times since 1960 and, remarkably, by over 50 times in China! It was the major reason for the Green Revolution: first, selecting seeds that could utilize more inputs of fertilizers and turn them into more plant growth, and second, providing them with the extra fertilizer. But beyond a certain point more fertilizer does not improve returns. It does, on the other hand, do increasing environmental damage, mainly by over fertilizing waterways and helping to create dead zones near river mouths. There are still big areas, particularly in Africa, that could process more fertilizer, but in general they are already priced out of the fertilizer market. The net result is that we are deep into diminishing returns with fertilizer and can hope for only modest and decreasing help from this source in the future for increasing the productivity of grain.

The negative effect of climate change on grain production

I used to think that "climate change" was a weak, evasive version of "global warming" but not anymore, for weather extremes – drought, floods, and bursts of extreme heat – have turned out to be more devastating for food production than the steady rise in average global temperatures. Droughts and floods were off-the-scale awful three growing seasons ago, and I forecasted some improvement. But with impossibly low odds – based on the previous weather distribution pattern – severe weather events kept going for two more growing seasons. Just as with resource prices, detailed last year, when the odds get into the scores of thousands to one, it is usually because the old model is broken. So in the resource case, the old model of declining resource prices was broken and a new, very different era had begun. Similarly, the odds of three such disastrous years together are just too high to be easily believed and the much safer assumption is that the old weather model is broken and a new era of rising temperature and more severe droughts and floods is upon us. All-time heat records in cities across the world are falling like flies and the months of March through May this year were the hottest in U.S. history. As with the equally unpleasant fact of rising resource prices, this new, less desirable climate has to be accepted and adjusted to. Once again, the faster we do it, the better off we will be. Several industries like insurance are already deep into the study of the new consequences. Farming must also adjust, and not just to the rising prices. With skill, research, and, above all, trial and error, farmers will adjust the type of crop and the type of corn seed they use to the changing weather. And I have no doubt that they will mitigate some of the worst effects of increased droughts and floods. But the worst shock lies out quite far in the future: grains have developed over many thousands of years in an unusually moderate and stable climate (moderate, that is, over a scale of hundreds of thousands of years); and selective breeding of the last few hundred years also was done in that moderate environment. Grains simply do not like very high temperatures. By the end of the century, the expected rise in temperature globally is projected by the IPCC to reduce the productivity of grain in traditional areas by 20% to 40% – numbers so high that the heart sinks given the other problems. Yes, northern climates will benefit (so Canada once again looks like a good ally) but more world-class grain land will be lost than is gained. And do not for a second think that the scientists can be dismissed as exaggerators in the pay of evil foundations as right-wing think tanks would have you believe. The record so far has been one of timid underestimation. Much the majority of scientists hate being in the limelight and live in dread of the accusation of the taint of exaggeration, so severe a crime in the academic world that it is second only to faking data. What the timid scientists forget (this is all driven by career risk just as with institutional investing) is that in this unique case it is underestimating that is dangerous! To put the science clearly in the public domain – a task so far totally failed at – is left to a brave handful of scientists willing to be outspoken.

Talk privately to scientists involved in climate research and you find that they believe that almost everything is worse than they feared and accelerating dangerously. A clear example is in the melting of the Northern ice, now down in late summer by 30% from its recent 30-year average to 2005. It is at a level today (and last month was the least ice cover of any June ever) that was forecast 15 years ago for 2050! Dozens of ships last year made commercial voyages across the Northern waters where none had ever gone before 2008. A dangerously reinforcing cycle is at work: the dark ocean absorbs heat where ice reflects it, so the water warms and more ice melts. Other potentially more dangerous loops might also start: the Tundra contains vast methane reserves and methane acts like supercharged CO_2. It warms the air and more Tundra melts and so on. For agriculture, which is very sensitive indeed to temperature shifts, it has

become a very dangerous world. There is now no safety margin to absorb unexpected hits as we are seeing in the global crisis playing out in the Midwest today.

The one piece of hopeful news for food

Over millions of years, an increasing minority of grass species – now up to 43% – have made a mutating jump into much greater efficiency in processing nitrogen, water, and the sun's energy. The majority of grasses are relatively inefficient photosynthesizers and belong to the family botanists known as C3. This group unfortunately includes rice and wheat, the two most important grains for human consumption. The smaller family that has made the jump, known as C4, luckily includes corn (maize) and sugar cane. Among other things, this means that under their present genetic circumstances, however hard you try to grow wheat and rice you will never get more than about half of the output of corn.

Up until now, genetic engineering of grains has shown little or no increases in actual yield, despite success in changing other seed characteristics. Nevertheless the "Holy Grail" of seed engineering, according to the Millennium Seed Bank of Kew Gardens, is to engineer efficient C4 genes into inefficient C3 grasses. This, it is thought, could increase productivity of wheat and other C3 plants by up to 50%! The work is apparently going well and has been described as "simply engineering" by involved scientists, without, I hope, too much hubris. They believe it will be done in less than 20 years. Even if it is done in 30 or 40 years, it would be that rare bird – a game changer. Hundreds of millions more could be fed, buying time for a more graceful population decline than is currently likely.

Food prospects for 2050

The literature on this topic agrees that a very large increase in global food production is "needed" by 2050. The two most commonly used numbers in the last several years (almost clichés) are that we either need to double food production or to increase it by 70% by 2050 to keep up with expected demand. Recently, U.N. sources have estimated that we are likely to be able to increase food supply by 60%.

Given the long litany of farming problems, it will come as no surprise that I believe that even the lower U.N. forecast is highly unlikely to be met and that the higher numbers are complete pie in the sky. Yes, a 60% increase is necessary to meet the realistically forecast 30% increase in population to 9 billion+ together with the anticipated increase in meat consumption. But given all of the difficulties already described, it is just not going to happen, at least on any sustained basis. (I know statements like this love to come back and haunt people but on this one I look forward to an unhaunted life, and afterlife, for that matter.) The increasing demand from a growing population will be there in 2050, although it is far from certain that it will be the full 9 billion+ if some large poorer countries begin to unravel. But this is where Mr. Market intrudes: long before an extra 60% in food supply is reached, rising prices will have made food too expensive for hundreds of millions. To balance the books, a series of serious (but still doable) steps must occur. First, the entire world must consume less meat than is assumed in the estimate of a doubling. Sensible governments will encourage it: poor countries to reduce increasingly expensive grain and soy imports and rich countries to contain the epidemic of obesity that is sweeping outwards from the U.S. and threatening the long-term health costs of each country that catches it. (If any issue needs a "nanny state" feature this is it!) With an aging population, a wave of extra health costs would be likely to break several national budgets. Second, food wastage runs – from farm to stomachs – at a shocking one-third globally. (Some sources claim the number is considerably higher.) This waste must be much reduced if we mean to have any chance at all of muddling through to 2050. Third, major food-producing countries will have to be more serious about investing more in sustainable production with increased investments in irrigation, farm education, and research. Taking serious steps to lower the longer-term costs of fuel and, of course, protecting against continued deterioration in the climate will also be vital. But the main contributor to reducing the food imbalance between supply and demand is once again likely to be price: more of the poor will eat less and some, regrettably, will eat nothing.

