

# The Index Investor

*Why Pay More for Less?*

## Model Portfolio Update

The objective of our first set of model portfolios is to deliver higher returns than their respective benchmarks, while taking on no more risk. The benchmark for the first portfolio in this group is an aggressive mix of 80% domestic equities, and 20% domestic bonds. Through the end of June, this benchmark had returned (10.8%), while our model portfolio had returned (7.3%). For the sake of comparison, we have also compared our model portfolios to a set of global benchmarks. In this case, the global benchmark is a mix of 80% global equities, and 20% global bonds. Through the end of June, it had returned (4.3%).

The benchmark for the second portfolio in this group is a mix of 60% domestic equities and 40% domestic bonds. Through the end of June, it had returned (7.4%), while our model portfolio had returned (4.4%), and the global benchmark had returned (0.9%).

The benchmark for the third portfolio in this group is a conservative mix of 20% domestic equities and 80% domestic bonds. Through the end of June, it had returned (0.6%), while our model portfolio had returned 0.8% and the global benchmark 5.9%.

The objective of our second set of model portfolios is to deliver less risk than their respective benchmarks, while delivering at least as much return. The benchmark for the first portfolio in this group is an aggressive mix of 80% domestic equities, and 20% domestic bonds. Through the end of June, this benchmark had returned (10.8%), while our model portfolio had returned (6.6%). For the sake of comparison, we have also compared our model portfolios to a set of global benchmarks. In this case, the global

benchmark is a mix of 80% global equities, and 20% global bonds. Through the end of June, it had returned (4.3%).

The benchmark for the second portfolio in this group is a mix of 60% domestic equities and 40% domestic bonds. Through the end of June, it had returned (7.4%), while our model portfolio had returned (4.8%), and the global benchmark had returned (0.9%).

The benchmark for the third portfolio in this group is a conservative mix of 20% domestic equities and 80% domestic bonds. Through the end of June, it had returned (0.6%), while our model portfolio had returned 2.2% and the global benchmark 5.9%.

The objective of our third set of model portfolios is not to outperform a benchmark index, but rather to deliver a minimum level of compound annual return over a ten year period. Thus far this year, our 12% target return portfolio has returned (5.9%), our 10% target return portfolio has returned (3.4%) our 8% target return portfolio has returned 3.7%, and our 6% target return portfolio has returned 4.1%.

Finally, on the active management front, our benchmark, the Fidelity Global Balanced Fund is up 1.1%, while our active model portfolio (which we have kept in the Vanguard Total Bond Market Index) is up 2.8%. As we have noted in the past, we limit ourselves to only four quarterly trades per year in our "active experiment" portfolio. This month, we are switching out of the Vanguard Long Term Bond Index, and into the Vanguard Inflation Protected Securities Fund.

## **The Economic Outlook: An Update**

In last December's issue, we set out two possible scenarios for how economic events could unfold this year. One was based on what we called the "conventional wisdom" prevailing at the time, and the other described what we considered to be the "most dangerous" turn of events that could occur this year. Now that we have reached the end

of June, we think it makes sense to look at how events have actually developed, and what may lie ahead. Our main finding is that actual events so far this year seem to have fallen somewhere in between the two scenarios we described. Going forward, however, a number of trends suggest that the next six months could see a more pronounced tilt towards our “most dangerous” scenario.

In the United States, the main story has been the continued resilience of the American consumer, with private consumption spending expected to grow 3 percent this year in real terms. A combination of fiscal stimulation (from both tax cuts and increased government spending), supportive monetary policy (low interest rates and continued willingness to lend to heavily indebted consumers) and demographic trends has led to substantial appreciation in housing values, even as equity market returns have turned negative. This rise in the value of their homes has led many American consumers to keep spending at higher levels than many had expected (in fact, studies have shown that the “multiplier effect” – that is, the increase in consumption due to an increase in asset prices and perceived wealth – is much stronger for housing than it is for financial assets, such as equities). As a result, so far this year the American economy’s decline has been a very mild one, and some observers today believe that we are seeing the beginning of a strong recovery (real GDP is expected to grow by 2.5% in real terms this year).

