# Retired Investor

*Invest Wisely…Get an Impartial Second Opinion.*

## Contents



## This Month's Issue: Key Points

When the events we observe are at odds with our existing mental models of the way the world works, we are faced with a so-called "sensemaking challenge." This month's feature article summarizes a number of interesting and important recent articles that have helped us modify our mental model and better understand the underlying dynamics at work in the global economy and financial markets, and, we hope, develop more accurate scenarios for future asset class returns. These papers also provide a strong antidote to the over-optimism, overconfidence, and wishful thinking that are the sources of many mistaken decisions. Though painful in the short term, a gimlet eyed assessment of our current situation is surely better for our financial future than avoiding reality, is it not? In the near term, the implications of the papers we have reviewed for returns in many asset classes are not positive; more bluntly, they suggest that, if they have not already done so, investors would be well advised to focus on ensuring adequate liquidity (even if this means selling financial assets) and rebalancing asset allocations towards underweight positions in overvalued asset classes.

In our product and strategy notes, we provide a further update on developments in the emerging CO2 asset class, review another report that criticizes sector rotation strategies, look



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at new research of interest to financial advisors (including a very interesting paper on the extent to which retirees' higher than expected saving is driven by a desire to leave a bequest, a desire to hedge against uninsured health care expenses, or both), an update on the continuing value of diversification across asset classes (even in down markets), and studies from areas as diverse as network and memetics research that help us to better understand the "madness of crowds" and its impact on financial markets.

## This Month's Letters to the Editor

*How would you describe your investment philosophy?*

Unfortunately, our answer will be a little longer than your question! Our starting point is that the performance of all organisms and organisations can be evaluated using three metrics. The first is effectiveness: The extent to which stated goals (survival being the most important) are achieved. The second is efficiency: The extent to which the resources used to achieve those goals are minimized. And the third is adaptability: the extent to which the impact of changes in the external environment on effectiveness and efficiency is minimized. Across our publications, the dominant goal we seek to achieve is helping investors to achieve their post-retirement income and bequest targets in the face of uncertain future investment returns. We seek to do this by helping our readers to understand and make the trade-off this requires between current consumption, saving, and the risk that one's goals will not be achieved. For example, for a given set of goals, higher consumption and lower savings usually means more risk. That said, we also believe that different individuals will choose to make this trade-off in different ways, and that even the same individuals may, due to changing circumstances, change the nature of his or her trade-off over time. With respect to efficiency, we believe that active management is an extremely difficult – and expensive -- game to play consistently well given the inherent cognitive challenges, the intense competition, and non-stationary nature of the underlying return generating processes. For this reason we believe that the majority of an investor's portfolio should be invested in a diversified mix of broadly defined, low cost index funds (we are less concerned whether they are mutual funds or ETFs), with at most a small portion allocated to expensive, actively managed uncorrelated alpha strategies. Finally, when


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it comes to adaptability, we believe that financial markets are a complex adaptive system that, while attracted to equilibrium and accurate pricing seldom attain this state. In other words, we believe that over and undervaluations are a fact of investing life. We also believe that extended and extensive overvaluations are the most dangerous of circumstances, because of their psychological seductiveness, the rapidity with which they can unwind, and the severe impact large losses have on the probability of achieving long-term goals. Hence, once these goals have been set and consumption, savings, and risk taking policies to reach them have been established, we believe that investors should focus their day to day attention on trying to identify asset classes that have become substantially overvalued, so that they can either underweight or temporarily exit them.

*Hello from Cape Town! Could you please give me your views on the differences and similarities from an asset allocation perspective on the market neutral, low risk hedge and absolute return labels used by many fund management companies to classify their products?*

Unfortunately, with more investors (wisely, we think) deciding to broaden their portfolio allocations beyond traditional bonds and equities, too many financial services companies are choosing to make life hard for them through the use of confusing terminology. The major providers of information on hedge fund returns use different schemes for categorizing hedge fund investment strategies. For a good example of this, see the material provided by CSFB/Tremont (www.hedgeindex.com). One of these categories is Equity Market Neutral. As you know, at the most basic level, the return on a given equity security can be broken down into two parts: one that is related to the performance of the overall market (also known as systematic or beta return) and one that is related to the performance of the company itself and/or its industry (also known as idiosyncratic return or alpha). In a given asset class, the positive and negative idiosyncratic returns sum to zero, leaving just systematic return, which is what a passive investor in a broad asset class index receives. The manager of an Equity Market Neutral fund focuses only on the alpha portion of returns, and eliminates the beta portion (e.g., by taking offsetting long and short positions in different equities, or by going long individual companies and shorting the overall market index). For this reason, the returns he or she generates should be uncorrelated with the returns on broadly defined asset class




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index funds. Mathematically, uncorrelated returns are a very attractive addition to a portfolio – however, because they are derived from active management, they are also very difficult to consistently produce.

The other two terms you noted, "low risk hedge" and "absolute return" do not correspond to the categories used by the major providers of hedge fund return information. Hence, they are quite likely to be the product of someone's marketing department. Still, their use deserves a couple of sharp comments. Clearly, "low risk hedge" is meant to be soothing to prospective investors. But, as the 1998 blow up of Long Term Capital Management proved (and subsequent hedge fund blow ups proved again and again), there is probably no such thing as a "low risk" hedge fund strategy. LTCM provides an excellent example of what we mean. Its fundamental investment strategy was based on taking advantage of (i.e., arbitraging) small deviations in the historical relationships between different segments of the bond market. Its assumption was that these would inevitably return to normal, creating a small profit if you were long the undervalued and short the overvalued asset. The profits on each trade were small, and hence the strategy was assumed by many to be "low risk." It may even have been "market neutral" in the sense that its returns had a low correlation with the returns on broadly defined bond market indices. However, since the per-trade profit was small, LTCM had to employ large amounts of leverage to scale up the returns to a level that was attractive to their equity investors. Then in 1998 the Russian debt crisis forced those relationships to move in directions they never had before (a perfect example of what statisticians call "non-stationarity"). This caused LTCM to be on the losing end of lots of leveraged trades, and face lots of margin calls. When they couldn't meet them, the whole firm imploded. As they say, high leverage works both ways (as way too many homeowners have also come to realize). Unfortunately, what evidence is available indicates that, in the face of intensifying competition in recent years, the hedge fund industry as a whole has increased its use of leverage in order to keep delivering the returns its investors have historically come to expect.

Let's move on to "absolute return." Strictly speaking, a fund's absolute return is simply the return generated on the fund over a given period of time – say, 10%. In contrast, "relative return" would mean by how much the fund in question over or underperformed some index. For example, if the overall asset class returned 8%, the fund's relative return (or, in this


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case, alpha) would be 2%. Alternatively (just to confuse matters), if inflation was 4%, the fund's return relative to inflation (i.e., its "real return") would be 6% -- but its alpha would still be 2% (since the overall equity market return should also be reduced by inflation). Don't you love this? As a practical matter, most marketing departments probably intend "absolute return" to mean a fund whose goal is not to outperform an index, but rather to deliver at least a minimum level of positive return each year, regardless of market conditions (since an active investor can profit by going short if he or she expects the market to decline). How they do that – the underlying strategy they are using – is another matter. Whether or not an "absolute return" fund is market neutral – in the sense of producing the uncorrelated alpha that really helps a portfolio – is impossible to say without regressing its historical returns on the returns of different broad asset class indices. For example, research has shown that many hedge funds actually deliver a mix of beta and alpha returns, yet charge investors as if all the returns were uncorrelated alpha. On the other hand, global macro hedge funds are absolute return funds, but their returns tend to be correlated with returns on different asset classes, since their basic business is going long and short different asset classes. On the other hand, these correlations change over time – for that reason, we like to think of global macro as an outsourced way to dynamically take over and underweight positions compared to an investor's long-term asset class weights. The bottom line is that without understanding the investment strategy being used by an "absolute return fund", you really can't tell whether or not it should even be on your radar screen.




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# Global Asset Class Returns