To deal with food and other resource problems, developed countries could respond early and decisively to economize on use and improve efficiency. There will no doubt be a little of this, but the price signal is still quite faint for

the affluent countries. We have enormous inertia. We are in general badly led on this issue – only Scandinavian countries and China might get even a passing grade. And we in the U.S. are constantly told that all will be just fine. So our collective under-response to these developing problems will cause unnecessarily sharp rises in the prices of resources, particularly food. Unintentionally, but thoughtlessly, we will cause and already are causing, unnecessary malnourishment and starvation in the poorer countries, which is only bound to get worse.

Of course they – the poorer countries – should respond with much increased urgency. Population growth in particular could be more actively discouraged. Educating women and making family planning available have worked well in some countries. Yet there are still 80 million unwanted conceptions a year, often in those very countries whose food future is most perilous. But will many of these countries respond vigorously within the time scale of the problem? As food and energy conditions worsen, they seriously weaken the remainder of the economy and the ability of government and society to respond. Finally, as states fail, they lose all hope for determined action.

Fortress North America

For Fortress North America (ex-Mexico), or what we might call Canamerica, these problems are relatively remote. When corn crops fail we worry about farmers' income, not about starvation. In the long run, the truth is that Canamerica seen as a unit is in an almost unimaginably superior position to the average of the rest of our planet. Per capita, the U.S. alone has five times the surface water and seven times the arable land of China! And Canada has even more. We are very large exporters of food. Canada, our very, very good friends (please!) has huge deposits of potash and the U.S. has a respectable amount of phosphate, although that probably is our weakest link. (Ironically, perhaps, we have been exporting this relatively limited resource as fast as foreigners demand it and the second largest mine just closed in Florida, reserves exhausted, the month before last.) It is hard when dealing with this kind of problem, which is a tragedy of the global commons if you will, to get the winners to worry too much about the losers. And we, the rich countries, do not worry and probably will not as far as the eye can see, for such a broad recognition of the problem would require a profound cultural and ethical change. A perfect symbol of our carefree and careless attitude is in our policy toward corn-based ethanol. It is an indirect, back-door subsidy (disguised as a mandated requirement) for farmers who today, with much higher crop prices, are already relatively well-off compared to normal. Despite corn being almost ludicrously inefficient as an ethanol input compared to sugar cane and scores of other plants, 40% of our corn crop – the most important one for global exports – is diverted away from food uses. If one single tankful of pure ethanol were put into an SUV (yes, I know it's a mix in the U.S., but humor me) it displaces enough food calories to feed one Indian farmer for one year! To persist in such folly if malnutrition increases, as I think it will, would be, to be polite, ungenerous: it pushes the price of corn away from affordability in poorer countries and, through substitution, it raises all grain prices. (The global corn and wheat prices have jumped over 40% in just two months.) Our ethanol policy is becoming the moral equivalent of shooting some poor Indian farmers. Death just comes more slowly and painfully.

Once again, why single out Indian farmers? Because it was reported last month in Bloomberg that the caloric intake of the average Indian farmer had dropped from a high of 2,266 a day in 1973 to 2,020 last year according to their National Sample Survey Office. And for city dwellers the average had dropped from approximately 2,100 to 1,900. It was also reported[4] that per capita consumption of food grains had fallen from 177kg in the early 1990s to 153kg in 2004 (about 1934 levels!). These are not drops you would want to repeat in the next 30 years if you wanted a good day's work! And, perversely, these declines occurred while the official average income of urban dwellers more than doubled. Apparently a free hut in the country became an expensive hut in town for the migrant. Now he has to pay for cooking fuel and transportation to work. And he has to buy food, expensively shipped in from the country, with incredible "only in India" quantities of wastage, and too many middle men and, bingo, he is twice as rich as measured by GDP but cannot afford to buy sufficient food. Even more shocking, over 40% of India's children under the age of three are undernourished and underweight, a ratio worse than most even poorer African countries. This is a number that threatens India's future. And meanwhile there is an amazing increase in new Indian millionaires. Well, good for

[4] Utsa Patnaik of Jawaharlal Nehru University.

them. But a little more food for the poor, and a lot less waste and food theft and outright corruption would be a good idea. The point of this story, though, is to reinforce a point: this crisis is playing out now!

Metal

To move on (at long last, I can hear you say) in our update to metals, the story is not really as serious in the near term, where price declines are more likely than rises because of growing weakness in the global economy. Nor is it as bad in the 20- to 40-year horizon as food or energy for there are quite a lot of reserves (let's say about 50-100 years) and there is substantial ability to substitute. Again it is "just a question of price" as economists like to say about everything. High-quality resources are depleted and prices rise, but in my opinion not enough to materially affect economic growth as it does with energy and food, but it is certainly a modest hindrance to growth and one that is an add-on to the other two more immediate constraints.

The big problem with metals, though, comes in the long term and the very long term where metal availability becomes the most intractable problem of all. For entropy in metals is merciless. However hard we try to recycle and however low our growth in physical output, metals will still slip slowly through our fingers. They are never replaced. Metals prices will rise slowly if we behave very well. If we behave less than well, which seems much more likely, then metal prices will rise more quickly. Until one day, the price pressure will insist we behave better, recycling close to 100% and raiding those rich 20th century dumps.

