

The Index Investor

Why Pay More for Less?

Performance Update

Our first set of model portfolios are designed to deliver returns that are superior to their respective benchmarks, while taking on the same amount of risk (that is, having the same expected standard deviation of returns). Thus far this year, they have generally underperformed their respective benchmarks. Our first portfolio is benchmarked against a mix of 80% equities (as measured by the Dow Jones Total Market ETF) and 20% bonds (as measured by the Vanguard Total Bond Market Fund VBMFX). Year-to-date, this benchmark is down (5.3%), while our model portfolio is down (10.2%). The major cause of this underperformance is the model portfolio's allocation to European equities which have lagged behind U.S. equities so far this year. The second portfolio is benchmarked against a mix of 60% equities and 40% bonds. Year-to-date, this benchmark portfolio is down (3.7%), while our model portfolio is down (8.3%). Again, European equities are the culprit. The third benchmark portfolio is a mix of 20% equities and 80% bonds. Through the end of June, it is down (.6%), while our model portfolio is down between (4.3%) and (2.6%) depending on the international bond fund used to measure its performance. The main story here has been the surprising strength of the U.S. dollar this year, and the consequently weak returns delivered by non-U.S. dollar bonds.

Our second set of model portfolios is designed to match the returns of their respective benchmarks while taking on less risk (again defined as expected standard deviation of the portfolio's returns). They have also underperformed so far this year. The 80/20 model portfolio is down (10.9%), the 60/40 is down (3.7%), and the 20/80 is down between (4.3%) and (2.5%), again depending on the international bond fund used.

Our last set of model portfolios is designed differently. These portfolios assume that an investor wants to maximize the probability of achieving at least a minimum target level of return, while taking on as little risk as possible. Year to date, our 12% target return portfolio has returned (10.2%), our 10% target portfolio has returned (10.9%), our 8% target portfolio has returned (7.5%), and our 6% target portfolio is down (5.2%).

Last but not least, this year we have also been running an active management experiment. Our goal is to achieve the highest possible returns by making timely shifts in the weighting we give to different asset classes. We have also tried to clearly explain the logic guiding our allocations. However, we have limited ourselves to just four rebalancings per year, at the end of March, June, September, and December. Our benchmark for this experiment is the Vanguard Global Asset Allocation Fund (VHAAX), which essentially attempts to do the same thing (but which can trade as often as it likes). Year-to-date, our active asset allocation portfolio has returned (9.1%) while our benchmark is down only (4.0%). This month we have another chance to rebalance our allocations to improve our performance. What are we to do? Let's start with our analysis of the situation we face.

Thus far this year, we have been hit with two surprises: the relatively strong performance of the U.S. dollar, and the relatively weak performance of European equities in local currency terms. This has resulted in very disappointing U.S. dollar returns on non-dollar bonds and European equities. The logic guiding our portfolio allocations up to now can be summarized as follows: (a) U.S. interest rate cuts would (b) generate positive returns on U.S. bonds, (c) have relatively little impact on U.S. equities, and (d) lead to a depreciation of the dollar versus the Euro, because of (e) Europe's relatively stronger economy and equity market performance. So far, we've been right about (a), with cuts in the Federal Funds rate of 2.75% since the start of the year, and about (b), with nice returns on U.S. dollar bonds. The jury is still out with respect to (c), with lot's of liquidity sitting on the sidelines waiting to see if rate and tax cuts will be able to offset the downturn in corporate earnings and increase in layoffs (which sap consumer confidence) caused in many cases by overexpansion of industry capacity and a glut of supply. Where

we've really been caught out is (d) and (e). For much of this year, the European Central Bank has refused to cut interest rates, believing that Europe's economy was relatively isolated from the slowdown in the U.S., and that on balance the main risk they faced was inflation, rather than a downturn in the real economy.