| *YTD 30Jun08* | In USD | In AUD | In CAD | In EURO | In JPY | In GBP | In CHF | In INR |
|---|---|---|---|---|---|---|---|---|
| Asset Held | | | | | | | | |
| **US Bonds** | 1.06% | -8.25% | 3.78% | -6.70% | -4.34% | 1.08% | -10.09% | 9.45% |
| **US Prop** | -3.38% | -12.69% | -0.66% | -11.14% | -8.78% | -3.36% | -14.53% | 5.01% |
| **US Equity** | -10.91% | -20.22% | -8.19% | -18.67% | -16.31% | -10.89% | -22.06% | -2.52% |
| | | | | | | | | |
| **AUS Bonds** | 8.18% | -1.12% | 10.91% | 0.42% | 2.79% | 8.20% | -2.97% | 16.58% |
| **AUS Prop** | -21.53% | -30.83% | -18.80% | -29.29% | -26.92% | -21.51% | -32.68% | -13.14% |
| **AUS Equity** | -8.15% | -17.46% | -5.43% | -15.92% | -13.55% | -8.13% | -19.31% | 0.24% |
| | | | | | | | | |
| **CAN Bonds** | -0.48% | -9.79% | 2.24% | -8.25% | -5.88% | -0.46% | -11.64% | 7.91% |
| **CAN Prop** | -9.14% | -18.45% | -6.42% | -16.90% | -14.54% | -9.12% | -20.29% | -0.75% |
| **CAN Equity** | 0.12% | -9.18% | 2.84% | -7.64% | -5.28% | 0.14% | -11.03% | 8.51% |
| | | | | | | | | |
| **Euro Bonds** | 4.84% | -4.47% | 7.56% | -2.92% | -0.56% | 4.86% | -6.31% | 13.23% |
| **Euro Prop.** | -6.21% | -15.52% | -3.49% | -13.98% | -11.61% | -6.19% | -17.37% | 2.18% |
| **Euro Equity** | -17.88% | -27.18% | -15.15% | -25.64% | -23.27% | -17.86% | -29.03% | -9.48% |
| | | | | | | | | |
| **Japan Bnds** | 4.51% | -4.79% | 7.24% | -3.25% | -0.88% | 4.53% | -6.64% | 12.91% |
| **Japan Prop** | -15.26% | -24.57% | -12.54% | -23.02% | -20.66% | -15.24% | -26.41% | -6.87% |
| **Japan Eqty** | -6.17% | -15.48% | -3.45% | -13.93% | -11.57% | -6.15% | -17.32% | 2.22% |
| | | | | | | | | |
| **UK Bonds** | -5.22% | -14.53% | -2.50% | -12.98% | -10.62% | -5.20% | -16.37% | 3.17% |
| **UK Prop.** | -22.09% | -31.40% | -19.37% | -29.86% | -27.49% | -22.07% | -33.25% | -13.70% |
| **UK Equity** | -13.95% | -23.26% | -11.23% | -21.72% | -19.35% | -13.93% | -25.11% | -5.56% |
| | | | | | | | | |
| **World Bnds** | 2.46% | -6.85% | 5.18% | -5.30% | -2.94% | 2.48% | -8.69% | 10.85% |
| **World Prop.** | -14.14% | -23.45% | -11.42% | -21.90% | -19.54% | -14.12% | -25.29% | -5.75% |
| **World Eqty** | -10.91% | -20.22% | -8.19% | -18.67% | -16.31% | -10.89% | -22.06% | -2.52% |
| **Commod** | 27.17% | 17.87% | 29.90% | 19.41% | 21.78% | 27.19% | 16.02% | 35.57% |
| **Timber** | -6.19% | -15.49% | -3.46% | -13.95% | -11.58% | -6.17% | -17.34% | 2.21% |
| **EqMktNtrl** | -1.53% | -10.84% | 1.19% | -9.29% | -6.93% | -1.51% | -12.68% | 6.86% |
| **Volatility** | 6.44% | -2.86% | 9.17% | -1.32% | 1.05% | 6.46% | -4.71% | 14.84% |
| ***Currency*** | | | | | | | | |
| **AUD** | 9.31% | 0.00% | 12.03% | 1.54% | 3.91% | 9.33% | -1.85% | 17.70% |
| **CAD** | -2.72% | -12.03% | 0.00% | -10.49% | -8.12% | -2.70% | -13.88% | 5.67% |
| **EUR** | 7.76% | -1.54% | 10.49% | 0.00% | 2.37% | 7.78% | -3.39% | 16.15% |
| **JPY** | 5.40% | -3.91% | 8.12% | -2.37% | 0.00% | 5.42% | -5.76% | 13.79% |
| **GBP** | -0.02% | -9.33% | 2.70% | -7.78% | -5.42% | 0.00% | -11.17% | 8.37% |
| **USD** | 0.00% | -9.31% | 2.72% | -7.76% | -5.40% | 0.02% | -11.15% | 8.39% |
| **CHF** | 11.15% | 1.85% | 13.88% | 3.39% | 5.76% | 11.17% | 0.00% | 19.54% |
| **INR** | -8.39% | -17.70% | -5.67% | -16.15% | -13.79% | -8.37% | -19.54% | 0.00% |



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## 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 (Current Dividend Yield x 100) x (1+ Forecast Productivity Growth) divided by (Current Yield on Real Return Bonds + Equity Risk Premium - 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 30 June 2008***

| *Australia* | Low Demanded Return | High Demanded Return |
|---|---|---|
| **High Supplied Return** | 62% | 92% |
| **Low Supplied Return** | 92% | 125% |



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| *Canada* | Low Demanded Return | High Demanded Return |
|---|---|---|
| **High Supplied Return** | 79% | 141% |
| **Low Supplied Return** | 153% | 232% |

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| *Eurozone* | Low Demanded Return | High Demanded Return |
|---|---|---|
| **High Supplied Return** | 60% | 92% |
| **Low Supplied Return** | 92% | 128% |

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| *Japan* | Low Demanded Return | High Demanded Return |
|---|---|---|
| **High Supplied Return** | 69% | 136% |
| **Low Supplied Return** | 149% | 236% |

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| *United Kingdom* | Low Demanded Return | High Demanded Return |
|---|---|---|
| **High Supplied Return** | 30% | 62% |
| **Low Supplied Return** | 58% | 95% |

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| *United States* | Low Demanded Return | High Demanded Return |
|---|---|---|
| **High Supplied Return** | 78% | 135% |
| **Low Supplied Return** | 145% | 216% |

| *Switzerland* | Low Demanded Return | High Demanded Return |
|---|---|---|
| **High Supplied Return** | 56% | 93% |
| **Low Supplied Return** | 93% | 222% |

| *India* | Low Demanded Return | High Demanded Return |
|---|---|---|
| **High Supplied Return** | 154% | 245% |
| **Low Supplied Return** | 315% | 448% |



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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 30Jun08***

| | Current Real Rate | Average Inflation Premium (89-03) | Required Nominal Return | Nominal Return Supplied (10 year Govt) | Return Gap | Asset Class Over or (Under) Valuation, based on 10 year zero |
|---|---|---|---|---|---|---|
| Australia | 2.57% | 2.96% | 5.53% | 6.45% | 0.92% | -8.28% |
| Canada | 1.45% | 2.40% | 3.85% | 3.74% | -0.11% | 1.02% |
| Eurozone | 2.31% | 2.37% | 4.68% | 4.63% | -0.05% | 0.45% |
| Japan | 1.06% | 0.77% | 1.83% | 1.60% | -0.23% | 2.25% |
| UK | 0.92% | 3.17% | 4.09% | 5.13% | 1.04% | -9.45% |
| USA | 1.58% | 2.93% | 4.51% | 3.98% | -0.53% | 5.18% |
| Switz. | 1.71% | 2.03% | 3.74% | 3.31% | -0.43% | 4.24% |
| India | 3.03% | 7.57% | 10.60% | 8.83% | -1.77% | 17.51% |

*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




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increases, so to 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 30Jun08***

| **Real Rate Analysis** | AUD | CAD | EUR | JPY | GBP | USD |
|---|---|---|---|---|---|---|
| Risk Aversion Factor | 3.5 | 5.0 | 4.0 | 5.5 | 6.0 | 5.0 |
| Time Discount Rate | 2.00% | 1.25% | 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% | 1.49% | 2.10% | 1.11% | 0.98% | 1.53% |
| Actual Real Rate | 2.57% | 1.45% | 2.31% | 1.06% | 0.92% | 1.58% |




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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).



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| | AAA – 10 Year Treasury | BBB-AAA |
|---|---|---|
| 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 30 June 2008, the AAA minus 10 year Treasury spread was 1.62%. This is significantly above the long-term average compensation for bearing liquidity and jump risk (assuming our model is correct), and reflects continuing investor concerns about the problems that have roiled the fixed income markets since August 2007 and have yet to fully abate.

At the end of the month, the BBB minus AAA spread was 1.44%. This is not significantly above the long-term average compensation for bearing credit risk. However, it still seems low given that conditions in the real economy continue to deteriorate. 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




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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 30Jun08***

| | To AUD | To CAD | To EUR | To JPY | To GBP | To USD | To CHF | To INR |
|---|---|---|---|---|---|---|---|---|
| From | | | | | | | | |
| **AUD** | 0.00% | -2.71% | -1.82% | -4.85% | -1.32% | -2.47% | -3.14% | 2.38% |
| **CAD** | 2.71% | 0.00% | 0.89% | -2.14% | 1.39% | 0.24% | -0.43% | 5.09% |
| **EUR** | 1.82% | -0.89% | 0.00% | -3.03% | 0.50% | -0.65% | -1.32% | 4.20% |
| **JPY** | 4.85% | 2.14% | 3.03% | 0.00% | 3.53% | 2.38% | 1.71% | 7.23% |
| **GBP** | 1.32% | -1.39% | -0.50% | -3.53% | 0.00% | -1.15% | -1.82% | 3.70% |
| **USD** | 2.47% | -0.24% | 0.65% | -2.38% | 1.15% | 0.00% | -0.67% | 4.85% |
| **CHF** | 3.14% | 0.43% | 1.32% | -1.71% | 1.82% | 0.67% | 0.00% | 5.52% |
| **INR** | -2.38% | -5.09% | -4.20% | -7.23% | -3.70% | -4.85% | -5.52% | 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 expect 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:



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***Commercial Property Securities Analysis as of 30Jun08***

| Country | Real Bond Yield | Plus Commercial Property Risk Premium | Less Dividend Yield on Commercial Property Securities | Equals Implied Rate of Future Real Dividend Growth |
|---|---|---|---|---|
| Australia | 2.6% | 2.5% | 9.2% | -4.1% |
| Canada | 1.4% | 2.5% | 5.7% | -1.7% |
| Eurozone | 2.3% | 2.5% | 4.9% | -0.1% |
| Japan | 1.1% | 2.5% | 2.4% | 1.2% |
| Switzerland | 1.7% | 2.5% | 1.0% | 3.2% |
| United Kingdom | 0.9% | 2.5% | 5.0% | -1.6% |
| United States | 1.6% | 2.5% | 5.3% | -1.2% |

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.

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 30 June 2008 closing value of 233.03 was nearly six 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). If history is any guide, mean reversion will eventually cause these prices to fall back toward their long-term average levels. That said, we are clearly in unchartered territory today, whether due to speculation, a collective fear of high future inflation and/or a substantial decline in the value of the U.S. dollar versus many other currencies, and/or fundamental structural changes in supply and demand conditions in many commodity markets (e.g., the peak oil thesis, changing diets, and the increasing use of agricultural commodities for fuel as well as food, and/or a slow response of supply to increases in demand). For a much more extensive review of the different explanations for why commodity prices are so high, see the April 2008 World




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Economic Outlook published by the International Monetary Fund. Until the underlying factors driving the DJAIG higher become clearer, we continue to believe that 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:

| **Growth Driver** | **Assumption** |
|---|---|
| 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. |




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| | |
|---|---|
| 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. |
| 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. That said, given housing market problems around the world, in the short term we may see substantial declines in timber prices. |
| 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 |




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| | |
|---|---|
| | 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. Arguably, this may still be too high, as timber is an asset class whose return generating process (being partially biologically driven) has a low correlation with returns on other asset class. Hence, it should provide strong diversification benefits to a portfolio, and investors should require a relatively low risk premium to own it.

Given these assumptions, our assessment of the valuation of the timber asset class at 30 June 2008 is as follows:

| | |
|---|---|
| Average Dividend Yield | 4.30% |
| Plus Long Term Annual Biological Growth | 6.00% |
| Less Percent of Physical Timber Stock Harvested Each Year | (5.00%) |
| Plus Average Annual Increase in Stock Value due to Ingrowth | 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 | **8.30%** |
| Real Bond Yield | 1.58% |
| Plus Risk Premium for Timber | 4.00% |
| Equals Average Annual Real Return Demanded | **5.58%** |
| Ratio of Returns Demanded/Returns Supplied Equals Valuation Ratio (less than 100% implies undervaluation) | **67%** |

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.