Energy

Massive capital spending for alternatives

Energy shortages are the easiest to handle of our resource problems. At least on paper. All it takes is real leadership from our leaders; common sense from the general public; a willingness of hydrocarbon interests to back off from politics and propaganda and a herd of flying pigs! We need to build a very large, very smart grid, covering the whole of the U.S. and one day perhaps including Canada. Among many tricks, it needs to be able to reach into smart homes and turn off the refrigerators and so on for a few minutes when needed. It is, in fact, all state–of-the-art already and in the 10 or 20 years it would take to build, the technology and engineering would no doubt greatly improve, given the great scale, helping to drive down the cost. Behind the grid we would need a truly massive investment in storage technologies and all renewables, especially solar and wind power. Solar costs have unexpectedly crashed in the last three years, down by over two-thirds, and finally today, in ideal conditions (even without coal carrying its full environmental costs), solar is competitive. In a happy variant of Moore's Law, solar costs, driven by scale and engineering as much as new technology, will continue rapidly downwards. (Although there is of course a physical limit to how much energy can be extracted from sunlight and the good/bad news here is that we should be close to it in 30 years or so, there is no such limit on price reductions.) Wind power costs will also fall, if substantially less fast, and it too is already competitive in very good conditions. In contrast, the costs of hydrocarbon energy of all kinds will implacably, if erratically, rise. To carry out such a program even in crash mode (son of Manhattan project, if you will, but actually cheaper as a percentage of our current GDP than that remarkable effort) would take 20 or 30 years, but long before then the marginal costs of operating and maintaining such a system would cross the rising costs of our current system as cheap hydrocarbons steadily disappear. By 2050, cheap hydrocarbon sources will be a distant memory. Electric grids based solely on hydrocarbons would by then, after desperate struggles and brownouts, likely have turned totally black and economies based on such grids would be under very severe stress. If I'm wrong in this assertion for some countries, simply add 10 or 20 years onto the timeframe.

The U.S., as in so many aspects of the resource problem, is relatively blessed in energy resources. The new reserves of natural gas and extra oil from new drilling technology will uniquely allow this country to improve its energy position. The worm in the apple is that it will also allow for complacency. In this we will be encouraged as always by the Cornucopians, telling us we will never need to worry about running out of gas or anything else. It is easy to imagine that this would leave us sticking loyally to depleting hydrocarbons while Germany and others, possibly including

China, forge ahead with renewables until they dominate these new, relatively job-intensive industries and eventually end up with much lower marginal costs. Their advantage would steadily increase as renewables fall in price and those for hydrocarbons rise. Still, with the new fracking reserves it will be exciting for a few years to have some very cheap energy, and it will surely stimulate the U.S. economy in the range of 0.25 to 0.50% a year of GDP for several years. In the longer run, though, it is ridiculous to underprice natural gas, a premium, irreplaceable fuel, just because of odd royalty arrangements. The major disadvantage of all of these extra reserves, though, is that they will give us more rope with which to hang ourselves by frying the planet. (Recent estimates by Cornell University,[5] which are preliminary and therefore, I hope, mis-measured, estimate that almost 8% of fracking gas leaks from drill to stove burner. Anything more than 4% (and it may be as little as 3%) makes natural gas even more dangerous to a warming planet than coal. Methane (which is what natural gas is) is 20 to 100 times worse than CO2 in its greenhouse effect. Depending on the time horizon, it is up to 100 times worse in the very near term, declining to 20 to 1 times worse over 100 years or so. Unlike other environmentalists, I worry less about other of the several negative effects of fracking: boiling the planet makes other negatives seem to me relatively inconsequential.

China's unique opportunity in energy

Time out here to take a look at China on this point. China has been in a class of its own in taking seriously this topic of future availability of resources. It has a long Confucian tradition of thinking very long term and its politicians do not have to worry about being re-elected or about voters and funders as much as ours do. It has also shown a degree of entirely justifiable panic on this resource issue as reflected in massive agricultural land deals outside of China and in a willingness to acquire foreign-based mineral resources. My colleagues worry that the Chinese save and invest too much, approximately half of all their income, a level never before reached in history. One of the reasons for so high a level is that in their attempts to stimulate their economy, notably after the global financial crisis, they found giant infrastructure-based public spending to be the most scalable and manageable. My colleagues also worry about the capital inefficiency in China: too many roads and fast rail lines and completely unnecessary regional airports and too many empty middle class apartments and even empty cities. (For my money, though, this still compares favorably to using public funds to bail out the banking system's errors and even protecting bonuses! But, I digress.) But for undertaking a completely renewable energy system, what a set-up! If the Chinese feel they must maintain a 50% capital spending ratio (or at least come down gracefully to avoid an outright depression), there are few projects big enough to both absorb the giant quantities of money available and have a good return on investment at the societal level in the long term. Building a renewable energy system achieves both aims. As a first mover they would quickly be able to build fewer coal utilities and, eventually, none. In 30 or 40 years they could phase out the last of them and stop slowly poisoning their urban residents while at the same time helping to stop slowly cooking the Earth. (Perhaps, though, the last coal plants could be kept in carbon capture and recycling mode – in which field they are undertaking today the first semi large-scale test in the world – for such plants would make load balancing that much easier by providing some base load to smooth out the variability of wind and solar.)

The Chinese are already becoming leaders in wind and solar power construction and research. At much higher scale, their cost advantages would be hard to match, and if a renewable energy system were to be completed, their biggest long-term worry of all – energy security – would be gone. Compare their problem – "How do we spend all of our money?" – with ours – "How do we pay back all of our debts?" – and you can see why our hurdles are so much higher. It will, in comparison, need much more heroic leadership from us and plenty of those flying pigs. In the meantime, a major Chinese effort would be both a great example and a commercial goad to encourage others to follow. Go China!

The need for research

As renewable projects for solar and wind go forward they should be accompanied by research and financial encouragement for other promising renewables. This would include converting algae and other vegetal matter into liquid fuels, perhaps research into Thorium-based nuclear, and possibly even fusion, for which the risks (of eventual failure) are high, but so are the returns – almost infinite supplies of incremental energy. (It is probably worth

[5] Professor Robert Howarth, "Climate Change Letters" (105:5), May 2012.

mentioning here that, courtesy of the second law of thermodynamics, you cannot indefinitely heat up the world. All heat must be dissipated through infrared radiation. This is why cities with more waste heat are warmer than the countryside. Given energy growth of just 2.3% a year, for 400 years, even if the supply is 100% renewable or fusion [to remove the need to consider the greenhouse effect], the planet's temperature would reach boiling point and only a few recently discovered organisms would be left. In this world, where hydrocarbons are still burned and where facts rather than opinions hold – although sometimes you would never know – the greenhouse effect in the next 100 years is likely to be 300 times the thermodynamic effect.) But perhaps the greatest need for research is in power storage, which will become by far the weakest economic link in the desired renewable energy system. There are almost weekly announcements of new, ingenious approaches, but they seem always to be just around the corner. This would be a good area to have some of that "infinite capacity of the human brain" one hears so much about from the perma-optimists, and for once even I, a cheerful realist (which is no mean feat!), believe there will indeed be, eventually, some real breakthrough, at least in cost if not heavy science. It would certainly be helpful.

