

# The Index Investor

*Invest Wisely... Get an Impartial Second Opinion.*

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## This Month's Issue: Key Points

This month's issue begins with our economic update. In our view, the critical uncertainty that will determine whether we muddle through with a painful but "normal" recession or plunge into something much worse is the future actions of China. We are not optimistic, as helping to bail out the United States does not seem to fit with their long-term ambitions. Assuming we head into more serious economic crisis, we believe that the actions of three different groups will determine whether cooperative solutions (which will shorten the crisis) or increasing conflict will rule the day. These include Chinese peasants (who seem to be growing more disaffected and becoming better organized, neither of which is good news for the Chinese leadership), Iranian youth (with President Ahmadinejad appearing to have squandered the opportunity presented by the revised U.S. National Intelligence Estimate on Iran's nuclear capabilities, the upcoming March parliamentary elections will provide a key indicator of the path that lies ahead), and the American middle class (which, as evidenced by the results of this presidential primary season, is in a volatile mood). We continue to believe that for many investors an increase in liquid, precautionary balances is warranted. However, in our product and strategy notes section we take a deeper look at the argument for staying fully invested.

Elsewhere we review the asset classes we have not included in our model portfolios, and the logic behind our decisions. In our product and strategy notes, we recommend new research products from James Montier and Michael Mauboussin, review a number of new academic papers, and cheer the beginning of the ETF consolidation process.

## **This Month's Letters to the Editor**

*Why don't you include an allocation to cleantech in your model portfolios?*

Our model portfolios are based on broadly defined asset classes, plus a limited allocation to uncorrelated alpha strategies (e.g., equity market neutral and active currency), whose returns have a very low relationship to those on the broad asset class index funds. As we understand the meaning of the term, “cleantech” refers to a subset of the equity market, comprised of companies that are expected to benefit (in terms of future profitability and/or growth) from rising global concern over the consequences of rising CO2 emissions and other negative environmental trends. As is true of other equities, the underlying justification for a tilt towards cleantech (as opposed to simply investing in a broad market capitalization weighted index) must be that the prices of these shares will rise in the future and provide returns in excess of the compensation required for bearing the risk involved. This justification must be based on some combination of (1) fundamental logic (i.e., that they are undervalued because future growth and/or margins have been underestimated, and/or relative risk has been overestimated) and/or (2) behavioral logic (i.e., price will rise as more investors “discover” cleantech and plunge into this sector believing that it represents “the next big thing”). Put differently, a tilt towards cleantech must be based on the belief that your forecasting model for this sector's future performance is superior. We do not doubt that some investors, including some fund managers, may have such models. What we lack is any confidence in our ability to identify them (assuming the funds are publically traded, which may not be the case), as well as any way of forecasting how long their superior models will remain valid (e.g., how long before they are copied or changes in the market undermine their assumptions?). On the other hand, if we could identify a publically traded, market neutral cleantech fund (i.e., one which used either index futures or a mix of long and short positions to eliminate exposure to overall market returns,

leaving only an exposure to company-specific risks and returns), we might consider including it in our allocation to uncorrelated alpha strategies. However, we can find no fund that meets this test.

*What do you think of the Phaunos Timber Fund (PTF) as a way for UK pound based investors to access the timber asset class?*

Phaunos is a closed end fund domiciled in Guernsey, and originally raised US\$115 million in December 2006. This was followed by a further \$370 million in June 2007. A further capital increase, via a private placement by a Luxembourg based fund, was just approved. The company's website details how these funds have been invested in a series of new timber ventures, including start-up plantations in the Northwest United States, Brazil, Uruguay and Indonesia. The fund is therefore better described as a timber venture fund, with the additional risks (and, one hopes, potential for higher returns) that implies. For a core allocation to the timber asset class, we continue to prefer established timber REITs like Plum Creek (PCL) and Rayonier (RYN) that provide exposure to changes in the value of timber. As a second best solution, we would choose one of the growing number of "timber ETFs" (e.g, CUT in the U.S. or WOOD in Europe) that invest in a selection of "timber related" equities. The shortcoming here, of course, is that investing in these products involves considerable exposure to non-timber and equity market risks, just as investing in a "natural resource equity fund" is a less attractive way to gain exposure to commodities than investing in a commodity index fund.

*Do you have an opinion about Eric Beinhocker's book, The Origin of Wealth?*

The short answer is yes; it was one of our favorite reads in 2007. Beinhocker's view of the economy as a complex adaptive system is fully in line with the points we have been making for years in these pages, and similar points about financial markets made by other researchers whose work we have cited (e.g., Andrew Lo, Blake LeBaron, Doyne Farmer, and others). Perhaps the most important implications of viewing financial markets as a CAS are (1) disequilibrium should be seen as the norm rather than the exception and (2) while this should create opportunities for successful active management, in practice it does not because

accurately forecasting the behavior of a complex adaptive system is extremely difficult over short horizons and basically impossible over long ones. In the latter case, the best one can hope for is a “coarse grained” understanding of the dynamics at work, rather than accurate predictions of the timing and magnitude of the results they will produce.

## **A Note from the Publisher**

Index Investors Inc. has now been publishing online financial journals for ten years. It seems like only yesterday that I was living in San Francisco and taking a big step into the unknown. Our original goal was to provide sophisticated individual investors with more tightly integrated analysis and insight than they would get from trade investment magazines, but without the greek notation found in academic and practitioner journals. Our analogy was, depending on who you talked to, either *Cooks' Magazine*, or a narrowly targeted version of the *Financial Times* or *The Economist*. To reach as many potential subscribers as possible and offer them better quality at a lower price than competitors, we chose to take the then radical step of publishing on the internet, rather than using a traditional paper-based newsletter model. Ten years later, the internet has become mainstream, and it is the paper based publications that are struggling to survive. That has been an enormous change.

On the other hand, some things haven't changed at all. I just read a survey of Canadian women done by T.D. Waterhouse. Only twenty two percent of them believed they were well informed investors. So our other original goal – to advocate for smarter asset allocations and wider use of index products to implement them – remains as valid as ever. And on the bright side, many of the positions we've advocated for years are becoming increasingly mainstream.

Unfortunately, as the internet has evolved toward more of an advertising based model, our subscription base has reached a plateau. For the past two years we have been experimenting with some relatively small changes to our pricing model to see if we could make the subscription based model work, but thus far we have seen insufficient improvement. As a result, it has become harder to maintain a consistent publishing schedule, as key writers have taken on other projects. We are thus at the point where we have to consider more fundamental changes.

On the bright side, there has been no shortage of people offering us ideas. For example, one suggestion was to dramatically raise our prices and focus on serving advisors, fund

managers and high net worth investors. It was further argued that this might actually expand our subscription base, assuming a much higher price was seen by potential subscribers as an indicator of the quality of our publications. We tended to discount this, as the quality of our writing can be seen in the free sections of our site. Rather than a pricing problem, we suspect that the root cause of our growth issue is that the absolute size of the market we have been targeting (sophisticated investors and advisors who are willing to subscribe to an online publication) is simply smaller than we thought. To go back to the T.D. Waterhouse study, while only 22% of women called themselves informed investors, a full 76% were confident they would live well in retirement. While that may seem logically inconsistent to us, we also have to face the reality of what data like this means for the likely size of our potential subscriber base. Another change that dramatically brought home to us the limitations of the subscription based model was the recent decision by the New York Times to abandon its online subscription model, and moved to one based solely on advertising revenue.

Another suggestion we received was to start using a much more aggressive marketing approach (“Sky Falling! Subscribe Now for How to Survive It and Make 50% Returns Along the Way!”), and adjust our editorial content to match it. Clearly, there are examples of companies making money with this model. And to judge from some of the nasty emails we occasionally receive (“Hey! Where are the trading tips?!”), some of the people we initially attract would like to see us move in this direction. However, we also have to admit that this isn’t a space where we would feel comfortable. People who respond to “sky is falling” appeals aren’t the kind of readers for whom we feel comfortable writing. Yet another suggestion was to go the route Bill Bernstein (of Efficient Frontier fame) has, and go into the money management business. We’re still mulling that one over, as it represents a big change for us.

In the meantime, we have to make some important decisions about how to adapt our business model in the short term to the changed circumstances we are facing in the publishing business today. Before making our move, I wanted to share with you what we are thinking about doing, and solicit your feedback before the Rubicon is crossed. Our tentative plan is to make a large part of our sites open to the public, with advertising running on all of our pages. Our hope is that making ten years of content public will generate a substantial increase in advertising revenue compared to what we earn today from our limited number of free pages. We will continue to update this free content, but on a quarterly rather than monthly basis (e.g.,

with our economic outlooks). However, we will continue to make our model portfolios and monthly asset class valuation updates available only to paid subscribers. In addition, emailed questions from paid subscribers will be the only ones we answer, and we will also send them a monthly email focused on product and strategy notes, rather than the longer feature articles we have published in the past. As I said before, just like any other business, we are facing changing customer needs, competitor offerings and technological possibilities. If we don't continuously adapt, we will eventually disappear. I look forward to hearing your thoughts on the right direction for us in the future, and promise that I will continue to do my best to provide you with the high quality content you have come to expect.