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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 30 June 2008, the VIX closed at 23.95, somewhat above its long term average value. However, we believe this level is too still low in light of rising uncertainty in the world economy and continuing turmoil in financial markets. Hence, we conclude that equity volatility is likely 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




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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.



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

| ***Rolling 3 Month Returns Through*** | ***30Jun08*** | | | |
|---|---|---|---|---|
| ***Economy*** | Bottoming | Strengthening | Peaking | Weakening |
| ***Interest Rates*** | Falling | Bottom | Rising | Peak |
| ***Style and Size Rotation*** | Small Growth (DSG) **2.84%** | Small Value (DSV) **-4.17%** | Large Value (ELV) **-6.60%** | Large Growth (ELG) **2.77%** |
| ***Sector Rotation*** | Cyclicals (IYC) **-5.02%**<br>Technology (IYW) **3.22%** | Basic Materials (IYM) **13.81%**<br>Industrials (IYJ) **-5.80%** | Energy (IYE) **17.70%**<br>Staples (IYK) **-8.77%** | Utilities (IDU) **7.79%**<br>Financials (IYF) **-16.85%** |
| ***Bond Market Rotation*** | Higher Risk (HYG) **-1.33%** | Short Maturity (SHY) **-0.94%** | Low Risk (TIP) **-0.14%** | Long Maturity (TLT) **-2.59%** |

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 June 2008. The distinction between possible, likely and probable reflects a rising degree of confidence in our conclusion.

| | |
|---|---|
| **Probably Overvalued** | Commodities, Corporate Bonds/Credit Risk, Equity Markets |
| **Likely Overvalued** | Commercial Property except Australia |
| **Possibly Overvalued** | Japan, US, Swiss and India Govt Bonds |
| **Possibly Undervalued** | Australian Dollar and UK Pound Govt Bonds; Australia Commercial Property; Non-U.S. Dollar Bonds |
| **Likely Undervalued** | Australian Dollar Real Return Bonds; U.K. Equity; Equity Volatility; Timber (in long run, if not short run given downward pricing pressure) |
| **Probably Undervalued** | |



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## Making Sense of Rapidly Changing and Highly Uncertain Financial Markets

Over the past few months, we have read quite a few interesting studies that are based on a longer time horizon than the flood of data and short term forecasts that all of us see every day. Taken together, these studies have helped us make sense of both the longer term trends at work in the global economy and financial markets, and key uncertainties that could significantly affect future asset class returns.

The first of these papers is the final report of the Commission on Growth and Development. As noted on the Commission's website (www.growthcommission.org), "the Commission is supported by the Governments of Australia, Sweden, the Netherlands, and United Kingdom, the William and Flora Hewlett Foundation, and the World Bank...It [was] brought together by the belief that the world's challenges - poverty, environment, misunderstandings within and between nations, vast differences in living standards within and across countries - are best met in conditions of rising and sustained prosperity, and expanding economic opportunities." Specifically, the Commission's mandate was "to take stock of the state of theoretical and empirical knowledge on economic growth with a view to drawing implications for policy for the current and next generation of policymakers." To generate these insights, the Commission focused on the varied experiences of the 13 economies that, since 1950, have grown at an average rate of 7 percent or more per year for at least 25 years.

The Commission's report begins by noting that "Sustained, high growth is not easy. If it were, the list of successful cases would be longer." Moreover, "growth is not an end in itself. But it makes it possible to achieve other important objectives of individuals and societies. It can spare people en masse from poverty and drudgery. Nothing else ever has. It also creates the resources to support health care, education and other goals to which the world has committed itself. In short, we take the view that growth is a necessary, if not sufficient, condition for broader development, enlarging the scope for individuals to be productive and creative." [As an aside, we should also cite the work of Jay Ritter, who in "Economic Growth and Equity Returns" has shown that higher economic growth in a country does not automatically generate higher returns for equity investors]. While growth is obviously




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important to a country's long-term well being, the Commission also notes that "no generic formula for growth exists." Instead, its report "identifies some of the distinctive characteristics of high growth economies, and asks how other countries can emulate them." These include the following:

- "Since learning something is easier than inventing it, fast learners can rapidly gain ground on the leading economies. Sustainable, high growth is catch-up growth."
- "The open world economy offers countries a deep, elastic market for their exports…Growth strategies that rely exclusively on domestic demand eventually reach their limits. The home market is usually too small to sustain growth for long, and it does not give an economy the same freedom to specialize in whatever it is best at producing… Extensive world demand allows countries to specialize in new export lines and improve their productivity in manifold ways."
- "Catch-up growth is also made possible by an abundant labor supply. As the economy expands and branches out, new ventures draw underemployed workers out of traditional agriculture into more productive work."
- "Most growth oriented policies and reforms are designed to foster microeconomic creation and destruction, and, crucially, to protect people who are adversely affected by these dynamics."
- Where "abundant labor and deep world demand" are present, "the speed of growth in the early stages of development is limited primarily by the pace of investment (public and private together), which in turn is affected by the availability of savings. High growth economies typically set aside a formidable share of their income: a national savings rate of 20-25 percent or higher is not unusual…Our view is that foreign savings is an imperfect substitute for domestic savings, including public sector saving, to finance the investment a booming economy requires."
- "Growth at such a quick pace, over such a long period, requires strong political leadership. Policy makers have to choose a growth strategy, communicate their goals to the public, and convince people that the future rewards are worth the effort, thrift and economic upheaval. They will succeed only if their promises are credible and inclusive, reassuring people that they or their children will enjoy their full share of the fruits of growth."



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- "Mature markets rely on deep institutional underpinnings, institutional that define property rights, enforce contracts, convey prices and bridge information gaps between buyers and sellers. Developing countries often lack these market and regulatory institutions. Indeed, an important part of development is precisely the creation of these institutionalized capabilities. Even without them, growth can occur, and these institutions can co-evolve with the economy as it expands. However, we do not know in detail how these institutions can be engineered, and policy makers cannot always know how a market will function without them. The impact of policy shifts and reforms is therefore harder to predict accurately in a developing economy. At this stage, our models and predictive devices are, in important respects, incomplete."
- "Government is not the proximate cause of growth. That role falls to the private sector, to investment and entrepreneurship responding to price signals and market forces. But stable, honest, and effective government is critical in the long run…No country has sustained rapid growth without also keeping up impressive rates of public investment – in infrastructure, education and health. Far from crowding out private investment, this spending crowds it in."
- "Economies often struggle to maintain their growth momentum as they narrow the gap with high-income countries. As wages rise, they steadily lose their comparative advantage in labor-intensive industries. Eventually, those industries fade away... The growth strategies that served an economy well at lower income levels cease to apply…Increasingly, growth must spring from knowledge, innovation and a deeper stock of physical and human capital."
- Changes in health, education and economic growth also drive changes in longevity and fertility. The impact of these demographic changes occurs over long time frames, and is subject to considerable uncertainty (for an excellent paper that explores this process in depth, see "Human Capital, Mortality and Fertility: A Unified Theory of Economic and Demographic Transition" by Cervellati and Sunde). What is clear is that, given a declining population, economic growth will slow if labor productivity fails to increase, due to either more capital per worker or growth in multifactor productivity (note: the latter is the residual increase in productivity – e.g., due to improvements in technology, work processes, organization, etc. – that is not due to




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> more or better capital per worker). In this regard, the Commission notes that "it is clear that the world population is aging rapidly, due to dramatically increased longevity combined with relatively low fertility rates. It is also clear that this trend will require many countries, both developed and developing, to change their pension and social security systems, and revise their expectations about retirement. What is not clear is whether aging will cause a slowdown in global growth and a narrowing of opportunities for developing countries."

This critical demographic issue is addressed in a recent working paper from the IMF, "Capital Flows and Demographics – An Asian Perspective" by Erik Lueth. The author notes that "the world is undergoing a massive demographic transition, marked by rising life expectancy and falling fertility. Since individual countries are at different stages of the demographic transition, this should give rise to [international] capital flows. For example, countries that are ahead in the demographic transition and experience slowing or negative labor growth should be able to earn more on their capital by investing it in countries that are at early stages of the demographic transition and [still experiencing] strong labor force growth. The latter countries should benefit from the additional capital through higher output per worker" [which in turn should generate higher returns for the providers of the capital]…"Asia seems predestined for the study of demographics and capital flows. It is host to the most populous nations in the world, China and India. It includes the oldest country in the world, Japan, measured by the median age of its population, and one of the oldest developing countries in the world, China…and the fastest aging country in the world, Korea. In Asia, fertility started to decline only after World War II, but the decline has been much more rapid than in the U.S. and Europe. As a consequence, the growth rate of Asia's labor force will fall below the U.S. rate by 2030, and will turn negative by 2045…At the same time, Asia is home to some of the youngest countries in the world, like India or Bangladesh, making Asia the most diverse region worldwide in terms of age structure and population dynamics." Lueth then presents his model and calibrates it to actual data from 176 countries and uses it to forecast capital flows between them between 2004 and 2050. The study's key findings are that "demographic factors will be of no help in correcting the global [current account] imbalances one observes today. With its relatively young population, the U.S. will remain a capital importer over most


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of the projection period, while China, with its rapidly aging labor force, is likely to remain a major capital exporter in the future" [for a more micro view of this, see another recent IMF paper, "Why Are the Saving Rates of Urban Households in China Rising?" by Chamon and Prasad]. Lueth concludes that "China is the key to understanding the demographic impact of Asia on the world, despite its neglect in virtually every study on capital flows and demographics. Asia offers the greatest arbitrage opportunities worldwide during the demographic transition, since it is host to some of the biggest, oldest and youngest economies worldwide." This has important implications for the forces driving the development of Asian capital markets; however, as implied by the previous paper, the continued development of market and regulatory institutions will also be critical in this regard.

In addressing the impact of demographic changes on future capital flows, Lueth divides the world into six regions: the U.S., Japan, Emerging Asia, the Euro Area, oil exporters and the rest of the world. He notes that "with its relatively young population [compared to Europe, Japan and eventually China], the U.S. will probably continue to import capital over the next decades." That said, "the rest of the world should replace the U.S. as the main capital importer in the early decades of the 21st century [again, this assumes the development of acceptable policy frameworks in countries with growing labor forces, which is clearly not assured]…Similarly, demographic factors will reinforce Asia's position as a major creditor, with the changes in capital outflows mainly driven by developments in China."

