

Retired Investor

Invest Wisely...Get an Impartial Second Opinion.

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This Month's Issue: Key Points

Should you tilt your equity (or even your bond) allocation toward socially responsible investments? For better or worse, the answer to that question seems to lie more in the realm of values than it does financial economics. To be sure, some of the criteria used to identify "socially responsible" companies seem to be associated with higher shareholder returns. Foremost among these seem to be some of the criteria associated with corporate governance. Unfortunately, as with all successful active management screening criteria, now that this has been publicized an efficient market should eliminate the future potential for excess returns, by bidding up the price of well-governed companies. However, the majority of criteria used to identify "socially responsible" companies do not seem to have a clear link to shareholder value creation. If you believe that a tilt toward "socially responsible" companies will produce superior risk adjusted returns, you will likely be disappointed.

This does not necessarily mean that you should avoid funds that invest in socially responsible funds. If you derive non-monetary satisfaction from investing in companies identified as "socially responsible" under some set of criteria, and are willing to sacrifice some financial returns to obtain this satisfaction, there is nothing wrong with that. However, if you choose to go this route, we would strongly suggest doing it using socially responsible index funds. Being socially responsible does not make active management any less challenging. Fortunately, there is a growing number of socially responsible index products available around the world. We prefer the ones that employ an optimization methodology that tries to keep the fund's returns and risk close to those of an underlying conventional benchmark index (e.g., the Russell 1000 for the new KLD ETF, and the Russell 3000 for the TCSCX mutual fund in the United States). However, the maximum tracking error versus the benchmark index that these funds allow (2% in the case of KLD) is very large in the world of index funds. Also, most actively managed funds take on tracking error risk in order to generate higher returns (alpha). In this case, tracking error is being taken on to generate a higher social responsibility score. This raises an interesting question: how many people would take the risk of paying 2% more in interest just to get a mortgage from a socially responsible bank?

When all is said and done, we remain unconvinced that for most people the level of non-monetary satisfaction that accompanies socially responsible investing exceeds the amount that comes from investing in a conventional broad market index fund, and contributing the higher earnings on this investment (ideally along with your time) to a charitable cause whose benefits you can observe and enjoy first-hand.

In this month's product and strategy notes, we review some interesting new studies. One from Standard and Poor's reinforces the case for indexing public equity investments. Another comes from Yale University, and uses a very innovative approach to estimate the rate at which our physical and cognitive capacities deteriorate from decade to decade. In line with most people's common sense about this subject, it finds that physical capacity deteriorates at a linear rate of 5 to 10 percent per decade up to age 70 for men and 60 for women. After this point, the decline rate becomes a power function (that is, capacity begins to decline at an accelerating rate). In contrast, the study finds that the decline rate for mental capacity is much lower – on the order of 2% per decade. Moreover, it doesn't begin to accelerate until much

later (around 80 for both men and women). For at example, even at age ninety, the ten-year expected decline in mental capacity is only about 10%. In short, every time somebody says an older person is “still sharp as a tack”, remember that is the rule rather than the exception!

We also summarize another study from the Federal Reserve Bank of New York that concludes there is not a housing bubble in the United States, and new research at Yale University that has made great progress toward systematically analyzing art as an asset class. Our last note looks at a new study from the International Monetary Fund that highlights a source of risk overlooked by many people planning for retirement -- variability in the cost of providing a given amount of retirement income via purchase of an annuity.

Finally, this month we introduce two new benchmark portfolios. The first is the one year return on cash. The second is a portfolio that gives equal weight to all asset classes. This portfolio implicitly assumes that it is impossible to accurately forecast future asset class risk and return; consequently, the best approach is to equally divide one's exposure to different sources of return (and risk). While we disagree with this assumption, intellectual honesty compels us to include the “couch potato” portfolio as one of our benchmarks.

This Month's Letters to the Editor

Do you support the use of dollar cost averaging?

In most circumstances, we support the use of dollar cost averaging, for the same reason we support regular rebalancing: both are sound risk management approaches, based on the extreme difficulty most of us have with consistently making accurate financial forecasts.

In the strict sense, of course, you are right: the decision to use dollar cost averaging, or to rebalance one's portfolio does represent a market-timing decision of sorts, in that the alternative is not to do it. However, from a practical perspective, we think there is a large difference between someone who "systematically" times markets, if you will, via dollar cost averaging and rebalancing, and someone who "episodically" times them, at irregular intervals, based on a specific forecast of future relative returns. In our mind, the latter is much closer to active management, with all its attendant difficulty.

However, all that being said, practical experience also has taught us not to be ideologues on this point. On rare occasions, asset classes can become so substantially and obviously overvalued that a departure from one's long-time asset allocation policy is warranted. The UK pound in 1992 and US equity markets in late 1999 and early 2000 are examples of this (however, we note that even then there were people who argued they were not overvalued). To help subscribers spot these overvalued situations, each month we produce our bond and equity market valuations updates, and twice a year we publish our economic update and our estimate of what it means for future asset class returns.

We also recognize that, in the case of investments in Exchange Traded Funds, the transaction costs associated with many small investments can be prohibitive in comparison to a smaller number of large investments (although some firms, such as Ameritrade, have taken steps to overcome this limitation). In this case, there is a clear trade-off between one's forecast of transaction costs (which has a high degree of certainty) and one's estimate of possible losses due to adverse changes in market valuations (which has a high degree of uncertainty). As with other aspects of investing, at best one can try to quantify this trade-off; however, there remains an irreducible level of uncertainty in the face of which human judgements must be made.

Why don't you use benchmarks at Retired Investor?

The whole issue of benchmarks is fraught with emotional traps for the unwary. For example, consider a retired investor who, having estimated his or her future portfolio income (withdrawal) objective, bequest target, and expected years of remaining life, determines the compound annual rate of return he must earn on his portfolio to avoid running out of money. Let us also assume that, given a set of assumptions about future asset class returns, risks, and correlations, he has identified an asset allocation strategy that has at least a 95% chance of achieving his income target over his expected life, under a wide range of possible asset class return scenarios. So far, so good. Now what happens when our retired investor picks up the newspaper on January 1st, and notes that some of the asset classes in his portfolio have outperformed others? Does that mean that our retired investor will go out and switch all of his portfolio into the top performing asset classes? Well, if the asset classes in question are

emerging markets equities and commodities, our investor will probably find it easy to resist this temptation. But what happens if a reasonable mix of asset classes -- say, 50% domestic equities and 50% domestic investment grade bonds -- has outperforms his portfolio? In this case, the temptation to switch may be stronger, because not only was the return on the 50/50 portfolio higher, but it is harder to intuit that the risk is any higher than it is on the investor's current (and more diversified) portfolio. And when one is confronted by peers who have achieved higher returns with the 50/50 portfolio (people rarely talk about the risk that was taken to achieve them) the temptation to switch asset allocations becomes even harder to resist.