Best regards,

Susan L. Miller

## Global Asset Class Returns

<b>YTD 31Jan08</b>	<b><u>In USD</u></b>	<b><u>In AUD</u></b>	<b><u>In CAD</u></b>	<b><u>In EURO</u></b>	<b><u>In JPY</u></b>	<b><u>In GBP</u></b>	<b><u>In CHF</u></b>	<b><u>In INR</u></b>
Asset Held								
<b>US Bonds</b>	1.77%	0.13%	3.87%	0.50%	-3.30%	1.90%	-2.63%	1.67%
<b>US Prop</b>	-0.34%	-1.98%	1.76%	-1.61%	-5.41%	-0.21%	-4.74%	-0.44%
<b>US Equity</b>	-6.08%	-7.72%	-3.98%	-7.35%	-11.15%	-5.95%	-10.48%	-6.18%
<b>AUS Bonds</b>	3.93%	2.29%	6.03%	2.66%	-1.15%	4.06%	-0.48%	3.82%
<b>AUS Prop</b>	-12.50%	-14.14%	-10.40%	-13.77%	-17.57%	-12.37%	-16.90%	-12.60%
<b>AUS Equity</b>	-6.73%	-8.37%	-4.63%	-8.00%	-11.80%	-6.60%	-11.14%	-6.83%
<b>CAN Bonds</b>	-1.33%	-2.97%	0.77%	-2.59%	-6.40%	-1.20%	-5.73%	-1.43%
<b>CAN Prop</b>	-8.27%	-9.91%	-6.17%	-9.54%	-13.35%	-8.14%	-12.68%	-8.38%
<b>CAN Equity</b>	-8.57%	-10.21%	-6.47%	-9.84%	-13.65%	-8.44%	-12.98%	-8.68%
<b>Euro Bonds</b>	5.08%	3.44%	7.18%	3.82%	0.01%	5.21%	0.68%	4.98%
<b>Euro Prop.</b>	0.95%	-0.69%	3.05%	-0.31%	-4.12%	1.08%	-3.45%	0.85%
<b>Euro Equity</b>	-10.33%	-11.97%	-8.22%	-11.59%	-15.40%	-10.19%	-14.73%	-10.43%
<b>Japan Bnds</b>	5.67%	4.02%	7.77%	4.40%	0.59%	5.80%	1.26%	5.56%
<b>Japan Prop</b>	-1.95%	-3.59%	0.15%	-3.22%	-7.02%	-1.82%	-6.35%	-2.05%
<b>Japan Eqty</b>	-4.29%	-5.93%	-2.19%	-5.55%	-9.36%	-4.16%	-8.69%	-4.39%
<b>UK Bonds</b>	0.25%	-1.39%	2.35%	-1.01%	-4.82%	0.38%	-4.15%	0.15%
<b>UK Prop.</b>	0.46%	-1.18%	2.56%	-0.80%	-4.61%	0.59%	-3.94%	0.36%
<b>UK Equity</b>	-7.97%	-9.61%	-5.87%	-9.24%	-13.05%	-7.84%	-12.38%	-8.08%
<b>World Bnds</b>	2.63%	0.99%	4.73%	1.36%	-2.44%	2.76%	-1.77%	2.53%
<b>World Prop.</b>	-4.25%	-5.89%	-2.15%	-5.52%	-9.32%	-4.12%	-8.65%	-4.35%
<b>World Eqty</b>	-7.32%	-8.96%	-5.21%	-8.58%	-12.39%	-7.18%	-11.72%	-7.42%
<b>Commod</b>	4.13%	2.49%	6.23%	2.86%	-0.95%	4.26%	-0.28%	4.02%
<b>Timber</b>	-9.65%	-11.29%	-7.54%	-10.91%	-14.72%	-9.52%	-14.05%	-9.75%
<b>EqMktNtrl</b>	-2.63%	-4.27%	-0.53%	-3.89%	-7.70%	-2.50%	-7.03%	-2.73%
<b>Volatility</b>	16.44%	14.80%	18.55%	15.18%	11.37%	16.58%	12.04%	16.34%
<b>Currency</b>								
<b>AUD</b>	1.64%	0.00%	3.74%	0.37%	-3.43%	1.77%	-2.76%	1.54%
<b>CAD</b>	-2.10%	-3.74%	0.00%	-3.37%	-7.17%	-1.97%	-6.51%	-2.20%
<b>EUR</b>	1.27%	-0.37%	3.37%	0.00%	-3.81%	1.40%	-3.14%	1.16%
<b>JPY</b>	5.07%	3.43%	7.17%	3.81%	0.00%	5.20%	0.67%	4.97%
<b>GBP</b>	-0.13%	-1.77%	1.97%	-1.40%	-5.20%	0.00%	-4.54%	-0.23%
<b>USD</b>	0.00%	-1.64%	2.10%	-1.27%	-5.07%	0.13%	-4.40%	-0.10%
<b>CHF</b>	4.40%	2.76%	6.51%	3.14%	-0.67%	4.54%	0.00%	4.30%
<b>INR</b>	0.10%	-1.54%	2.20%	-1.16%	-4.97%	0.23%	-4.30%	0.00%

## Asset Class Valuation Update

Our market valuation analyses are based on the assumption that markets are not perfectly efficient and always in equilibrium. This means that it is possible for the supply of future returns a market is expected to provide to be higher or lower than the returns investors logically demand. In the case of an equity market, we define the future supply of returns to be equal to the current dividend yield plus the rate at which dividends are expected to grow in the future. We define the return investors demand as the current yield on real return government bonds plus an equity market risk premium. As described in our May, 2005 issue, people can and do disagree about the “right” values for these variables. Recognizing this, we present four valuation scenarios for an equity market, based on different values for three key variables. First, we use both the current dividend yield and the dividend yield adjusted upward by .50% to reflect share repurchases. Second, we define future dividend growth to be equal to the long-term rate of total (multifactor) productivity growth. For this variable, we use two different values, 1% or 2%. Third, we also use two different values for the equity risk premium required by investors: 2.5% and 4.0%. Different combinations of all these variables yield high and low scenarios for both the future returns the market is expected to supply (dividend yield plus growth rate), and the future returns investors will demand (real bond yield plus equity risk premium). We then use the dividend discount model to combine these scenarios, to produce four different views of whether an equity market is over, under, or fairly valued today. The specific formula is  $(\text{Current Dividend Yield} \times 100) \times (1 + \text{Forecast Productivity Growth})$  divided by  $(\text{Current Yield on Real Return Bonds} + \text{Equity Risk Premium} - \text{Forecast Productivity Growth})$ . Our valuation estimates are shown in the following tables, where a value greater than 100% implies overvaluation, and less than 100% implies undervaluation. In our view, the greater the number of scenarios that point to overvaluation or undervaluation, the greater the probability that is likely to be the case.

*Equity Market Valuation Analysis at 31 January 2008*

<i>Australia</i>	<b>Low Demanded Return</b>	<b>High Demanded Return</b>
<b>High Supplied Return</b>	69%	101%
<b>Low Supplied Return</b>	103%	140%

<i>Canada</i>	<b>Low Demanded Return</b>	<b>High Demanded Return</b>
<b>High Supplied Return</b>	101%	163%
<b>Low Supplied Return</b>	181%	259%

<i>Eurozone</i>	<b>Low Demanded Return</b>	<b>High Demanded Return</b>
<b>High Supplied Return</b>	63%	100%
<b>Low Supplied Return</b>	102%	145%

<i>Japan</i>	<b>Low Demanded Return</b>	<b>High Demanded Return</b>
<b>High Supplied Return</b>	75%	148%
<b>Low Supplied Return</b>	167%	266%

<i>United Kingdom</i>	<b>Low Demanded Return</b>	<b>High Demanded Return</b>
<b>High Supplied Return</b>	37%	75%
<b>Low Supplied Return</b>	72%	116%

<i>United States</i>	<b>Low Demanded Return</b>	<b>High Demanded Return</b>
<b>High Supplied Return</b>	77%	138%
<b>Low Supplied Return</b>	150%	228%

<i>Switzerland</i>	<b>Low Demanded Return</b>	<b>High Demanded Return</b>
<b>High Supplied Return</b>	77%	123%
<b>Low Supplied Return</b>	129%	261%

<i>India</i>	<b>Low Demanded Return</b>	<b>High Demanded Return</b>
<b>High Supplied Return</b>	59%	163%
<b>Low Supplied Return</b>	201%	364%

Our government bond market valuation update is based on the same supply and demand methodology we use for our equity market valuation update. In this case, the supply of future fixed income returns is equal to the current nominal yield on ten-year government bonds. The demand for future returns is equal to the current real bond yield plus the historical average inflation premium (the difference between nominal and real bond yields) between 1989 and 2003. To estimate of the degree of over or undervaluation for a bond market, we use the rate of return supplied and the rate of return demanded to calculate the present values of a ten year zero coupon government bond, and then compare them. If the rate supplied is higher than the rate demanded, the market will appear to be undervalued. This information is contained in the following table:

***Bond Market Analysis as of 31Jan08***

	<b>Current Real Rate</b>	<b>Average Inflation Premium (89-03)</b>	<b>Required Nominal Return</b>	<b>Nominal Return Supplied (10 year Govt)</b>	<b>Return Gap</b>	<b>Asset Class Over or (Under) Valuation, based on 10 year zero</b>
Australia	2.66%	2.96%	5.62%	6.09%	0.47%	-4.37%
Canada	1.98%	2.40%	4.38%	3.89%	-0.49%	4.81%
Eurozone	1.99%	2.37%	4.36%	3.93%	-0.43%	4.23%
Japan	1.03%	0.77%	1.80%	1.45%	-0.35%	3.47%
UK	0.98%	3.17%	4.15%	4.53%	0.38%	-3.55%
USA	1.38%	2.93%	4.31%	3.64%	-0.67%	6.68%
Switz.	2.01%	2.03%	4.04%	2.82%	-1.22%	12.52%
India	1.34%	7.57%	8.91%	7.84%	-1.07%	10.38%

\*Derived from ten year yield and forecast inflation

It is important to note some important limitations of this analysis. First, it uses the current yield on real return government bonds (or, in the cases of Switzerland and India, the implied real yield if those bonds existed). Over the past forty years or so, this has averaged around 3.00% in the United States. Were we to use this rate, the required rate of return would generally increase. Theoretically, the “natural” or equilibrium real rate of interest is a function of three variables: (1) the expected rate of multifactor productivity growth (as it increases, so should the demand for investment, which will tend to raise the real rate); (2) risk aversion (as investors become more risk averse they save more, which should reduce the real rate of interest, all else being equal); and (3) the time discount rate, or the rate at which investors are willing to trade off consumption today against consumption in the future. A higher discount rate reflects a greater desire to consume today rather than waiting (as consumption today becomes relatively more important, savings decline, which should cause the real rate to increase). These variables are not unrelated; a negative correlation (of about .3) has been found between risk aversion and the time discount rate. This means that as people become more risk averse, they also tend to be more concerned about the future (i.e., as risk aversion rises, the time discount rate falls).

All three of these variables can only be estimated with uncertainty. For example, a time discount rate of 2.0% and risk aversion factor of 4 are considered to be average, but studies show that there is wide variation within the population and across the studies themselves. The analysis in the following table starts with current real return bond yields and the OECD’s estimates of multifactor productivity growth between 1995 and 2002 (with France and Germany proxying for the Eurozone). We then try to back out estimates for risk aversion and the time discount rate that would bring theoretical rates into line with those that have been observed in the market. Higher risk aversion factors and lower time discount rates indicate more conservative attitudes on the part of the average investor in a given currency zone. Increasing conservatism raises the risk of sharp downward price moves and increases in volatility when they occur at a time when many asset classes appear to be overvalued. If this conservatism becomes excessive (which is admittedly very hard to gauge), undervaluations may result. In contrast, falling risk aversion and rising time discount factors may indicate a rising danger of overvaluations occurring in asset markets. The real rate formula is [Time Discount Rate + ((1/Risk Aversion Factor) x MFP Growth)].

