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# White Paper

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## The Next Chapter in the Active vs. Passive Management Debate

*An analysis of manager performance, consistency, and persistency*

*We are not so bold as to attempt to settle the active vs. passive debate. However, we hope our observations will help you determine where active and passive management is appropriate for your portfolio.*

### Observations:

- ✓ *Approximately 90 percent of ten-year top quartile mutual funds<sup>1</sup> across 17 categories spent at least one three-year stretch in the bottom half of their peer groups. It may have been difficult for many investors to hold these long-term top performers through their inevitable lulls.*
- ✓ *The greater an asset class' absolute return during a 3-year period, the greater the likelihood and magnitude of median manager underperformance and vice-versa. In other words, indexes usually performed better than median managers in bull markets and worse in bear markets on a relative basis.*
- ✓ *Holding the 48th percentile mutual fund<sup>1</sup> across 17 categories would have matched the weighted-average index return for a globally diversified 70 percent equity and 30 percent fixed income hypothetical portfolio mix over the last ten years. Investing with top quartile managers would have led to about 1.0 percent of annual outperformance at the aggregate portfolio level. Bottom quartile managers would have generated -1.3 percent of alpha.*
- ✓ *There are frequently ignored factors that can preclude passively managed portfolios from matching index returns. The factors vary depending on the asset class and index, but are important to consider before making the active or passive management decision.*
- ✓ *Falling prey to natural human behavioral tendencies during the manager selection and termination process generally leads to failure. Investors should make better efforts to understand their managers' investment processes, sub-styles and investment philosophies in order to develop the patience required for long-term success; or they should invest passively.*

<sup>1</sup>Distinct portfolio share classes (only) from Morningstar mutual fund database. Not corrected for survivorship bias.

## Introduction

In a typical institutional setting, the investment consultant presents three managers to an investment committee. All the managers had strong performance numbers over the last 3, 5 and 7-year periods relative to the appropriate index and peer group. The investment processes vary among the candidates, but each appears to have solid style discipline and a sensible process executed by a team of experienced investment professionals. So far, so good. However, before any manager is hired, the investment committee should understand an uncomfortable truth: *even if the manager selected ends up being a top performer over the next decade, it is virtually assured he will one day try your patience with lousy performance over a three or five year period.*

## Consistency of Manager Returns

*“Those who cannot learn from history are doomed to repeat it.”* What does history tell us about manager performance? If an investor was skillful-*or lucky*-enough to have picked only funds destined to be top performers a decade ago, the path to performance excellence would still have been perilous because top quartile managers frequently fell below the median of their peer groups during three and five year periods.

We examined the performance of 1,596 mutual funds with ten-year records in the Morningstar mutual fund database<sup>1,2</sup> across 17 categories. As one can see in Exhibit 1, about 89 percent (359 out of 402) of all ten-year top-quartile funds spent at least one 3-year stretch in the bottom half of their peer group. On average, once the fund fell into the bottom half during a 3-year period, it stayed there for an average of 1.2 years (or the next 5 quarters). About 51 percent of ten-year top quartile funds spent at least one 5-year stretch in the bottom half. *The appendix contains a list of the 43 (out of 402) top-quartile funds that avoided a below median 3-year stretch.*

### **Exhibit 1**

Ten-year top quartile funds (ending December 31, 2006)<sup>1</sup> that fell below median during one or more three and five year periods

Category <sup>1</sup>	Funds with 10-year records	10-year top quartile funds	Number of 10-year top quartile funds below median for a 3-year period	Percent of 10-year top quartile funds below median for a 3-year period	Median years spent in bottom half during next rolling 3-years	Percent of 10-year top quartile funds below median for a 5-year period
Intermediate Bond <sup>3</sup>	182	46	34	74%	0.5	38%
High Yield Bond	63	16	15	94%	1.0	50%
Foreign Bond	20	5	4	80%	2.5	60%
Large Cap Value	171	43	41	95%	0.75	40%
Large Cap Blend	270	67	61	91%	1.25	41%
Large Cap Growth	217	54	48	89%	1.25	46%
Mid Cap Value	32	8	6	75%	1.0	25%
Mid Cap Blend	70	18	17	94%	1.5	72%
Mid Cap Growth	119	30	29	97%	1.25	53%
Small Cap Value	42	11	11	100%	1.0	64%
Small Cap Blend	68	17	17	100%	1.25	41%
Small Cap Growth	115	29	27	93%	1.25	48%
REIT	27	7	6	86%	2.0	71%
Foreign Value	35	9	9	100%	1.0	56%
Foreign Blend	90	23	19	83%	1.0	35%
Foreign Growth	37	9	6	67%	0.75	56%
Emerging Markets	38	10	9	90%	1.0	70%
<b>Total:</b>	1596	402	359	89%	1.2	51%

<sup>1</sup>Distinct Portfolio Only: Many fund families offer multiple versions of the same fund, but with variations on the sales fees that are charged and/or investor qualifications. The "distinct portfolio only" feature removes all but one of these options. Morningstar normally designates the oldest share class as the distinct portfolio, which is often, but not always the A share class.