Unfortunately, events have proven them wrong, and their tight monetary policy seems to have compounded the slowdown in economic activity that is taking place in spite of their predictions to the contrary. This has led to weak performance by European equity markets, which has in turn limited any flows out of the dollar. This has been compounded of late by yet another downturn in the Japanese economy, and as a result, rather than falling, the dollar has actually risen against most of the world's major currencies so far this year, despite the cuts in U.S. interest rates. In short, many investors around the world still think the U.S. is the best place to put their money, so the dollar has remained stronger than we expected it would. As a result, our allocations to European equities and non-dollar bonds have delivered weaker than expected returns.

The question is, will this situation continue for the rest of this year? On balance, we think it probably will. We don't see a recovery developing in Europe or Japan; rather, we see the continuation of sluggishness in all three of the globe's major regions, with the U.S./North America performing slightly better than the rest. This should cause commodity prices and returns to remain weak, while limiting the ability of further cuts in U.S. interest rates to drive down the U.S. exchange rate versus other currencies. As a result, we are putting our portfolio into U.S. bonds and equities. For the next three months, our allocation will be 60% to U.S. bonds and 40% to U.S. equities.

What does this leave us worrying about the most? The performance of U.S. equities -- we believe there is still a significant risk of further losses, though we believe most investors have discounted this possibility more than they should. On the other hand, if we are wrong, missing a rally in U.S. equities could leave us even further behind the benchmark against which we are measuring our performance. So we're still leaving 40%

in U.S. equities. Such is the life of an active manager whose performance is measured on an annual basis...

Product and Strategy Notes

- One of the mutual fund industry's more self-serving conventions has been the reporting of fund performance on a pre-tax basis. Given that about 60% of mutual fund assets are held in taxable accounts, this is a poor way to measure performance. Fortunately, the SEC has recently agreed with this, and mandated that starting next February, all funds must report their after-tax performance (at the highest marginal tax rates) in their prospectuses. Unfortunately, reporting of after-tax performance in sales materials and advertising wasn't mandated, so the potential for confusion will still exist for the unwary. Does it matter? You bet it does. The most frequently cited study is one by the accounting firm KMPG, which found that the median difference between pre-tax and after-tax mutual fund performance was 2.5%. When you add this tax burden to the 1.5% average expense load charged by most actively managed funds, the use of index funds and ETFs looks even more attractive. Finally, when you add in the sales loads that are charged on broker distributed mutual funds, indexing's advantage looks overwhelming.
- Of course, some people don't see things this way. In fact, a number of our readers have emailed us recently with the same question, which goes something like this. "I read your letter, and agree with your points. But my financial advisor always tries to talk me out of using index funds. What gives?" Our typical answer goes like this: One reason that a financial advisor might try to talk a potential client out of using index funds is because said advisor is compensated via the commissions that he or she earns on the trades or investments made by his or her client. The commissions paid to the "advisor" on actively managed mutual funds are much higher than those paid on index fund. In fact, you really shouldn't pay any commission at all on an index mutual fund, when you can buy them

directly from Vanguard, Schwab, Price and other companies. The only exception to this is the commission you pay on the purchase of an Exchange Traded Fund, which is an index fund that trades like a stock on the Amex. But in this case too, the commission you pay when you buy the ETF through a discount broker (e.g., through Schwab) is much lower than what you would probably have to pay to the typical “full service financial advisor.”

Assume, however, that this isn't the case, and that the financial advisor in question is being compensated by fees rather than commissions. In this case, the FA's underlying logic for advising against index funds might be his or her confidence in his or her ability to “pick winners” – that is, recommend a portfolio of investments that will deliver a risk adjusted return that is superior to some index. The point to be made here is that assuming the index in question has the same risk as the actively managed portfolio, multiple research studies have shown that it is very, very difficult for any manager to consistently exceed the index's performance over medium to long periods of time. Of course, a few people manage to do this (Warren Buffet comes to mind), and we rightly call them geniuses. Unfortunately, their genius only becomes clear (that is, statistically supported) in retrospect after they have developed a long track record of superior performance. In other words, there is no reliable way to determine which, if any, of today's managers will be able to consistently beat some market index over the next twenty or thirty years. For this reason, index funds make the most sense, even before their relative tax, expense, and sales cost advantages are taken into account.