However, in the case of our model portfolios, we believe it should be resisted. In all our asset allocation models, there is no constraint on the percentage of a portfolio that can be allocated to domestic equity and domestic investment grade debt. The fact that our model portfolios' allocate assets to a wider range of asset classes implies that, given our assumptions about future asset class returns, risks, and correlations, the resulting allocation has either a higher probability of achieving the compound annual real return target than a portfolio limited to domestic equity and domestic investment grade bonds, or, in rare cases, the same probability of achieving the target but a lower annual standard deviation of returns (risk).

In light of these considerations, we had originally been reluctant to use benchmarks at Retired Investor. We use them at our sister publication, www.indexinvestor.com, but in a very limited way: they are the basis of comparison for a set of model portfolios developed specifically for investors (e.g., professional asset managers) whose performance is evaluated annually versus a benchmark. We believe that our target real return portfolios are more appropriate for investors with longer time horizons.

That being said, we also want to be responsive to our subscribers' needs. Hence, this month we are introducing two benchmarks against which the performance of our model portfolios can be compared. These are (1) cash, and (2) a portfolio that gives equal allocations to each asset class. The second portfolio implicitly assumes that while it is possible to identify sources of investment risk and returns (that is, different asset classes), it is not possible to forecast future risk and return with sufficient accuracy to enable one to deviate from an equal allocation with any degree of confidence that the resulting outcome will be better. While we disagree with this position, we also recognize that it is one that intellectual

honesty demands we take into account. Later on in the year, we are still thinking about introducing benchmark target real return portfolios that are constructed using the same target real rates of return, but with allocations limited to domestic equity and investment grade bonds. Please let us know if this would be of interest to you by sending us a quick e-mail at customerservice@retiredinvestor.com We appreciate your input.

Global Asset Class Returns

YTD 31Jan05	In USD	In AUD	In CAD	In EURO	In JPY	In GBP
Asset Held						
US Bonds	0.60%	1.74%	4.03%	4.70%	1.55%	2.36%
US Prop.	-8.50%	-7.36%	-5.07%	-4.40%	-7.55%	-6.74%
US Equity	-2.70%	-1.56%	0.73%	1.40%	-1.75%	-0.94%
AUS Bonds	-1.90%	-0.76%	1.54%	2.20%	-0.94%	-0.14%
AUS Prop.	-2.06%	-0.92%	1.37%	2.04%	-1.11%	-0.30%
AUS Equity	0.78%	1.92%	4.21%	4.88%	1.73%	2.54%
CAN Bonds	-2.47%	-1.33%	0.96%	1.63%	-1.52%	-0.71%
CAN Prop.	-0.01%	1.12%	3.42%	4.08%	0.94%	1.75%
CAN Equity	-0.47%	0.67%	2.97%	3.63%	0.49%	1.29%
Euro Bonds	-2.91%	-1.77%	0.52%	1.19%	-1.96%	-1.15%
Euro Prop.	-4.96%	-3.82%	-1.53%	-0.87%	-4.01%	-3.20%
Euro Equity	-2.20%	-1.06%	1.23%	1.89%	-1.25%	-0.44%
Japan Bonds	-0.40%	0.74%	3.03%	3.70%	0.55%	1.36%
Japan Prop.	4.99%	6.13%	8.43%	9.09%	5.95%	6.75%
Japan Equity	-3.02%	-1.88%	0.41%	1.08%	-2.07%	-1.26%
UK Bonds	-1.71%	-0.57%	1.72%	2.39%	-0.76%	0.05%
UK Prop.	-4.45%	-3.31%	-1.01%	-0.35%	-3.49%	-2.69%
UK Equity	-2.43%	-1.29%	1.00%	1.67%	-1.48%	-0.67%
World Bonds	-0.50%	0.64%	2.93%	3.60%	0.45%	1.26%
World Prop.	-4.60%	-3.46%	-1.17%	-0.50%	-3.65%	-2.84%
World Equity	-2.20%	-1.06%	1.23%	1.90%	-1.25%	-0.44%
Commodities	0.80%	1.94%	4.23%	4.90%	1.75%	2.56%
Hedge Funds	-0.47%	0.67%	2.96%	3.63%	0.48%	1.29%
A\$	-1.14%	0.00%	2.29%	2.96%	-0.19%	0.62%
C\$	-3.43%	-2.29%	0.00%	0.66%	-2.48%	-1.67%
Euro	-4.10%	-2.96%	-0.66%	0.00%	-3.15%	-2.34%
Yen	-0.95%	0.19%	2.48%	3.15%	0.00%	0.81%
UK£	-1.76%	-0.62%	1.67%	2.34%	-0.81%	0.00%
US\$	0.00%	1.14%	3.43%	4.10%	0.95%	1.76%

Equity and Bond Market Valuation Update

Our equity market valuation analysis rests on two fundamental assumptions. The first is that the long term real equity risk premium is 4.0% per year. The second is the average rate of productivity growth an economy will achieve in the future. Because future growth rates are uncertain, we use both high and a low productivity growth assumptions for each region. Given these assumptions, here is our updated market valuation analysis at the end of last month:

Country	Real Risk Free Rate Plus	Equity Risk Premium Equals	Required Real Return on Equities	Expected Real Growth Rate* plus	Dividend Yield Equals	Expected Real Equity Return**
Australia	2.76%	4.00%	6.76%	4.90%	3.48%	8.38%
Canada	1.99%	4.00%	5.99%	2.10%	1.84%	3.94%
Eurozone	1.43%	4.00%	5.43%	2.50%	2.61%	5.11%
Japan	0.48%	4.00%	4.48%	2.70%	0.97%	3.77%
U.K.	1.71%	4.00%	5.71%	2.50%	3.14%	5.64%
U.S.A.	1.69%	4.00%	5.69%	4.50%	1.68%	6.18%

*High Productivity Growth Scenario..

** When required real equity return is greater than expected real equity return, theoretical index value will be less than actual index value – i.e., the market will appear to be overvalued.