**Real Interest Rate Analysis at 31Jan08**

<b>Real Rate Analysis</b>	AUD	CAD	EUR	JPY	GBP	USD
Risk Aversion Factor	3.5	4.0	4.0	5.5	6.0	5.0
Time Discount Rate	2.00%	1.75%	1.75%	1.00%	0.75%	1.25%
MFP Growth	1.60%	1.20%	1.40%	0.60%	1.40%	1.40%
Theoretical Real Rate	2.46%	2.05%	2.10%	1.11%	0.98%	1.53%
Actual Real Rate	2.66%	1.98%	1.99%	1.03%	0.98%	1.38%

Our bond market analysis also uses historical inflation as an estimate of expected future inflation. This may not produce an accurate valuation estimate, if the historical average level of inflation is not a good predictor of average future inflation levels. For example, if expected future inflation is lower than historical inflation, required returns will be lower. All else being equal, this would reduce any estimated overvaluation or increase any estimated undervaluation. For example, if one were to assume a very different scenario, involving a prolonged recession, accompanied by deflation, then one could argue that government bond markets are actually undervalued today.

Let us now turn to the subject of the valuation of non-government bonds. Some have suggested that it is useful to decompose the bond yield spread into two parts. The first is the difference between the yield on AAA rated bonds and the yield on the ten year Treasury bond. Because default risk on AAA rated companies is very low, this spread may primarily reflect prevailing liquidity and jump (regime shift) risk conditions (e.g., between a low volatility, relatively high return regime, and a high volatility, lower return regime). The second is the difference between BBB and AAA rated bonds, which may tell us more about the level of compensation required by investors for bearing credit risk. For example, between August and October, 1998 (around the time of the Russian debt default and Long Term Capital Management crises), the AAA-Treasury spread jumped from 1.18% to 1.84%, while the BBB-AAA spread increased by much less, from .62% to .81%. This could be read as an indication of investor's higher concern with respect to the systematic risk implications of these crises (i.e., their potential to shift the financial markets into the low return, high volatility regime), and lesser concern with respect to their impact on the overall pricing of credit risk.

The following table shows the average level of these spreads between January, 1970 and December, 2005 (based on monthly Federal Reserve data), along with their standard deviations and 67% (average plus or minus one standard deviation) and 95% (average plus or

minus two standard deviations) confidence range (i.e., based on historical data, 95% of the time you would expect the current spreads to be within two standard deviations of the long term average).

	<b>AAA – 10 Year Treasury</b>	<b>BBB-AAA</b>
Average	.97%	1.08%
Standard Deviation	.47%	.42%
Avg. +/- 1 SD	1.44% - .50%	1.51% - .66%
Avg. +/- 2 SD	1.91% - .03%	1.93% - .23%

At 31 January 2008, the AAA minus 10 year Treasury spread was 1.74%. This is significantly above the long-term average compensation for bearing liquidity and jump risk (assuming our model is correct), and reflects a clear market reaction to the severe liquidity problems that roiled the markets since August and have yet to abate.

At the end of the month, the BBB minus AAA spread was 1.25%. This is still not significantly different from the long-term average compensation for bearing credit risk. However, it seems low given the continuing turmoil in credit markets. We still believe that it is more likely that credit risk is underpriced rather than overpriced today, and that corporate bonds remain overvalued rather than undervalued.

For an investor contemplating the purchase of foreign bonds or equities, the expected future annual percentage change in the exchange rate is also important. Study after study has shown that there is no reliable way to forecast this, particularly in the short term. At best, you can make an estimate that is justified in theory, knowing that in practice it will not turn out to be accurate. That is what we have chosen to do here. Specifically, we have taken the difference between the yields on ten-year government bonds as our estimate of the likely future annual change in exchange rates between two regions. According to theory, the currency with the relatively higher interest rates should depreciate versus the currency with the lower interest rates. Of course, in the short term this often doesn't happen, which is the premise of the popular hedge fund "carry trade" strategy of borrowing in low interest rate currencies, investing in high interest rate currencies, and, essentially, betting that the change in exchange rates over

the holding period for the trade won't eliminate the potential profit. Because (as noted in our June 2007 issue) there are some important players in the foreign exchange markets who are not profit maximizers, carry trades are often profitable, at least over short time horizons. Our expected medium to long-term changes in exchange rates are summarized in the following table:

***Annual Exchange Rate Changes Implied by Bond Market Yields on 31Jan08***

	To AUD	To CAD	To EUR	To JPY	To GBP	To USD	To CHF	To INR
From								
<b>AUD</b>	0.00%	-2.20%	-2.16%	-4.64%	-1.56%	-2.45%	-3.27%	1.75%
<b>CAD</b>	2.20%	0.00%	0.04%	-2.44%	0.64%	-0.25%	-1.07%	3.95%
<b>EUR</b>	2.16%	-0.04%	0.00%	-2.48%	0.60%	-0.29%	-1.11%	3.91%
<b>JPY</b>	4.64%	2.44%	2.48%	0.00%	3.08%	2.19%	1.37%	6.39%
<b>GBP</b>	1.56%	-0.64%	-0.60%	-3.08%	0.00%	-0.89%	-1.71%	3.31%
<b>USD</b>	2.45%	0.25%	0.29%	-2.19%	0.89%	0.00%	-0.82%	4.20%
<b>CHF</b>	3.27%	1.07%	1.11%	-1.37%	1.71%	0.82%	0.00%	5.02%
<b>INR</b>	-1.75%	-3.95%	-3.91%	-6.39%	-3.31%	-4.20%	-5.02%	0.00%

Our approach to valuing commercial property securities as an asset class is hindered by a lack of historical data about rates of dividend growth. To overcome this limitation, we have assumed that markets are fairly valued today (i.e., the expected supply of returns equals the expected returns demanded by investors), and “backed out” the implied future real growth rates for dividends (which over time should correlated with the real change in rental income) to see if they are reasonable in light of other evidence about the state of the economy (see below). This analysis assumes that investors require a 2.5% risk premium above the yield on real return bonds to compensate an investor for the risk of securitized commercial property as an asset class. The following table shows the results of this analysis:

**Commercial Property Securities Analysis as of 31Jan08**

<b>Country</b>	<b>Real Bond Yield</b>	<b>Plus Commercial Property Risk Premium</b>	<b>Less Dividend Yield on Commercial Property Securities</b>	<b>Equals Implied Rate of Future Real Dividend Growth</b>
Australia	2.7%	2.5%	6.7%	-1.6%
Canada	2.0%	2.5%	5.1%	-0.7%
Eurozone	2.0%	2.5%	3.4%	1.1%
Japan	1.0%	2.5%	1.8%	1.7%
Switzerland	2.0%	2.5%	4.1%	0.4%
United Kingdom	1.0%	2.5%	3.0%	0.4%
United States	1.4%	2.5%	4.5%	-0.7%

If you think the implied real growth estimates in the last column are too high relative to your expectation for the future real growth in average rents, this implies commercial property securities are overvalued today. On the other hand, if you think the implied growth rate is too low, that implies undervaluation. Since we expect a significant slowdown in the global economy over the next few years, we are inclined to view most of these implied real growth assumptions as still too optimistic (though less so than before), and therefore to believe that the balance of business cycle and valuation evidence suggests that commercial property securities in many markets are likely overvalued today.

To estimate the likely direction of short term commodity futures price changes, we compare the current price to the historical distribution of futures index prices. Between 1991 and 2005 period, the Dow Jones AIG Commodities Index (DJAIG) had an average value of 107.6, with a standard deviation of 21.9. The 31 January 2008 closing value of 192.18 was more than three and a three quarter standard deviations above the long term average (assuming the value of the index is normally distributed around its historical average, a value greater than three standard deviations away from that average should occur less than 1% of the time). Given this, the probability of a near term decline in the spot price of the DJAIG still seems much higher than the probability of a substantial further increase. At any given point in time, the current price of a commodity futures contract should equal the expected future spot price less some premium (i.e., expected return) the buyer of the future expects to receive for bearing the risk that this forecasted future spot price will be inaccurate. However, the *actual* return realized by the buyer of the futures

contract can turn out to be quite different from the expected return. When it occurs, this difference will be due to unexpected changes in the spot price of the contract that occur after the date on which the futures contract was purchased but before it is closed out. If the unexpected change in the spot price is positive, the buyer of the futures contract (i.e., the investor) will receive a higher than expected return; if the unexpected price change is negative, the buyer's return will be lower than expected. In a perfectly efficient market, these unexpected price changes should be unpredictable, and over time net out to zero. On the other hand, if the futures market is less than perfectly efficient – if, for example, investors' emotions cause prices to sometimes diverge from their rational equilibrium values – then it is possible for futures contracts to be over or undervalued.

Our approach to assessing the current valuation of timber is based on two publicly traded timber REITS: Plum Creek (PCL) and Rayonier (RYN). As in the case of equities, we compare the return these are expected to supply (defined as their current dividend yield plus the expected growth rate of those dividends) to the equilibrium return investors should rationally demand for holding timber assets (defined as the current yield on real return bonds plus an appropriate risk premium for this asset class). Two of these variables are published: the dividend yields on the timber REITS and the yield on real return bonds. The other two variables have to be estimated, which presents a particularly difficult challenge with respect to the rate at which dividends will grow in the future. A number of factors contribute to the expected future growth rate of timber REIT dividends. These are listed in the following table, along with the assumptions we make about their future values:

<b>Growth Driver</b>	<b>Assumption</b>
Biological growth of trees	This varies widely according to the type and maturity a given timber property (and, indeed, biological growth doesn't directly translate into returns as different trees and growing arrangements also involve different costs. We assume 6% as the long term average.
Harvesting rate	In order to produce a timber REIT's dividend, a certain physical volume of trees must be harvested each year. This will vary over time; for example, when prices are high, a smaller volume will have to be cut to pay for a given level of dividends. As a long term average, we assume that 5% of tree volume is harvested each year.