The need for a serious effort now

In earlier pieces I tried to convey the sheer impossibility of any perpetual rate of steady growth in people or physical output: 1% compounded for 3000 years, I noted, would multiply people or possessions by seven trillion times the original number. But for those with shorter horizons, the thermodynamic effect on its own, as we've seen, puts a quite separate ceiling of a mere 400 years' growth in energy use at a modest 2.3% growth a year. Throw in climate change effects and our species would be toast long before 400 years would pass if present trends continue. We simply cannot have exponential growth on a finite planet, but no politicians (understandably) and almost no economists (almost unbelievably) will deal with this topic. The longer we delay in facing up to resource shortage, especially the need to go to renewables, the more severe the problem becomes. For example, by the time hydrocarbon prices go "critical," some countries may not have the capability – political, social, or economic – to meet the substantial investments required and they will be left more or less permanently floundering behind. In the late 1930s, Churchill faced intractable unwillingness to deal with unpleasant news – German rearmament and hostile intentions – on the part of both politicians and the general public. Finally, as the problem became obvious even to the most block-headed, he could not resist a little "I told you so." He said, "The era of procrastination, of half measures … of delays is coming to its close … In its place we are entering a period of consequences." This time we can already see the early consequences but we still delay.

But we still delay…

The reasons for delay and even denial are varied. In the U.S., some politicians are understandably desperate to protect jobs, in the short term, in their state. In return for so doing, some receive help from hydrocarbon interests in getting re-elected. They, the hydrocarbon companies, are in turn protecting the value of their huge current and future reserves in the ground, which often represent all of their market value. They also presumably feel that they are acting in their shareholders' interest, which interest is interpreted in the currently fashionable and extremely narrow sense of maximizing intermediate-term profits. Other possible stakeholders, including the country of origin and the well-being of its current and future citizens, typically play no role at all. Some delayers are libertarians who just hate government intervention regardless of the facts or circumstances. But far, far more numerous are the ordinary people who would just dearly love for everything to work out well and the future to be as easy as it used to be in the good old days. But thinking and hoping will not make it so, and delay and denial are dangerous, even potentially lethal, games to be playing.

Finally, who are we?

This brings me to my final point on our food and resource problems: all of our resource problems (and most of all of our other problems for that matter) are soluble if we rise to the occasion and use all of the abilities that, on paper, we have. Most of the more optimistic calculations and estimates that I see are based on the assumption that we will do just that, that we are homo economicus (just as in investing): rational, smart, well informed, well-intentioned,

and incorruptible. Well, it just ain't so. We are badly informed, passionately prefer good news, and easily evade unpleasant facts; our views are easily manipulated by vested interests; we are sometimes desperately inefficient; and we are apparently corruptible as heck. It is on this assumption of ordinary, unenlightened humans that our global food outlook and, in consequence, our future political instability, looks so dangerous.

But once in a blue moon we really do rise to the occasion. The last time was World War II in general and The Manhattan Project in particular. Of course, we were a much more cohesive society then and we had a Congress much more willing to compromise. We also had a clear and immediate enemy who brilliantly (for us) galvanized and united the country by a sneak attack. But, all in all, what a magnificent effort and what a rebuttal to those today who think no government can ever do anything right. If that were indeed true, the war would have been lost and the world would have become a very different place. The threat today, though, is more technical and very much slower burning and the enemy seems amorphous. On the other hand, the penalties this time will be even greater and for the whole planet if we collectively do not start to act soon. It is time for another blue moon. Go world!

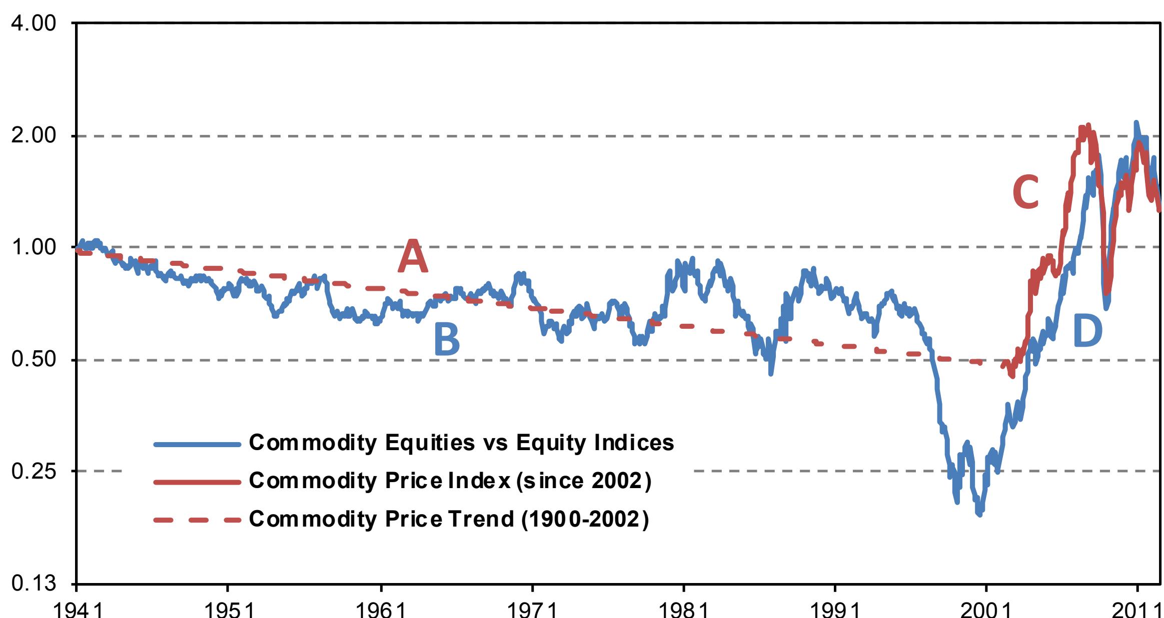
Updated Investment Implications of Resource Limitations