Others, however, aren’t so sure about the prospects for the U.S. economy. They point to the lack of a recovery in business profits and capital investment, both of which will be needed if the expected strong recovery is to materialize. For example, where gross fixed capital investment increased 7.9% in 1999, it is expected to fall by 0.7% this year, as companies focus on paying down their debts instead of buying new plants and equipment. A number of factors seem to account for this behavior. First, during the last expansion, excess production capacity was built in many industries; given the slow growth in most parts of the world, there is currently insufficient demand to fully utilize it. Until this demand appears, capital investment will stay low. Second, many businesses have not realized the benefits they had expected from their past investments in information technology (in no small measure because of their inability to change their organizations

to fully take advantage of it), and as a result they have slowed down their spending in this area too. Finally, the combination of overcapacity, falling trade barriers, and increasing communications efficiency means that many businesses are now exposed to some of the most intense price competition they have ever seen. As a result, many businesses are being forced to give up (via price cuts) many of the improvements in profitability they had hoped to achieve through cost saving productivity improvement projects. Flat profits or declining profitability has in turn reduced their enthusiasm (as well as the economic logic) for spending on new capital investments.

In recent months, foreigners also have begun to notice that things aren't all that rosy in the United States economy. This is a potentially critical problem because the difference between what the U.S. buys from other countries less what it sells to them amounts to 4.1% of U.S. GDP. Foreign investment into the United States finances this excess of imports over exports. And foreigners may be getting a bit tired of continually adding to their stock of dollar denominated assets. According to the Economist, non-U.S. residents currently own 40 percent of the United States' government bonds, 25 percent of the bonds issued by U.S. corporations, and 13 percent of their shares. This makes their opinion very, very important. If they decide that the U.S. no longer looks like the most attractive country in which to invest their funds, they will put them somewhere else (joined, undoubtedly, by more than a few Americans who want to diversify their portfolios to protect against the risk of a falling dollar). This reduction in demand for the dollar will result in its depreciation against the currencies of those countries that are receiving the funds flowing out of U.S. investments. That fall in the dollar will help reduce the current account deficit by making imports more expensive for U.S. residents, while making their exports cheaper. the last few months, this has begun to happen, with foreigners slowing down their new investment into the U.S., and increasing the money they put into assets denominated in Euros. This has led to the depreciation of the dollar versus the Euro.

Were this trend to gather speed, we could see a sharp decline in the value of the dollar, which could cause havoc, not only in U.S. bond and equity markets (because of the

downward price pressure caused by foreign investors bailing out), but also in the housing market too (the flip side of falling bond prices is rising interest rates). Should that happen, one would reasonably expect to see American consumers sharply cut back on their spending, and focus instead of paying down their debts. If this process resulted in falling asset values (e.g., as a result of forced liquidations), it could become self-reinforcing, as deflation makes debt even more burdensome, leading to more spending reductions, which in turn cause businesses to lay people off, further reducing income and spending, leading to further asset price falls and more burdensome debt.

Fortunately, at the moment this seems unlikely to happen, because Europe isn't growing fast enough to make it substantially more attractive to investors than the United States. Looking at the Eurozone (that is, countries using the Euro as their currency), private consumption is expected to grow only 1.4 percent, this year, while gross fixed capital formation falls by 0.1%. One of the key reasons for this slow growth has been the lack of progress toward implementing key structural reforms in the Eurozone economies (e.g., regulatory changes to make labor markets work more efficiently). The political consensus needed to make these reforms doesn't yet exist, and probably won't develop in the runup to German and French national elections. Moreover, the appreciation of the Euro will bring more issues to the fore. On the negative side, it will hurt export growth, which has been a bright spot recently for the Eurozone economy. On the positive side, it will cut import costs and inflation, which, at 2.1 percent, has been just over the European Central Bank's 2 percent target rate. Theoretically, a fall in inflation should create more room for monetary loosening to stimulate growth; however, absent structural reforms, the main impact of any monetary easing is more likely to be on prices rather than output. As a result, the net result of Euro appreciation may well be a further reduction in Eurozone growth rates.

Policy makers in the United States and the Eurozone have a name for their nightmares: Japan. In that country, deflation is worsening (prices are expected to fall 1.4 percent this year) and the aforementioned spiral is increasingly powerful. Real private consumption is projected to fall by 0.4% this year, while gross fixed capital investment declines by

5.8%. Moreover, the government's ability to take action to reverse the situation is limited. With very high levels of government debt, further deficit spending is hard to finance (a situation which wasn't helped by recent downgrades of the country's credit rating). On the other hand, the room for monetary policy stimulus is also very limited. Nominal interest rates are already zero (though they are actually rising in real terms as a result of deflation), and, given both deflation (which makes your money worth more tomorrow than today) and concerns about the government's future ability to meet its pension obligations, people are much more likely to save any additional money they receive rather than spend it. Finally, as a result of the bursting of Japan's twin real estate and stock price bubbles ten years ago, the nation's banking system is still burdened with a very high level of non-performing loans, without sufficient capital to write them off and still stay in business. This makes them unwilling to lend, which further limits the potential effectiveness of monetary policy. Hence the somewhat understandable reluctance of the Bank of Japan (the central bank) to try to offset deflation by sharply expanding the money supply until the government takes action to reform the banking system.