Growth Driver	Assumption
In-growth of trees	This refers to the fact that as trees grow taller and wider, they are capable of producing products with substantially higher values. This so called “grade change” will cause an increase in value (and hence return) of timber even when prices within each product category are falling. We assume this adds 3% per year to the return on timber assets.
Change in prices of timber and land on which the trees are growing	We assume that over the long term prices will just keep pace with inflation. In the U.S. some data shows real price increases of 2% per year over the past 20 years; however, IMF data shows real price declines on a world timber price index. Hence, we assume the contribution of real timber price changes to long term timber returns is zero.
Diversification across countries	As in the case of commodities, that an investor in an internationally diversified portfolio of timber assets should earn a diversification return, similar to the one earned by investors in a well diversified portfolio of commodity futures contracts. In the interest of conservatism, we assume that in the case of timber this equals zero.
Carbon credits	In the future, investors in timberland may earn additional returns from the receipt and resale of carbon credits. However, since the future value of those credits is so uncertain, we have assumed no additional return from this source.

This leaves the question of the appropriate return premium to assume for the overall risk of investing in timber as an asset class. Historically, the difference between returns on the NCRIEF timberland index and those on real return bonds has averaged around six percent. However, since the timber REITS are much more liquid than the properties included in the NCRIEF index, we have used four percent as the required return premium for investing in liquid timberland assets.

Given these assumptions, our assessment of the valuation of the timber asset class at 31 January 2008 is as follows:

Average Dividend Yield	4.45%
Plus Long Term Annual Biological Growth	6.00%
Less Percent Harvested Each Year	(5.00%)
Plus Average Annual Ingrowth Value Increase	3.00%
Plus Long Term Real Annual Price Change	0.00%
Plus Other Sources of Annual Value Increase (e.g., Carbon Credits)	0.00%
Equals Average Annual Real Return Supplied	<b><u>8.45%</u></b>
Real Bond Yield	1.38%
Plus Risk Premium for Timber	4.00%
Equals Average Annual Real Return Demanded	<b><u>5.38%</u></b>
Ratio of Returns Demanded/Returns Supplied Equals Valuation Ratio (less than 100% implies undervaluation)	<b><u>63.7%</u></b>

Our approach to assessing the current value of equity market volatility (as measured by the VIX index, which tracks the level of S&P 500 Index volatility implied by the current pricing of put and call options on this index) is similar to our approach to commodities. Between January 2, 1990 and December 30, 2005, the average value of the VIX Index was 19.45, with a standard deviation of 6.40. The one standard deviation (67% confidence interval) range was 13.05 to 28.85, and the two standard deviations (95% confidence) range was from 6.65 to 32.25. On 31 January 2008, the VIX closed at 26.20, about equal to the VIX's long term average value. However, we believe this level is too low in light of rising uncertainty in the world economy and continuing turmoil in financial markets. Hence, we conclude that equity volatility is probably still undervalued today.

## **Sector and Style Rotation Watch**

The following table shows a number of classic style and sector rotation strategies that attempt to generate above index returns by correctly forecasting turning points in the economy. This table assumes that active investors are trying to earn high returns by investing today in the styles and sectors that will perform best in the next stage of the economic cycle. The logic behind this is as follows: Theoretically, the fair price of an asset (also known as its fundamental value) is equal to the present value of the future cash flows it is expected to produce, discounted at a rate that reflects their relative riskiness.

Current economic conditions affect the current cash flow an asset produces. Future economic conditions affect future cash flows and discount rates. Because they are more numerous, expected future cash flows have a much bigger impact on the fundamental value of an asset than do current cash flows. Hence, if an investor is attempting to earn a positive return by purchasing today an asset whose value (and price) will increase in the future, he or she needs to accurately forecast the future value of that asset. To do this, he or she needs to forecast future economic conditions, and their impact on future cash flows and the future discount rate. Moreover, an investor also needs to do this before the majority of other investors reach the same conclusion about the asset's fair value, and through their buying and selling cause its price to adjust to that level (and eliminate the potential excess return).

We publish this table to make an important point: there is nothing unique about the various rotation strategies we describe, which are widely known by many investors. Rather, whatever active management returns (also known as "alpha") they are able to generate is directly related to how accurately (and consistently) one can forecast the turning points in the economic cycle. Regularly getting this right is beyond the skills of most investors. In other words, most of us are better off just getting our asset allocations right, and implementing them via index funds rather than trying to earn extra returns by accurately forecasting the ups and downs of different sub-segments of the U.S. equity and debt markets. That being said, the highest rolling three month returns in the table give a rough indication of how investors expect the economy and interest rates to perform in the near future. *The highest returns in a given row indicate that most investors are anticipating the economic and interest rate conditions noted at the top of the next column* (e.g., if long maturity bonds have the highest year to date returns, a

plurality of bond investor opinion expects rates to fall in the near future). Comparing returns across strategies provides a rough indication of the extent of agreement (or disagreement) investors about the most likely upcoming changes in the state of the economy. When the rolling returns on different strategies indicate different conclusions about the most likely direction in which the economy is headed, we place the greatest weight on bond market indicators. Why? We start from a basic difference in the psychology of equity and bond investors. The different risk/return profiles for these two investments produce a different balance of optimism and pessimism. For equities, the downside is limited (in the case of bankruptcy) to the original value of the investment, while the upside is unlimited. This tends to produce an optimistic view of the world. For bonds, the upside is limited to the contracted rate of interest and getting your original investment back (assuming the bonds are held to maturity). In contrast, the downside is significantly greater – complete loss of principal. This tends to produce a more pessimistic (some might say realistic) view of the world. As we have written many times, investors seeking to achieve a funding goal over a multi-year time horizon, avoiding big downside losses is arguably more important than reaching for the last few basis points of return. Bond market investors' perspective tends to be more consistent with this view than equity investors' natural optimism. Hence, when our rolling rotation returns table provides conflicting information, we tend to put the most weight on bond investors' implied expectations for what lies ahead.

### *Three Month Rolling Nominal Returns on Classic Rotation Strategies in the U.S. Markets*

<i>Rolling 3 Month Returns Through</i>	<i>31Jan08</i>			
<i>Economy</i>	Bottoming	Strengthening	Peaking	Weakening
<i>Interest Rates</i>	Falling	Bottom	Rising	Peak
<i>Style and Size Rotation</i>	Small Growth (DSG) <b>-14.28%</b>	Small Value (DSV) <b>-10.72%</b>	Large Value (ELV) <b>-9.54%</b>	Large Growth (ELG) <b>-11.54%</b>

*Rolling 3 Month  
Returns Through*

**31Jan08**

<b><i>Economy</i></b>	Bottoming	Strengthening	Peaking	Weakening
<b><i>Interest Rates</i></b>	Falling	Bottom	Rising	Peak
<b><i>Sector Rotation</i></b>	Cyclicals (IYC) <b>-10.52%</b>	Basic Materials (IYM) <b>-6.81%</b>	Energy (IYE) <b>-8.41%</b>	Utilities (IDU) <b>-7.47%</b>
	Technology (IYW) <b>-18.94%</b>	Industrials (IYJ) <b>-9.83%</b>	Staples (IYK) <b>-8.18%</b>	Financials (IYF) <b>-12.98%</b>
<b><i>Bond Market Rotation</i></b>	Higher Risk (HYG) <b>-2.97%</b>	Short Maturity (SHY) <b>3.76%</b>	Low Risk (TIP) <b>7.53%</b>	Long Maturity (TLT) <b>6.83%</b>

The following table sums up our conclusions (based on the analysis summarized in this article) as to potential asset class under and overvaluations at the end of January 2008. The distinction between possible, likely and probable reflects a rising degree of confidence in our conclusion.

<b>Probably Overvalued</b>	Commodities, Corporate Bonds/Credit Risk, Equity Markets (except Australia, Eurozone, and UK)
<b>Likely Overvalued</b>	Commercial Property
<b>Possibly Overvalued</b>	
<b>Possibly Undervalued</b>	Australian Dollar and UK Pound Government Bonds; UK Equity
<b>Likely Undervalued</b>	Euro, Canadian Dollar and Australian Dollar Real Return Bonds
<b>Probably Undervalued</b>	Non-U.S. Dollar Bonds (based on expected XR changes), Equity Volatility, and Timber

## Economic Update

Our basic framework for thinking about the global economy hasn't changed very much. As described in our previous updates, the two critical uncertainties driving the world economy up to now were (1) whether overleveraged U.S. consumers would keep on spending and (2) whether U.S. overconsumption would continue to be enabled by government imposed restraints on the growth of domestic demand in China.

To be sure, the forces driving U.S. private sector consumption are powerful indeed. As we have noted in the past, the almost simultaneous worsening of income inequality (caused by globalization, the spread of winner-take-all markets, and the declining relative quality of U.S. public schools) and a relative weakening of religious beliefs combined to create a tsunami of “keep up with the Jones” spending over the past ten years. To cite but one telling statistic, the U.S. Department of Energy reports that 25 percent of people with two car garages currently don’t park any cars in them, while 32 percent park only one car – because the rest of the space is being used to store all the stuff they’ve purchased over the years. Another recent study is equally telling. In “Relative Status and Well-Being: Evidence From U.S. Suicide Deaths”, Daly, Wilson and Johnson find that, controlling for other risk factors, “individual suicide risk rises with reference group income.” In other words, people who see themselves falling behind in the great status race are more likely to commit suicide. Today, however, with housing prices in free fall, the economy most likely falling into recession, and credit standards being sharply tightened, there are equally powerful forces working to curb America’s deeply ingrained tendency to conspicuously consume.

The flipside to U.S. consumption growing faster than domestic output is large current account deficits that must be financed by an excess of savings over investment in the rest of the world. The two biggest sources of this savings surplus have been China and to a lesser though significant extent, the world’s oil exporting countries. China’s rapid economic growth in recent years has been driven by strong growth in exports and investment spending, rather than domestic consumption. The substantial profits generated by this system have been recycled back into the financing of the United States’ current account deficit – what some have cynically termed the biggest consumer financing program in world history.

Taken together, these powerful forces have driven the build up of substantial and increasingly fragile imbalances in the world economy, including excessive levels of household debt and a large current account deficit in the United States, and excessive monetary expansion and dependence on exports and investment in China. As Mike Mauboussin of Legg Mason ably described in a recent note (“Fat Tails and Non-Linearity”) the seemingly “one way bet” nature of these trends in recent years has also made the financial system increasingly fragile, and poised for crisis. A similar point was made thirty years previously by Hyman Minsky, who concluded that prolonged periods of low financial stress contained within themselves the seeds

of subsequent crises (for a more recent summary of Minsky's work and its applications to our current situation, see "The Natural Instability of Financial Markets" by Jan Kregel).