The one-line summary is this: I am very bearish on the problems we humans face and, sadly, very bullish on resources. Not surprising, I am even more convinced than I was a year ago of the inevitability of rising resource prices (and, unfortunately, associated societal and international instability). Therefore I am more confident in my suggested investment battle plan of a year ago. For any responsible investment group with a 10-year horizon or longer, one should move steadily to adopt a major holding of resource-related investments. For my Foundation (i.e., personally as opposed to institutionally where, reasonably enough, we cannot impose 10-year plus horizons on our clients) I had adopted 30% in resources as my eventual target and was slowly averaging in, nervous of near-term substantial price declines, but even more nervous of completely missing my own point. In my Foundation, I have currently reached about the two-thirds point of 20%.

My personal, somewhat arbitrary breakdown of a targeted 30% is to have 15% in forestry and farms, 10% in "stuff in the ground," and 5% in resource efficiency plays. I will change the mix as I become more comfortable with some of the subsets or as I see exceptional opportunities. I do, though, see farms and forestry as the senior or preferred component, if you will, for the longer term: mining and oil companies benefit a lot from rising prices, but they suffer from the need, as capitalist enterprises, to keep replacing their stock in trade every year and this slowly becomes impossible to do completely. Farms, however, also benefit from rising commodity prices but for them their "stuff in the ground" is soil, which, if well managed, has fully renewed growing capacity each year, usually even with a modestly rising trend. There is one component of the potential "stuff in the ground" sub portfolio, though, to which I would give a miss: coal and tar sands. This is not primarily because their incredible cost to the environment hurts my conscience; it is because, in my opinion, the odds will steadily grow as climate damage becomes increasingly apparent, that their use will be curtailed.

Before I leave this topic I would like to throw in a tidbit concerning the strong relationship between real price increases in stuff in the ground and the relative outperformance of those companies that own the reserves. Imagine in Exhibit 2 that I am clicking through on PowerPoint: Click one "A" would show the steady decline in raw material prices to 2002. Click two "B" would show the accompanying steady, very long-term underperformance of mining stocks in that previous environment: every year they took inventory markdowns and every year the value of their main asset lost value, a tough environment in which to prosper. Click three "C" would show the dramatic breakout of resource prices after 2002, and the final click "D" would show the equally dramatic outperformance of the miners. This relationship is a remarkable .52. For other resources it is typically lower – around .3. This is because raw material price rises can help and hurt different parts of a diversified company. Large oil companies, for example, are both sellers of oil and buyers in their capital-intensive refineries, which mutes the direct relationship with oil price changes. In general, though, I think you can confidently expect that if resource prices steadily rise in real terms, then resource stocks should outperform the market.

Exhibit 2
Commodity Equity Performance vs Equity Indices and Metals Commodity Price Index
Commodity Equity Performance vs Indices is for U.S., U.K., Canada



Source: Global Financial Data, GMO As of 6/30/12

Last year I warned of what I saw as a strong possibility of a decline in resource prices. The bad weather – perhaps a 1-in-150-year global event in 2010 – would surely get less bad, I argued, and China looked likely to stumble or at least slow down. Some outright momentum speculation had also been attracted by the rapid and large price recoveries from the lows of 2009. I have been persuaded since then that there was likely some deliberate "go slow" on the part of miners to complete capacity and infrastructure extensions – with the prices so high, who could blame them? – and perhaps some genuine oligopolistic, cartel-like behavior, probably of a just legal variety to keep prices up. Yet at bedrock (pardon the expression) the data allowed for certainty that the main input was a paradigm shift, or phase change, caused by a profound shift in balance between current and potential demand and long-term potential supply: i.e., we are indeed rapidly running out of cheap resources. Today, though, extra metal production is finally coming on line and the boom in new fracking gas and oil production (and reserves) mainly in the U.S. continues. On the demand side, global economic growth, especially in China and Europe, is slowing. As a result prices have fallen by about 25% to 35% from their peaks for most "stuff in the ground" and, with the weather less bad, have also fallen by a similar average amount for agricultural products up to the beginning of June.

Climate problems intrude

Well, a month is a long time in agriculture, particularly these days apparently. For starting in early June there came yet another burst of anomalous global weather. The center of this season's problem is as it was last year: the U.S. Midwest coupled with dry weather around the Northern Hemisphere's wheat belt. Suffering intense drought and 90- to 100-degree searing heat, the U.S. corn crop, the world's largest, has been damaged and the price has jumped an astonishing 50% in a month. A similar story exists for soy beans. In almost no time, two of the three most important crops have gone back to the highs of 2008, which were often described as "never to be seen again." Wheat also is within striking distance of its 2008 high and up over 40% in the last six weeks.

Let's discuss what this means. It is not at all like 2008, when the planted crops were not that exceptionally large. However, since the massive rise of price in 2008 and the unexpected rebound in 2011 from the effects of the crash, unprecedented total acreage has been planted to take advantage of the much higher prices. There was also a strong

case back in 2008 that there was an unprecedented speculative momentum element attracted by prices doubling in a single year. This time, though, just plain awful bad weather blindsided the market despite the massive planting. And as for speculation, just a brief six weeks ago speculators were short grains! World demand is now just so high and growing so fast and reserves so modest that the slack in the system appears to have completely gone and vulnerability to bad weather like this year's has increased enormously.

And let's talk about the weather, for it is indeed beginning to have investment implications that might be expensive to ignore. Globally, 2010 looked to me like a 1-in-150-year event with heroic heat in Russia and elsewhere and biblical floods in Pakistan and Australia. It really hurt global grain output. I suggested then that surely the following season had to be at least less bad, and what did we get? Thailand, the largest rice exporter was knee-deep in floods over half the country, 80-year floods occurred in the Mississippi, Texas sweltered in way-above record heat, and quite severe droughts gripped many other places. Perhaps in total a 1-in-50-year event globally. So, after all, perhaps I was right; it was "less bad" but hardly what I meant. And now, quite suddenly, even while I was thinking about this letter, 1-in-50-year drought and heat have hit our major growing areas. So let's call this a 1-in-20-year globally, for Brazil, Argentina, Russia, and several other areas are also having unusually bad weather. Any statistician starts to get jumpy when looking at 1-in-150, 1-in-50, and 1-in-20 back to back. Long-term weather records are poor and a lot of this is judgmental, but this three-year stretch is, shall we say, very unusual. (The National Oceanic and Atmospheric Administration has said that the chance that this year's heat in the Midwest was not affected by a warming climate was over 1 in 1 million. Other sources have used much punier odds, such as 1 in 100,000. I will settle for "very unusual.") We really have to start factoring into the investment equation increased odds of difficult and volatile growing weather.

