

The Index Investor

Why Pay More for Less?

Global Asset Class Returns

YTD 31Dec03	In USD	In AUD	In CAD	In EURO	In JPY	In GBP
US Equity	28.50%	-5.66%	7.21%	8.70%	17.88%	17.55%
US Bonds	4.00%	-30.16%	-17.29%	-15.80%	-6.62%	-6.95%
AUS Equity	47.10%	12.94%	25.81%	27.30%	36.48%	36.15%
AUS Bonds	29.98%	-4.18%	8.69%	10.18%	19.36%	19.03%
CAN Equity	51.00%	16.84%	29.71%	31.20%	40.38%	40.05%
CAN Bonds	29.64%	-4.52%	8.35%	9.84%	19.02%	18.69%
Euroland Equity	40.80%	6.64%	19.51%	21.00%	30.18%	29.85%
Euroland Bonds	23.74%	-10.42%	2.45%	3.94%	13.12%	12.79%
Japan Equity	38.70%	4.54%	17.41%	18.90%	28.08%	27.75%
Japan Bonds	10.12%	-24.04%	-11.17%	-9.68%	-0.50%	-0.83%
UK Equity	28.20%	-5.96%	6.91%	8.40%	17.58%	17.25%
UK Bonds	13.47%	-20.69%	-7.82%	-6.33%	2.85%	2.52%
World Equity	34.40%	0.24%	13.11%	14.60%	23.78%	23.45%
World Bonds	11.40%	-22.76%	-9.89%	-8.40%	0.78%	0.45%
Commodities	22.60%	-11.56%	1.31%	2.80%	11.98%	11.65%
XR Chng v. USD	0.00%	34.16%	21.29%	19.80%	10.62%	10.95%

Looking at the 2003 asset class returns across the six currencies covered by *The Index Investor*, a number trends stand out. The first is the twin impact of the substantial monetary and fiscal policy stimulus provided by the United States government. Early in the year this generated a decline in interest rates, and further gains for bond and property investors. Later in the year it generated renewed growth in real demand, and substantial gains in equity and commodity markets. However, a disproportionate amount of this demand remained

concentrated in the United States, giving rise to ever-larger U.S. current account deficits and the continued build up of dollar assets in foreign portfolios. As the year wore on, crystallizing fears about how the eventual unwinding of these imbalances would play out led to a substantial decline in the value of the U.S. dollar, which significantly affected the returns on many asset classes. They also caused a rise in long term bond yields in the U.S. (and a reduction in the annual return on this asset class) that reflected the first whiffs of investor concern about the possible inflationary consequences of the current situation. Undoubtedly, these trends will continue to develop in 2004.

Equity Market Valuation Update

As we start the new year, most equity markets, except for Australia, look to be quite fully valued, which suggests that the balance of probable 2004 returns lie on the downside compared to 2003. Our 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 rate of productivity growth the economy will achieve. As described in our June, 2003 issue, we use both high and a low productivity growth assumptions. 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	Div Yield Equals	Expected Real Equity Return**
Australia	3.36%	4.00%	7.36%	4.90%	3.76%	8.66%
Canada	2.73%	4.00%	6.73%	2.10%	1.83%	3.93%
Eurozone	1.63%	4.00%	5.63%	2.50%	2.47%	4.97%
Japan	2.16%	4.00%	6.16%	2.70%	0.91%	3.71%
U.K.	1.99%	4.00%	5.99%	2.50%	3.20%	5.70%
U.S.A.	2.35%	4.00%	6.35%	4.50%	1.59%	6.09%

**High Productivity Growth Scenario. See Asset Class Review, in our June 2003 Issue, for details of both productivity growth scenarios for each region.*

*** 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*	Current Index Value	Current/Implied (high productivity growth)	Current/Implied (low productivity growth)
Australia	456.29	298.53	65%	92%
Canada	123.31	311.97	253%	308%
Eurozone	126.90	160.81	127%	187%
Japan	28.02	103.45	369%	479%
U.K.	297.17	324.10	109%	156%
U.S.A.	389.95	453.72	116%	179%

* *High productivity growth scenario.*

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 December, this benchmark had returned 23.6%, while our model portfolio had returned 32.7%. 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 last month, it had returned 29.8%.

The benchmark for the second portfolio in this group is a mix of 60% domestic equities and 40% domestic bonds. Through the end of last month, it had returned 18.7%, while our model portfolio had returned 26.8%, and the global benchmark had returned 25.2%.

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 last month, it had returned 8.9%, while our model portfolio had returned 13.3% and the global benchmark 16.0%.

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 last month, this benchmark had returned 23.6%, while our model portfolio had returned 29.1%. 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 last month, it had returned 29.8%.

The benchmark for the second portfolio in this group is a mix of 60% domestic equities and 40% domestic bonds. Through the end of last month, it had returned 18.7%, while our model portfolio had returned 22.0%, and the global benchmark had returned 25.2%.

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 last month, it had returned 8.9%, while our model portfolio had returned 13.5% and the global benchmark 16.0%.

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 nominal return over a ten-year period. Through last month, our 12% target return portfolio has returned 32.6% year-to-date, our 10% target return portfolio has returned 27.1% our 8% target return portfolio has returned 23.3%, and our 6% target return portfolio has returned 12.5%.