Recent developments have given every indication that the fine balancing act that has characterized recent years is quickly coming undone. By now, the crisis underway in the U.S. housing market is old news. However, increasing payment problems on credit cards and falling retail sales suggest that consumers are beginning to cut their spending with a vengeance, and that we have not yet seen the end of the credit crises that have been roiling markets since last summer. Along with declines of the U.S. dollar exchange rate versus the Euro and Canadian Dollar, this domestic spending slowdown has reduced U.S. imports and the size of the U.S. current account deficit as a percentage of GDP. However, private sector financing of the U.S. current account deficit has largely dried up, and all that stands in the way of a collapse in the value of the U.S. dollar is the continued willingness of foreign central banks and sovereign wealth funds, particularly in China and the major oil exporting countries, to keep financing the U.S. current account deficit. Unfortunately, China does not appear as yet to be taking aggressive steps to increase domestic consumption spending, and thereby help head off the global slowdown that would otherwise be triggered by the collapse in U.S. consumer spending. As described in an excellent recent paper by Reinhart and Rogoff ("Is the 2007 U.S. Sub-Prime Financial Crisis So Different? An International Historical Comparison"), this would not be the first time that this story has played out. In the absence of more aggressive action on the part of China to increase its domestic consumption demand, the U.S. government has been forced to react aggressively, with an \$150 billion emergency fiscal package and an unprecedented one week reduction of 1.25% in the federal funds rate. While in the short term this may help delay a more serious and quite possibly prolonged global recession, it cannot permanently hold off this outcome in the absence of faster domestic spending in China. In the meantime, China's continued resistance to letting its currency appreciate against the U.S. dollar is leading to rapidly rising inflation at home, and worsening relations with the Eurozone, which has seen its trade deficit with China dramatically worsen over the past year, as its currency has risen against the U.S. dollar, while the Chinese renminbi has not.

So where does that leave us today? Clearly, we face two scenarios – one is continued muddling through, albeit with a prolonged reduction in U.S. consumption spending, provided that China takes steps to stimulate domestic consumption (for a good description of this

outcome, see “The U.S. Economy: Is There a Way Out of the Woods?” by Godley, Papadimitriou, Hannsgen and Zezza). The other is a prolonged global recession, which is likely to be characterized by rising conflicts over trade, contracting credit, the appearance of deflation, and (since the consensus of OECD governments seem to be that inflation is much preferred to deflation) a coordinated expansion of the money supply to head it off. However, as this scenario becomes more likely, we will also see a sharp rise in bond yields, which will set off yet another credit market crisis. However, in trying to estimate which of these scenarios will develop, rather than facing two critical uncertainties, it seems more and more like we face only one: What will China do?

In our March, 2004 Economic Update, we took an in-depth look in China. We concluded that its long term goals seemed to be preserving the rule of the Communist Party, maintaining domestic order, and accumulating sufficient power to eventually replace the United States as the world’s dominant power. We also noted an excellent (and then brand new) report from the RAND Corporation (“Fault Lines in China’s Economic Terrain” by Wolf, Yeh, Zycher Eberstadt and Lee) that summarized the significant obstacles China would have to overcome to achieve these goals (for a more recent update, see “On China’s Internal Stability” by Heungkyu Kim). Today, three of the most pressing problems confronting the country’s leadership are rising inflation, which exacerbates growing popular resentment of widening income inequality and China’s endemic corruption (on the latter, see “Corruption Threatens China’s Future” by Minxin Pei).

It is in this context that we must evaluate the choice facing China’s leaders as to whether or not to take steps to substantially increase domestic consumption spending. On balance, we believe that a combination of long and short term considerations make it more likely that China will decide not to significantly stimulate domestic demand in order to help the world economy avoid a prolonged recession. Strategically, a prolonged recession would further weaken the United States, and strengthen China’s relative position. Moreover, a prolonged crisis in the capitalist economies of North America and Europe might also strengthen the Chinese regime’s popular legitimacy at home, and help defuse some of the current tensions over inequality and corruption. Last but not least, as a means of moderating the sharp rise in domestic inflation caused by the pegging of its currency to the U.S. dollar, a slowdown in growth (as would be caused by falling exports to the U.S., in the absence of increased domestic

consumption) might be preferable to a sharp appreciation of the renminbi, which would trigger immediate, very large, and quite possibly politically costly losses on China's foreign exchange reserves. In sum, while we clearly see how an appreciation of the renminbi versus the U.S. dollar and increased Chinese domestic consumption could benefit the rest of the OECD, we cannot say the same for the benefits to the Chinese leadership in the short and medium term. Hence, we think that a prolonged global recession is the most likely outcome of the forces underway today.

The second part of our basic framework for understanding the world economy is how a prolonged recession would play out. We have posited the existence of two basic attractors in the chaotic gyrations that are likely to characterize a prolonged recession. One is a set of cooperative solutions whose aggregate effect would be to shorten the time spent in the chaotic recession phase; the other is continued conflict that is likely to deepen and prolong the downturn. More specifically, we have pointed to the future actions of three different groups as central to which of these attractors is likely to predominate. The first is Chinese peasants, who seem to hold the key to domestic stability in China. If their resentments continue to build (e.g., over continued land seizures, and poor rural health care, education and old age income security), and if they become better organized (e.g., through better use of technology, or by organizations like Falun Gong or disaffected former People's Liberation Army members), then the chances of serious instability in China and disruption to its (and, by extension, the world's) economy sharply increase.

The second key group is Iranian youth, where two thirds of the population is under thirty years old, and unemployment, by unofficial estimates, now stands at roughly 25 percent, while inflation approaches 20 percent. Clearly, these are conditions which one might expect to force a moderation of the extreme policies of President Ahmadinejad that seem destined, and perhaps intended, to provoke a bloody confrontation with the West that would threaten world oil supplies and further destabilize the Middle East. On the positive side, the National Intelligence Estimate released in December by the United States temporarily reduced the tensions that seemed to be driving both sides towards a military confrontation. However, it did not take long for Ahmadinejad and his supporters in the Revolutionary Guards and other radical organizations to quickly ratchet up the tension once again. Iran's parliamentary elections in March should be telling; clearly we are hoping for a widespread repudiation of Ahmadinejad.

If that doesn't happen, the chances for a destabilizing conflict involving Iran will rise substantially.

The third group is the American middle class, which, as we noted earlier, has been coming under steadily rising financial stress. The consequences of these unprecedented (at least for most Americans) pressures are currently on full display in the U.S. presidential primaries. For all his faults, Richard Nixon was one of America's most astute politicians. One of his great pieces of advice to people considering running for public office was only to do so if "you had something different to say, and the voters were ready to listen to you." This year's primaries have provided a fascinating example of the enduring power of Nixon's advice. Both parties have offered up two types of candidate: one positioned as the experienced manager with a firm grasp of policy (Clinton and Romney), and the other positioned as an inspiring leader, at least in the eyes of some (Obama and Huckabee). The final candidate in this mix has been Senator John McCain, who presents a unique blend of policy experience, independence, and inspiring personal history and character. The results from the primaries to date seem to indicate that this is not a year in which the electorate wants to hear about policy competence; rather, with the dawning realization of the depth of problems that lie ahead, they seem to be looking for inspiring leadership, and perhaps strength of character. As Douglas Schoen noted in the *Washington Post*, "Voters today aren't just fed up with the status quo; they're furious." In this volatile environment, another *Post* writer, E.J. Dionne noted that Obama's growing strength was due to Clinton "promising toughness, competence, clarity and experience in a year when Democrats are seeking something closer to salvation." On balance, McCain may be the candidate who is best able to eventually forge cooperative solutions to the crises to come, while the other candidates, to varying degrees, seem more likely to exacerbate existing divisions and conflicts within the United States that could easily spill over to affect the wider world (e.g., via a sharp increase in protectionism).

Finally, our basic framework for understanding the world economy and financial markets also includes two "wildcards" whose impacts, while impossible to predict, could easily be very substantial. The first is the continuing evolution of the H5N1 influenza virus. While the "pandemic flu" headline long ago disappeared from the world's headlines, the virus itself has continued to steadily evolve. Worryingly, one of these evolutionary developments has been the appearance of Tamiflu resistance in some strains (Tamiflu is one of the world's few

antiviral drugs, and great hope had been placed on its ability to help control a widespread outbreak of H5N1 in humans). On the positive side, we have not seen any sharp increase in rates of human to human transmission, even in Egypt and Indonesia, the two countries where H5N1 seems to be most widespread and fast developing. On the other hand, H5N1 continues to be unusually lethal in those humans who become infected. If the past is any guide, then as evolution makes H5N1 easier to pass between humans, it should also become less lethal. If that doesn't happen, we are likely in for a very nasty stretch that could substantially reduce global growth rates.

The second wildcard is a new one: a major environmental incident that causes very substantial economic damage and/or widespread loss of life. We expect that such an event would trigger a rapid acceleration in efforts to limit CO2 and other emissions, which in turn would both create new investment opportunities (e.g., in the so-called "cleantech" space) but also possibly slow down economic growth in other areas as taxes are imposed on CO2 emissions. If this environmental shock came in the middle of a global recession, its affect could be quite beneficial; however, if it came in the middle of a period of strong economic growth, it might have a negative effect.

The following table updates our economic early warning indicators through the end of January 2008:

<b>Indicator</b>	<b>Dangerous Trend</b>	<b>Recent Observations</b>
<i>Real Return Bond Yields</i>	Declining (lack of investment relative to savings)	Unusually low (due to high savings and low levels of investment spending outside of China) and declining.
<i>Yield on Nominal Return Ten Year U.S. Treasury Bond</i>	Sharp rise, which would further worsen the credit contraction.	Currently very low, consistent with the Federal Reserve's monetary easing to stimulate the economy and low expectations for future inflation.
<i>Oil Prices</i>	Remain at high levels in spite of global recession (Since oil price functions as a tax on consumers, higher prices raise probability of economic slowdown)	Still quite high, which imposes a further drag on demand growth around the world.