<sup>2</sup>The Morningstar mutual fund data was used because it is less prone to some reporting biases than other databases. For example, poor performing managers frequently stop reporting to manager databases during poor performance stretches. While the Morningstar data is not immune to survivorship bias, each mutual fund that survived the ten-year stretch was captured regardless of performance. In addition, the Morningstar data generates returns net of expenses. Many other databases show returns gross of fees. Since fees for institutional investors are often tiered based on asset size, and trading costs are not uniform, it is problematic to calculate objective after-expense returns.

<sup>3</sup>Four of the twelve top quartile intermediate bond funds that avoided a below median 3-year stretch had the same manager. One of the twelve was an index fund.

On average, ten-year top quartile funds spent about 22 percent (or about 6 out of 29) of all 3-year periods in the bottom half of the peer group. Therefore, had one been skillful or *lucky* enough to have selected top quartile funds in every single category, one would still have suffered through many quarterly performance reviews where about one in four of the selected managers suffered 3-year below-median performance. Top quartile funds (over the last ten years) also spent, on average, about 12 percent (or about 3 out of 21) of 5-year rolling periods in the bottom-half of their peer groups.

**Exhibit 2**

Average percent of 3-year and 5-year periods spent in the bottom half by ten-year top quartile funds (through 12/31/06)

Category	Average percent of 3-year periods spent in bottom half	Average percent of 5-year periods spent in bottom half
Intermediate bond	13%	6%
HY Bond	23%	12%
Foreign Bond	28%	24%
Large Cap Value	19%	8%
Large Cap Blend	23%	6%
Large Cap Growth	25%	12%
Mid Cap Value	19%	7%
Mid Cap Blend	31%	22%
Mid Cap Growth	26%	14%
Small Cap Value	25%	14%
Small Cap Blend	21%	7%
Small Cap Growth	23%	10%
REIT	25%	16%
Foreign Value	21%	8%
Foreign Blend	22%	8%
Foreign Growth	16%	13%
Emerging Markets	21%	16%
	Average	Average
	22%	12%

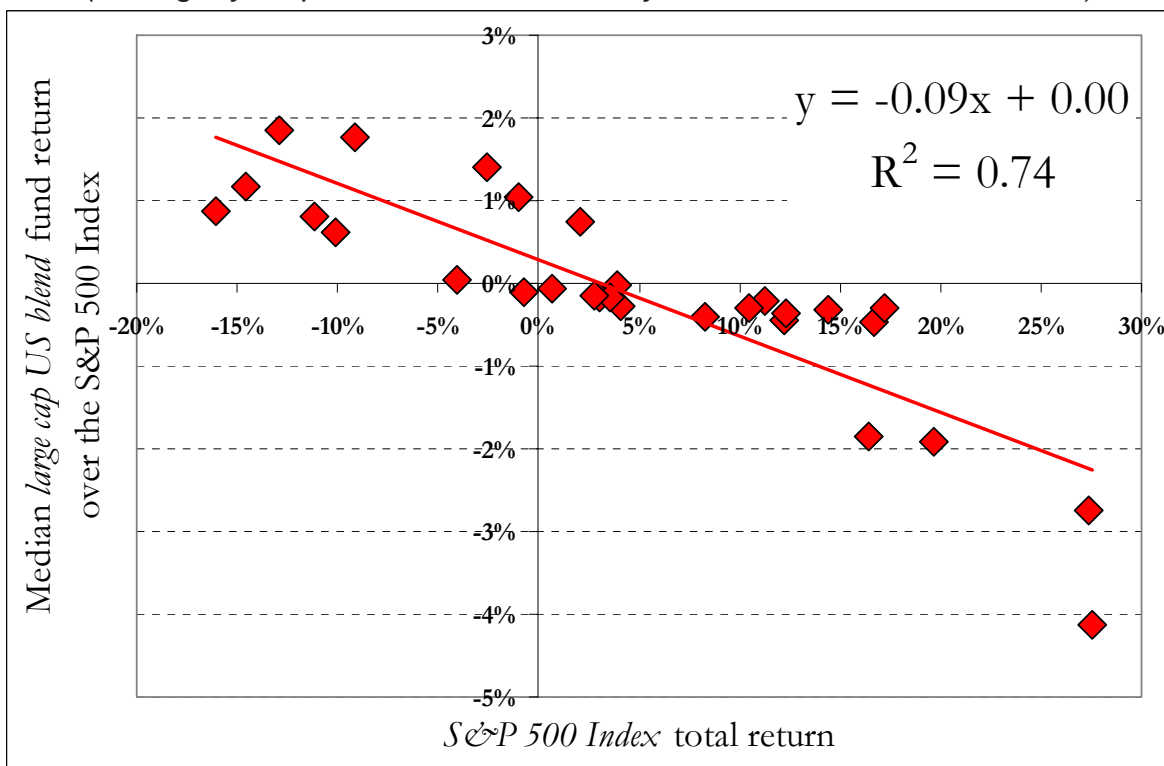
*“Shouldn’t we expect our managers to consistently perform in the top half of their peer groups over three and five-year periods?”* This is a common expectation of investment committee members. The answer can only be “no”. The only way to maintain an investment menu of managers in the top half over three years is to fire managers when they underperform (*not ‘if they underperform because they probably will’*), and replace their performance history with the ‘inherited’ record of a new manager. However, since we are without a time machine, we only participate in new managers’ returns after they are hired. Underperforming the median manager in the peer group (and index benchmark) over some time horizon is close to a certainty.