Last month, the active portfolio was allocated as follows: 60% to the Vanguard Inflation Protected Securities Fund, 15% each to the Oppenheimer Real Assets Fund and the T. Rowe Price International Bond Fund, and 10% to the U.K. Equity Market iShare. Year-to-date, our actively managed portfolio has returned 21.3%. As you may recall, our actively managed portfolio was undertaken as an experiment, to see whether or not we could, through actively switching between asset classes, achieve higher returns than any of our model portfolios which employ constant long term asset allocations. While last year our active approach delivered relatively good results, this year it did not. Our performance reflects the fact that

throughout 2003 we remained relatively pessimistic about the course of the world economy and potential equity market returns, while many investors eventually became more optimistic. On the other hand, we have proven, yet again, the basic wisdom our fundamental beliefs: that superior long term returns result from a policy of diversification across asset classes, implemented through low cost index funds. Having proven our point, we are ending our active management experiment.

This Month's Feature Articles: Key Points

Our first feature article this month looks at how well *The Index Investor's* model portfolios have performed over the past fifteen years. Reassuringly, we find that diversification across a range of asset classes has delivered the benefits that theory predicts.

Our second article looks at four product and strategy issues. In a follow up to last month's article on retail hedge fund products, we look at an intermediate product: registered closed end fund-of-funds that have relatively low minimum investments and are available through registered investment advisers to qualified U.S. investors. We then go on to look at TRAKRS, an innovative new futures product from Merrill Lynch that provides a potentially lower cost way to invest in a commodities index. Next we examine a question that has been raised by a recent new product introduction: when is an "index fund" not an index fund? We close with an update on recent developments in the widening mutual fund scandals, and what may be in store for 2004.

Long Term Model Portfolio Performance

Over the years, the subscriber base of *The Index Investor* has grown larger and more sophisticated. In fact, a surprising number of financial advisers and brokers are now regular readers. Many of these new readers have asked us to provide more detailed information about the performance of our model portfolios. While we are happy to respond to this request, doing so is not without its challenges. Most importantly, our model portfolios have evolved over the past six years, and expanded beyond our initial focus on delivering higher than

benchmark returns while taking on the same amount of risk. On top of that, our approach to constructing these portfolios has also changed. For example, we switched to broad asset class definitions (and away from explicit capitalization and style tilts), and have recently moved to a focus on real (inflation adjusted) rather than nominal returns.

In light of this, we think it will be more useful to our readers if we provide the answers to two different questions. First, we will summarize the six-year performance of our model portfolios which focus on delivering higher than benchmark returns with the same level of risk. We will then look at back-tested real returns for all of our current model portfolios.

The following table shows the past six years' net results for our model portfolios which focus on delivering higher than benchmark returns with the same level of risk. A positive number shows the amount by which our model portfolio outperformed its respective domestic benchmark, and a negative number shows the extent of any underperformance.

Model Portfolio Less Domestic Benchmark Return	High Risk (Benchmark = 80% Domestic Equity, 20% Domestic Debt)	Medium Risk (60% Equity, 40% Debt)	Low Risk (20% Equity, 80% Debt)
1998	6.40%	0.00%	0.00%
1999	4.90%	4.50%	5.40%
2000	5.70%	7.70%	5.40%
2001	-7.80%	-8.20%	-4.00%
2002	2.10%	2.80%	1.10%
2003	9.10%	8.10%	4.40%
Average	3.40%	2.48%	2.05%

As you can see, our model portfolios have generally performed well, with the exception of 2001, where they were hurt by the sharp increase in the dollar and high returns on U.S. dollar bonds (and negative returns on many other asset classes) following the September 11th terrorist attack.

The following tables provide a more detailed analysis of how our current portfolios would have performed over the previous fifteen, ten, five and three year periods. The tables show the results for the domestic and global 80/20, 60/40, and 20/80 benchmarks, as well as for our model portfolio which either attempt to deliver higher returns with the same risk as the domestic benchmark, or deliver the same returns with lower risk. For each portfolio, and for each evaluation period, we show the following data: (1) the mean (arithmetic average) monthly real return; (2) the median monthly real return (half the returns are above the median, and half below it); (3) the standard deviation of returns (which measures their dispersion around the mean, and is frequently used as a measure of risk); (4) the annualized mean real return; (5) the annualized standard deviation; (6) the annualized mean divided by the annualized standard deviation (in other words, how much return you receive per unit of risk taken on); (7) the skewness of the distribution (negative means more returns are below the mean than above it; positive means the opposite, and zero signifies a normal “bell curve” shaped distribution); (8) the kurtosis or “peakedness” of the distribution (positive means a distribution that is more peaked and has “fatter tails” than the normal distribution; hence extreme returns are more likely; negative kurtosis means just the opposite); and (9), the compound annual (geometric average) return (CAGR) over the evaluation period (which measures the actual amount by which the value of your portfolio increased over the evaluation period).

To put this slightly differently, the following tables provide three different measures of return (arithmetic average, median, and geometric average), three different measures of risk (standard deviation, skewness and kurtosis), and a measure which relates return to risk. In the best case, a portfolio would have a high geometric average return, a low standard deviation, and a positive skewness. Kurtosis cuts both ways: when skewness is positive, you would prefer positive kurtosis as it would imply more periods with large positive returns. However,

when skewness is negative, you would prefer negative kurtosis, which would imply fewer large negative returns.