<b>Indicator</b>	<b>Dangerous Trend</b>	<b>Recent Observations</b>
<i>Domestic Private Demand (consumption and investment) Growth in Japan and Eurozone</i>	Failing to increase (world growth remains overdependent on U.S. consumer spending)	Signs of weakening are appearing.
<i>Private and Government Consumption Spending in China</i>	No Increase (world remains overdependent on U.S. consumers; danger of overinvestment and deflationary pressure in many industries)	Chinese economic growth actually appears to be slowing.
<i>Political Instability and Increased Repression in China</i>	Increase signifies higher probability of sharp economic slowdown in China and/or higher global tensions	Evidence that it is growing; e.g., increased reports of protests by peasants and disaffected former PLA members.
<i>Iranian Rhetoric and Actions on Nuclear Issue</i>	Aggressive rhetoric and actions raise probability of dangerously destabilizing military clash between Iran and West. Outcome of March elections will be a good indicator of whether moderation lies ahead.	While December U.S. National Intelligence Estimate that downplayed imminence of Iranian nuclear threat created conditions for easing of tensions, Ahmadinejad apparently saw it as a sign of weakness, and escalated his rhetoric and visible nuclear actions.
<i>Policy Solutions Gaining Popularity with American Middle Class</i>	Protectionist trade measures and punitive taxes increase likelihood of a longer and deeper economic slowdown	Situation is highly unstable, as conditions in the economy and electorate continue to evolve.
<i>Human-to-Human Transmission of H5N1 Virus, and Associated Mortality Rate</i>	Easier human-to-human transmission without a significant decline in the current mortality rate	Evidence in Indonesia and Egypt of increased transmission rates and Tamiflu resistance, with high mortality rate especially among young people. Transmission rates have not yet risen to pandemic levels.
<i>Major Environmental Event With High Cost and/or Loss of Life</i>	Slowdown in economic activity due to lag between imposition of high CO2 tax or emissions limits (which would reduce consumption) and eventual rise in	Continued droughts in key areas (e.g., U.S. southeast and southwest) have potential to pass a tipping point and trigger serious, visible consequences.

Indicator	Dangerous Trend	Recent Observations
	investment spending to deploy new cleantech solutions.	

In light of our outlook for the economy, our outlook for financial markets in 2008 is pessimistic. In terms of asset class valuations, our current views are summed up in the following table (for more of the logic that led us to these conclusions, please see this month's Market Valuation Update section):

<b>Probably Overvalued</b>	Commodities, Corporate Bonds/Credit Risk, Equity Markets (except Australia, Eurozone, and UK)
<b>Likely Overvalued</b>	Commercial Property
<b>Possibly Overvalued</b>	
<b>Possibly Undervalued</b>	Australian Dollar and UK Pound Government Bonds; UK Equity
<b>Likely Undervalued</b>	Euro, Canadian Dollar and Australian Dollar Real Return Bonds (note that SSGA is expected to soon launch a new ETF that provides exposure to a global real return bond index)
<b>Probably Undervalued</b>	Non-U.S. Dollar Bonds (based on expected XR changes), Equity Volatility, and Timber

So what are the implications of our views for asset allocation? Frankly, our opinion hasn't changed since we wrote the following in our May 2007 issue: "As we have often written, for investors pursuing long-term goals, avoiding big downside losses is more important than reaching for the last few basis points of higher returns. That prejudice (and backgrounds in fixed income and credit) naturally predispose us to be cautious...But what we sense today goes beyond that. In the ten years our publications have been in existence, we have never suggested taking what for us is a radical step: reducing one's exposure to different asset classes, and raising holdings of cash. We have long believed that, over the long-term, a well-diversified portfolio should be able to weather most storms. However, at this point, we're not so sure that's true about the one we see on the horizon. For that reason, and in spite of the possibly unpleasant tax consequences, we think that reducing exposure to the most overvalued asset classes and either raising allocations to undervalued asset classes or moving into cash (or short term government bonds) looks more and more like the most prudent course of action."

From a technical point of view, we should also note that we do not include an explicit allocation to cash in our model portfolios, which represent our recommended allocation of those funds that have been invested in financial assets. The logic for this approach is that, given the wide range of background risks that individuals face (e.g., those related to job security, variable mortgage resets, litigation exposure or potential health expenses) and the extent to which they can and have hedged them, we cannot model the right proportion of one's total assets (financial and non-financial) to hold in liquid form (e.g. cash and gold). Hence, we do not include an allocation to liquid assets in our model portfolios.

We should also emphasize that there is an argument to be made for avoiding this type of episodic market timing, and staying fully invested, though perhaps with a portfolio reallocated towards overweight positions in asset classes that appear to be undervalued. In this month's Product and Strategy Notes, we examine this argument in more detail. We do not deny that the available evidence makes the right decision under the current circumstances a tough call. Another way to look at it may be to reconsider the adequacy of one's liquid reserve in light of any increase to one's labor income and debt financing costs under the downside scenario we have described. If an investor's current precautionary savings still seem adequate, then there is a good argument for staying fully invested. But if this isn't the case, some liquidation of investments and an increase in cash is the prudent course of action to follow.

## **What's Not in Our Model Portfolios, and Why**

Over the past year, we have been asked about different asset classes and why they aren't included in our model portfolios. As we start a new year, we thought it would be useful to sum up our replies to these questions in a single article.

### Equity Volatility

We have long noted the potential benefits of having a product based on the VIX index available for our model portfolios, as it provides exceptional hedging benefits against sharp market downturns – exactly the type of “tail risk” that makes most investors recoil. Commodity index

products have shown that it is possible to construct such a fund, with most of the cash invested and TIPS or other government bonds, and a small portion used to purchase and continuously roll over forward and futures contracts on the target index to provide exposure to the target asset class. With implied and realized volatility futures products now trading, the building blocks for a product that would give individual investors access to this asset class now exist. It only remains to be seen whether one or more ETF sponsor will launch such a product. So the only reason this asset class is still missing from our model portfolios is because there is no easy way for individuals to invest in it.

### Emerging Markets Debt and Domestic High Yield Debt

Late in 2007, two new ETFs that track emerging markets debt indices were introduced by Powershares (PCY, .50 expense ratio) and iShares (EMB, .60 expense ratio). These joined three similar ETFs that invest in domestic “high yield” debt (what in the old days, we used to call junk bonds). These latter products come from iShares (HYG, .50 expense ratio), PowerShares (PHB, .50 expense ratio) and SSGA, with the appropriately tickered JNK (.40 expense ratio). We have not included any of these in our model portfolios because neither emerging markets debt nor domestic high yield debt meets our criteria for a broadly defined asset class. In the case of emerging markets debt, the return generating process is too similar to that for emerging markets equity, with both dominated by political risk factors. In our view, it is better to invest in an equity index (that puts no upper limit on the compensation an investor can earn for bearing this risk) than an emerging markets bond index. In addition, we highly suspect the historical data and statistical analysis upon which rests many cases made for emerging markets bonds as an attractive investment. To be sure, we aren’t the only ones asking this question – for example, the IMF recently published a working paper titled “Emerging Market Spread Compression: Is It Real, or Is It Liquidity?” (by Hartelius, Kashiwase and Kodres). They conclude that while in some cases falling emerging market bond spreads versus U.S. Treasuries reflects improvements in the real economy, monetary developments have also been important, and “expectations of future U.S. interest rates and the volatility of those expectations are also a key determinant of emerging market spreads.” Our argument against domestic high yield debt is more straightforward – the correlation between total returns on any

of these indices and total returns on the domestic equity market is above our .60 maximum. Put differently, given their tendency to default and get restructured into equity (a process only made much more complicated as the market for credit derivatives has grown), the underlying return generating process between high yield bonds and equities is too similar to treat them as distinct asset classes.

## Water

The case for investing in water as an asset class (as opposed to taking a tilt within equities towards companies that are active in the water area) is based on two often implicit assumptions. First, as clean water becomes increasingly scarce, governments will allow its price to substantially increase. Second, there are vehicles available that enable an investor to participate in this future price appreciation. While we have serious doubts about the first premise (the politics of raising water prices presenting a daunting obstacle, see, for example, the book Cadillac Desert), our concern with respect to adding water to our model portfolios lies with the second. In some jurisdictions (say the southwestern United States), it might indeed be possible for a fund to invest in water rights – in fact, one listed company (Pico Holdings, ticker PICO) has generated impressive returns in the past by doing just that. Alternatively, a company might seek to create water rights by constructing and operating desalinization plants. However, regardless of the approach used, the fact remains that virtually all of the funds that are investing in these areas are not publicly traded and available to individual investors.

That said, in the United States at least four different ETFs have been launched that claim to focus on “water”, including PIO (.75 expense ratio) and CGW (.50 expense ratio), both of which are global in scope, as well as the domestically focused PHO and FIW. However, rather than investing in the commodity itself (e.g., via the aforementioned water rights), these funds are really a means of taking a tilt within the equity asset class towards companies that are expected to benefit from water’s growing scarcity. However, in this case it is not enough to say that one expects the price of the water itself to increase. Rather, to logically justify an investment in water related equities, one must also believe that they are undervalued today. To use an analogy from the commodities asset class, it is the same as the difference between investing in commodity funds or natural resource equity funds. Of course, this point raises

another logical question of why commodity funds don't include water. When and if water futures contracts start trading, we're sure they will. So, while today PICO might make for an interesting investment, we haven't reached the point where a sufficient number of water rights investment vehicles are available to individual investors to justify including water as a separate asset class (like timber) in our model portfolios.

## Gold

Our view on gold is straightforward. The core argument for investing in gold is that it will remain a viable store of value if and when the value of paper money is undermined by high inflation. This clearly implies that a portion of an investor's liquid reserves should be held in the form of physical gold (e.g., coins) as well as a diverse portfolio of currencies.

However, as our frequent readers know, we also believe that, given the range of background risks that individuals face (e.g., those related to job security, variable mortgage resets, litigation exposure or potential health expenses) and the extent to which they can and have hedged them, we cannot model the right proportion of one's total assets (financial and non-financial) to hold in liquid form. Hence, we do not include liquid assets (e.g., cash and gold) in our model portfolios.

On the other hand, all investors with a position in the commodity indexes we use in our model portfolios will have some exposure to gold, though not in a liquid form that can be used to survive in the face of hyperinflation. Similarly, one could, in theory, tilt one's equity allocation toward gold stocks (or water stocks) if one concluded (on the basis of some forecasting model) that they were undervalued, and were likely to outperform over some time horizon.