Country	Implied Index Value ¹	Current Index Value	Current to Implied Value Under High Growth Scenario ²	Current to Implied Value Under Low Growth Scenario
Australia	187.30	100.00	53%	82%
Canada	47.26	100.00	212%	266%
Eurozone	89.11	100.00	112%	170%
Japan	57.91	100.00	173%	276%
U.K.	97.94	100.00	102%	150%
U.S.A.	141.41	100.00	71%	130%

¹High productivity growth scenario. ²Values below 100% indicate undervaluation; more than 100% indicates overvaluation

Our valuation estimate is based on the relationship between the returns an equity market is expected to supply, and those investors are likely to demand. The rate of return the

equity market is expected to supply in the future equals current dividend yield plus the expected rate of real long-term economic growth. To be sure, changes in the market price/dividend (or price/earnings) ratio also affect the returns supplied. However, because this is driven by psychological factors which we have no basis for predicting, we do not include future price/dividend ratio changes in our analysis.

We define the future equity market return that investors demand to be equal to the current yield on long term real return bonds, plus a four percent long term equity market risk premium. As you can see, the good news is that two of the factors in our model -- current dividend yields and the real bond return -- are easily obtained from the daily paper. The bad news is that the other two -- the expected rate of dividend growth and the "correct" equity market risk premium -- are two of the most contentious issues in finance. However, if you assume that an equity market is currently in equilibrium (that is, neither under or overvalued), by assuming a value for one of these variables, you can derive an estimate of the market's current expectation for the other. Specifically, the market's current implied rate of future dividend growth equals the current real bond yield plus the four percent equity market risk premium less the current dividend yield. Similarly, the market's current implied equity market risk premium equals the current dividend yield plus our estimated future growth rate less the current real bond yield. These estimates are shown in the following table:

	Current Dividend Yield	Current Real Bond Yield	Implied Future Real Growth Rate, Assuming 4% ERP	Implied ERP, Assuming Low Future Growth Scenario	Implied ERP, Assuming High Future Growth Scenario
Australia	3.48%	2.76%	3.28%	4.62%	5.62%
Canada	1.84%	1.99%	4.15%	0.95%	1.95%
Eurozone	2.61%	1.43%	2.82%	2.18%	3.68%
Japan	0.97%	0.48%	3.51%	2.30%	3.30%
United Kingdom	3.14%	1.71%	2.57%	2.43%	3.93%
United States	1.68%	1.69%	4.01%	3.49%	4.49%

Our 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:

	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	2.76%	2.96%	5.72%	5.41%	-0.31%	2.96%
Canada	1.99%	2.40%	4.39%	4.22%	-0.17%	1.67%
Eurozone	1.43%	2.37%	3.80%	3.54%	-0.26%	2.53%
Japan	0.48%	0.77%	1.25%	1.33%	0.09%	-0.84%
UK	1.71%	3.17%	4.88%	4.60%	-0.28%	2.67%
USA	1.69%	2.93%	4.62%	4.14%	-0.48%	4.69%

It is important to note that this analysis looks only at ten year government bonds. The relative valuation of non-government bond markets is also affected by the extent to which their respective credit spreads (that is, the difference in yield between an investment grade or high yield corporate bond and a government bond of comparable maturity) are above or below their historical averages (with below average credit spreads indicating potential overvaluation).

Finally, 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. 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. This information is summarized in the following table:

Annual Exchange Rate Changes Implied by Bond Market Yields

	To A\$	To C\$	To EU	To YEN	To GBP	To US\$
From						
A\$	0.00%	-1.19%	-1.87%	-4.08%	-0.81%	-1.27%
C\$	1.19%	0.00%	-0.68%	-2.89%	0.38%	-0.08%
EU	1.87%	0.68%	0.00%	-2.21%	1.06%	0.60%
YEN	4.08%	2.89%	2.21%	0.00%	3.27%	2.81%
GBP	0.81%	-0.38%	-1.06%	-3.27%	0.00%	-0.46%
US\$	1.27%	0.08%	-0.60%	-2.81%	0.46%	0.00%

Sector and Style Rotation Watch

The following table shows a number of classic style and sector rotation strategies that attempt to generate above index returns by correctly forecasting turning points in the economy. This table assumes that active investors are trying to earn high returns by investing today in the styles and sectors that will perform best in the next stage of the economic cycle. The logic behind this is as follows: Theoretically, the fair price of an asset (also known as its fundamental value) is equal to the present value of the future cash flows it is expected to produce, discounted at a rate that reflects their relative riskiness. Current economic conditions affect the current cash flow an asset produces. Future economic conditions affect future cash flows and discount rates. Because they are more numerous, expected future cash flows have a much bigger impact on the fundamental value of an asset than do current cash flows. Hence, if an investor is attempting to earn a positive return by purchasing today an asset whose value (and price) will increase in the future, he or she needs to accurately forecast the future value of that asset. To do this, he or she needs to forecast future economic conditions, and their impact on future cash flows and the future discount rate. Moreover, an

investor also needs to do this before the majority of other investors reach the same conclusion about the asset's fair value, and through their buying and selling cause its price to adjust to that level (and eliminate the potential excess return).

We publish this table to make an important point: there is nothing unique about the various rotation strategies we describe, which are widely known by many investors. Rather, whatever active management returns (also known as "alpha") they are able to generate is directly related to how accurately (and consistently) one can forecast the turning points in the economic cycle. Regularly getting this right is beyond the skills of most investors. In other words, most of us are better off just getting our asset allocations right, and implementing them via index funds rather than trying to earn extra returns by accurately forecasting the ups and downs of different sub-segments of the U.S. equity and debt markets. That being said, the highest year-to-date returns in the table give a rough indication of how investors employing different strategies expect the economy 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. Similar returns in multiple columns (within the same strategy) indicate a relative lack of agreement between investors about the most likely future state of the economy.