Possible price declines and regret minimizing

Moving back to the portfolio, there is probably a risk of another 20% or so relative underperformance in the miners and oil companies (as the new supplies of U.S. oil and gas continue to expand) and as China has gone from our "likely to slow" a year ago to definitely slowing, and the euro and fiscal cliff in the U.S. are enough to make even seasoned cool-cat investors jumpy. (And downside results have a disturbing habit of being twice what you counted on.) Grain prices, having bounced once again, are very vulnerable and land prices typically need a couple of bad grain years in a row to have the effect pass through to them. So farm prices have stayed resolutely high, which for potential buyers is both frustrating and dangerous. Farm buyers are forced to look globally – although I advise safe and friendly countries only – and hunt for bargains and special cases. Fortunately, though, farms form a very inefficient market and there are always relative bargains to be had somewhere.

Resource problems are likely to squeeze the balance of the portfolio

So my regret-minimizing advice still holds: average slowly in over the next one, two, or three years depending on developments. But something important in the picture has changed. Not only am I more convinced than a year ago that sensible long-term investors' 7- to 10-year horizons should overweight resources (30% is about two times market weight), but I am now also convinced that rising resource prices will worsen the prospects for the balance of the portfolio, by both squeezing profit margins and reducing overall growth.

If correct, this will have serious implications for longer-term endowment and pension fund returns: among other factors, a lower growth for GDP in the long term may mean lower returns on all capital. That question, along with a discussion of overall GDP growth and why I think it is likely to be lower in the future than generally expected, will be discussed next quarter. In the meantime, it may be worth asking which kind of company will better resist lower GDP growth, especially in the developed world, and be better able to absorb pressure from higher resource prices. Once again, we prefer "quality" stocks. They have much lower resource costs as a percentage of total revenues than typical companies and they have a higher margin base from which to resist margin pressure.

"Groundhog Day"

The economic environment seems to be stuck in a rather unpleasant perpetual loop. Greece is always about to default; the latest bailout is always about to save the day and yet never seems to; China is always about to collapse but instead teases us by inching down; and I swear the *Financial Times* is beginning to recycle its reports! In the U.S., the fiscal cliff looms along with debt limits and the usual election uncertainties. The dysfunctional U.S. Congress continues for the time being in its intractable ways. The stock market rises and falls and rises and falls again. It is getting difficult to find anything new to say at client meetings. I, for one, wish that the world would get on with whatever is coming next.

One slight change, though, is that fantastic (almost unbelievable) profit margin and earnings gains have finally weakened a little. They, together with Bernanke's super low rates, have been the twin pillars of the market and not bad ones at all: here we are up 8% for the year in a thoroughly unsettling financial and economic world. With margins weakening, one of the twin pillars is looking shaky and price declines look more likely than before.

Ben Inker's investment comments are attached.

Performance data quoted represents past performance and is not predictive of future performance. Returns are presented after the deduction of management fees and incentive fees if applicable. Net returns include transaction costs, commissions and withholding taxes on foreign income and capital gains and include the reinvestment of dividends and other income, as applicable. A GIPS compliant presentation of composite performance has preceded this presentation in the past 12 months or accompanies this presentation, and is also available at www.gmo.com. Actual fees are disclosed in Part II of GMO's Form ADV and are also available in each strategy's compliant presentation. The performance information for the Global Balanced Asset Allocation Strategy is supplemental to the GIPS compliant presentation that was made available on GMO's website in April of 2011.

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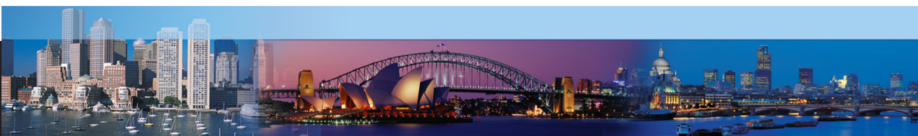
COMMENTARY



July 2012

When Bad Things Happen to Cheap Assets

Ben Inker

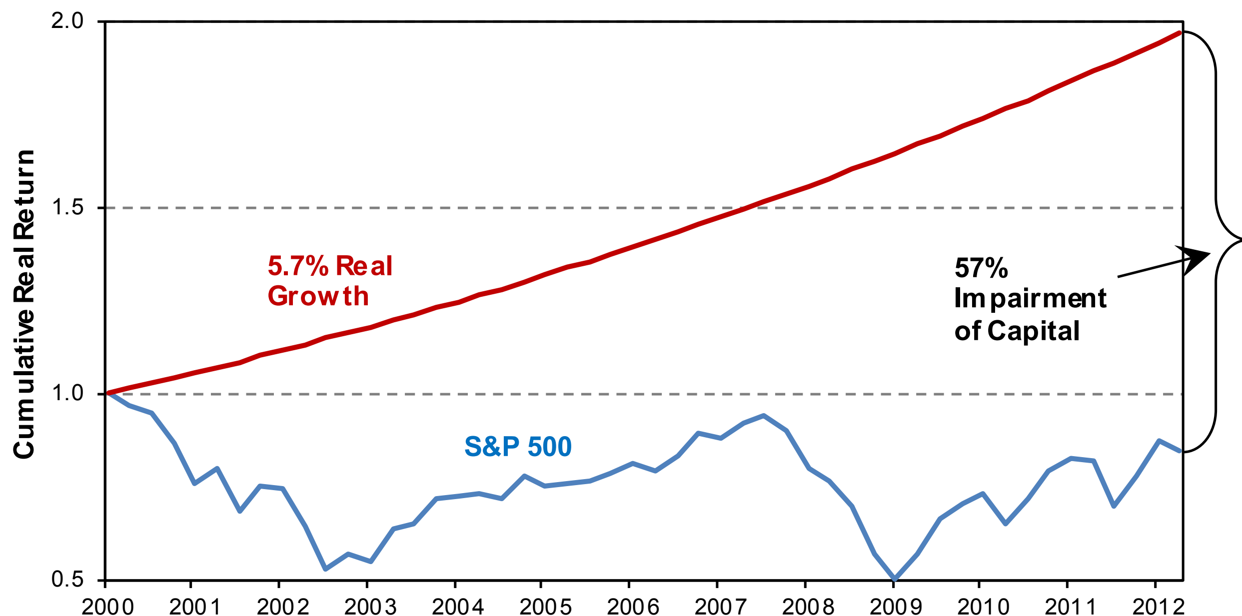
We are value managers. We view it as our job to buy assets when we believe they are cheap. The standard reason value managers give for buying cheap is that cheap assets outperform. We've gone farther than merely saying that. We have claimed that cheap assets not only perform better on average but also have lower risk where risk is considered as the likelihood and size of a permanent impairment of capital. History seems to be supportive of our claim, but the question is how much comfort can we take in this tendency? Or to put it another way, how concerned do we have to be about the potential of bad things happening to cheap assets?