### **Bull and Bear Markets and Active Manager Performance:**

One of the most striking findings of our research is the high correlation between strong absolute market returns and median manager underperformance. Across all categories, the better the asset class (index) return, the worse the median manager performed relative to its index. For example, the following *large cap U.S. equity* example (see Exhibit 3) illustrates the high correlation between the S&P 500 Index's absolute return and median *large cap blend* fund's underperformance over rolling 3-year periods. On the horizontal axis, we plot the absolute return of the *S&P 500 Index*. On the vertical axis, we plot excess return of the median *large cap U.S. blend* fund over the *S&P 500 Index*. Based on this linear relationship ( $R^2 = 0.74$ ), every 1 percent of higher index return leads to expected median manager underperformance of about 0.09 percent.

#### **Exhibit 3**

Median *large cap U.S. blend* fund outperformance vs. *S&P 500 Index* return  
(Rolling 3-year periods between January 1, 1997 - December 31, 2006)

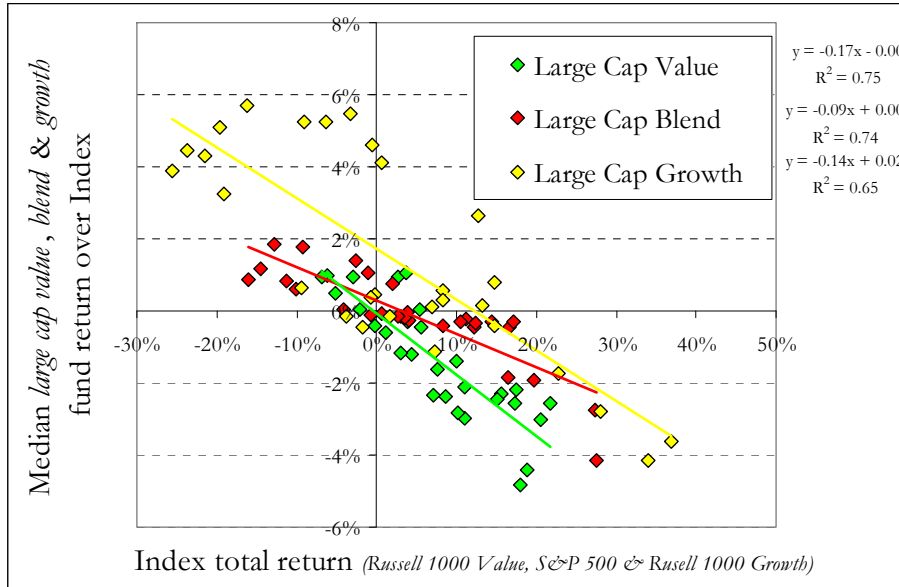


Therefore, an expected 20 percent three-year *S&P 500 Index* return leads to expected 1.81 percent of underperformance by the median *large cap blend* manager. For an expected -10 percent three-year *S&P 500 Index* return, the median *large cap blend* manager's expected outperformance is 0.92 percent. Heteroskedasticity is also present because the distribution of errors does not appear to be random. In other words, when the S&P 500 had its absolute best return, the linear model understated the median *large cap blend* manager's underperformance.