Year-to-Date Returns on Classic Rotation Strategies in the U.S. Markets

<i>Economy</i>	Bottoming	Strengthening	Peaking	Weakening
<i>Interest Rates</i>	Falling	Bottom	Rising	Peak
<i>Style Rotation</i>	Growth (IWZ)	Value (IWW)	Value (IWW)	Growth (IWZ)
	-3.17%	-2.10%	-2.10%	-3.17%
<i>Size Rotation</i>	Small (IWM)	Small (IWM)	Large (IWB)	Large (IWB)
	-4.06%	-4.06%	-2.19%	-2.19%
<i>Style and Size Rotation</i>	Small Growth (DSG)	Small Value (DSV)	Large Value (ELV)	Large Growth (ELG)
	-2.80%	-5.30%	-2.28%	-3.05%
<i>Sector Rotation</i>	Cyclicals (IYC)	Basic Materials (IYM)	Energy (IYE)	Utilities (IDU)
	-3.50%	-2.74%	3.42%	1.43%

Economy	Bottoming	Strengthening	Peaking	Weakening
Interest Rates	Falling Technology (IYW) -5.88%	Bottom Industrials (IYJ) -3.04%	Rising Staples (IYK) 0.49%	Peak Financials (IYF) -2.83%
Bond Market Rotation	High Risk (VWEHX) -0.20%	Short Maturity (VBISX) 0.00%	Low Risk (VIPSX) 0.00%	Long Maturity (VBLTX) 2.50%

Socially Responsible Investing

The launch in the United States last month of the iShares KLD Select Social Index Fund (ticker KLD; .50% expense ratio) makes this an appropriate time to examine the logic behind what is known as "socially responsible investing." We will first consider the theoretical basis for SRI: What does it mean for a company to be "socially responsible?" Should we expect socially responsible companies to deliver superior risk adjusted returns? If not, then why invest in them? We will then look at the way SRI works in practice, starting with the companies that rate "social responsibility", the indexes that are derived from these ratings, and the performance of funds that only invest in socially responsible companies. Finally, we will answer a simple question: should you tilt your equity allocation towards socially responsible companies?

The Theoretical Basis for SRI

When examining the logic behind socially responsible investing, the first, and ultimately the most difficult challenge one encounters, is defining what constitutes a "socially responsible" company. Writing in 1776, Adam Smith quite clearly equated "socially responsible" with "profit maximizing" in his famous book, An Inquiry Into the Nature and Causes of the Wealth of Nations. Assuming that all externalities (e.g., the indirect costs of pollution) are taken into account (i.e., either included in prices or via taxes and regulations imposed by government),

an economy in which firms pursue their own self-interest (by seeking to maximize their profits) will also be one that maximizes the overall welfare of its citizens. Either because they disagree with Smith's conclusion, or because they doubt that all externalities are fully taken into account, ever since 1776 people have advocated alternative views about the proper social role of the corporation. The most recent manifestation of this controversy is found in calls for "corporate social responsibility" and "socially responsible investing."

Unfortunately, beyond disagreeing with Smith, the people and organizations calling for CSR and SRI don't completely agree on what it means. In general, classification as a "socially responsible firm" is the result of a two step process. The first stage is a "negative screen" that eliminates companies that operate in certain, presumably "socially irresponsible" industries. However, the firms that assign "social responsibility" ratings don't agree on which industries belong in this category, which usually contains some mix of alcohol, gambling, tobacco, weapons manufacturing, nuclear power, and sometimes chemicals. As you can see, ultimately any such characterization has to be based on values about which people can and do disagree. Moreover, these "negative screens" also raise questions about where to draw the line, so to speak. For example, while tobacco companies are out, banks that lend to them can still be considered "socially responsible." The same is true for the difference between chemical companies and companies in other industries that use chemicals as inputs into their production process.

The second stage of the "socially responsible" classification is a so-called "positive screen" that assigns points for behaviors and practices that, based on some criteria, are considered "socially responsible." Unfortunately, there is no agreement on what these are. For example, consider the differences in criteria used by two firms that assign social responsibility ratings to firms. One's list includes community relations, employee relations, workforce diversity, environment, human rights, and product quality and safety; the other's includes governance and ethics, safe and health work environment, environment, product safety and impact, international operations and human rights, indigenous peoples' rights, and community relations.

Assuming one has settled on a definition of the characteristics of a "socially responsible" company, the next question is whether there is any evidence that social

responsibility (so defined) is associated with superior risk adjusted returns. Perhaps the strongest evidence is found in the area of corporate governance. In theory, this is not surprising. The separation of ownership and management in a modern corporation creates what is called an "information asymmetry", which gives rise to "principal-agent conflicts." In practical terms, this means that managers can potentially take advantage of shareholders because they have better information about what is going on at the company. The purpose of "corporate governance" is to minimize these conflicts, through a variety of means (e.g., eliminating anti-takeover defenses, using more outside directors, improving accounting disclosures and the like). Multiple academic studies have found a significant positive relationship between good corporate governance and higher shareholder returns (e.g., see "Corporate Governance and Equity Prices" by Gompers, Ishii and Metrick). Yet even within this area, there is disagreement about the specific factors that are causing the observed beneficial effects. For example, in "Corporate Governance and the Returns on Investment" by Gugler, Mueller and Yurtoglu, the authors find that being located in a country that uses a common law (English) based legal system has a substantial impact. However, in another paper ("What Matters in Corporate Governance?" by Bebchuk, Cohen, and Ferrell), the authors find that only six factors (all related to the degree to which management is entrenched) have strong correlations with shareholder returns.

Beyond corporate governance, there is also substantial evidence linking firm performance to some of the other factors included under some definitions of "social responsibility", including certain employee relations, health and safety, and quality practices. However, it is equally legitimate to argue that these practices are also the hallmarks of good management, which maximizes profits.

The real difference of opinion between Adam Smith and the leaders of the CSR/SRI school is about factors for which no strong link to shareholder value creation has been demonstrated. For example, one firm that rates companies on their "social responsibility" takes into consideration such factors as whether "the company's chief executive officer is a woman or a member of a minority group," whether the company "has implemented notably progressive policies toward its gay and lesbian employees," and whether "the company has as part of its basic mission the provision of products and services for the economically

disadvantaged." To our knowledge, there is no body of research that demonstrates a statistically significant link between these factors and superior risk adjusted returns.

Using factors like these, which lack a clear link to value creation, as criteria for identifying "socially responsible" companies, implies a value judgement that they are worth pursuing, even if they worsen risk adjusted returns. For some, this undermines the case for socially responsible investing (see, for example, "The Myth of Social Investing" by Jon Entine). Others, however, make two additional arguments in support of SRI.

The first argument is often called "stakeholder theory." Its advocates propose that a company's managers owe allegiance not just to shareholders, but to other "stakeholders" as well, including customers, suppliers, employees, communities and governments. Unfortunately, stakeholder theory does not provide a criterion (like maximizing shareholder value) for making trade-offs between the competing interests these groups. Critics argue that this opens the door to bigger agency problems (and lower equity returns), as managers maximize their personal satisfaction by spending resources owned by shareholders on other stakeholder groups (see, for example, "Value Maximization, Stakeholder Theory, and the Corporate Objective Function" by Michael Jensen). They also point out that in many countries, the law is quite clear that the primary obligation of managers and people who invest other people's money is to maximize risk-adjusted returns.