Model Portfolio Name	Dom 80E/20B Bmark	World 80/20 Bmark	80/20 Max Return, Same Risk	80/20 Same Return, Min Risk
<i>Asset Class Weights</i>				
U.S. Govt TIPS				
US Investment Grade Bonds	20.0%	10.0%		5.0%
US High Yield Bonds				
Foreign Currency Bonds		10.0%		
Commercial Property			3.0%	10.0%
Commodities			10.0%	10.0%
U.S. Equity	80.0%	40.0%	55.0%	58.0%
EAFE Equity				
Europe Equity			25.0%	17.0%
Pacific Equity				
Emerging Mkts Equity			7.0%	
EAFE+EMF		40.0%		
Total	100.0%	100.0%	100.0%	100.0%
Mean N=15 years	0.71%	0.49%	0.73%	0.71%
STD	3.52%	3.47%	3.76%	3.35%
Median	1.14%	0.78%	1.14%	1.29%
Annualized Mean	8.80%	6.09%	9.10%	8.91%
Annualized STD	12.18%	12.01%	13.03%	11.60%
Mean/Std	0.72	0.51	0.70	0.77
Skewness	-0.56	-0.44	-0.70	-0.67
Kurtosis	0.56	0.54	1.24	1.03
CAGR	7.63%	5.14%	7.88%	7.87%

Model Portfolio Name	Dom 80E/20B Bmark	World 80/20 Bmark	80/20 Max Return, Same Risk	80/20 Same Return, Min Risk
Mean N=10 years	0.65%	0.49%	0.63%	0.68%
STD	3.69%	3.47%	4.03%	3.56%
Median	1.25%	0.89%	1.45%	1.37%
Annualized Mean	8.07%	6.00%	7.85%	8.44%
Annualized STD	12.78%	12.03%	13.96%	12.33%
Mean/Std	0.63	0.50	0.56	0.68
Skewness	-0.67	-0.61	-0.81	-0.78
Kurtosis	0.31	0.49	1.11	0.97
CAGR	6.93%	4.79%	6.41%	7.25%

Model Portfolio Name	Dom 80E/20B Bmark	World 80/20 Bmark	80/20 Max Return, Same Risk	80/20 Same Return, Min Risk
Mean N=5 years	-0.01%	0.08%	0.13%	0.17%
STD	3.96%	3.81%	4.48%	3.89%
Median	0.25%	0.38%	-0.26%	-0.38%
Annualized Mean	-0.09%	0.91%	1.52%	2.02%
Annualized STD	13.72%	13.19%	15.52%	13.49%
Mean/Std	-0.01	0.07	0.10	0.15
Skewness	-0.19	-0.24	-0.26	-0.24
Kurtosis	-0.89	-0.68	-0.56	-0.58
CAGR	-1.56%	-0.15%	0.03%	0.77%

Model Portfolio Name	Dom 80E/20B Bmark	World 80/20 Bmark	80/20 Max Return, Same Risk	80/20 Same Return, Min Risk
Mean N=3 years	-0.17%	0.01%	-0.14%	-0.08%
STD	4.12%	4.09%	4.88%	4.24%
Median	0.25%	0.38%	-0.80%	-0.73%
Annualized Mean	-2.06%	0.10%	-1.67%	-0.98%
Annualized STD	14.28%	14.17%	16.91%	14.69%
Mean/Std	-0.14	0.01	-0.10	-0.07
Skewness	-0.20	-0.30	-0.29	-0.26
Kurtosis	-0.86	-0.60	-0.62	-0.60
CAGR	-3.94%	-1.49%	-3.68%	-2.45%

Model Portfolio Name	Dom 60/40 Bmark	World 60/40 Bmark	60/40 Max Return, Same Risk	60/40 Same Return, Min Risk
<i>Asset Class Weights</i>				
U.S. Govt TIPS				
US Investment Grade Bonds	40.0%	20.0%	12.0%	29.0%
US High Yield Bonds			5.0%	5.0%
Foreign Currency Bonds		20.0%	5.0%	
Commercial Property			6.0%	6.0%
Commodities			10.0%	5.0%
U.S. Equity	60.0%	30.0%	47.0%	45.0%
EAFE Equity				
Europe Equity			10.0%	10.0%
Pacific Equity				
Emerging Mkts Equity			5.0%	
EAFE+EMF		30.0%		
Total	100.0%	100.0%	100.0%	100.0%

Model Portfolio Name	Dom 60/40 Bmark	World 60/40 Bmark	60/40 Max Return, Same Risk	60/40 Same Return, Min Risk
Mean N=15 years	0.63%	0.47%	0.67%	0.63%
STD	2.69%	2.75%	2.87%	2.54%
Median	0.89%	0.80%	1.01%	0.95%
Annualized Mean	7.83%	5.81%	8.28%	7.80%
Annualized STD	9.33%	9.51%	9.95%	8.81%
Mean/Std	0.84	0.61	0.83	0.89
Skewness	-0.48	-0.29	-0.69	-0.60
Kurtosis	0.40	0.28	1.17	0.71
CAGR	7.08%	5.22%	7.52%	7.13%