Finally, Lueth addressed the so-called "meltdown hypothesis", which posits that financial asset prices will decline as a growing number of developed country retirees run down their savings and sell their financial assets. The author notes that the meltdown hypothesis is based on a closed world in which capital cannot flow away from the developed countries to those where capital per worker is still relatively low, and therefore can still generate relatively high returns. However, "if capital is mobile across countries that are at different stages of the demographic transition, one country's capital abundance may be traded against another country's labor abundance" resulting in both higher returns on capital and higher output per worker (which translates into higher wages and growth). In a world of perfect capital mobility, Lueth concludes that "instead of falling, the average rate of return on capital actually increases by 50 basis points [i.e., one half of one percent] over the next fifty



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years…as global production relocates from relatively fast aging to relatively slow aging economies." That said, Lueth ends his paper on an appropriately cautionary note: "Capital flows induced by population dynamics are good for everyone, but strong policies are needed to reap the benefits of this demographic diversity. [In particular] receiving countries need to pursue prudent macroeconomic policies that ensure that additional funds are translated into higher capital accumulation to generate the additional output needed to compensate the providers of that capital." Obviously, this brings us back to the findings of the Growth Commission, and the steep challenges faced by countries trying to create an attractive environment for capital inflows. Since Lueth also notes that the fastest labor force growth over the next fifty years will occur in Africa -- a region not noted for its capital friendly public policies – we should not yet completely discard the meltdown hypothesis, with its implication of lower returns on many asset classes in the years ahead. Still, taken together, the Growth Commission and IMF studies describe a process that could result in the world increasing average welfare over the next fifty years.

Unfortunately, as discussed in other recent papers, there are some rather large long and short-term obstacles that will have to be overcome if this scenario is to be realized. In the former category is a new study by Dell, Jones and Olken. They begin their paper, "Climate Change and Economic Growth", by noting that "climate change may – or may not – be a central issue for the world economy. Yet assessing the economic impact of climate change faces a fundamental challenge of complexity: the set of mechanisms through which climate may influence economic outcomes, positively or negatively, is extremely large and difficult to investigate comprehensively. Even if the effect of climate on each relevant mechanism were known, one would still be faced with the challenge of how various mechanisms interact to shape macroeconomic outcomes." Hence, the authors choose to take a different approach, by relating historical temperature and precipitation data to economic growth for every country in the world between 1950 and 2003. While this leaves open the question of whether the results reflect causation or merely correlation, the authors' findings are intriguing. Their results "show large, negative effects of higher temperatures on growth, but only for poor countries. In poorer countries, [they] estimate that a 1 degree Celsius rise in temperature in a given year reduces economic growth in that year by about 1.1%. Changes in precipitation have no discernable effect on growth." They also "find evidence for a broad set of mechanisms


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through which temperature might affect growth in poor countries. While agricultural output contractions are part of the story, [they] also find adverse affects of hot years on industrial output and aggregate investment. Higher temperatures are also associated with higher political instability in poor countries."

The short term economic obstacles to realization of the optimistic long-term growth scenario are described with admirable bluntness in the recently published Annual Report of the Bank for International Settlements. The BIS begins by asking, "How could problems with subprime mortgages, being such a small sector of global financial markets, provoke [the dislocation we have experienced over the past year]? The report offers two answers. "The school of 'What is Different?' has emphasized shortcomings in the way the originate-to-distribute model of banking was extended to the mortgage sector. It has also highlighted the expanded role played by highly innovative structured products, their encouragement by the rating agencies, and the recourse to off-balance sheet vehicles by banks eager to reduce their use of regulatory capital. All of this is important, and points to useful public policy prescriptions. Nevertheless, this approach only complements a more fundamental analysis that helps explain not only the recent financial turmoil, but also rising inflation as well as the sharp retrenchment in many housing markets. The school of 'What is the Same?' would note the parallels between this period of financial and economic turmoil and many earlier ones. Historians would recall the long recession beginning in 1873, the global downturn that began in the late 1920s, and the Japanese and Asian crises of the early and late 1990s respectively. In each episode, a long period of strong credit growth coincided with an increasingly euphoric upturn in both the real economy and financial markets, followed by an unexpected crisis and extended downturn. In virtually every instance, some form of new economic discovery or new financial development provided a further 'new era' justification for rapid credit expansion, and predictably became a focus for blame in the downturn. Against this background, even what has been identified as different remains fundamentally the same [as in previous crises]."

As to the underlying causes of this most recent period of rapid credit growth, the BIS points to a number of causes, including high levels of money supply growth in developed countries (e.g., the injection of liquidity following the bursting of the tech stock bubble), actions taken by many developing countries to peg their currencies to the U.S. dollar (we have


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written often about the substantial increase in China's money supply this has caused), high levels of savings in Asia (partially due to demographic factors, and partially due to deliberate policy actions by governments in the region); financial market innovations (e.g., the development of collateralized debt obligations and credit derivative markets); and the increasing willingness of investors to accept higher levels of risk in order to obtain higher yields in a low inflation environment (e.g., low government bond rates reduced the discount rate used by defined benefit pension funds, which magnified the present value of their future liabilities relative to their assets, and put more pressure on their managers to deliver higher investment returns to reduce the size of their funding gap).

The BIS report then moves on to a very sobering discussion of the risks and uncertainties facing the global economy and financial markets today, which is well worth quoting at length [our additional comments are in brackets]. The authors note, "against this background, while most commentators expect some slowing of global economic growth, there is an exceptional degree of uncertainty as to how severe the downturn might be…Looking back in time provides some clues as to why such a high level of uncertainty currently prevails. How we got to where we are now was itself highly unusual. On the real side, the impact of globalization in recent years has been unprecedented [with the world economy now more integrated than it has ever been]. But consider as well the unprecedented reliance [for demand growth] on household spending and debt accumulation in many countries during the last upturn. On the financial side, there has been unprecedented growth in [trading] volumes in many markets, a whole host of new instruments and many new players. And on the policy side, the degree of sustained fiscal and monetary stimulus needed to ensure recovery after the slowdown of 2001 was also unprecedented. Against this background, and continuing turmoil in financial markets, it is simply implausible that traditional forecasting models would continue to work well, if indeed they ever did."

"Looking forward in time, there is significant uncertainty as to the extent of the damaging effects on growth of a number of interactive processes. There are interactions within the financial sector, within the real economy, and between the real and financial sectors, and potential contagion across geographic regions. To these vulnerabilities must be added the inhibiting effect on the real economy of rising inflation, and potential disruptions arising from [the domestic political fallout from] global trade imbalances. Lurking behind


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many of these processes is the spectre of deleveraging, after many years of debt accumulation…Such processes can be highly non-linear, potentially leading to much slower global growth than is generally expected, and, for a time at least, also to higher inflation."

"Within the financial sector, the most important interaction is that between institutions and markets. Finding it hard to estimate their own future capital and liquidity requirements, as losses have mounted and balance sheets have swollen involuntarily, banks in the main financial centres have already cut back on credit to financial sector borrowers and have tightened margin requirements. This could well intensify. In turn, those borrowers who cannot meet more onerous credit conditions could be forced to sell assets into markets which remain illiquid in spite of extraordinary efforts by central banks to resolve this problem. The impact of such "fire sales" on prices, and on the capital of financial institutions, could be substantial [to put it mildly; we note that the U.S. debt/GDP ratio is currently at an all time high]. Potentially, such developments could also do further damage to market liquidity if previous market-makers, starved of funding liquidity, were forced to reduce their activities further. Within the real sector, the principal concern is that households facing heavy debt burdens, and sometimes falling house prices, will seek to raise secularly low saving rates by cutting consumption quite sharply. The fact that in the United States and some other advanced industrial countries the stocks of houses, cars and other durables already seem rather high could encourage such behaviour. Unfortunately, everyone cannot save more simultaneously, since one person's spending is another person's income. The end result of such a process would be lower economic activity and employment, not only in these countries, but also in those reliant on exporting to them. Nor would higher US investment be likely to fill the gap. In such circumstances, corporations might well judge that the demand for their products was unlikely to recover for some time and would simply hold back spending while cutting costs. Evidently, a related fall in the effective value of the US dollar would create domestic jobs and reduce the US trade deficit, but this would only add to the discomfort of exporters in other countries."

"Between the financial and real sectors, there could also be worrying interactions. Of greatest concern at the moment is that still tighter credit conditions will be imposed on non-financial borrowers. While the corporate sector globally is hardly cash constrained, this cannot be said of many large firms that have recently been involved in leveraged buyouts.



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Moreover, the financial position of the household sector in many countries is not good. Simply losing the ability to withdraw equity from houses has, in the United States at least, already had a significant effect on spending. But even tighter credit conditions could exacerbate such trends, leading to more job losses and bankruptcies, which would again feed back on the financial system. Given the possibility of such a worsening economic and financial environment, it would not be surprising if asset valuations also came under further pressure, with house prices still of prime concern in many countries. In the United States, the inventory of unsold houses remains particularly high, and could well increase further if homeowners are tempted to walk away when the value of their house falls below their mortgage obligations. This would be another direct charge on the capital of the lenders, and would further increase the downward pressure on US house prices, as well as the prices of all financial instruments backed by such mortgages. In a number of countries, commercial property prices are also beginning to soften, a development which traditionally has been bad news for lenders [Note that this may be an understatement. As a result of the increased securitization of many types of credit, a much higher percentage of bank loans today are for construction and property development than at any time in the past]. Clearly, these real-financial interactions are potentially both complex and dangerous."