The second argument used to justify corporate consideration of theoretically weak social responsibility criteria is based on a particular view of investors. Specifically it assumes that, rather than simply seeking to maximize their risk adjusted returns, investors actually derive their satisfaction from a mix of financial returns and the "warm glow" that comes from being a shareholder in a socially responsible firm (see, for example, "A Modigliani-Miller Theory of Corporate Social Responsibility" by Small and Zivin). If this argument is true, then these investors should be willing to accept lower returns in exchange for a higher level of social responsibility spending by the companies in which they invest. Indeed, the "activist" school of socially responsible investing claims that investors (and others) should undertake political action to force companies to do this. While acknowledging the theoretical elegance of this argument, critics note that it does not appear to be supported by the data. For example, there has not been a great inflow of funds into socially responsible investment funds that deliver performance significantly below their less responsible benchmarks. In fact, poor

performance by these funds has led to outflows of assets. Moreover, other research has found that investors in socially responsible funds are more, rather than less performance sensitive than other investors (see, for example, "Socially Responsible Investors and Performance Sensitivity" by Bollen and Cohen). This suggests that for many people, socially responsible investing is more of a luxury good than a necessity.

Investing in SRI Funds

Let's now move on to the practical issues associated with socially responsible investing. As previously noted, one key issue in this area is the profusion of firms that are rating companies on their "social responsibility", and the different criteria that they use. A closely related problem is the inherently subjective nature of this process, involving as it does "active management" type decisions about (1) the screening criteria to use, (2) the weight to give each criteria, and (3) the inherently subjective nature of a company's "score" on many of these criteria.

A recent report ("Values for Money: Reviewing the Quality of SRI Research") by Mistra, a foundation established by the government of Sweden, highlighted other problems: "Company disclosure was by far the most significant single source of information [for firms assigning SRI ratings], accounting for 40% to 80% of the information input [into the ratings process]." Not only was this information hard to verify, but "one of the most common comments made by companies about the SRI research organizations is the time it takes to respond to numerous requests for information." Many of these companies reported that they were suffering from "questionnaire fatigue." Another comment often raised by companies was that "many SRI research organizations do not understand [the company's] business, and that the [SRI ratings] methodologies are not focusing on key company and sector specific issues."

After they have been identified (on the basis of a set of screening criteria), socially responsible companies are often combined into a "socially responsible" index. There is no shortage of such indexes available today, from both global providers (e.g., the Dow Jones Sustainability Indexes and the FTSE4Good indexes), and national or regional ones (e.g., the Calvert and KLD/Domini indexes in the United States). The most common approach is to use

market capitalization weighting. If one believes that socially responsible companies will generate superior risk adjusted returns, then market capitalization weighting maximizes the financial benefit to an investor. We note, however, that if you believe that corporate social responsibility is valuable in its own right, even if it results in lower financial returns, then one should logically use a weighting scheme based on companies' "social responsibility" scores. The KLD Select Social Index (upon which the iShares ETF is based) uses a variant of this approach. It is constructed using an optimization model (pioneered by TIAA-CREF) that maximizes the "social responsibility score" of the index, subject to a maximum tracking error constraint (in this case, 2% per year) versus an external benchmark (in this case, the Russell 1000 Index). This raises another key point about socially responsible indexes: most of them contain very different risk exposures than the non-socially responsible indexes against which they are often benchmarked. For example, at the end of December, 2004, the FTSE4Good global index had, relative to the FTSE Developed Countries Index, 5.4% more exposure to the financial sector and 3.6% more exposure to non-cyclical services, but 4.7% less to general industrials and 2.6% less to resources. It also had 7.9% less exposure to the United States, but 6.4% higher exposure to the UK, and 2.3% higher exposure to France. Other studies have shown similar differences in socially responsible indexes' exposure to other risk factors, including small versus large capitalization shares, and value versus growth style shares.

Numerous studies have examined the performance record of socially responsible investment funds. Unfortunately, many of them have been criticized for employing questionable methodologies. The stronger studies have taken into account the differing risk factor exposures (e.g., to the market, small caps, value, or momentum) of socially responsible funds. This makes it possible to see whether the socially responsible screens themselves (as opposed to the differing factor risk exposures they produce) had any impact on the funds' performance (technically, they test to see if the SRI screens produced any alpha). In most cases, they find that they do not. For example, in "International Evidence on Ethical Mutual Fund Performance and Investment Style", Bauer, Koedijk, and Otten review performance in Germany, the U.K. and the U.S. and "find little evidence of significant differences in risk adjusted returns between ethical and conventional funds for the 1990 - 2001 period." They also find that actively managed socially responsible funds failed to outperform the socially

responsible indexes over this period. In "Socially Responsible Investments in Germany, Switzerland and the United States," Michael Schroeder reaches the same conclusion.

In "Canadian Ethical Mutual Funds: Performance and Ethical Style Analysis," Bauer, Derwall and Otten find that their "Canadian results are consistent with the perception that the performance differential between ethical mutual funds and their non-ethical peers is statistically insignificant." And in "Ethical Investing in Australia," Bauer, Otten and Rad find that "Australian ethical mutual funds underperform [on a risk adjusted basis] both their relevant indices and their conventional peers between 1992 and 2003." Finally, in "The Performance of Socially Responsible Bond Funds", Derwall and Koedijk find "a positive but statistically insignificant performance differential between socially responsible bond funds and their conventional peers over the period 1987 to 2003" in the United States.

While not adjusted for their differing factor exposures, the following comparison between different socially responsible U.S. index funds and the Vanguard Total Market Index Fund is also interesting. The data cover the three years ended December 31, 2004.