Model Portfolio Name	Dom 60/40 Bmark	World 60/40 Bmark	60/40 Max Return, Same Risk	60/40 Same Return, Min Risk
Mean N=10 years	0.57%	0.45%	0.58%	0.58%
STD	2.79%	2.68%	3.06%	2.65%
Median	0.99%	0.69%	1.03%	1.00%
Annualized Mean	7.08%	5.59%	7.23%	7.15%
Annualized STD	9.65%	9.27%	10.60%	9.16%
Mean/Std	0.73	0.60	0.68	0.78
Skewness	-0.58	-0.49	-0.79	-0.70
Kurtosis	0.04	0.17	1.04	0.55
CAGR	6.37%	4.79%	6.31%	6.42%

Model Portfolio Name	Dom 60/40 Bmark	World 60/40 Bmark	60/40 Max Return, Same Risk	60/40 Same Return, Min Risk
Mean N=5 years	0.07%	0.13%	0.23%	0.16%
STD	2.92%	2.91%	3.32%	2.82%
Median	-0.15%	0.29%	-0.07%	0.00%
Annualized Mean	0.90%	1.55%	2.81%	2.00%
Annualized STD	10.12%	10.08%	11.51%	9.76%
Mean/Std	0.09	0.15	0.24	0.20
Skewness	-0.13	-0.20	-0.25	-0.18
Kurtosis	-0.97	-0.72	-0.66	-0.81
CAGR	-0.05%	0.93%	1.87%	1.22%

Model Portfolio Name	Dom 60/40 Bmark	World 60/40 Bmark	60/40 Max Return, Same Risk	60/40 Same Return, Min Risk
Mean N=3 years	-0.03%	0.15%	0.07%	0.04%
STD	2.99%	3.08%	3.56%	3.01%
Median	-0.15%	0.33%	-0.33%	0.00%
Annualized Mean	-0.38%	1.87%	0.81%	0.48%
Annualized STD	10.37%	10.68%	12.32%	10.43%
Mean/Std	-0.04	0.18	0.07	0.05
Skewness	-0.13	-0.26	-0.33	-0.20
Kurtosis	-0.85	-0.53	-0.57	-0.73
CAGR	-1.68%	0.82%	-0.60%	-0.65%

Model Portfolio Name	Dom 20/80 Bmark	World 20/80 Bmark	20/80 Max Return, Same Risk	20/80 Same Return, Min Risk
<i>Asset Class Weights</i>				
U.S. Govt TIPS			10.0%	25.0%
US Investment Grade Bonds	80.0%	40.0%	55.0%	40.0%
US High Yield Bonds			3.0%	8.0%
Foreign Currency Bonds		40.0%		
Commercial Property			5.0%	4.0%
Commodities			5.0%	5.0%
U.S. Equity	20.0%	10.0%	16.0%	10.0%
EAFE Equity				
Europe Equity			6.0%	8.0%
Pacific Equity				
Emerging Mkts Equity				
EAFE+EMF		10.0%		
Total	100.0%	100.0%	100.0%	100.0%

Model Portfolio Name	Dom 20/80 Bmark	World 20/80 Bmark	20/80 Max Return, Same Risk	20/80 Same Return, Min Risk
Mean N=15 years	0.48%	0.43%	0.49%	0.46%
STD	1.32%	1.68%	1.31%	1.16%
Median	0.61%	0.43%	0.68%	0.57%
Annualized Mean	5.91%	5.25%	6.09%	5.62%
Annualized STD	4.57%	5.83%	4.54%	4.03%
Mean/Std	1.29	0.90	1.34	1.40
Skewness	-0.10	0.17	-0.26	-0.28
Kurtosis	0.43	0.08	0.18	0.29
CAGR	5.67%	5.11%	5.86%	5.44%

Model Portfolio Name	Dom 20/80 Bmark	World 20/80 Bmark	20/80 Max Return, Same Risk	20/80 Same Return, Min Risk
Mean N=10 years	0.42%	0.39%	0.45%	0.42%
STD	1.31%	1.51%	1.33%	1.19%
Median	0.58%	0.32%	0.63%	0.55%
Annualized Mean	5.13%	4.77%	5.52%	5.15%
Annualized STD	4.54%	5.25%	4.59%	4.12%
Mean/Std	1.13	0.91	1.20	1.25
Skewness	0.02	0.15	-0.19	-0.21
Kurtosis	0.16	-0.03	0.04	0.25
CAGR	4.89%	4.48%	5.22%	4.88%

Model Portfolio Name	Dom 20/80 Bmark	World 20/80 Bmark	20/80 Max Return, Same Risk	20/80 Same Return, Min Risk
Mean N=5 years	0.24%	0.23%	0.31%	0.32%
STD	1.34%	1.64%	1.36%	1.28%
Median	0.12%	0.21%	0.29%	0.38%
Annualized Mean	2.90%	2.84%	3.81%	3.94%
Annualized STD	4.63%	5.68%	4.71%	4.45%
Mean/Std	0.63	0.50	0.81	0.89
Skewness	0.52	0.09	0.28	0.21
Kurtosis	0.94	-0.30	-0.32	-0.25
CAGR	2.59%	2.73%	3.55%	3.70%

Model Portfolio Name	Dom 20/80 Bmark	World 20/80 Bmark	20/80 Max Return, Same Risk	20/80 Same Return, Min Risk
Mean N=3 years	0.25%	0.45%	0.27%	0.30%
STD	1.46%	1.71%	1.47%	1.45%
Median	0.12%	0.47%	0.29%	0.38%
Annualized Mean	3.08%	5.50%	3.34%	3.68%
Annualized STD	5.05%	5.92%	5.10%	5.03%
Mean/Std	0.61	0.93	0.65	0.73
Skewness	0.68	0.13	0.42	0.30
Kurtosis	1.34	-0.40	-0.11	-0.39
CAGR	2.42%	5.10%	2.80%	3.08%

The following tables present the same information for our four current target return portfolios. The objective of these portfolios is to deliver a minimum compound annual nominal return over a long term holding period. The data in the tables are real returns; however, we have also included the relevant inflation rates for different periods to enable the conversion to approximate nominal returns.