"Globalisation increases the possibility of contagion across geographical regions. There can be little doubt at this point that the US economy is facing serious difficulties, and has the greatest potential to be hurt by interactions of the sort just described. Moreover, there are suspicions that a number of other countries with low household saving rates might be similarly, if perhaps less significantly, exposed. Nevertheless, there continues to be hope that the slowdown will spread to other countries only in a much attenuated form. In Europe, the centre seems fundamentally strong, though the periphery is another story. Problems in the construction sector in Spain and Ireland are already quite evident, while some countries in Eastern Europe have been running remarkably large current account deficits. As well, their dependence on western European banks implies another significant vulnerability, should circumstances force those banks to retrench. Japan still has strong trade links with the United States, and is exposed to that extent, but it seems to have avoided the build-up of private sector debt in recent years that now threatens many other countries [of course, that is in part due to the fact that it is still hamstrung by the lingering after effects of the bursting of its own



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asset bubble almost twenty years ago]. It is also not clear whether, and if so to what extent, the emerging market economies might "decouple" from setbacks in the advanced industrial countries. On the one hand, their domestic demand does seem to be on an upward trend, and exports are increasingly directed to other emerging market countries. On the other hand, it is notable that much domestic investment, as well as the export of goods for final assembly in other emerging market countries, remains ultimately driven by spending in the advanced industrial countries [and in particular, as we have noted many times, on the U.S. consumers' willingness to keep taking on more debt and spend more than they make]. Moreover, financial market influences and general confidence effects would seem likely in an increasingly "globalised" environment. Such arguments imply that the linkages and vulnerabilities seen in earlier cyclical downturns have by no means been eliminated [plus ca change…]"

"Rising global inflation provides a further serious and conflicting source of concern. How high could it go, and for how long? Commodity prices have been at the heart of the recent global acceleration, in part because neither demand nor supply react quickly to price changes, but the underlying pressure of strong global demand on near-term supply capacity is becoming increasingly evident over a much broader range of markets. Further, while the quiescence of wages and inflation expectations to date gives solace to some, others see a clear potential for both to rise significantly. Higher prices have already cut real consumer wages almost everywhere, even to the point of triggering social and political unrest in a number of emerging market economies. In turn, this has prompted many governments to resort to administrative measures to hold down prices and restrict exports, measures which imply that underlying inflationary forces are actually stronger than they appear. Evidently, a global economic slowdown would help reduce overall inflationary pressures. Given the inertia in the inflation process, however, this might still imply an uncomfortably long period of high inflation along with slower growth. Moreover, slower growth would also provide an environment in which more generalised and dangerous protectionist pressures might well emerge."

"Beyond these global risks to the inflation outlook, the prospects for both growth and inflation in individual regions will also be affected by exchange rate movements. One source of concern is what might happen in the markets themselves. Against the background of a still wide US current account deficit and rising external debt levels, the decline in the effective




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value of the US dollar has to date been remarkably orderly [thanks to the willingness and ability of foreign central banks – e.g., in China and the oil exporting countries – to continue to finance the U.S. current account deficit]. However, this need not be a guide to the future. Foreign investors in US dollar assets have seen big losses measured in dollars, and still bigger ones measured in their own currency. While unlikely, indeed highly improbable for public sector investors, a sudden rush for the exits cannot be ruled out completely. Finally, whatever exchange rate changes might occur, they could have significant costs as well as benefits. Countries like the United States, whose currencies are depreciating, should see growth benefit from trade substitution effects. The United States will further benefit from valuation effects, since most of its debts are denominated in dollars while its assets are measured in appreciating foreign currencies. Conversely, those with appreciating currencies are likely to see growth suffer on both counts."

"When it comes to the impact on inflation of exchange rate changes, the calculation of costs and benefits is both more complex and, for some countries, more worrisome. For example, should the dollar and sterling continue to depreciate on an effective basis, inflationary pressures in the United States and the United Kingdom would be expected to increase. While "pass-through" from exchange rate changes has been relatively weak in these countries in recent years, this has been associated with shrinking margins in exporting countries, and enhanced efforts to keep margins up by increasing productivity relative to wage growth. However, with time, both processes become increasingly painful and the likelihood of an inflationary outcome correspondingly greater. Conversely, in most of the countries whose currencies might appreciate, particularly in Asia and western Europe, inflation is [already] higher than desired and the disinflationary implications of an appreciation against the dollar would be clearly welcome [on the other hand, the Chinese government seems particularly worried about the political implications of the loss of a significant number of export related jobs]. In this last respect, Japan remains a significant and worrisome outlier. With the effective value of the yen close to a 30-year low, a large current account surplus and massive exchange rate reserves, the yen could eventually rise further [which would reduce demand for its exports]. In this case, against a backdrop of sagging trade and continuing sluggish growth, a return to deflation could by no means be ruled out. While the Japanese economy today seems to be less exposed than many others to the various damaging interactions described




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above, its room for manoeuvre on the policy front has become almost non-existent. The country has a huge government debt, and policy rates are almost zero. In fact, this is the lingering heritage of Japan's long having relied almost exclusively on macroeconomic instruments to deal with the aftermath of the bubble that burst in the early1990s. Together with a decade or more of sub-par growth, this continuing downside exposure in Japan suggests two policy conclusions that might be pertinent to other countries today. First, if the Japanese authorities had leaned against the bubble earlier and more vigorously than was actually done, the worst of the excesses of the "boom" might have been avoided [hindsight always being 20/20]. Second, their failure to restructure corporate and financial sector debts in a timely and orderly way made the ultimate costs of the subsequent "bust" much greater than they would otherwise have been…"

"The fundamental cause of today's [global economic and financial market] problems was excessive and imprudent credit growth over a long period. This always threatened two unwelcome outcomes, although it was never clear which would emerge first. One possibility was a rise in inflation as the world economy gradually approached its near-term production potential [i.e, when demand began to outstrip available supply, e.g., as is the case today in many commodity markets]. The second was an accumulation of debt-related imbalances in the financial and real economy which would at some point prove unsustainable and lead to a significant economic slowdown. In the event, the global economy now seems to be experiencing both unwelcome phenomena at the same time, albeit with different countries often having significantly different degrees of exposure to these common threats. This presents a considerable complication for policymakers. Not leaning vigorously against inflation pressures, which are currently rising almost everywhere, threatens an increase in inflation expectations that might prove very costly to rein in. But not leaning vigorously against the interacting processes described above threatens a cumulative downward momentum in the economy that could all too easily get out of hand [e.g., rapid deleveraging could lead to a sharp decline in financial asset values and contraction of liquidity – i.e., debt deflation -- that in turn would cause a sharp reduction in demand, which would further accelerate the process]. Yet these threats also differ in their immediacy, in that inflation is actually rising, while significantly slower growth remains only a possibility in many parts of



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the world. In general, this should imply a bias of global [monetary] policy towards being much less accommodating…".

"Of course, policy should in principle be conducted not only with a view to resolving current problems, but also with an eye to the longer term. Again, conflicts present themselves that offer further scope for policy divergences [between countries]. On the one hand, it is not impossible that the unwinding of the credit bubble could, after a temporary period of higher inflation, culminate in a deflation that might be hard to manage, all the more so given high initial nominal debt levels. Such considerations have led some, not least in the United States, to argue for a particularly vigorous use of monetary easing as "insurance" against this low-probability but high-cost outcome [i.e., to argue that inflation is less dangerous than deflation, and probably less politically costly as well]. However, others, notably in continental Europe, have voiced different concerns about the future. In addition to near-term worries about higher inflation, many suspect that significantly easier monetary policies will only stimulate another unsustainable credit and asset price bubble – perhaps a partial explanation for developments in commodity markets today – and that current spending and trade imbalances will only tend to be exacerbated. Those espousing this view would note the historical experience of serial bubbles, particularly in the United States [e.g., first equities, then housing and then credit] and what seems to have been the need for an ever more vigorous monetary response to successive downturns. Another, closely related concern is that, in the end, monetary easing might even cease to stimulate real growth at all and would only produce higher prices. Indeed, many prewar theorists warned of just such a possibility. In failing to recognize this possible limitation of monetary easing, the great danger is that policymakers could delay too long in turning to other policy actions that could prove more effective in mitigating a cumulative economic downturn…."

"Perhaps the most obvious policy alternative would be stimulative fiscal policy. In most advanced industrial countries, slowdowns activate some degree of automatic stabilisation, though this is less common in emerging market economies. It also seems a political reality that, given the prospect of a serious downturn, discretionary fiscal policy would be used more actively. Indeed, an element of this has already been seen in the United States, where concerns about a serious downturn were used to justify a fiscal stimulus package in early 2008 that was [intended to be] "timely, targeted and temporary". At the same


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time, however, certain downsides [associated with this approach] must be recognised. One is that pre-emptive fiscal stimulus, like monetary easing, might encourage an upward shift in inflation expectations given an initial absence of excess capacity. Another is that, in many countries, the explicit and implicit debts of governments are already so high as to raise doubts about whether all non contractual commitments will be fully honoured [in this regard, we note the impending release – on August 22nd – of "IOUSA", a new movie produced by the Peter G. Peterson Foundation, that, in the manner of Al Gore's "An Inconvenient Truth" is intended to call attention to the U.S. government's exploding liabilities, and raise critical questions about whether the nation's public sector can meet them all without radical reforms – e.g., to Medicare and to many state and local government defined benefit pension plans. See www.pgpf.org for more information]. Further fiscal stimulus could then lead to a rise in risk premia, which might cause interest rates to back up. Moreover, for countries with large external deficits or debts, the exchange rate might also be severely affected [and here we note that the globalization of supply chains and focus on making them as efficient as possible has had the side effect of weakening the trade balance impact of exchange rate changes, because it is now extremely hard to quickly shift production between countries. In sum, when it comes to unwinding current account imbalances, the ability of price changes to do the trick is much weaker than in the past, which means that more reliance must be placed on the income channel – which means an extended period of lower consumption in the United States, as well as much higher domestic demand elsewhere – with China being the most likely candidate]. And, of course, governments' fiscal room for manoeuvre would be further restricted given fears that taxpayers' money might eventually have to be used to help resolve problems of overindebtedness in the financial or household sectors" [which, like it or not, appears to be inevitable].

"Principally in the United States today, but also prospectively in a number of other countries, there has been a build-up of debts that cannot be serviced on the originally agreed terms; US subprime mortgages are a good example of this. In such circumstances, creditors and debtors should in principle restructure the debt in an orderly way so as to maintain residual value to their mutual benefit, while limiting moral hazard going forward. However, one reason why governments might have to get involved in this process is that existing private sector workout and liquidation procedures, and their supporting infrastructure, could prove



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incapable of ensuring speedy and effective resolutions on the scale required. Moreover, new financial instruments and players in the world's major financial markets constitute a further significant impediment to private sector solutions. It is not clear where the losses are, how they should currently be valued, or how large they might grow given ongoing declines in the prices of underlying assets. Similarly, it is often not clear who retains the legal authority to initiate procedures to seize what value is presumed to remain. Yet another complication, in sharp contrast to recurrent sovereign debt crises, is that there are now millions of troubled borrowers, particularly US households, as well as a myriad of lenders. And equally troubling, given the widespread use of credit risk transfer instruments, is that the interests of investors are no longer aligned in seeking to minimise losses by avoiding bankruptcies. In sum, orderly private sector workouts are not going to be easy. Perhaps the most useful role of governments might be to see how this state of affairs could be quickly improved. Should governments feel it necessary to take direct actions to alleviate debt burdens, it is crucial that they understand one thing beforehand. If asset prices are unrealistically high, they must eventually fall. If saving rates are unrealistically low, they must rise. And if debts cannot be serviced, they must be written off. Trying to deny this through the use of gimmicks and palliatives will only make things worse in the end."