## Carbon

There is clearly an accelerating trend underway that recognizes the seriousness of global warming, and is moving more quickly toward action steps to limit the risk it poses. Two main scenarios have emerged, with one placing a tax on carbon emissions and the other using a market based system of tradable emission allowances. While economists argue that the former

is more efficient, decision makers around the world seem to have been swayed by the argument that cap and trade systems are more politically acceptable. That is the direction in which the world has been moving, with the European Union in the lead. We have already written quite a bit about the investing implications of climate change, and investing in carbon emissions certificates in particular (see our November 2006 and September 2007 issues). We would like to add this asset class to our model portfolios. Unfortunately, we again confront a situation in which the products to implement this plan simply aren't available yet to the majority of individual investors. To be sure, there are signs of progress, including Barclays Capital's launch of a new Global Carbon Index in December 2007. Their goal appears to be establishing the same leadership position in this asset class that they have in real return bonds. Eventually, we fully expect to see innovative investable carbon index products from Barclays Global Investors and other firms (e.g., XShares already has an "AirShares" ETF in registration with the U.S. Securities and Exchange Commission). Unfortunately, because these products are not yet available, we haven't included carbon as an asset class in our model portfolios.

### Longevity (Mortality)

We have written in the past (see our December 2006 issue) about the world's exposure to longevity risk (i.e., the risk that average lifespans are either much longer or shorter than currently forecast), and the potential for this to become a new investable asset class. For example, defined benefit pension fund sponsors and issuers of annuities are both short longevity risk, as a further decrease in the mortality rate (i.e., longer average lifetimes) would increase the size of the financial liability they face. In contrast, life insurance companies are long longevity, as an increase in average lifetimes might be expected to raise their premium income. On a net basis, current players are short longevity risk by a considerable amount. What is needed are standardized securities that facilitate the trading of this risk and sharing of it with other parties who are willing to bear it provided the expected return is sufficient. As we have previously noted, this is already beginning to happen (for an even more recent review, see "CAT Bonds and Other Risk Linked Securities: State of the Market and Recent Developments" by J. David Cummins of Temple University). More important, the pace of innovation is accelerating, with JP Morgan Chase recently introducing LifeMetrics, which should provide a

standard from the development of new securitized longevity risk products (see, “Longevity: A Market in the Making” by Loeys, Panigirtzoglou and Ribeiro of JP Morgan Chase). Again, at some point we fully expect to see an ETF structured like current commodity products, with an underlying investment in TIPS or government bonds backing an investment in longevity forwards, futures and swaps. When these products arrive on the market and individual investors can invest in longevity, we will include this asset class in our model portfolios. Unfortunately, we’re not there yet.

### Infrastructure

With two new infrastructure ETFs available to U.S. investors (GII from SSGA and IGF from iShares), we must once again face the question of whether or not this represents a separate broadly defined asset class that should be included in investor portfolios. Back in November 2006, we noted that “infrastructure is the new new thing. So, just what is infrastructure? Is it a new asset class? A new sure fire way to make money? No. It is what, in a bygone age, many of us called "utilities." Today, infrastructure is one of those maddening faddish investment terms whose meanings too often stretch like rubber to cover a multitude of sins. Toll roads and bridges are infrastructure. So are airports. And power plants. And water works. And pipelines. Basically, if it is a monopoly or oligopoly, requires large amounts of capital expenditure, lasts for a long time, and George Banks sang about it in *Mary Poppins*, (in the Fidelity Fiduciary Bank song) it's infrastructure (he was just a little ahead of his time, I guess. Who knew?).

So what's the appeal? In theory, steady long term cash flows that adjust for inflation, with perhaps a little more upside than a bond, assuming you can either grow your franchise, creatively structure your debt financing, or negotiate a higher return with the regulators. That's the theory, at least. However, based on twenty plus years experience with what, in the old days, used to be called "project finance" (before it became "infrastructure") we have a somewhat more jaded view. Infrastructure is not a separate asset class. In some cases (e.g., airports, seaports) cash flow has a relatively strong correlation with GDP growth, and therefore with equity markets. In other cases with less cyclical demand (say, a water utility), share values should move up and down with local interest rates, just like a domestic bond. But unlike a bond, there is more risk involved with infrastructure projects. Just ask anybody who financed

an infrastructure project with foreign currency debt and then discovered that it was politically impossible to raise prices (take your pick: tolls, power rates, water and sewer rates etc.) by an amount sufficient to meet rising debt and maintenance costs. Just ask the original investors in the Channel Tunnel. So much for that steady real income you had counted on to offset your pension fund's rising long term real liabilities. And if the infrastructure is located in another currency zone (from the one in which the investor's long term liabilities are denominated), that only makes things more exciting (especially if it uses foreign currency debt in its capital structure). Believe us, we've seen lots of things go wrong with infrastructure investments over the years. So excuse us for not jumping on the bandwagon. We've seen this movie before."

Our thinking hasn't changed over the past year. In fact, the new investable index products have only strengthened it. For example, over the past 12 months, the correlation between the return on GII and the return on KXI (global consumer staples ETF) is .97; the correlation with the global utilities ETF (JXI) is .99. In sum, we regard infrastructure as a tilt one can take within the equity asset class, and not a distinct asset class in itself.

## Product and Strategy Notes

### To Time Markets, or Not?

A number of recent papers have shed more light on a debate that has long graced the pages of our publications: Does it make sense to try to time markets? To briefly sum up our position, we distinguish between four different types of "market timing", depending on their motive (earning higher returns versus limiting downside risk) and the means used (systematic programs versus episodic "one off" decisions). In general, we believe that episodic market timing to earn substantially higher portfolio returns is a losing game, due to the weakness of most investors' forecasting models and the presence of transaction costs (e.g., commissions, bid/ask spreads, and taxes). On the other hand, we strongly believe in the ability of systematic rebalancing (triggered by actual portfolio over and underweight levels, rather than the simple passage of time) to help keep a portfolio within or at least near its targeted risk limits. Based on our analysis of historical data, we also believe that a systematic approach to over and underweighting, within the overall rebalancing strategy, can help boost long returns, though by a relatively small amount. Specifically, we advocate rebalancing the most overweight asset class in a portfolio to slightly under its target weight, and the most underweight asset class to

slightly over its target weight. Assuming that over time most asset class returns will mean revert, this should (and, in historical simulations, does) add a slight boost to long term returns. This leaves perhaps the most controversial box in our matrix: episodic market timing to limit exposure to significant downside risks (see, for example, the article in our May 2007 issue calling for reduced exposure to some asset classes we believed to be overvalued). On the one hand, when it comes to achieving an investor's long term portfolio objectives, the mathematical importance of avoiding large losses is very clear. The following example shows how a large loss (in Case 2) compared to small loss (in Case 1) substantially raises the future returns required to achieve a given portfolio goal:

<b>Starting Value</b>	\$ 100.00		
<b>Year</b>	1	2	3
<b>Return, Case 1</b>	7%	5%	9%
<b>Value, Case 1</b>	\$ 107.00	\$ 112.35	\$ 122.46
<b>Return, Case 2</b>	7%	0%	14%
<b>Value, Case 2</b>	\$ 107.00	\$ 107.00	\$ 122.46

On the other hand, avoiding substantial losses would seem to raise the same issues regarding the weakness of most investors' forecasting skills. Should we expect a market timing approach focused on avoiding large downside losses to be any more successful than one focused on generating large upside gains? In our view, the answer to this question is a qualified "yes."

We believe that the oft-heard description of investor and market psychology as a fight between fear and greed is an oversimplification that hides some important forces at work. On the one hand, investors tend to make three predictable mistakes when it comes to asset valuation: they are overoptimistic (i.e., they tend to overestimate an asset's expected return), overconfident (i.e., they tend to underestimate the year to year variability of these returns) and biased towards paying attention to evidence that confirms rather than disconfirms the views they currently hold (for a good recent example of a paper on the latter, see "Do Investors Overweight Personal Experience?" by Kaustia and Knupfer).

On the other hand, investors tend to feel the impact of losses twice as intensely as they feel the impact of gains. Taken together, we believe that these fundamental forces have two critical consequences. First, assets should be overvalued more often than they are undervalued.

Second, once the confirmation bias is overcome, extreme downside moves should be more common than extreme upside moves. While the first proposition is difficult to support with historical data (since it is inherently dependent on the asset valuation model used), the second is not. The following table is drawn from a fascinating new paper, “Black Swans and Market Timing” by Javier Estrada. Across a range of equity markets, he shows that between 1990 and 2006, extreme negative and positive returns (more than three standard deviations from the mean) were far more likely than would have been the case had these returns been normally distributed. The table shows how much more frequent these extreme returns were (compared to a normal distribution). As you can see, in every case, extreme downside moves were more common.

<b>Country</b>	<b>Extreme Downside Moves Relative to Normal Distribution</b>	<b>Extreme Upside Moves Relative to Normal Distribution</b>
Australia	4.4x	3.2x
Canada	6.9x	4.1x
France	6.2x	4.8x
Germany	5.3x	4.8x
Japan	6.8x	5.8x
Switzerland	7.9x	4.8x
United Kingdom	5.3x	4.6x
United States	6.4x	6.1x

While this data appears compelling as to the relative frequency of extreme downside and upside moves, it does not address a point famously made by John Maynard Keynes with respect to betting against overvaluations by taking short positions: “The market can stay irrational longer than you can stay solvent.” An excellent new paper reinforces this view. In “Natural Selection in Financial Markets: Does It Work?”, Hongjun Yan of Yale University shows that the selection process that removes investors with incorrect beliefs from the market at best only operates at very long time frames. He concludes that “investors with incorrect beliefs have a significant and long-lasting impact on asset prices.” This raises the question of whether the potential gains from episodic market timing to avoid large downside losses are greater or lesser than the foregone gains from avoiding market timing and staying fully invested in a given asset class.

In the previously mentioned “Black Swans” paper, Javier Estrada shows the average annual geometric nominal return for different equity markets over the 1990 to 2006 period, as well as the change in those returns assuming an investor had missed the 20 best and 20 worst trading days over this 17 year period:

<b>Country</b>	<b>Geometric Average Return (Always Invested) Over Full Period</b>	<b>Incremental Impact on Geometric Return if 20 Best Days Were Missed</b>	<b>Incremental Impact on Geometric Return if 20 Worst Days Were Missed</b>	<b>Net Incremental Impact of Missing All 40 Extreme Days</b>
Australia	7.5%	-3.3%	+4.3%	+1.00%
Canada	7.2%	-4.4%	+5.5%	+1.10%
France	6.5%	-5.7%	+6.2%	+0.50%
Germany	8.0%	-7.5%	+8.2%	+0.70%
Japan	-4.7%	-6.6%	+6.4%	-0.20%
Switzerland	9.4%	-5.8%	+6.5%	+0.70%
United Kingdom	6.0%	-4.7%	+5.0%	+0.30%
United States	8.5%	-7.3%	+5.5%	-1.80%

As you can see, the incremental impact of missing either the 20 days with the most extreme upside or the most extreme downside returns was quite large relative to the return earned from being fully invested. And in most markets, the impact from missing the big downside moves was somewhat larger. However, this data does not answer an equally important question: how closely are the days with extreme upside and downside moves related in time?