Model Portfolio Name	12% Nom Tgt	10% Nom Tgt	8% Nom Tgt	6% Nom Tgt
<i>Asset Class Weights</i>				
U.S. Govt TIPS		25.0%	28.0%	35.0%
US Investment Grade Bonds				40.0%
US High Yield Bonds		2.0%	10.0%	5.0%
Foreign Currency Bonds			15.0%	
Commercial Property	10.0%	2.0%	6.0%	5.0%
Commodities	10.0%	6.0%	8.0%	5.0%
U.S. Equity	50.0%	39.0%	7.0%	5.0%
EAFE Equity				
Europe Equity	25.0%	18.0%	20.0%	
Pacific Equity			3.0%	
Emerging Mkts Equity	5.0%	8.0%	3.0%	5.0%
EAFE+EMF				
Total	100.0%	100.0%	100.0%	100.0%

Model Portfolio Name	12% Nom Tgt	10% Nom Tgt	8% Nom Tgt	6% Nom Tgt
Mean N=15 years	0.72%	0.62%	0.48%	0.43%
STD	3.57%	2.84%	1.87%	0.99%
Median	1.17%	0.95%	0.68%	0.45%
Annualized Mean (inflation = 2.93%)	9.05%	7.67%	5.89%	5.31%
Annualized STD	12.35%	9.84%	6.48%	3.43%
Mean/Std	0.73	0.78	0.91	1.55
Skewness	-0.72	-0.75	-0.45	-0.09
Kurtosis	1.32	1.43	0.79	1.04
CAGR (inflation = 2.89%)	7.94%	6.95%	5.63%	5.20%

Model Portfolio Name	12% Nom Tgt	10% Nom Tgt	8% Nom Tgt	6% Nom Tgt
Mean N=10 years	0.65%	0.53%	0.43%	0.37%
STD	3.79%	3.02%	1.89%	1.06%
Median	1.43%	1.05%	0.66%	0.38%
Annualized Mean (inflation = 2.45%)	8.10%	6.51%	5.33%	4.50%
Annualized STD	13.15%	10.46%	6.55%	3.68%
Mean/Std	0.62	0.62	0.81	1.22
Skewness	-0.83	-0.86	-0.62	0.07
Kurtosis	1.28	1.31	1.15	1.08
CAGR (inflation = 2.42%)	6.77%	5.63%	4.82%	4.29%

Model Portfolio Name	12% Nom Tgt	10% Nom Tgt	8% Nom Tgt	6% Nom Tgt
Mean N=5 years	0.18%	0.20%	0.31%	0.43%
STD	4.19%	3.33%	2.14%	1.17%
Median	-0.19%	0.13%	0.55%	0.37%
Annualized Mean (inflation = 2.53%)	2.20%	2.46%	3.82%	5.30%
Annualized STD	14.53%	11.54%	7.43%	4.05%
Mean/Std	0.15	0.21	0.51	1.31
Skewness	-0.28	-0.31	-0.33	0.28
Kurtosis	-0.44	-0.52	0.18	0.58
CAGR (inflation = 2.48%)	0.90%	1.52%	3.53%	5.10%

Model Portfolio Name	12% Nom Tgt	10% Nom Tgt	8% Nom Tgt	6% Nom Tgt
Mean N=3 years	-0.06%	0.04%	0.30%	0.44%
STD	4.62%	3.63%	2.43%	1.36%
Median	-0.55%	-0.01%	0.70%	0.37%
Annualized Mean (inflation = 2.13%)	-0.72%	0.52%	3.65%	5.41%
Annualized STD	16.01%	12.57%	8.41%	4.72%
Mean/Std	-0.04	0.04	0.43	1.15
Skewness	-0.31	-0.36	-0.38	0.29
Kurtosis	-0.53	-0.51	0.06	0.16
CAGR (inflation = 1.94%)	-2.48%	-1.03%	2.93%	4.66%

Looking at all this performance analysis, we were struck by a few points. First, at the longest evaluation horizon we used (15 years, which was about the limit of some data series, such as emerging market equities), most of our model portfolios were achieving their objectives. . This is logical, as the benefits of diversification tend to grow over time. Another interesting time horizon to look at is the last five years, which contained both the last years of the equity market bubble and the subsequent bear market. Again, most of our model portfolios also outperformed their domestic (and often global) benchmarks during this period too.

However, the analysis also raises some concerns. Consider, for example, the portfolios with the objective of delivering more return than a domestic benchmark but with the same level of risk. The results show that while they achieved their return objectives, they also usually took on more risk than the benchmark as measured by standard deviation. Despite this, they still often delivered more return per unit of risk than the benchmark itself. While we're on the subject of risk, it is also interesting to note the impact of differences in skewness and kurtosis. These can help to explain differences in CAGR which happen in spite of similar portfolio mean returns and standard deviations.