Fund	Calvert Social Index Fund	Domini Social Equity Fund	TIAA-CREF Social Choice Equity Fund	Vanguard Total Market Index Fund
Ticker	CSXAX	DSEFX	TCSCX	VTSMX
Expense Ratio	.75%	.95%	.27%	.20%
Selection Universe	Index selected from Russell 1000 (large cap tilt)	350 large companies, plus 50 other companies with "particularly strong social characteristics" (large cap tilt)	Index selected from Russell 3000 (broad market index)	Tracks Wilshire 5000 (broad market index)
Average Annual Return (nominal)	1.68%	3.28%	5.01%	5.32%
3 Year Standard Deviation	16.89%	15.82%	15.54%	15.62%

As you can see, the Vanguard Total Market Index Fund outperformed all of the socially responsive index funds. However, the difference between it and the TIAA-CREF Social Choice Equity Fund does not appear statistically significant. This is not surprising. Both CSXAX and DSEFX are market capitalization weighted funds. In contrast, TCSCX employs an optimization methodology intended to maximize the fund's weighted social responsibility score within the constraint that its return and risk don't deviate too far from the Russell 3000 (which includes about 98% of U.S. equity market capitalization, versus 100% in the Wilshire 5000). This is the same approach used by the new iShares KLD Select Social Index ETF. However, rather than using the broad Russell 3000 as its benchmark, it takes a large cap tilt and uses the Russell 1000. Also, at .50%, its expense ratio is also somewhat higher than the TIAA-CREF fund.

Conclusion

Should you tilt your equity (or even your bond) allocation toward socially responsible investments? For better or worse, the answer to that question seems to lie more in the realm of values than it does financial economics. To be sure, some of the criteria used to identify "socially responsible" companies seem to be associated with higher shareholder returns. Foremost among these seem to be some of the criteria associated with corporate governance. Unfortunately, as with all successful active management screening criteria, now that this has been publicized an efficient market should eliminate the future potential for excess returns, by bidding up the price of well-governed companies. However, the majority of criteria used to identify "socially responsible" companies do not seem to have a clear link to shareholder value creation. If you believe that a tilt toward "socially responsible" companies will produce superior risk adjusted returns, you will likely be disappointed.

This does not necessarily mean that you should avoid funds that invest in socially responsible funds. If you derive non-monetary satisfaction from investing in companies identified as "socially responsible" under some set of criteria, and are willing to sacrifice some financial returns to obtain this satisfaction, there is nothing wrong with that. However, if you choose to go this route, we would strongly suggest doing it using socially responsible index funds. Being socially responsible does not make active management any less

challenging. Fortunately, there is a growing number of socially responsible index products available around the world. We prefer the ones that employ an optimization methodology that tries to keep the fund's returns and risk close to those of an underlying conventional benchmark index (e.g., the Russell 1000 for the new KLD ETF, and the Russell 3000 for the TCSCX mutual fund in the United States). However, the maximum tracking error versus the benchmark index that these funds allow (2% in the case of KLD) is very large in the world of index funds. Also, most actively managed funds take on tracking error risk in order to generate higher returns (alpha). In this case, tracking error is being taken on to generate a higher social responsibility score. This raises an interesting question: how many people would take the risk of paying 2% more in interest just to get a mortgage from a socially responsible bank?

When all is said and done, we remain unconvinced that for most people the level of non-monetary satisfaction that accompanies socially responsible investing exceeds the amount that comes from investing in a conventional broad market index fund, and contributing the higher earnings on this investment (ideally along with your time) to a charitable cause whose benefits you can observe and enjoy first-hand.

Product and Strategy Notes

Fund Changes

As we have noted in the past, there is considerable research evidence that suggests potential benefits from internationally diversifying one's allocation to commercial property. In Australia, Deutsche Asset Management recently launched two new actively managed funds that help investors do just this. The Deutsche Global (Ex-Australia) Property Securities Fund will invest in US, Asia and Europe, while The Deutsche Global Property Securities Fund invests in the same regions plus Australia.

The Vanguard Energy Fund (VGENX) recently closed to new investors. Fortunately, we understand that the broader-based PIMCO Commodity Real Return Fund (PCRDY) is available through Vanguard Brokerage. Given a choice, we still prefer the latter as the way to implement an allocation to commodities.

Completing its shift to indexes from Morgan Stanley Capital International, Vanguard has also announced that it is changing the benchmark for its total market fund (VTSMX) and associated ETF shares (VTI) from the Wilshire 5000 to the MSCI Broad Market Index. The latter includes the large cap 300, midcap 450, small cap 1,750, and microcap 2,500 indexes. It covers 99.5% of total U.S. equity market capitalization, or one half of one percent less than the Wilshire 5000. In performance terms, the impact should be very slight.

Standard and Poor's SPIVA Shows Advantage of Index Investing

Over the past few months, Standard and Poor's has been expanding the geographic scope of their excellent series of SPIVA reports (short for Standard and Poor's Indices Versus Active Funds Scorecard). The results are not encouraging for active managers. Over the five years ended December 31, 2004, the S&P 500 Index delivered higher returns than 58.7% of U.S. large cap equity funds. The MidCap 400 Index outpaced 84.2% of comparable active funds over the same period, while the S&P 600 outperformed 72.4% of actively managed small cap funds. Through the five years ended September, 30, 2004, the S&P/TSX Composite Index outperformed 69.6% of actively managed pure large cap Canadian equity funds (i.e., those that have minimal investments in the United States), while the Capped Composite Index outpaced 91.3% of pure large cap equity funds. Over the same period, the S&P/TSX Small Cap Index delivered higher returns than 65.7% of actively managed small cap funds. Finally, in the five years ended June 30, 2004, the S&P Japan 500 Index outperformed 73.7% of actively managed large cap equity funds, while the S&P Japan Small Cap 250 Index outperformed 76.6% of actively managed small cap funds.

How Fast Does Human Performance Deteriorate With Age?

The Cowles Foundation at Yale University has just published a fascinating new paper by Ray Fair. Titled, "Estimated Physical and Cognitive Aging Effects", it estimates physical and mental capacity deterioration rates using record bests by age for chess and for various track and field, road running, and swimming events. This is a very innovative approach, because "using records on best-ever performances by age avoids the problem of selection bias that is

common to cross-section studies of cognitive aging effects in psychology, where more talented people may be over represented at the old ages.” Moreover, the sample used is huge, and its “age range is quite large, beginning at age 35 and ending at age 100 for swimming, age 98 for track and field and running, and age 94 for chess.”

Fair points out that, “The aging estimates in this study are meant to be taken as benchmarks for other studies. They are estimates of biological capacity...Each age observation is like this, and so the population that is being used is special—it doesn’t get any better than this.” He also notes that, “the biological-capacity estimates may be useful benchmarks in a number of ways. First, measured deterioration rates for a particular individual in a study can be compared to the capacity deterioration rates. Of course, individuals will generally have lower capacity levels than the record levels, but those who are not sick or injured and remain in peak shape both physically and mentally may have similar capacity deterioration rates...[Also], the present estimates may have some clinical use. If capacity deterioration rates for typical individuals are similar to the estimated capacity deterioration rates, then measured deterioration rates that are much larger than these for an individual can possibly be reversed by increased physical and mental effort.”