- Finally, in February of this year the Financial Times/Stock Exchange (FTSE) introduced a new series of Global Sector Indexes, covering Autos, Banks, Basic Industries, Energy, Financials, General Industries, Media, Pharmaceuticals, Technology, Telecommunications, and Utilities. The universe for creating the sector indexes is the FTSE All-World Developed Index, which covers 23 major markets. Simultaneously, Merrill Lynch announced its intention to launch a series

of new products based on these indexes. The most interesting thing about these new FTSE indexes is their global coverage. While similar products have been available in the United States (e.g., SPDRs based on S&P Sector Indexes, and iShares based on the Dow Jones Sector Indexes), the widespread availability of global sector indexes introduces a very interesting set of new asset allocation possibilities, which we further detail in this month's In Focus section.

In Focus: Sector Tilts

As you may remember, when we rebalanced our recommended portfolios at the end of last year, we used a fairly broad definition of an asset class. Specifically, because the benefit from diversification comes from risk reduction, we required that the "asset classes" we used could have no more than a .60 correlation of returns with each other. That definition eliminated from use a number of groupings of stocks and bonds that other commentators call "asset classes." Examples of these include small cap stocks or large cap growth stocks, and short-term bonds. In our view, all of these represent various "tilts" that one can make in order to enhance the risk/return trade-off within an asset class. At the time of our rebalancing, we promised that we would be taking a closer look at these "tilts" to see which, if any of them, made sense. Last month we looked at tilts based on market capitalization and growth vs. value. This month we look at sector investing. Next month we'll look at country investing, in August we'll look at investing in different bond maturities, and in September we'll look at momentum investing. As was the case last month, the fundamental question we're trying to answer is whether or not you can improve on the risk/return trade-off for the asset class as a whole by making a sector tilt in your portfolio.

To answer this question, we ran analyses using both the Dow Jones U.S. Sector Indexes and the Dow Jones Global Market Sector Indexes. We chose the latter over the new FTSE indexes because they included companies from developing as well as developed

countries, and therefore seemed to be more representative of the potential benefits of sector tilts. Our data set for both analyses covered the period from January, 1992 to December, 2000.

Let's look first at the U.S. results, and start with a description of the indexes we used. The Dow Jones U.S. Sector Indexes are based on the Dow Jones U.S. Total Market Index, which includes companies that comprise 95% of U.S. equity market capitalization. The indexes divide the total market into ten sectors: Basic Materials, Consumer Cyclical, Consumer Non-Cyclical (called staples by others), Energy, Financials, Health Care, Industrials, Technology, Telecommunications, and Utilities. At the end of 2000, The three biggest sectors (in terms of their market capitalization as a percentage of the total market index) were Technology (23.4%), Financial Services (17.3%), and Health Care (14.0). In the period covered by our data, the results for various sector indexes varied widely. At the low end of the distribution, U.S. Basic Materials delivered average annual returns of only 9.40%, with a standard deviation of 21.12%, or only .445% of return per unit of risk. At the other end of the spectrum, Financials generated average annual returns of 22.71%, with a standard deviation of 22.34%, or 1.017% of return per unit of risk. In terms of highest annual returns, the Technology Sector was the leader at 30.54%. However, this came at a price – the standard deviation of those returns was 35.99%, for an all in result of only .849% of return per unit of risk taken on. By way of comparison, the overall Dow Jones U.S. Total Market Index delivered average annual returns of 16.52% during the 1/92 to 12/00 period, with a standard deviation of 15.45%, or a very respectable 1.069% of return per unit of risk. Obviously, the fact that the overall index was diversified across all the sectors accounted for the fact that its risk adjusted performance was better than that of any single sector.

However, the extent to which the overall index was diversified varied over time throughout the year, and was directly related to the relative underlying performance of the different sectors, as evidenced by the still heavy weighting of the Technology Sector at the end of last year. The question we must ask ourselves then, is whether or not a fixed weighting of different sectors would have delivered a superior risk adjusted performance.