Until now, the one bright spot in this otherwise dreadful situation has been export performance (Japan has a current account surplus forecast to be 2.9% of GDP this year). Unfortunately, the depreciation of the dollar could serve to undermine it as well, if it is not offset by central bank intervention in the foreign exchange market.

What we have just described is not a very pretty picture. There are, however, bright spots, called Australia, Canada, and the United Kingdom whose economies have all performed quite well this year (with respective real GDP growth rates of 3.7%, 3.2% and 1.9%). Broadly speaking, the domestic fundamentals in these countries are in good shape, and they will do well provided that nothing major goes wrong in the U.S., Eurozone, and/or Japanese economies.

That, however, is far from assured. Beside the continued uncertainty in Japan, the potential for a nasty oil price surprise (related, no doubt, to war or terrorism) is

increasing, as is the probability that world financial markets will be roiled by problems in Latin America (which started in Argentina, but now seem to be spreading).

Ideally, both the Eurozone and Japan would take a double dose of structural reform and begin to grow faster, which would allow for a gradual reduction in the U.S. current account deficit and an equally gradual improvement in domestic balance sheets. Unfortunately, this “best case” scenario seems pretty far fetched at this point. Today, the conventional wisdom seems to be that we’ll be able to muddle through, with already overleveraged U.S. consumers providing most of the demand growth, as the rest of the world agrees to hold its breath and continue to accumulate dollar denominated assets. If this doesn’t happen, then policymakers will be faced with a stark choice between synchronized deflation in the U.S., Eurozone, and Japan, or a return to higher inflation rates as the lesser of two evils. After what we have seen happen over the last decade in Japan, our best guess is that most policymakers will, faced with a choice, opt for the latter. Time will tell; until then we’ll be keeping our fingers crossed, fixing up our house, and inviting our European friends to come and visit.

## **Are Equity Markets Overvalued?**

Many readers of *The Index Investor* hear and/or ask this question all the time. This month, we’ve done an analysis that highlights the difficult issues we face when we try to answer it. So get ready for a journey into the realm of financial theology!

Our starting point is the valuation model we will use to make sense of current equity market prices. While there are many valuation models that one could use, we have opted for a simple one whose key inputs are widely available. Variously called either the Gordon or the Dividend Growth model, this valuation approach says that the fair value of an asset (be it a share or a market index) can be determined by dividing (that is, discounting) its current dividend by the sum of the required rate of return on equity for

the asset in question less the expected future growth rate of the dividend. This statement contains two (or possibly three) of the most contentious issues in finance.

First, there is the question of share repurchases, and whether or not they should be added to dividends to obtain the numerator of the valuation equation. Technically, the answer is yes, but practically it seems to be no. Technically, share repurchases are, like dividends, as means of returning cash to an asset's owners. Practically, however, share repurchases take place much less frequently than dividends are paid, and data about them are not widely available to the public. Moreover, studies which have included them have reached conclusions that are very similar to those that have used dividends alone. So we have elected to just use dividends in our analysis.

The second contentious issue has to do with what constitutes an appropriate expected rate of return on equity for the asset in question. Theoretically, this is the rate of return that adequately, but not excessively, compensates an investor for taking on the level of risk inherent in the asset in question. Two elements are added together to determine the required rate of return on equity. First, there is the expected return on a risk free asset – usually a government bond. Second, there is an “equity risk premium” which reflects the return one expects for taking on incremental risk above and beyond that inherent in the risk free asset. The size of the equity risk premium is both one of the most important, and one of the most argued about numbers in finance.

Until recently, the most common approach used to estimate the equity risk premium was to look at historical rates of return on equity and government bonds, and use the average difference between them as the equity risk premium. The following table contains historical estimates of equity risk premia. The first set is the difference between the rate of return on the Morgan Stanley Capital International Equity Index for the country or region in question and the rate of return on government bonds with maturities of five years or more, between 1985 and 2000. The second set is from the book Triumph of the Optimists (by Elroy Dimson, et al), and is based on the period between 1900 and 2000.