So, on to the findings! In line with most people’s common sense about this subject, Fair finds that for physical capacity a linear 10 year decline rate (that is, the amount of decline over the course of a decade) in “the 5 to 10 percent range is a reasonable approximation through age 70 for men and age 60 for women.” After this point, the decline rate becomes a power function (that is, capacity begins to decline at an accelerating rate). In contrast, Fair finds that the decline rate for mental capacity is much lower – on the order of 2% per decade. Moreover, accelerating decline rates don’t appear to begin until much later (around 80), and when they do, they grow more slowly than the rates of physical decline. For at example, even at ninety, the ten-year expected decline in mental capacity is only about 10%, for both men and women. In short, every time somebody says an older person is “still sharp as a tack”, remember that is the rule rather than the exception!

Is There A Housing Bubble in the U.S.?

Not according to two economists from the Federal Reserve Bank of New York. In their paper “Are Home Prices the Next Bubble?” McCarthy and Peach find “little evidence to support the existence of a national home price bubble. Rather, it appears that home prices have risen in line with increases in personal income and declines in nominal interest rates. Moreover, expectations of rapid price appreciation do not appear to be a major factor behind the strong housing market. Our observations also suggest that home prices are not likely to plunge in response to deteriorating fundamentals to the extent envisioned by some analysts. Real home prices have been less volatile than other asset prices, such as equity prices. Several reasons have been cited for the lower volatility, including the cost to speculate in the housing market. However, there have been examples of extreme home price volatility where it presumably has been costly to speculate, such as in Japan in the late 1980s and the 1990s. Therefore, we prefer instead to emphasize that the lower volatility of national home prices likely stems from the disjointed nature of the U.S. housing market. Furthermore, our state-level analysis of home prices finds that while prices have risen much faster recently for some states than for the nation, the supply of housing in those states appears to be inelastic, making prices there more volatile. We therefore conclude that much of the volatility at the state level is the result of changing fundamentals rather than regional bubbles. Nevertheless, weaker fundamentals have caused home price declines in those areas with inelastic supply. If the past is any guide, however, that phenomenon is unlikely to plunge the U.S. economy into a recession.”

More specifically, the authors note that their evidence “suggests that changing demand fundamentals should cause prices to fluctuate more in California and the northeast than in other areas. Therefore, the strong home price appreciation over 1999-2003 in those areas is a consequence of improving economic conditions combined with relatively unresponsive supply. Our evidence also implies that recent state price fluctuations can be explained through an expanded model of fundamentals. This conclusion is in contrast to [other researchers] who suggest that unusually strong price appreciation in some states (compared with the predictions of a simple pricing model) indicates home price bubbles in those regions.”

Also on the housing front, another interesting paper (“The Long Run Relationship Between House Prices and Rents” by Joshua Gallin of the Federal Reserve Board) finds “that periods in which house prices are high relative to rents appear to be followed by periods in which real rent growth is faster than usual, and real house-price growth is slower than usual, and that the response of prices dominates that of rents.” In other words, the rent/price ratio acts in a very similar manner to the dividend/price ratio in equity markets.

Thinking Systematically About Art as an Asset Class

In some publications, “collectibles” are included as an asset class. This immediately poses the problem of how to compare collectibles to other asset classes, since the underlying works are often non-standardized, have little in common with each other, and few objective bases for valuation analysis. An innovative paper recently published by Yale University has begun to make inroads into solving this problem, at least when it comes to works of art. In their paper “Beauty is in the Bid of the Beholder: An Empirical Basis for Style”, Goetzmann, Walden, Maggioni and Jones work backward from the prices for different works of art in the auction market. Using a new clustering algorithm, they define five different styles in terms of their price dynamics. They authors then make preliminary associations between these “investment styles” and the “artistic styles” of the artists whose works are included in the data series. While this paper is not the last word on how to include collectibles in asset allocation analyses, it certainly makes for interesting reading.

Annuities: A Hidden Source of Risk

With more and more people now depending on defined contribution (DC) plans to provide a substantial portion of their retirement income, more researchers are focusing on issues related to the conversion of the accumulated funds in these plans into annuities. The International Monetary Fund has just published an excellent paper on this issue, “Can the Private Annuity Market Provide Secure Retirement Income?” by Mackenzie and Schrage. It is quite good, and worth quoting at some length. The authors begin by noting that, “the increasingly dominant role of DC plans has raised concerns over the variability of the income that these

plans will provide...Most of the policy debate and research on the variability of DC retirement income has been focused on the accumulation phase, in particular, on the risks attendant on investing contributions in the stock and bond markets. Comparatively little attention has been given to the distribution phase...

In studies of the investment risk associated with individual accounts, a standard assumption is that the retirement income per dollar of funds that accumulate in an individual account is a given. This approach assumes away a potentially important source of risk to retirement income security. A contributor to a DC plan approaching retirement confronts the important decision of what to do with the money that has accumulated in his or her account...[One option for] DC plan participants [is to] purchase a life annuity, although the life annuity is only one of a large number of annuity or annuity-like products available in U.S. financial markets. Purchasing an annuity can be welfare enhancing for many DC plan participants, particularly if they will not receive a pension under an employer-provided defined benefit plan and their social security benefit is low relative to their income while working. However, annuity premiums—the cost of a given stream of income—are in principle a function of bond yields and can, as a result vary considerably over time. This variability creates additional risk for the DC plan participant over and above the investment risk he confronts during the accumulation phase...The DC plan participant cannot be certain before he annuitizes what premium he will have to pay for a given stream of annuity income.”

In their simulation analysis of this risk, the authors assume “that annuity prices are determined by the interest rates on government debt. As a result, treasury bond yield fluctuations cause uncertain annuity premiums. In the simulations the paper describes, the standard deviation of the replacement rates for a pensioner who faces no other source of risk is about 4 percentage points. This is not a trivial variation.” For example, consider someone with a annual pre-retirement, pre-tax income of \$100,000. The paper’s model finds an expected replacement rate of 50%, or \$50,000 per year. Given the 4% standard deviation, this implies a 95% confidence range (the mean plus or minus two standard deviations) of \$42,000 to \$58,000 per year. As the paper says, for most people, this is non-trivial. The paper also explores ways of limiting this risk. It finds that in theory staggered annuity purchases can significantly reduce it. However, a significant portion of the potential benefits may be offset by increased transaction costs. An alternative approach would be for insurance companies to

create a new product that bundled staggered annuities into a single offering. While advantageous from the consumer's point of view, the IMF notes that this would significantly complicate the insurance company's funding challenges. In short, there are no easy answers to this issue.