On the other hand, the portfolios which sought to match their respective benchmarks' returns with less risk usually delivered the most return per unit of risk. This further reinforces a point we've made before: there is much more estimation risk involved in future return estimates than in future risk estimates. As a result, optimizations focused on risk minimization are likely to deliver actual results that are closer to expected results than optimizations that seek to maximize returns.

At the fifteen year time horizon three of our target return portfolios were achieving their CAGR goals, while the one with the most aggressive objective (12% nominal CAGR) was falling just short. Even at a ten year horizon, the 6% and 8% portfolios were on target, while the 10% and especially the 12% portfolios were adversely affected by the global equity market declines. Again, however, a clear lesson emerges: more conservative approaches to investment management (that is, those which have lower required rates of portfolio return, due to more modest accumulation targets and/or higher savings rates) are more likely to succeed over short time horizons.

We also examined whether the performance of our model portfolios was consistent across different currencies. We found that this was, indeed the case (these analyses are available in the other editions of this month's issue).

Finally, while past performance is certainly no guarantee of future results, we were reassured to see that in this case the data agreed with what theory predicted: diversification across

multiple asset classes did reduce portfolio risk, and improve the risk/return trade-off in our model portfolios relative to their domestic benchmarks.

Product and Strategy Notes

More On Retail Hedge Fund Index Products

After last month's article on retail hedge fund products, a number of readers asked us why we had not mentioned products such as Rydex Capital Partners Sphinx Fund, the Deutsche Bank DB Hedge Strategies Fund, or the Oppenheimer Tremont Opportunity Fund. The answer is straightforward: we were looking for index based hedge fund products that would make a mix of absolute value strategies available to all individual investors. The funds noted above (and others like them) require minimum investments of \$50,000 and are only available to qualified investors (e.g., minimum net worth of \$1.5 million) through registered investment advisers. On the other hand, we also recognize that these are considerably lower minimum investment amounts than have traditionally been required of hedge fund investors. So let's take a closer look at these funds.

While hedge funds are typically organized as limited liability companies, these products are closed end investment management companies that are registered with the Securities and Exchange Commission. This enables them to sell shares to a larger number of qualified investors than would normally be the case for a hedge fund. The funds received by the closed end investment management company are placed in different hedge funds representing a range of absolute return strategies (e.g., arbitrage, event-based, and directional). Compared to traditional "funds of funds" these closed end funds charge somewhat lower fees. For example, the Oppenheimer Tremont Opportunities Fund has a 2.5% front end sales load (called a "placement fee"), an annual expenses of 2.16% of its assets. In addition, the fund manager receives an additional performance related fee equal to 10% of any return above 8% (and note that this 8% return is after the underlying hedge funds have taken out their operating expense and performance related fees). On the other hand, the DB Hedge Strategies Fund

charges a front end load of 3.5%, and has annual operating expenses of 2.20%, but has no performance related fees. Of the three funds cited, the Rydex Capital Partners Sphinx Fund offers the best pricing, with no front-end fee, and annual expenses of only 1.95%. Moreover, while the Oppenheimer and DB funds leave the actual hedge fund selection up to the closed end investment fund manager, the Rydex fund invests in the forty hedge funds that make up the Standard and Poor's Hedge Fund Index, which includes a wide range of absolute return strategies.

TRAKRS: Another Way to Invest in a Commodities Index

While interest in commodities as an asset class has been growing, many individual investors still balk at the high cost of the two existing index mutual fund products from Oppenheimer (QRAAX) and PIMCO (PCRAAX). The former tracks the energy heavy Goldman Sachs Commodities Index, while the latter tracks the Dow Jones AIG Commodities Index, which is more evenly balanced between metals, agricultural, and energy commodities. That being said, both of these funds are still very expensive as index funds go, not only in terms of their operating expense ratios (1.68% at QRAAX, and 1.24% at PCRAAX), but also due to the fact that they carry high front end sales loads of up to 5.5% (which are almost never charged by index funds). An important exception to this are the Class D shares on the Pimco Commodities Fund, which have no front end load, but which are only available through Registered Investment Advisors or some fund supermarket programs (e.g., Fidelity). Inevitably, this raises the questions about what is driving these high costs, and whether we can expect them to decline in the future.

On the one hand, the operation of a commodity index fund is quite different from that of a "normal" stock or bond index fund. Given the high costs that would be involved in holding physical commodities (transportation, storage, financing, etc.), commodity index funds instead hold a portfolio of commodity futures contracts. However, since these are leveraged instruments (that is, \$1 invested in a futures contract gives you control over more than \$1 of the underlying commodity), you don't need to invest the full amount of the money you have received (as the operator of the fund) in futures contracts. Both QRAAX and invest the

remaining funds in bonds. We prefer PIMCO's approach to this, which uses primarily real return bonds (U.S. Government issued TIPS). This seems logical, since the commodities fund serves as an inflation hedge many portfolios. On balance, we believe that the additional costs inherent in operating a commodity index fund probably account for some of QRAAX and PCRAAX's higher expense ratios. However, until somebody (e.g., Vanguard or iShares) introduces a lower priced product, we won't know the extent to which this is the case.