<b>Country or Region</b>	<b>1985-2000 ERP Estimate</b>	<b>1900 – 2000 ERP Estimate</b>
Australia	3.5%	8.0%
Canada	2.2%	6.0%
Japan	(1.5%)	10.3%
United Kingdom	4.3%	5.6%
United States	7.3%	7.0%
Eurozone Countries	10.5%	NA
Germany	NA	9.9%
World Index	3.9%	5.6%

However, in the past two years or so, the historical approach to estimating the equity risk premium (ERP) has been questioned by many respected academic researchers. They have concluded that there is often a big difference between the returns people reasonably expect to receive when they make an investment (the “ex ante” ERP), and the returns they actually end up receiving (the “ex post” ERP). In other words, historical, or realized rates of return on equities (and the difference between these returns and the returns on government bonds) may be very poor estimates of what people actually were thinking when they made these investments. These doubts have been reflected in a large number of academic papers. Broadly speaking, the general conclusion that has been reached is that the expected risk premium is probably lower than the realized risk premium. The following table presents the key conclusions from a number of these studies:

<b>Study and Authors</b>	<b>Equity Risk Premium Estimate</b>
Merrill Lynch Survey of Fund Managers, May, 2002	3.8% for world ERP
“Estimating the Equity Risk Premium”, by O’Hanlon and Steele	4% to 5% in U.K.

<b>Study and Authors</b>	<b>Equity Risk Premium Estimate</b>
“The Shrinking Equity Premium” by Jeremy Siegel	1.5% to 2.5% in U.S.
“An Ex-Ante Examination of the Equity Premium” by Glen Donaldson et al	3.5% in U.S.
“New Estimates of the Equity Risk Premium” by Douglas Lamdin	3.1% in U.S.
“The Declining U.S. Equity Premium” by Ravi Jagannathan et al	0.7% after 1970 in U.S.
“The Equity Premium” by Eugene Fama and Kenneth French	2.55% for 1951 to 2000 in U.S.
“What Risk Premium is Normal?” by Robert Arnott and Peter Bernstein	2.4% in U.S. from 1810 to 2001
“Estimating the Market Risk Premium” by Scott Mayfield	4.1% in U.S.
“Stock Market Returns in the Long Run” by Roger Ibbotson and Peng Chen	6% in U.S., 1926-2000

The third contentious issue is how fast dividends will grow in the future. In the aggregate, dividends cannot grow faster than the underlying economy for very long. Therefore, a good estimate of long term dividend growth (especially for broad market indexes) is the expected real growth rate for the economy. Actually, this is more of a maximum estimate, as some authors (notably Arnott and Bernstein) have pointed out that not all growth is investable; that is, a certain percentage of economic growth takes place in private (and often small) companies that are not included in market indexes. As a result, the maximum growth rate of dividends on publicly traded shares is probably somewhat below the overall real growth rate of the economy.

The overall economic growth rate is generated by two other factors: the rate at which the size of the labor force is growing, and the rate at which output per worker (productivity) is growing. Neither of these is easy to estimate. The rate of labor force growth results from at least three factors: the rate at which the native population is growing (that is, their fertility rate), the immigration rate, and what is called the participation rate, or the percentage of working age people who are working or looking for work. While future

fertility rates are relatively easy to predict, immigration rates and participation rates are more difficult. In our analysis, we have used the International Monetary Fund's estimates of future labor force growth.

Future productivity growth is also an issue about which reasonable people can and do disagree (often vehemently). At best, one can say that while recent productivity growth in the United States has been impressive, it is not yet clear how long it will continue, or whether other countries (some with very different regulatory environments) will be able to match it in the years ahead. In light of this, in our analysis we have used the IMF's estimates of productivity growth over the 1994 – 2003 period. Our assumptions are shown in the following table:

<b>Country</b>	<b>Labor Force Growth Assumption</b>	<b>Productivity Growth Assumption</b>	<b>Dividend Growth Assumption</b>
Australia	0.8%	3.0%	3.8%
Canada	0.6%	2.4%	3.0%
Eurozone	0.0%	3.3%	3.3%
Japan	(0.3%)	2.1%	1.8%
U.K.	0.0%	4.3%	4.3%
U.S.A.	0.9%	3.9%	4.8%