The first step for testing this was a look at the extent to which the returns on different sector indexes were correlated with each other during the period covered by our data. The results were very encouraging, with a large number of very low correlations. Here are a few examples: Basic Materials/Health Care = .17; Basic Materials/Utilities = .10; Consumer Cyclical/Utilities = .07; Energy/Telecomms = .19; Energy/Health Care = .23; Utilities/Technology = (.16).

Using these inputs, we used our optimization software to construct two portfolios. The goal of the first was to exceed the total market portfolio's average annual return, while matching its 15.45% standard deviation. The goal of the second was to match its 16.52% return with a lower standard deviation. In both cases, we set the further limit that no single sector index could account for more than 20% of our portfolio.

The results were impressive. For the 15.45% target standard deviation portfolio, we were able to achieve expected annual returns of 20.58% versus the total market portfolio's 16.52%, or 1.332% of return per unit of risk. For the 16.52% target return portfolio, we were able to reduce standard deviation to 12.37%, or 1.335% of return per unit of risk taken on. In the case of the former, our result was achieved with a mix of 20% in each of Energy, Financials, Health Care, and Technology, 8.5% in Industrials, and 11.5% in Utilities. In the second case, our portfolio included a mix of 20% each in Consumer Cyclical, Energy, Health Care and Utilities, along with 5% in Consumer Non-Cyclical, 7% in Technology, and 8% in Telecomms.

We achieved similar results in our global experiment. In this case, the index against which we benchmarked ourselves was the Dow Jones World Index, which covers 34 developed and emerging markets. Over the 1/92 to 12/00 period, this index had delivered average annual returns (in U.S. dollars) of 11.62%, with a standard deviation of 14.36%, or .809% of return per unit of risk. By comparison, our 14.36% target standard deviation portfolio had expected annual returns of 16.84% (1.173% of return per unit of risk), while our 11.62% target return portfolio had a standard deviation of 11.09% (1.048% of return

per unit of risk). The allocation of the former was 20% each to Energy, Health Care, Technology, and Telecommunications, 8% to Financials, and 12% to Utilities. For the latter portfolio, the allocations were 20% each to Consumer Cyclical and Non-Cyclical, Health Care and Utilities, 8% to Energy, and 6% each to Basic Materials and Telecomms.

We repeated this analysis five more times, using the perspectives of investors whose functional currencies were Australian Dollars, Canadian Dollars, Euros, Yen, and U.K. Pounds. In each case, we were able to achieve similar improvements versus the performance of the total market index, though with somewhat different sector allocations. Obviously, something was going on in the past. This raised the next two logical questions: what accounted for the performance improvements delivered by the sector portfolios, and would these causal factors continue to operate in the future?

We believe that the superior performance of the sector fund portfolios is due to two factors. First, they make heavy allocations to sectors whose returns have very low correlations. More importantly, it would seem that a substantial portion of these low correlations is due to a low correlation between the fundamental demographic and economic factors that affect growth and profitability in the respective sectors, and is not just a historical market phenomenon that is unlikely to repeat itself in the future.

Second, the portfolio allocations to different sectors are stable over time. In contrast, the portfolio allocations in the Total Market Index change dynamically as the sectors' relative market capitalizations change. At the margin, this means that the total market index portfolio will tend to overreact in ways that hurt performance – overinvesting in sectors that have become overvalued, and underinvesting in sectors that have become undervalued. However, lest this be construed as an argument against indexing, we should also point out that, by definition, the total market index fund will consistently (and that is important) correct these mistakes faster than 50% of active managers.

The crux of the issue then, comes down to this. If you believe that (a) the correlations between some sectors will continue to remain low in the future, and (b) the risk/return

characteristics of those sectors will remain similar to what they have been in the past, then you should consider building a portfolio around a carefully chosen mix of sector indexes, rather than buying a total market index fund. On the other hand, if you don't believe that these two conditions will hold true in the future, then you are better off going the total market index route which, despite its shortcomings, will still over time deliver returns that are superior to all but a very few actively managed funds that are impossible to identify in advance.