On the other hand, the high front end loads charged by both QRAAX and PCRAAX have nothing to do with the operation of the fund per se, but rather reflect the costs involved in distributing them (e.g., brokers' commissions). We believe that, at this point in time, these high front-end loads reflect the difficult nature of the "sales process" for a retail commodity index fund. More specifically, we believe that most individual investors currently do not appreciate the potential diversification benefits offered by the commodities asset class, and as such are likely to regard it as a highly speculative (that is, risky) investment. Providing the education needed to overcome this initial investor resistance probably requires substantial amounts of a broker (or financial planner's) time. Given this, Oppenheimer and PIMCO have probably had to charge a substantial front-end load on their respective funds in order to induce brokers and planners to spend the time required to sell these funds to their respective clients. Going forward, however, we believe that the average level of investor understanding of the benefits of investing in commodities will increase to the point that another company (e.g., Vanguard or iShares) will launch their own no-load, low cost mutual fund or ETF commodities index product. The fact that PIMCO has started to offer – on a limited basis – a no load class of "D" shares is very encouraging in this regard.

In the meantime, the high fees that now exist have led some investors to ask if there are other alternatives available for gaining exposure to the commodities asset class. We know of one other vehicle that tracks the Dow Jones AIG Commodities Index, but it is an unusual one. "Total Return Asset Contracts" were recently launched by Merrill Lynch, and are perhaps better known by their brand name "TRAKRS". Technically, they are neither mutual funds nor exchange traded funds: they are futures contracts, but of a very special type. Unlike typical futures contracts, they can be through a brokerage account, and do not require a

separate futures trading account to be set up (although some reports suggest that other brokers may be reluctant to do this, given that TRAKRS are a Merrill Lynch product).

The reason TRAKRS can be held in a brokerage account is that unlike a typical futures contract, no leverage or margin calls are involved. Individual investors must post one hundred percent of the contract's value when it is purchased. The value of the commodity TRAKRS fluctuates in line with the total return on the Dow Jones AIG Commodity Index. The current commodity TRAKR contract is traded on the Chicago Mercantile Exchange (www.cme.com) and expire on June 28, 2006, when they are settled for cash (presumably, Merrill will introduce another contract at or before this date, to enable investors to maintain their position in this asset class). TRAKRS can also be sold before maturity. TRAKRS are not treated like other futures contracts for tax purposes, and instead become eligible for capital gains treatment after they have been held for more than six months. Because they are futures contracts, TRAKRS pay no dividends; the only taxable event occurs when they are sold or expire.

Another attractive feature of TRAKRS is that, because they are futures contracts, they carry no annual operating expense charges. There are, however, other costs involved in owning them. First, there is a brokerage commission when they are purchased (similar to the brokerage commission one pays when buying an exchange traded fund). Second, due to the structure of the contracts themselves, TRAKRS typically trade at a slight premium to the underlying index value. This premium has been estimated to be about three percent, on average.

How, then, would you evaluate the trade-off between the PCRAX mutual fund and the commodity TRAKR? There are a number of issues involved. The first is the relationship between the front-end load on PCRAX and the combined brokerage commission and price premium on the TRAKR. Let's assume (unrealistically, but for the sake of illustration) that the sales load equals the brokerage commission. The question then becomes what discount rate should you use to convert the three percent price premium to an annual equivalent fee (analogous to a fund operating expense charge) over three years? Logically, the rate you use

should reflect the opportunity cost of that money – that is, the rate you could otherwise earn on the TRAKR premium charge. To keep this example nice and tidy, let's assume that this discount rate is what you would expect to earn if you invested that three percent in PCRAX. The breakeven discount rate that would make your three percent estimated TRAKR premium equal to the 1.24% annual expense charge on PCRAX is 11.5%. If you expected to earn more than this each year on PCRAX, it would appear to be a better deal than the TRAKR, assuming that the front end load on the former was equal to the brokerage commission on the latter.

But of course, this assumption isn't true – the front end load on PCRAX is probably much higher than the brokerage commission you would pay to buy the TRAKR (though because the latter is a futures contract, you should check on the size of that brokerage commission in advance). This means that the breakeven opportunity cost is actually much higher. For example, if the difference between the sales load and the brokerage commission reduces the effective TRAKR price premium to 2%, the breakeven discount rate rises to over 38%. In this case, it seems like the TRAKR is a cheaper way to gain exposure to the commodities asset class.

On the other hand, what about the case where you can purchase the PIMCO "D" shares without a front-end load? In this case, the TRAKRS don't look like such a good deal. If you assume the brokerage fee to purchase the TRAKRS equals 0.25% (twenty five basis points), the breakeven rate of return falls to only 7.00%. If you expect the Dow Jones AIG Commodity Index to increase by more than this much per year over the next three years, you would be better off investing in the PIMCO "D" shares and giving TRAKRS a pass.

The bottom line is that TRAKRS are new, different, but potentially very interesting products. In addition to commodities, TRAKRS have been introduced that track gold as well as the Euro/U.S. dollar exchange rate. If you don't have access to the PCRDX shares, and are looking for a cheaper way to invest in the commodities asset class, at least for the next two and a half years, TRAKRS may make sense if you don't mind the additional operational hassles that investing in them entails. For more information, visit www.trakrs.com.

When Is An "Index Fund" Not An Index Fund?