The last assumption we need to make before moving on to our valuation analysis is the risk free rate to use. Historically, this presented a difficult issue, as nominal bond yields contain both a real risk free rate and a premium for expected inflation over the holding period. Fortunately, in recent years many countries have introduced inflation linked or “real return” bonds that provide a clear estimate of the real risk free rate of interest. We show these in the following table:

<b>Country</b>	<b>Real Risk Free Rate Assumption</b>
Australia	3.35%
Canada	3.45%

<b>Country</b>	<b>Real Risk Free Rate Assumption</b>
Eurozone (French OATi bond)	3.28%
Japan (estimated; no real return bonds available)	2.74%
U.K.	2.33%
U.S.A.	3.00%

Having established our assumptions, let's move on to our analysis. All of the following examples are based on the end of June, 2002 values and dividend yields for different FTSE Country and Region Indexes.

We began by taking the (very arguable) position that markets are efficient, and fairly value assets, so that their current prices are, in fact, equal to their true values. If this is the case, then the current dividend yield by definition equals the sum of the expected rate of return on equities less the expected growth rate of dividends. This is the same as saying that the dividend yield plus the expected dividend growth rate equals the expected rate of return on equities. And when you subtract the current real risk free rate from that, you derive the equity risk premium, as shown in the following table:

<b>Country</b>	<b>Dividend Yield</b>	<b>Expected Growth Rate</b>	<b>Rate of Return on Equities</b>	<b>Real Risk Free Rate</b>	<b>Equity Risk Premium</b>
Australia	3.4%	3.8%	7.2%	3.35%	3.85%
Canada	2.0%	3.0%	5.0%	3.45%	1.55%
Eurozone	2.7%	3.3%	6.0%	3.28%	2.72%
Japan	0.9%	1.8%	2.7%	2.74%	(0.04)%
U.K.	3.1%	4.3%	7.4%	2.33%	5.07%
U.S.A.	1.6%	4.8%	6.4%	3.00%	3.40%

This table tells quite a story. Two of them, actually. First, if you assume the markets are fairly valuing equity markets today, then the implied equity risk premia are generally at or below the low end of current academic estimates of where they should actually lie.

This would seem to be inconsistent with the notion of efficient markets, unless one believes that all the academic estimates of the true ex ante ERP have been too high.

Second, if the markets are accurately priced, then the only way we can achieve the same nominal rates of return on equity over the next five to ten years that we experienced in the recent past is to undergo fairly substantial and prolonged periods of global inflation. In the U.S.A., for example, to achieve the 10% to 15% nominal returns that some surveys suggest the investing public expects to earn, we would have to experience annual inflation of between 4% and 9%. Granted, the previous article on the dangers inherent in the current economic situation suggests that future increases in inflation are a distinct possibility. However, prolonged inflation in the 4% to 9% range would put us back in the 1970's, which seems quite unlikely to occur (with the exception of the odd fashion mistake you see now and then). Assuming current inflation targets of around 2% per year are met by different central banks, then nominal rates of return on equities of 8% to 9% are what the markets are forecasting today.

Our next analysis assumes the markets are not efficient. We are therefore seeking to determine whether current indexes are over, under, or fairly valued. We ran a number of scenarios, but will present only the one which seemed most reasonable to us. In this scenario, we used an equity risk premium of 4 percent (for all countries), and further assumed that productivity growth in all countries would converge on a common rate of 3.5% per year (labor force growth rates, however, and real interest rates would still be different). This analysis generated the following results:

<b>Country</b>	<b>Implied Index Value</b>	<b>Current Index Value</b>	<b>Actual/Current</b>
Australia	245.55	225.33	92%
Canada	136.93	227.31	166%
Eurozone	112.69	130.18	116%
Japan	22.61	88.92	393%
U.K.	308.98	276.09	89%

<b>Country</b>	<b>Implied Index Value</b>	<b>Current Index Value</b>	<b>Actual/Current</b>
U.S.A.	242.34	404.41	167%

This analysis, though subject to the disagreements we have discussed over the correct assumptions to use, suggests that Canadian, Japanese and U.S.A. equity markets are still considerably overvalued, despite the price declines they have already seen. In contrast, the Australian, Eurozone, and U.K. markets do not seem to be overvalued.

As we have noted, there are certainly many points you can disagree with in this analysis, incorporating as it does many of the most contentious issues in modern finance. Nevertheless, the approach we have used has the important advantage of being easy to apply, because it uses data that are widely available (we got them all from the Financial Times). We hope you'll find it useful the next time someone begins to wax eloquent about whether or not the equity market is overvalued.