Any and all attempts to resolve the economic and financial market problems described by the BIS will have to contend with an increasingly volatile political environment in the United States. A number of recent books and reports have provided further evidence of a trend we have been writing about for a few years: the growing insecurity and anger of America's middle class. In their report, "Inside the Middle Class: Bad Times Hit the Good Life", the Pew Research Center (www.pewsocialtrends.org) provides a substantial amount of evidence to back their conclusion that "the overarching economic narrative of the 2008 [Presidential] campaign is the idea that life for the middle class has grown more difficult." The report notes that "most Americans feel stuck in their tracks. A majority of adults say that in the past five years they either haven't moved ahead in life or have fallen backwards. That is the most downbeat assessment of personal progress in nearly a half century of polling by the Pew Research Center and the Gallup Organization. People feel this way for a reason. Median annual household income in the United States – arguably the best single measure of a middle class standard of living – is below the peak it reached in 1999 after adjusting for inflation.




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This has been one of the longest slumps for this key indicator in modern U.S. history. And the pain has not been spread evenly. Those in the upper income tier have done better than those in the middle and lower tiers – not just during this decade's downturn, but through the good times and bad stretching back to the early 1970s. These two trends – a recent decline in standard of living, coming on top of a long-term rise in income inequality – have conspired to produce the economic malaise characterized by candidates and commentators alike during this presidential campaign season as 'the middle class squeeze'…For the past two decades, middle income Americans have been spending more and borrowing more. The median debt to income ratio for middle income adults increased from .45 in 1983 to 1.19 in 2004. At a time when these borrow and spend habits have spread, Americans say it has become harder to sustain a middle class lifestyle. Nearly eight in ten (79%) respondents in the survey say it is more difficult now than five years ago for people in the middle class to maintain their standard of living…More than half rate their life today either worse (31%) than their life five years ago or the same (25%)…However, there is no consensus about who or what to blame for this state of affairs. Among middle class respondents to the survey, 26% blame government, 15% blame the price of oil, 11% blame the people themselves, 8% blame foreign competition, 5% blame private corporations and the rest cite other factors [as most important]." In short, as we head into the last three months of the U.S. presidential election campaign, the electorate remains in a highly volatile mood, with unpredictable policy consequences down the road.

In his new book High Wire, Los Angeles Times writer Peter Gosselin provides an in-depth look at the sources of the rising insecurity and anger felt by many Americans today. He begins by noting that "most Americans assume that hard work and responsible behavior are required to achieve a decent living standard. But they also believe the rewards of their efforts should include not only economic opportunity but also reasonable security for themselves and their families." He then goes on to document how that sense of security has been eroded by many forces, including weakening job security (e.g., when spending is based on two earners, loss of one job can have a substantial negative impact), America's continuing problems with health insurance, and the shift from defined benefit to defined contribution pension plans. He concludes that "the time is coming when unquestioning reliance on markets alone will give ground to a new politics of shared responsibility. It is coming because American history has


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been a continual effort to strike the right balance between markets and personal opportunity on one side and mutual obligation on the other, and we've just spend an inordinate amount of time on the markets and opportunity side of the equation with only glancing notice at the mutual obligation side." In "Finance and Labor: Perspectives on Risk, Inequality and Democracy", Sanford Jacoby offers an extensive academic critique of the current situation and its underlying causal processes, reaching conclusions similar to Gosselin, and providing further evidence of the political storm that is brewing. Finally, as reported in the *Financial Times*, a recent FT/Harris Poll found strong majorities around the world agreed that income inequality has become too great (e.g., 76% in Spain, in Germany, 78% in the United States, and 80% in China), and supported raising taxes on the rich as a solution to this problem.

While further soaking the rich with higher taxes may be politically popular (and should be taken into account in affluent investors' planning), it also fails to address the root causes of the problem, which are well described in two other recent papers. In "Long Run Changes in The Wage Structure: Narrowing, Widening, Polarizing", Goldin and Katz show that "the majority of the increase in wage inequality in the United States since 1980 can be accounted for by rising differences in wages for workers with different educational attainments. However, relative demand shifts favoring more educated workers have not been particularly rapid [in historical terms] since 1980. Instead, growth in the supply of skills slowed considerably after 1980, and the wage structure, in consequence, widened. The deceleration in the relative supply of skills of the working population came about largely from a slowdown in the growth of educational attainment of U.S. natives for people born since 1950. In contrast, the increase in unskilled immigration accounts for only a small part of the post-1980 slowdown in skill supply growth. Although the overall rate of relative demand growth for more skilled workers does not appear to have accelerated since 1980, computerization and foreign offshoring have changed the nature of skill demand shifts. For most of the past century, skill biased technological change increased the relative demand for skill in a rather [linear] manner across the wage distribution. But computerization, a newer form of skill biased technological change, has increased the relative demand for skill in a [non-linear] manner. Computers strongly complement the non-routine or abstract tasks of high wage jobs and, at the other extreme, have little impact on the non-routine manual tasks of many low-wage service jobs. But computers directly substitute for the skills used to




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perform the routine tasks characteristic of many traditional middle-wage jobs. This U-shaped pattern of demand shifts appears to be reinforced by offshoring. The consequence of these changes is a polarization of labor demand that has led to rapidly growing inequality in the top half of the income distribution with little or no change in inequality in the bottom half."

In "Rising Income Inequality: Technology, or Trade and Financial Globalization?" Jaumotte, Lall and Papageorgiou of the IMF reach a similar conclusion about the dynamics at work in the world economy. They find that "technological progress is having a greater impact [on income inequality] than globalization…However, both globalization and technological changes have increased the returns on human capital, underscoring the importance of education and training in both developed and developing countries." Whether or not the political debate in the U.S. and other countries ever addresses these underlying issues remains to be seen. We are not optimistic. Not only is raising taxes on the rich an easier diagnosis and solution to pitch to the electorate, but addressing the underlying problems in human capital quality would require venturing into political minefields like the role of the teachers unions (e.g., their aversion to competition, standards, testing, and performance based pay) and the long-term impact of more liberal social mores (e.g., the fact that an ever growing percentage of America's children are being born into, or spending significant time living in single parent families, while at the other end of the spectrum, highly educated people are increasingly marrying each other and raising children in stable marriages).

Last but not least, recent months have also seen the publication of a number of papers warning of an impending retirement savings crisis. The starting point for these reports is the realization (as noted by Munnell and Soto in "What Replacement Rates Do Households Actually Experience in Retirement?") that "today is in some senses the 'golden age' of retirement income. Today's retirees are claiming Social Security benefits before the extension in the retirement age to 66 and then 67, which is equivalent to an across the board cut in benefits. Today's retirees also do not face the huge deductions in their Social Security check to cover Medicare premiums for Part B and Part D that tomorrow's retirees will. And today, the average retiree does not pay personal income tax on his or her Social Security benefits, whereas future retirees will increasingly see a portion of their benefits subject to taxation. Finally, most of today's retirees are covered primarily by a defined benefit pension plan and do not face the uncertainty associated with the inadequate lump-sum payments from


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401(k) plans. The comfortable circumstances of today's retirees make it very hard to call attention to the challenges that future retirees will face." Despite that challenge, or perhaps because of it, the McKinsey Global Institute has published "The Economic Impact of Aging U.S. Baby Boomers." They find that "America's Baby Boom generation has dominated the U.S. economy for more than a quarter century. Our research shows that the nearly 79 million Baby Boomers have earned record levels of income, generated great wealth, and spurred economic growth. But they have also spent at record levels, failed to save, and accumulated unprecedented levels of debt. Now, as the oldest Boomers near retirement, we estimate that approximately two-thirds of Early Boomer households, who are aged 54 to 63, are financially unprepared for retirement – that is, they have not accumulated enough savings to maintain their lifestyle as they age. And many of them do not realize they are ill-prepared. Meanwhile, their predicament is worsening with fall in home values and stock prices that began in 2007." As the *Economist* noted in an article in its June 12th issue, "workers are sleepwalking towards an impoverished old age" due to a combination of lower employer and employee contributions to defined contribution versus defined benefit plans, and the inferior investment strategies being followed by many DC plans (which are individually managed). On the other hand, the most recent Retirement Confidence Survey published by the Employee Benefit Research Institute suggests that more and more workers are becoming aware of their plight. "The percentage of workers very confident about having enough money for a comfortable retirement decreased sharply, from 27% in 2007 to 18% in 2008 – the biggest one year drop in the 18 year history of the survey. Current retiree confidence in having a financially secure retirement also decreased sharply, from 41% very confident to just 29%."

On the positive side, the McKinsey report finds that "enabling Boomers to work later in life would significantly benefit both individual households and the broader economy. By increasing the median retirement age by about two years – from 62.6 today to 64.1 by 2015 – the share of unprepared Boomer households could be halved from 62 percent to 31 percent. And the additional workers would boost real GDP growth." In addition, we continue to believe that mandatory worker contributions into a defined contribution plan (e.g., like the Australian system), run by the government with a limited number of low cost index fund investment choices (like the Thrift Incentive Plan the U.S. government runs for its own employees) that would require annuitization of some portion of the plan's value at retirement


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(in effect, like a defined benefit plan) could also make a significant contribution towards resolving our impending retirement income security crisis. That said, we are also not optimistic that the considerable political obstacles to implementing such a plan (say, the combined lobbying money and might of the U.S. financial services industry) can or will be overcome.

So where does our reading of all these recent papers leave us (apart from reaching for a strong drink)? In aggregate, they do not paint a pretty picture of what lies ahead. But in doing so, these papers also provide a strong antidote to the over-optimism, overconfidence, and wishful thinking that are the sources of many mistaken decisions. Though painful in the short term, a gimlet eyed assessment of our current situation is surely better for our financial future than avoiding reality, is it not? In the near term, the implications of the papers we have reviewed for returns in many asset classes are not positive; more bluntly, they suggest that, if they have not already done so, investors would be well advised to focus on ensuring adequate liquidity (even if this means selling financial assets) and rebalancing asset allocations towards underweight positions in overvalued asset classes.