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, and Pounds-Sterling. In addition to currency, each solution is based on input values for three other variables:

1. 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.
2. 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.
3. 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 (from 1971 to 2002) 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 maximums include 20% for foreign bonds and foreign equities, and 10% each for commercial property, commodities, and 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) compound annual 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.

The following tables show how asset allocations with different target compound annual rate of return objectives have performed year-to-date:

	YTD 31Jan05	Weight	Weighted Return
	In US\$		In US\$
7% Target Real Return	<i>YTD Returns are Nominal</i>		
<u>Asset Classes</u>			
Real Return Bonds	0.0%	0%	0.0%
U.S. Bonds	0.6%	0%	0.0%
Non-U.S. Bonds	-1.6%	20%	-0.3%
Commercial Property	-8.5%	10%	-0.9%
Commodities	0.8%	10%	0.1%
U.S. Equity	-2.7%	50%	-1.4%
Foreign Equity (EAFE)	-1.8%	0%	0.0%
Emerging Mkt. Equity	-0.1%	10%	0.0%
		<i>100%</i>	-2.5%

±

	YTD 31Jan05	Weight	Weighted Return
	In US\$		In US\$
6% Target Real Return	<i>YTD Returns are Nominal</i>		
<u>Asset Classes</u>			
Real Return Bonds	0.0%	0%	0.0%
U.S. Bonds	0.6%	0%	0.0%
Non-U.S. Bonds	-1.6%	20%	-0.3%
Commercial Property	-8.5%	10%	-0.9%
Commodities	0.8%	10%	0.1%
U.S. Equity	-2.7%	45%	-1.2%
Foreign Equity (EAFE)	-1.8%	5%	-0.1%
Emerging Mkt. Equity	-0.1%	10%	0.0%
		<i>100%</i>	-2.4%

±

	YTD 31Jan05	Weight	Weighted Return
	In US\$		In US\$
5% Target Real Return	<i>YTD Returns are Nominal</i>		
<u>Asset Classes</u>			
Real Return Bonds	0.0%	0%	0.0%
U.S. Bonds	0.6%	0%	0.0%
Non-U.S. Bonds	-1.6%	20%	-0.3%
Commercial Property	-8.5%	10%	-0.9%
Commodities	0.8%	10%	0.1%
U.S. Equity	-2.7%	30%	-0.8%
Foreign Equity (EAFE)	-1.8%	20%	-0.4%
Emerging Mkt. Equity	-0.1%	10%	0.0%
		<i>100%</i>	-2.3%

±

	YTD 31Jan05	Weight	Weighted Return
	In US\$		In US\$
4% Target Real Return	<i>YTD Returns are Nominal</i>		
<u>Asset Classes</u>			
Real Return Bonds	0.0%	5%	0.0%
U.S. Bonds	0.6%	35%	0.2%
Non-U.S. Bonds	-1.6%	20%	-0.3%
Commercial Property	-8.5%	10%	-0.9%
Commodities	0.8%	10%	0.1%
U.S. Equity	-2.7%	5%	-0.1%
Foreign Equity (EAFE)	-1.8%	10%	-0.2%
Emerging Mkt. Equity	-0.1%	5%	0.0%
		<i>100%</i>	-1.2%

±

	YTD 31Jan05	Weight	Weighted Return
	In US\$		In US\$
3% Target Real Return	<i>YTD Returns are Nominal</i>		
<u>Asset Classes</u>			
Real Return Bonds	0.0%	75%	0.0%
U.S. Bonds	0.6%	0%	0.0%
Non-U.S. Bonds	-1.6%	10%	-0.2%
Commercial Property	-8.5%	10%	-0.9%
Commodities	0.8%	5%	0.0%
U.S. Equity	-2.7%	0%	0.0%
Foreign Equity (EAFE)	-1.8%	0%	0.0%
Emerging Mkt. Equity	-0.1%	0%	0.0%
		<i>100%</i>	-1.0%

±

	YTD 31Jan05	Weight	Weighted Return
	In US\$		In US\$
2% Target Real Return	<i>YTD Returns are Nominal</i>		
<u>Asset Classes</u>			
Real Return Bonds	0.0%	85%	0.0%
U.S. Bonds	0.6%	0%	0.0%
Non-U.S. Bonds	-1.6%	10%	-0.2%
Commercial Property	-8.5%	5%	-0.4%
Commodities	0.8%	0%	0.0%
U.S. Equity	-2.7%	0%	0.0%
Foreign Equity (EAFE)	-1.8%	0%	0.0%
Emerging Mkt. Equity	-0.1%	0%	0.0%
		<i>100%</i>	-0.6%

This year, we are also introducing two new benchmarks that can be used to evaluate the returns on our model portfolios. The first is the return on holding all of one's assets in cash. We define this return as the yield to maturity on a one-year government security purchased at the end of the previous year. For 2005, the U.S. cash benchmark return is 2.75% (nominal).

The second benchmark is a portfolio that is equally allocated to all of the asset classes we use in our other model portfolios. This benchmark portfolio implicitly assumes that it is impossible to accurately forecast future asset class risk and return. Consequently, the best approach is to equally divide one's exposure to different sources of return (and risk). While we disagree with this assumption, intellectual honesty compels us to include this "couch potato" portfolio as one of our benchmarks.

	YTD 31Jan05	Weight	Weighted Return
	In US\$		In US\$
Equally Weighted	<i>YTD Returns are Nominal</i>		
<i>Asset Classes</i>			
Real Return Bonds	0.0%	12.5%	0.0%
U.S. Bonds	0.6%	12.5%	0.1%
Non-U.S. Bonds	-1.6%	12.5%	-0.2%
Commercial Property	-8.5%	12.5%	-1.1%
Commodities	0.8%	12.5%	0.1%
U.S. Equity	-2.7%	12.5%	-0.3%
Foreign Equity (EAFE)	-1.8%	12.5%	-0.2%
Emerging Mkt. Equity	-0.1%	12.5%	0.0%
		100%	-1.7%