If anyone had ever had a doubt about the potential for expensive assets to inflict a permanent impairment of capital, we hope that the experience of the last dozen years has disabused them of that notion. From March 2000 to June 2012, the S&P 500 lost 15% in real terms. But declaring that to be the permanent impairment of capital from the overvaluation is a significant understatement. Believers in stocks for the long run who invested in March 2000 were not expecting to get their money back in real terms after 12 years in the stock market; they were expecting to get the long-term average return of 7% real per year. The 7% real figure was flattered by the fact that the market had ended at a much higher valuation than it started at in 1900, or 1926, or 1945, or 1970, or quite frankly any starting point in history you wanted to pick. But if we took 5-6% real to be the fair return to owning equities, investors would have expected to earn between 85% and 110% over the period, making the permanent impairment of capital from investing in the overvalued S&P 500 somewhere in the 55-60% range, which can perhaps be more easily seen in Exhibit 1. I'm doing a bit of hand waving in declaring that to be "permanent," but given that we believe that the S&P 500 is still substantially overvalued today, I'd trade off the possibility that the S&P 500 makes a stunning run higher that mitigates the loss against the possibility that we are not yet done with the totality of this impairment.

The losses from 2007-09 were also generally a case of bad things happening to expensive assets. While plenty of assets wound up cheap relative to fair value by the bottom, by and large the places where one is still nursing impairment to capital are those places where the assets came into the period trading well above their historical valuation levels. I say "by and large" here because there are two potential exceptions to the idea that the losses were simply due to expensive assets falling back to fair value.

One exception is banks, which since the market high in 2007 have fallen about 60% in real terms in both U.S. and EAFE markets. Banks are an odd case with regard to capital impairment. First, they are highly levered entities where small changes to assets or liabilities can lead to large changes to equity values. Second, they were large holders of a number of the overpriced assets in 2007, principally corporate debt and mortgages, which is not a problem faced by non-financial companies. And third, due to their leverage, there is a very dangerous feedback loop that can arise when they take losses. Those losses force them to raise equity capital, and if the losses are big, investors will punish them by pushing their valuation below book value. Recapitalizing a levered entity below book value tends to be quite dilutive to shareholders, and this dilution is a permanent impairment of capital. So if you have a bunch of highly

Exhibit 1
Impairment of Capital for S&P 500 since 2000



Source: S&P, BLS As of 6/30/2012

levered entities that are bound to give you a permanent impairment of capital in the event that they take large losses on their assets, and they are holding assets that are substantially overvalued, there may not actually be a valuation level at which you can call them "cheap." Once they have taken their losses it is a different matter, and it is possible that the financials are cheap today. For our part, we are still somewhat leery of them since it is not entirely clear what other dangers still lurk on their balance sheets.[1]

The other possible exception is eurozone equities. They have fallen less than the banks – the eurozone ex-financials is down a "mere" 33% from its high in real euro terms. As of October 2007, our forecast suggested that EAFE ex-Japan needed to fall 33% to hit fair value. Assuming the eurozone was priced similarly to the rest of the non-U.S. markets at the time, that suggests that if the markets were at fair value today and there was no impairment of capital, it should have lost 13% (a 33% hit to valuations, but 4.7 years of dividends and real sales growth should have dampened the pain by now). So, is the eurozone cheap, or has it suffered some permanent impairment of capital? We believe it is a combination of both. If we look at the valuation of the eurozone on our 7-year forecasting framework, we see it as having an expected return of around 7.5-8% real, which suggests it is currently about 15% cheaper than fair value. Why is it not cheaper, given that the eurozone would have to rise 30% from here to get to a total loss of 13%? A piece of this is due to the fact that we use slightly tougher assumptions than we did when markets were very overvalued in 2007. That explains about 6% of the discrepancy. The rest, which is about 8% as can be seen in Exhibit 2, is due to our estimated impairment of capital to date for eurozone stocks.

An 8% impairment is actually a pretty big number when one considers that the Great Depression in the U.S. seems to have caused about only four points of impairment, due to lower than equilibrium dividends paid in the 1930s.[2]

But impairment up until today is only part of the story. We also need to ask the question of what impairment there may be going forward. Are eurozone stocks actually 14% cheap today, or is the market correctly estimating that the ongoing crisis will knock another chunk out of their long-term value? In an attempt to answer that question, Anthony Hene of our Global Quantitative Equity group has led an effort into scenario analysis for the eurozone,