More specifically, in the challenging period that lies ahead, we expect that returns on real return bonds will continue to be attractive relative to those on many other asset classes. This could be particularly true for real return bonds issued by Australia and Canada, which not only have rich supplies of resources and relatively small populations, but which have also done more than most countries to limit the growth rate of national health care and retirement income liabilities. In the world of nominal return bonds, we are certain that fortunes will be made from buying credit assets at prices well below what turn out to be their true values. However, experience has also taught us that credit risk assessment is a difficult game to play, and is well beyond the capabilities of most investors. Hence, in our view, any investments in nominal return bonds (which will do well in a deflationary period, but suffer in the case of inflation) should be limited to government issues, with maturities of no more than two years (which limits the exposure to inflation risk). Diversification across a range of currencies also strikes us (as it always has) as the most prudent course of action to follow.

It also seems likely that equities of all stripes are going to go through a very rough period, with substantial declines from current valuation levels in most markets (though the UK is already undervalued). We are also wary of the claim that somehow emerging market




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equities will be exempt from this process, due to our suspicions about whether institutions in these countries are strong enough to sustain long-term growth, and about the extent to which public market equity investors will benefit even if they do (e.g., while much wealth has been created in Russian and China, very little has accrued to foreign public equity investors). Commercial property will also suffer in the downturn; particularly those properties and portfolios that have been built using high amounts of leverage. On the other hand, the negative returns should be less than those on equities, as commercial property still represents an investment in physical assets whose long term value should keep pace with inflation. Similarly, while commodity and timber prices may fall in the short term, they will continue to retain their "assets in the ground" value during an inflationary period, while in many cases also benefiting from a structural increase in demand relative to supply. So we would not abandon these asset classes during the economic turmoil we expect; rather, we believe timber will become more popular as investors increasingly seek asset classes that can preserve their capital.

Similarly, we continue to support a small portfolio allocation to uncorrelated actively managed strategies. While many hedge fund strategies will no doubt be tested in a worsening economy and found wanting, we believe that uncorrelated strategies like equity market neutral and global macro hold the most promise for delivering positive skill based returns in a very challenging environment. As previously noted, we also believe that some skilled distressed debt active managers (who, as we continuously emphasize in our writing, are always hard to identify) will deliver impressive returns in the medium term. Last but not least, in an environment that may well gyrate between inflation and deflation, we would also expect precious metals, and gold in particular, to perform well. However, as we have noted in the past, we distinguish between gold as a commodity investment (which is already included in many commodity index funds) and gold as a physical asset (which we view as part of an investor's diversified cash holdings, the size of which are primarily driven by expected liquidity and precautionary savings needs). In sum, while we believe that stormy seas lie ahead, we also believe that investors who understand the fundamental dynamics at work can sail them safely.



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## Product and Strategy Notes

CO2 Developments

Two European academics, Maria Mansanet-Bataller and Angle Pardo, have published a research paper analyzing the impact of adding European Emissions Trading Scheme CO2 certificates to a diversified portfolio. They find that, given their assumptions about the ETS return/risk and correlation profile, a mean variance optimization model makes a small allocation to this asset class. While this is interesting and encouraging, as we and other writers have noted, given the inefficiency of the ETS/CO2 asset class at this stage of development, these results are subject to a significant amount of uncertainty. This past month also provided an excellent example of the latter, in the form of a 588 page "advance notice of proposed rulemaking" from the United States Environmental Protection Agency. Based on a 2007 U.S. Supreme Court ruling that CO2 and other greenhouse gasses should be classified as air pollutants under current environmental laws, the EPA is apparently girding up for a massive new regulatory effort. Undoubtedly, this will trigger court challenges and probably new legislation as it moves forward. At this point, however, it only reinforces how unclear the future of CO2 as an investable asset class still remains.

Sector Rotation: Marketers vs. Academics

Last month, we noted a new paper ("Sector Rotation Over Business Cycles") by Stanl, Jacobsen, and Visaltanachoti who found that, between 1948 and 2007, a sector rotation strategy failed to outperform a broadly defined equity asset class index fund. This month another paper was published on the same theme. In "Can Exchange Traded Funds Be Used to Exploit Industry Momentum?", Swinkels and Tjong-A-Tjoe find that "paper [momentum] profits from academic studies of about 5% per year are also present in our sample from 2000 to 2007. [However], when we estimate the transaction costs on these industry momentum strategies, we find that these profits disappear in real-life." Meanwhile, State Street has just launched at new set of ETFs that cover non-U.S. industry sectors (a complement to existing U.S. and global sector ETF products already available in the market).

Research of Interest To Advisors


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A significant number of our readers are professional financial advisors. The past few months have also seen the publication of new research papers of particular interest to them. In "The Joy of Giving or Assisted Living?", Ameriks, Caplin, Laufer and van Nieuwerburgh note that "strong bequest motives can explain low retirement saving, yet so equally can strong precautionary saving motives" [e.g., to pay for future uninsured health care expenses]. "Separating these motives is vital not only to guide innovations in household finance for retirees, but also for public policy in the areas of health care and estate taxation." To address this issue, the authors develop a model of spending in retirement that includes both motives. In contrast to previous research (which tended to focus on bequest or health care motives, but not both), Ameriks et al find "that bequest motives are more prevalent than currently believed, and, rather than being the sole province of the very wealth, instead spread deep into the middle class." They also find that "indivisibility associated with long term care [medical] expenses induces those with low wealth to give up entirely on gaining access to private long term care. At the other end of the spectrum, many of those with high wealth levels will never be at risk of having to rely on Medicaid, again having no incremental incentive to save for this purpose. [In sum], Medicaid Aversion [the authors' term for the precautionary health care related savings motive] induces additional precautionary savings only for those in the middle class." The authors also find that "those retirees without children are more Medicaid averse than those with children, and also have lower bequest motives." On the subject of bequests, we found another recent paper quite interesting. In "The Anatomy of a Likely Donor: Econometric Evidence on Philanthropy to Higher Education", Lara and Johnson note that "in 2006, philanthropic giving to higher education institutions totaled $28 billion" and that "roughly fifteen percent of these funds came from alumni donations." While up to now models to identify those high potential donors were only available for a high fee from specialized consulting firms, this paper makes one public.

We also read an interesting critique of advisors' performance. In "The Influence of Financial Advice on Individual Investor Portfolio Performance", Marc Kramer of the University of Groningen compares the portfolio performance of 15,675 advised and self-directed investors from the Netherlands over a 52 month period. Based on previous research, Kramer hypothesizes that advised investors should outperform their self-directed colleagues.



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He finds that, while advised investors are indeed better diversified, after correcting for different risk levels the advised group slightly underperform the self-directed group. Not a major criticism, to be sure, but a cautionary tale nonetheless. Or, to put it in terms more familiar to Index Investor readers, while getting one's asset allocation right is critical, so too is implementing it efficiently (e.g., by avoiding use of expensive actively managed funds that will almost certainly underperform over the long term). On this issue, Peng Chen of Ibbotson has recently published a paper on the importance of diversification. He begins by noting that "technology is driving the correlation among the world equity markets higher, as it diminishes the importance of location, borders and trading costs on business transactions." This is a point we have also noted before, with reference to the increasing volume of world trade and, more importantly, the extension of supply chains around the globe and a strong corporate focus on making them more efficient (e.g., by closing rather than preserving excess plant capacity in the United States, and choosing to wholly rely on Chinese based manufacturing subcontractors). Chen also notes that, "not only are global equity correlations generally rising, but correlations tend to spike during down markets when investors most need the risk reduction benefits of diversification." To quantify this issue, he looks at 29 years of returns data for the S&P 500, the MSCI EAFE and the S&P/IFCI Emerging Markets Composite Index, covering January 1970 to March 2008. During "up months" (defined as those in which the S&P 500 had positive returns), its correlation with the EAFE was .31 and with the IFCI, .24. However, when the S&P 500 had negative returns, its correlation with the EAFE rose to .53, and with the IFCI to .59. Chen notes that "the probability of having losses in multiple equity markets simultaneously is much higher than what is suggested by the traditional [average] correlation estimate." While that is clearly true, we also note that even in the down markets correlations are not so high as to cause us to question whether we are dealing with one global equity asset class or three still separate ones. Moreover, Chen also notes that "around the same time global equity market correlations began to rise, the correlation between U.S. stocks and bonds began to fall." In months when the S&P 500 rose, it was .23, while in month when the S&P 500 fell, it was only .06. Finally, Chen also found that the correlation between the S&P 500 and U.S. commercial property (REITS) rose from .22 in S&P positive months to .46 when the S&P 500 was in negative territory. Overall, Chen concludes that,


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even "in today's more integrated world economy, there is still value in conventional diversification techniques."

Last but not least, we also call readers attention to a new paper by Blitz and Swinkels on "The Value of Fundamental Indexation" (a subject regular readers know is near and dear to our heart). The authors find that "fundamental indexation is by definition nothing more than an (elegant) value strategy, because the weights of stocks in a fundamental index and a market capitalization weighted index only differ as a result of differences in valuation ratios. Moreover, fundamental indices more resemble active investment strategies than classic passive indices, because (i) they appear to be at odds with market equilibrium; (ii) they do not represent a buy-and-hold strategy; and (iii) they require several subjective choices." We couldn't agree more.

## What Drives the Madness of Crowds?

The great value investor Ben Graham is perhaps best known for this quote from his book, The Intelligent Investor: *"In the short run, the market is a voting machine, but in the long run it is a weighing machine."* This is typically interpreted to mean that while investor sentiment can have a substantial impact on asset prices in the short term, fundamental valuation factors will always anchor prices to reality over the long term. However, as Graham made clear in his previous book (Security Analysis), it is far from clear how long it will take for rationality to win out, or, more accurately, exert a dominant if not exclusive influence on prices: *"The influence of what we call analytical factors over the market price is both partial and indirect – partial, because it frequently competes with purely speculative factors which influence the price in the opposite direction; and indirect, because it acts through the intermediary of people's sentiments and decisions. In other words, the market is not a weighing machine, on which the value of each issue is recorded by an exact and impersonal mechanism, in accordance with its specific qualities. Rather should we say that the market is a voting machine, whereon countless individuals register choices which are the product partly of reason and partly of emotion."*

Writing in 1936, two years after Security Analysis was first published, John Maynard Keynes also noted that "a valuation which is established as the outcome of the mass


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psychology of a large number of ignorant individuals is liable to change violently as the result of a sudden fluctuation of opinion due to factors which do not really make much difference to the prospective yield [dividends on the security], since there will be no strong roots of conviction to hold it steady." This led to Keynes' famous analogy of a financial market being like a newspaper beauty contest, in which the objective was to pick the photograph from a group that the largest number of other readers would find the most attractive. This led to an endless cycle of trying to "anticipate what average opinion expects the average opinion to be."