Another excellent recent paper helps us to answer that question. In “Anomalies in the Serial Correlation of Returns”, Gautam George from Brandeis University finds that the serial correlation of returns (that is, the extent to which the return on one day is related to the return on the previous day) is actually negative following an extreme downside move. Quite logically, he notes that this is most likely related to the role played by the disappearance of market liquidity in the process giving rise to the large downside moves. Put differently, George asserts that when prices rapidly reverse (i.e., when an incremental piece of information finally causes many investors to overcome their previous confirmation bias, and sell ahead of the crowd) the rapid reduction of liquidity may cause prices to fall below their fundamental value, and thus create the opportunity for large upside gains to those investors who provide liquidity

when it is very scarce. In sum, the evidence suggests that days with extreme negative and positive returns are likely to fall quite close together, which makes episodic market timing challenge to minimize large downside losses even more difficult.

Or does it? The last column shows the net incremental impact on geometric average return of missing the 40 days with both the highest and lowest returns between 1990 and 2006. If you assume that most extreme returns occur fairly closely in time (as assertion further supported by the well known tendency of volatility to cluster in short regimes of high variability, and longer regimes of lower volatility), then missing them – as a result of episodic market timing intended to avoid large downside moves in overvalued asset prices – in most cases would have boosted returns over the period studied. This is not to say that this will be the case in the future, or that this strategy is without risk (e.g., due to use of an inaccurate valuation model, or due to investors’ “animal spirits” driving very high returns after an investor has withdrawn from an asset class). However, even after reviewing a number of recent studies on this very important issue, we continue to believe that, when one or more asset classes appears to be substantially overvalued (which will always remain a subjective judgment), episodic market timing to avoid large downside losses appears to be a prudent strategy to follow.

For more reading on both sides of this issue:

1. “Riding Bubble” by Guenster, Kole, and Jacobsen: Incremental returns from riding bubbles may be greater than the incremental crash risk taken on.
2. “Global Tactical and Cross-Asset Allocation” by Blitz and Vliet: Market timing across asset classes can deliver (at least in hindsight) significant abnormal returns.
3. “On Turning to Market Timing” by Benjamin Cotton of Ford Motor Company: market timing is not a good strategy for most investors.

### Two Writers Whose Work You Should Read

James Montier and Michael Mauboussin are two of the few writers who are in our “must read” category, because of the insights they provide into the practical application of behavioral finance theories. Montier recently moved from Dresdner Kleinwort to SocGen, and Mauboussin from Credit Suisse to Legg Mason. Both publish regular research notes and have

written books that bring together much of their previous writing. The latest of these is from Montier, titled Behavioral Investing: A Practitioner's Guide to Applying Behavioral Finance. Across 700 pages, it makes a compelling case for why evolution has made active management success so hard to sustain over the long term. We agree with the reviewer from the *Financial Times* who called it “simply the best and most comprehensive treatment of the subject to date.” Buy it and enjoy a good read on a cold winter day.

Elsewhere, Mauboussin has recently published three research notes on subjects near and dear to our hearts. The first two are on “Death, Taxes and Reversion to the Mean” and “ROIC Patterns and Shareholder Returns.” To oversimplify their main messages, (1) mean reversion is a powerful force that regularly undermines overoptimistic growth projections and investor overconfidence about the future return variability; (2) companies that deliver superior returns not only get the basics right, but also tend to benefit from superior industry structural conditions that support high profit margins; and (3) mean reversion makes it hard to identify these companies in advance.

### Recent Research of Note

- In “Determinants of Risk Taking Behavior: The Role of Risk Attitudes, Risk Perception and Beliefs”, Nasic and Weber from the University of Mannheim study factors affecting investors' portfolio decisions. They find that questionnaires that attempt to predict financial behavior by asking about risk preferences in other domains (e.g., lotteries) do not correlate well at all with the portfolio decisions they observe. Rather, accurate assessment seems to require asking questions of investors that are specific to the investment domain. However, they also find that simple “risk attitude” surveys also fail to correlate closely with observed portfolio behavior. They conclude this is due to other important factors also having a strong influence on investors' decisions, including their perception of the riskiness of different assets, which in turn may be colored by their underlying degree of over-optimism and overconfidence. Overall, it appears from their research that there is much room for improvement in the “fact find” and “know your client” tools used by financial advisors.

- In “Depression Babies: Do Macroeconomic Experiences Affect Risk Taking?”, Malmendier and Nagel find that experience early in life have a strong and lasting impact, along with more recent returns on different asset classes.
- Bullard, Friesen and Sapp find (in “Investor Timing and Fund Distribution Channels”) that “investors who transact through investment professionals using conventional distribution arrangements experience substantially poorer timing performance than investors who purchase no load funds.” Investors who buy Class B shares seem to fare worst of all. The authors also noted that “no load index funds are the only funds found to show no evidence of poor investor timing.” They conclude that “these findings question the value being added by investment professionals who sell mutual fund shares through conventional distribution arrangements.”
- In “Do REITS Behave More Like Real Estate Now?”, Tsai, Chen and Sing find that they do, “because investors are better able to price the underlying [real estate] assets the longer REIT assets are securitized.”
- Buyuksahin, Haigh and Robe note that “amidst a sharp rise in commodity investing, many have asked whether commodities nowadays move in sync with traditional financial assets.” The authors find that “the relation between the prices of, and returns on, investable commodity and U.S. equity indices has not changed significantly in the last fifteen years” nor do they find any “evidence of a secular increase in co-movement between the returns on commodity and equity investments during periods of extreme returns.” In sum, commodities still appear to be a good source of diversification benefits in a portfolio.
- Housing is a subject very much on people’s minds these days. In “The Rent Price Ratio for the Aggregate Stock of Owner-Occupied Housing”, Davis, Lehnert and Martin find that in the United States, “the rent-price ratio ranged between 5 and 5.5 percent between 1960 and 1995, but rapidly declined after 1995. By year-end 2006, the rent-price ratio

reached an historic low at 3.5 percent.” They conclude that “for the rent-price ratio to return to its historical average, house prices likely would have to fall considerably.”

- In our writing over the past ten years, we have repeatedly noted that financial asset allocation involves much more than crunching historical risks and returns for different assets through an optimizer. For example, considerations like the expected level and risk of labor income, exposure to residential real estate, and the extent to which these risks can and are insured should all play a role. This logic is both confirmed and extended in a new paper by Goldman and Maestas from the RAND Corporation, who examine “Medical Expenditure Risk and Household Portfolio Choice” by retired investors. They find that exposure to health care expense risk is significant, and that hedging this (e.g., via Medigap insurance or participation in an HMO) results in a greater allocation of a retired investor’s portfolio to risky assets. The authors link their analysis to a broader discussion of the inadequacy of simple mean/variance analysis as a basis for measuring investor utility, which entails the broader notion of moderating total exposure to investment and non-investment risks and the use of precautionary saving, insurance and other means (beyond asset allocation) to manage them.
- What would a quarter be without yet more new papers weighing in on the underlying causes of the higher returns one observes (historically, at least) on stocks of small companies and those with high book to market ratios (so called “value” stocks)? In “Does Noise Create the Size and Value Effects?”, Arnott, Hsu, Liu and Markowitz answer in the affirmative. “Noise” trading is buy and sell orders that is not driven by the arrival of public or private information that changes an investor’s estimate of the fair value of an asset. For example, investor’s who sell because of sudden liquidity needs, and investors who buy because they anticipate that other investors will be doing the same are examples of noise using this definition. Just as important, in another new paper (“Natural Selection in Financial Markets: Does It Work?”), Hongjun Yan shows that such noise traders can have a substantial impact on asset prices and returns, implying that markets operating in disequilibrium may be the more normal state of affairs than the efficient markets populated by rational investors so beloved by many

academic theorists. Of course, it also bears mentioning that this conclusion certainly strengthens the case for fundamental indexing, which is also advocated by Arnott and Hsu, since it shows why indices based on market capitalization weighting can contain – and sustain – pricing errors. On the other hand, there is no shortage of papers on the other side of the argument, which claim to demonstrate how the small stock and value stock premiums represent compensation for bearing some type of risk. Garcia-Fejoo and Jorgensen recently published another paper in this vein, “Can Operating Leverage Be the Cause of the Value Premium?” They conclude that “the evolution of systematic risk associated with firm-level investment activity, rather than financial distress, seems to be the main determinant of the value premium.” We don’t expect this debate to end any time soon.

- Last but not least, we cannot say we were surprised to read that Claymore Securities is closing down a number of the exchange traded funds it launched over the past year. Let’s just say that we never expected the market for such gems as the “Sudan Free Large Cap Core” or the “Global Vaccine” indices to be very large. Frankly, the more and faster that these active quant equity strategies dressed up in index clothing ETFs disappear from the scene, the better off most investors will be.

## Model Portfolios Year-to-Date Performance

Our model portfolios are constructed using a simulation optimization methodology. They assume that an investor understands the long-term compound real rate of return he or she needs to earn on his or her portfolio to achieve his or her long-term financial goals. We use SO to develop multi-period asset allocation solutions that are “robust”. They are intended to maximize the probability of achieving an investor’s compound annual return target under a wide range of possible future asset class return scenarios. More information about the SO methodology is available on our website. Using this approach, we produce model portfolios for six different compound annual real return targets: 7%, 6%, 5%, 4%, 3%, and 2%. We produce two sets of these portfolios: one assumes only investments in broad asset class index funds. These are our “all beta” portfolios. The second set of model portfolios includes equity market

neutral (uncorrelated alpha) funds as a possible investment. These assume that an investor is primarily investing in index funds, but is willing to allocate up to ten percent of his or her portfolio to equity market neutral investments.

We use two benchmarks to measure the performance of our model portfolios. The first is cash, which we define as the yield on a one year government security purchased on the last trading day of the previous year. For 2008, our Swiss Franc cash benchmark is 2.73% (in nominal terms). The second benchmark we use is a portfolio equally allocated between the ten asset classes we use (it does not include equity market neutral). This portfolio assumes that an investor believes it is not possible to forecast the risk or return of any asset class. While we disagree with that assumption, it is an intellectually honest benchmark for our model portfolios' results.

The year-to-date nominal returns for all these model portfolios can be found here:

<http://www.indexinvestor.com/Members/YTDReturns/Swiss.php>