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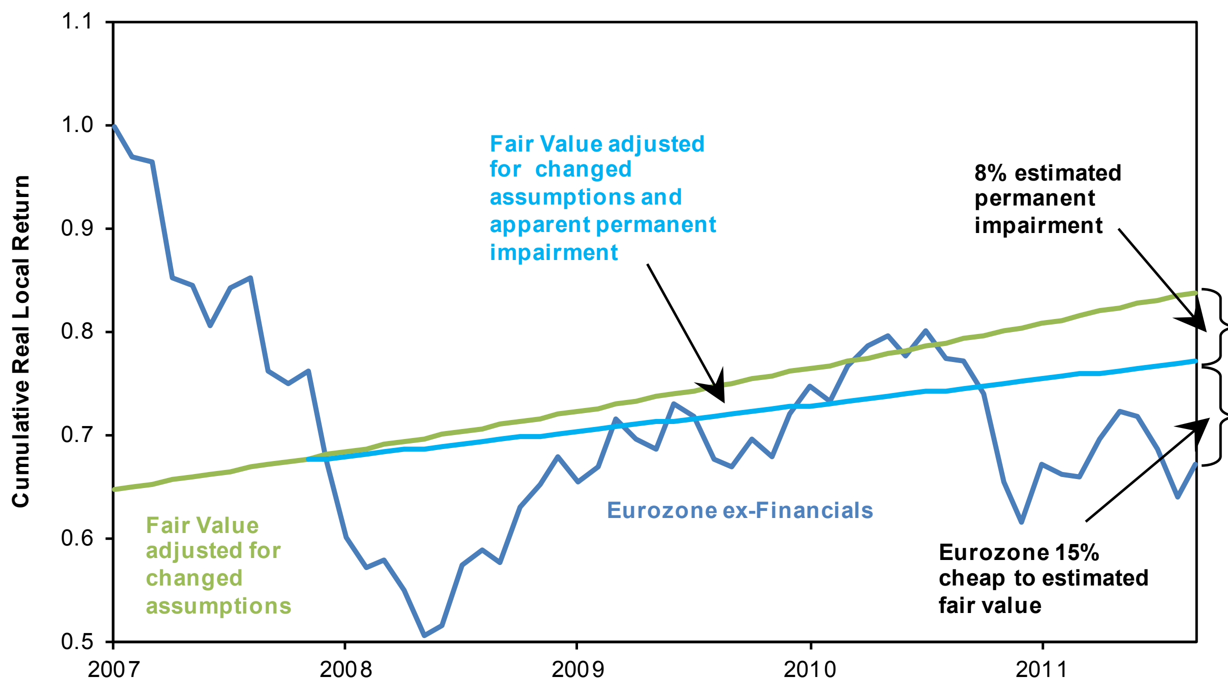
1 Not to mention the potential for further fines and litigation losses driven by shady practices before, during, and after the crisis.

2 Based on lower dividends relative to trend from 1931-41, the loss was 4%. As it turns out, this loss was more than compensated for by the fact that the market was quite cheap for most of that period and therefore your smaller than expected dollar dividends actually bought a larger than expected quantity of stocks, helping compound out greater returns.

Exhibit 2
Impairment of Capital for Eurozone ex-Financials since 2007



Source: GMO, MSCI, Eurostat As of 6/30/2012

looking at the potential impact of falling EBITDA, covenant breaches, and subsequent forced recapitalizations under various scenarios for the eurozone. While this analysis does not pretend to be definitive, it suggests the potential for a further 10-15% impairment in the event of large-scale government defaults or a euro breakup scenario, versus minor impairment if the eurozone takes an inflationary route to sustainability. It should be noted that this 10-15% impairment is an analysis across all non-financial companies and countries in the eurozone. Some companies would undoubtedly go bankrupt in a government default or breakup scenario, and some countries will fare significantly worse than others. And it is very likely that in the event of a bad outcome, the prices of the stocks would fall by more than 15% as myopic investors overreact to the bad news. But across the whole of the eurozone, 10-15% further impairment is at least an educated guess as to the permanent impact of a bad end to the crisis.

Another way of putting the 10-15% possible impairment would be to say that current valuations of non-financial stocks in the eurozone broadly discount an ugly endgame for the region. If something less bad than that occurs, the stocks are at least mildly cheap. Believing this, after the market fall of April and May we bought a decent chunk of European stocks in our asset allocation portfolios. In our Global Asset Allocation Strategy, benchmarked to 65% MSCI ACWI/35% bonds, we have a 5% overweight to eurozone equities. This is a significant bet, bigger than our overweight to emerging equities (2%) and similar to our overweight to Japanese stocks. It is not, however, particularly close to our maximum weight in the region because, while "somewhere between fair value and mildly cheap" is a pretty good deal relative to U.S. stocks, global bonds, or cash today, it is not exactly a table-pounding endorsement. We stand ready to buy more eurozone stocks should prices fall significantly from here, but at the moment it is not particularly close to qualifying as a "Big Bet" in the GMO mold.

Given the decent rally in the eurozone in June and quality's outperformance in the quarter, the second quarter was a pretty good one for our asset allocation strategies in terms of relative performance, with the benchmarked strategies outperforming by 1-2% and thus making up most of the ground lost in the first quarter. Absolute performance was negative given that ACWI was down over 5.5% in the quarter, and consequently our long-biased absolute return oriented strategies struggled with losses of -0.1% to -1.4% depending on the strategy. Only the Multi-Strategy and Mean Reversion Strategies, which have an approximate zero beta at the moment and were therefore unaffected by the general equity malaise, eked out absolute gains, rising about 1% and 3%, respectively.

A quick word on our AA and quantitative global equity strategies in the current environment. We are accustomed to our equity strategies tending to outperform when markets fall, a tendency that has only been intensified in recent years given our large overweight to quality stocks. As and if we shift more toward eurozone stocks, particularly the eurozone value stocks, which today have the most enticing valuations, it becomes more likely that several of our equity strategies may underperform on the down days, particularly if the downdraft is driven by problems in the eurozone (of which there is no shortage). Most of the time, cheaper equities are fairly defensive on the downside, but this may be one of those times when it may go the other way for a while.

Underperformance on the downside would likely be both because bad things were actually happening to cheap assets and because the market will have a knee-jerk response assuming bad things are happening, whether or not they actually are. Owning the eurozone is undoubtedly a nerve-wracking activity at the moment. If we are right, the permanent impairment of capital due to a combination of the financial crisis and breakup of the eurozone could be something on the order of 17-22% for investors in eurozone non-financial stocks. This is a big number, and far larger than the impact of the Great Depression in the U.S. Bad things can indeed happen to cheap assets, and as value managers we need to look out for this possibility and manage our portfolios accordingly. But the damage we are talking about pales in comparison to the impairments driven by overvalued markets such as the S&P 500 in 2000 or the Nikkei in 1989, which cost investors about 55% and 75%, respectively. As conscientious investors, we obsess about all routes to capital impairment. But if you only had to choose one route on which to focus, across history, overvaluation has almost certainly been a much bigger driver of impairment than deteriorating fundamentals have been.

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Mr. Inker is the head of asset allocation.

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