More than seventy years after these words were written, researchers in a number of different areas are finally developing a better understanding of the causal factors than underlie the market wisdom espoused by Graham and Keynes. The first of these is the study of networks. Consider a collection of 100 people. Each person can be represented by a separate node on a graph, with connections between people represented as lines drawn between two nodes. Networks can be characterized by the distribution of the connections between nodes (technically, this is known as the "degree" of the node). Researchers have found that in many social networks (regardless of their size), the number of connections each node has with others in the network increases according to a power law, with a few highly connected "hubs" and many nodes with far fewer connections. They have also found that social networks are distinguished by positive degree correlations between nodes – in other words, there is a tendency to have connections between nodes with similar degrees (see "Why Social Networks Are Different From Other Types of Networks" by Newman and Park). Social networks also tend to exhibit the so-called "small world" property, in that the average distance between any two nodes on the graph tends to be quite small, regardless of the number of nodes. For example, Leskovec and Horvitz from Microsoft Research recently published the largest study ever undertaken into the small world phenomenon (which was originally popularized in the 1990s via the movie trivia game "Six Degrees of Kevin Bacon" ). Their dataset was 30 billion Microsoft Instant Messenger conversations that occurred during June 2006. From this, they created a network graph with 180 million nodes and 1.3 billion connections between them. They found that the "average shortest path length between nodes was 6.6." This closely replicated the findings of the original "small world" study conducted by Travers and Milgram in 1969 ("An Experimental Study of the Small World Problem"), suggesting the possibility that a universal law may be at work. Leskovec and Horvitz also found that "people have


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more conversations and converse for longer durations with people who are similar to themselves" particularly with respect to language spoken, geographical location and age. Interestingly, this did not hold for gender: "people tend to converse more frequently and for longer durations with the opposite gender" (there's hope…but that's another story!).

The initial focus of social network research was epidemiology – that is, the way infectious diseases (e.g., like influenza) spread through a population. For example, the positive degree correlations found in social networks tends to accelerate the spread of disease (see, for example, "Epidemic Spreading on Undirected and Directed Scale Free Networks with Correlations" by Yukio Hyashi and "Spreading Dynamics on Small World Networks" by Alexei Vazquez). However, it is not just viruses that can quickly spread through social networks – so too can ideas, and perhaps raw emotions (see, for example, "Theory of Rumor Spreading in Complex Social Networks" by Nekovee, Moreno, Bianconin and Marsili).. Researchers in the field of "memetics" study of the former process. A meme is "an information pattern, held in an individual's memory, which is capable of being copied to another individual's memory [others have defined a meme as a unit of cultural imitation]. Memetics is the theoretical and empirical science that studies the replication, spread and evolution of memes." Michael Mauboussin has written an admirably succinct introduction to this subject: "Memes are to cultural evolution what genes are to genetic evolution. Both are replicators: genes propagate through the reproduction of an organism while memes propagate themselves through their transmission from one mind to another. Both are subject to recombination and mutation. And both operate through differential selection, which means that some are more successful at reproducing themselves than others. While most species deal solely with genetic evolution, humans deal with both genetic and memetic evolution." This raises the intriguing question of the factors that maximize the fitness of a meme – i.e., the likelihood that it will be widely propagated throughout a population. Many writers have opined on this; while there are still differences of opinion, most would agree that superior fitness is associated with (a) simplicity, which makes a meme easy to communicate and understand; (b) consistency with a host's existing beliefs; and (c) emotional power (e.g., Prospect Theory suggests that losses – relative to a reference point – have twice the emotional power of gains. Hence a meme framed as a way to avoid loss of something valued may be more fit than one framed as a gain). That said, Mauboussin also cautions that "successful


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memes are able to replicate themselves; success is not a matter of whether or not they are helpful. Said differently, there are very successful memes that may not be very good ideas." The classic example of this is the meme "Smoking is Cool" which successfully replicated itself for many years.

This is a point also made by Joshua Frank in his paper "Applying Memetics to Financial Markets." In this context, Frank conceives of memes as competing investment strategies, and describes two methods through which such memes can increases the amount of capital associated with them (Frank's measure of meme success). First, the amount of capital associated with the meme's use by a single investor can increase due to the success of the strategy in the marketplace. Frank calls this economic replication. Second, the amount of capital associated with a meme can increase as it is adopted by others due to non-economic factors, such as those noted above. Frank calls this interpersonal replication. Critically, he notes that "although financial theorists have implicitly been assuming that economic reproduction is the dominant method of transmission of investment strategy memes, it should be noted that any reasonable model of financial markets must include interpersonal transmission…[Moreover] it is reasonable to expect that the inpterpersonal reproductive fitness of a meme will dominate in most real world circumstances…There is clearly a potential for interpersonal reproduction to take place extremely rapidly relative to economic reproduction." And as Mauboussin noted, there is no reason to believe that a fast propagating meme will be good for investors' long-term health. Consider just a few examples from the past few years: "The internet changes everything." Or "there has never been a national housing price decline in the United States." Or "always buy on the dips." As Will Rogers noted, "It isn't what we don't know that gives us trouble, it's what we know that ain't so."

However, it isn't just memes that are communicated through social networks. There is growing evidence that two decision making systems operate in parallel in human beings. Daniel Kahneman has termed these System One (which operates quickly, subconsciously, and is based on emotional reactions) and System Two (which operates more slowly, consciously, and is more rational). Other writers have written about this same subject using different terminology, including Malcolm Gladwell (in Blink), Gerd Gigerenzer (in Gut Feelings), and Gary Klein (in Intuition at Work). Suffice to say, there is ample evidence that System One is



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powerful and important. And now there is growing evidence that raw emotions, and fear in particular, can be rapidly transmitted between people, and potentially affect their System One thinking. This is the subject of two recent papers. In "Social Simulation of Stock Markets: Taking It to the Next Level", Hoffman, Jager and Von Eije find that a certain portion of investors are motivated not only by economic goals, but also by psychosocial considerations (e.g., susceptibility to interpersonal influence, need to belong, quest for status, etc.), and that markets with a higher proportion of such investors tend to exhibit greater volatility. In "Learning Fears by Observing Others", Olsson, Nearing, and Phelps begin by noting that "learning to respond appropriately to environmental stimuli that predict potentially harmful events is an adaptive mechanism crucial to the survival of any organism." They also note that human beings' "socio-cultural environment provides [an] indirect means of attaining fear-relevant information, such as social observation and verbal communication, which are more efficient and associated with fewer risks than learning through direct aversive experiences." Olsson and his colleagues use functional magnetic resonance imaging to investigate whether the neural bases of these two types of fear learning are the same. They find that this is the case, and show that "fear acquired indirectly through facial observation, with no personal experience of the aversive event, engages similar neural mechanisms as [direct] fear conditioning." We very strongly suspect that this "fear cascade" underlies the very sharp deterioration in U.S. consumer spending that appears to have occurred in June, and, more broadly, that underlies the accelerating collapse of the housing and credit bubbles.

Taken together, the study of networks, memetics, and the rapid transmission of emotions suggest the need for a new theory of asset pricing that includes not only rational considerations of risk and return, and not only the individual cognitive shortcomings highlighted by behavioral finance researchers, but also the social dimension individual decision making its emergent impact on the behavior of markets. This is the subject of an excellent new paper by David Hirshleifer and Siew Hong Teoh. In "Thought and Behavior Contagion in Capital Markets", they note that "prevailing models of capital markets capture [only] a limited form of social influence and information transmission, in which the beliefs and behavior of an investor affect others only through market price, information transmission and processing is simple (without feelings) and there is no localization in the influence of an investor on others." After a wide ranging review of recent research, they conclude that



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"social influence is central to how information and investor sentiment are transmitted, so thought and behavior contagion should be incorporated into a [new] theory of capital markets."

## Model Portfolios Year-to-Date Nominal Returns

We offer over 2,000 model portfolio solutions for subscribers whose functional currencies (that is, the currency in which their target income and bequest/savings are denominated) include Australian, Canadian, and U.S. Dollars, Euro, Yen, Pounds-Sterling, Swiss Francs and Indian Rupees. In addition to currency, each solution is based on input values for three other variables:

- The target annual income an investor wants her or his portfolio to produce, expressed as a percentage of the starting capital. There are eight options for this input, ranging from 3 to 10 percent.

- The investor's desired savings and/or bequest goal. This is defined as the multiple of starting capital that one wants to end up with at the end of the chosen expected life. There are five options for this input, ranging from zero (effectively equivalent to converting one's starting capital into a self-managed annuity) to two.

- The investor's expected remaining years of life. There are nine possible values for this input, ranging from 10 to 50 years.

We use a simulation optimization process to produce our model portfolio solutions. A detailed explanation of this methodology can be found on our website. To briefly summarize its key points, in order to limit the impact of estimation error, our assumptions about future asset class rates of return, risk, and correlation are based on a combination of historical data and the outputs of a forward looking asset pricing model. For the same reason, we also constrain the maximum weight that can be given to certain asset classes in a portfolio. These



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maximums include 30% for foreign equities, 20% for foreign bonds, domestic and foreign commercial property, and commodities (including a sub-limit of 10% on timber), and 10% for emerging markets equities. There are no limits on the weight that can be given to real return and domestic bonds, and to domestic equities.

Each model portfolio solution includes the following information: (a) The minimum real (after inflation) internal rate of return the portfolio must earn in order to achieve the specified income and savings/bequest objectives over the specified expected lifetime. (b) The long-term asset allocation strategy that will maximize the probability of achieving this return, given our assumptions and constraints. (c) The recommended rebalancing strategy for the portfolio. And (d) the probability that the solution will achieve the specified income and savings/bequest goals over the specified time frame.

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 U.S. cash benchmark is 3.97% (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.retiredinvestor.com/Members/Portfolio/USA.php




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