On November 7, 2003, the iShares Dow Jones Select Dividend Index Fund (DVY) started trading on the New York Stock Exchange. With an annual expense ratio of .40%, it tracks the returns on the new "Select Dividend Index" recently introduced by Dow Jones, whose press release noted that it was "designed as a tool for the income investor, [with] fifty companies selected and weighted based on their dividend yields." One could also say that its introduction may mark something of a turning point, since it would seem that the sponsors of what are, in effect, actively managed funds now believe it is to their advantage to be known as an "index fund." Let us be clear: in our view, this is very much an actively managed fund. A look at the average price/book value data for the companies included in the "Select Dividend Index" shows that they have the low price/book ratios one would normally associate with value stocks. And, indeed, a high dividend yield is one of the stock screening factors typically used by active investors who pursue a value strategy. So why don't we just view this as another "value tilt" that an index investor could take? First, because of the small number of stocks included in the index, and second, because of the way they are chosen. Fifty stocks is a relatively small number to hold in a portfolio, even by the standards of most active managers. Moreover, the stocks included in the index are not chosen according to some mechanical rule (e.g. "divide the S&P500 into two equal groups based on the companies' price/book ratios, and call one group the value index, and the other the growth index), but rather at the discretion of Dow Jones. In short, just because I have chosen fifty stocks to include in an index (presumably on the basis of some theory of relative value or relative momentum), and then created a fund that tracks it does not make the end result an "index fund", at least in so far as we understand the meaning of that term. In fact, if one really wanted to pursue a high dividend strategy, you might actually be better off in an actively managed fund whose manager could distinguish between companies whose high dividends reflect impending bankruptcy and those who pay them because of a highly profitable underlying business model. Unless of course that is what the Dow Jones team believes it is doing when it selects those fifty companies (hint: seven of the original fifty were dropped from the index and replaced by other companies in December).

The Mutual Fund Scandals at the End of 2003

The last few months have seen a number of developments in the widening mutual fund scandals. In November, the U.S. Securities and Exchange Commission ruled that Morgan Stanley must pay a \$50 million fine because its brokers accepted special payments for recommending funds to investors without disclosing those incentives to them. As Stephen Cutler, director of Enforcement at the SEC noted, “few things are more important to investors than receiving unbiased advice from their investment professionals – or knowing that what they’re getting may not be unbiased...In plain and simple terms, Morgan Stanley’s customers were not informed of the extent to which Morgan Stanley was motivated to sell them a particular fund.” However, in a world with over 7,000 mutual funds, in which brokers and other financial advisers account for a large percentage of all fund sales, special payments by fund companies to gain brokers’ attention are more likely to be the rule rather than the exception. As a Financial Times editorial noted, “Such deals make it hard for brokers to give unbiased advice to their customers: all too often, the deciding factor will be the commission that a broker receives rather than the investment return that a customer is likely to obtain.”

In December, the SEC announced two further investigations: the first into the activities of a high yield bond fund that was accused of using stale prices to inflate its reported returns, and the second into 139 mutual funds that were closed to new investors but which were still charging annual 12b-1 fees (meant to support fund marketing) averaging .625% of their assets. The fund companies in question claimed the charges were legitimate, and were meant to cover deferred commission payouts to the brokers who sold the funds, as well as ongoing account servicing. Time will tell...

Also in December, the U.S. mutual fund trade association, The Investment Company Institute, 12/15/03 Investment Company Institute calls on SEC to limit the use of soft-dollar commissions to proprietary research, and to ban their use to pay for computer hardware, software and data services. Similar proposals have already made in the U.K. The ICI also called for the elimination of directed brokerage arrangements, where fund companies direct all their trading to a brokerage in exchange for that firm promoting its funds. A logical

question to ask is what could have prompted the mutual funds' own trade association to reverse its long held positions on these issues. There is a simple, two-word answer to this question: "Eliot Spitzer", the New York Attorney General who originally broke the market timing scandal. At a November hearing before the Senate Banking Committee, he said that excessive fund fees were a "logical next step" for regulators to address. Spitzer said that his office estimated that Americans paid \$70 billion in mutual fund fees in 2002. He went on to note that both market timing and excessive fees were "consequences of a [mutual fund] governance structure that permitted managers to enrich themselves at the expense of investors."

This point was rather colorfully echoed at the Banking Committee hearings by Senator Peter Fitzgerald from Illinois, who noted that "the combination of opaque fees, abusive trading practices, and government policies which channel investor money into mutual funds has transformed this once sleepy industry into a monster." He went on to characterize the mutual fund industry as "the world's largest skimming operation--a \$7 trillion trough from which fund managers, brokers and other insiders are steadily siphoning off an excessive slice of the nation's household, college and retirement savings."

Where is all this leading? We hope that the following editorial by Holman Jenkins Jr. (which appeared in the November 19th Wall Street Journal) proves to be prophetic: "The fund industry paints itself as the salvation of Mom and Pop, then drowns them in brochures for 'growth' funds, 'technology funds', 'health care' funds, 'overseas health technology growth' funds, and other absurd permutations. These are nothing more than an invitation to commit the same mistakes by sector that small investors have always made by chasing the latest hot individual stock. The S.E.C., if it were really doing its job, would inform the public that it is wasting its money. But the agency considers itself the protector of the 'active' small investor, so it can't very well tell him that his 'activity' is the single biggest menace to his investment returns. Don't get us wrong, speculators and active fund managers are highly useful people. They do the research and risk taking to make sure prices are 'right' – that is, reflect the latest wisdom about what companies are worth. They make the world safe for indexers: smart

investors who stick their money in cheap, broad funds...and let Wall Street support them rather than the other way around.”

2004 should be an interesting year...