What can we infer from this analysis? For one, drawing the conclusion that an active manager should be terminated because he trailed during a recent bull market run may be unwise. On the other hand, touting the skill of an active manager for losing less during a bear market stretch may also be an exaggeration. The following graphs (Exhibits 4-8) illustrate the same relationships for other asset classes and investment styles.

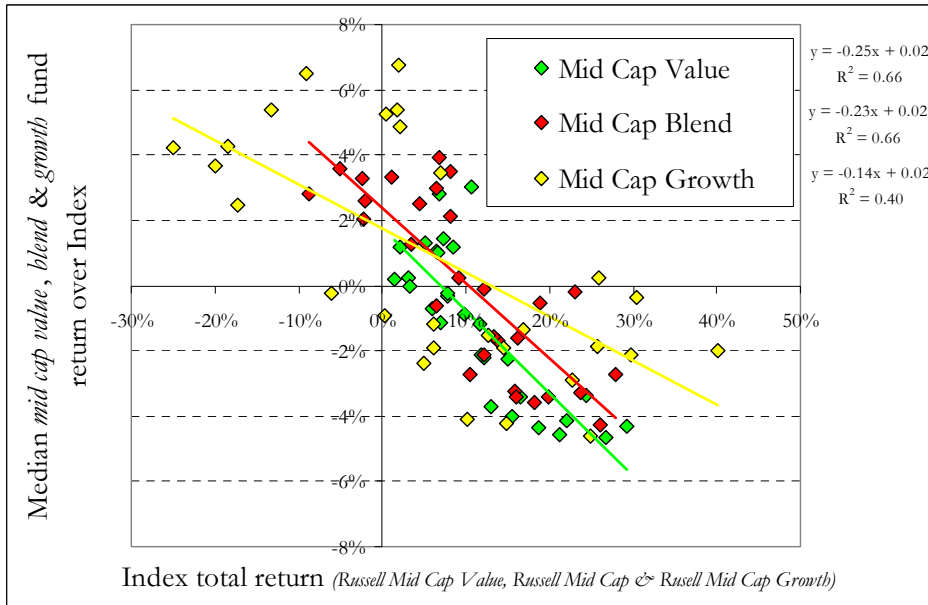
**Exhibit 4**

Median large cap value, blend, and growth fund outperformance vs. index return  
(Rolling 3-year periods between January 1, 1997 - December 31, 2006)



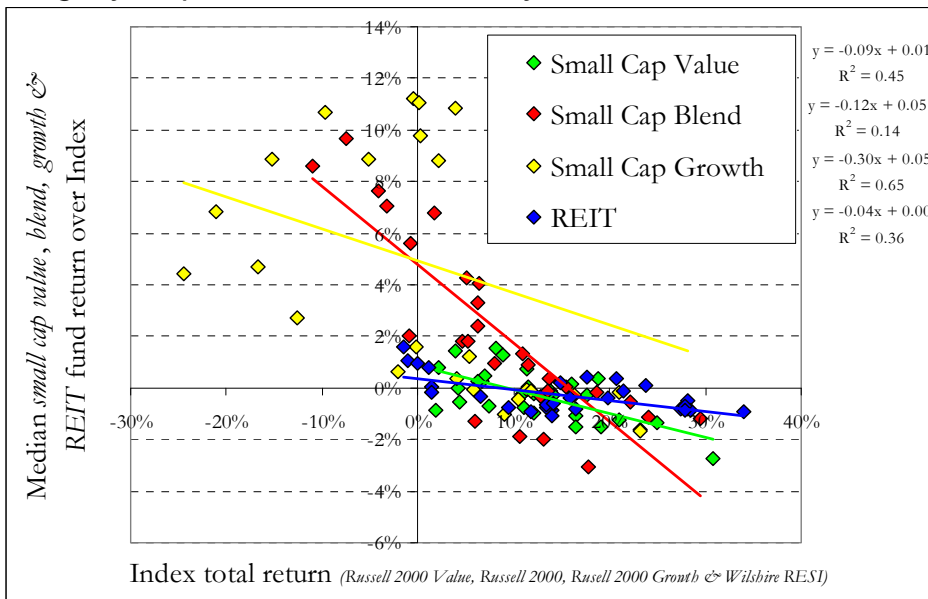
**Exhibit 5**

Median mid cap value, blend, and growth fund outperformance vs. index return  
(Rolling 3-year periods between January 1, 1997 - December 31, 2006)



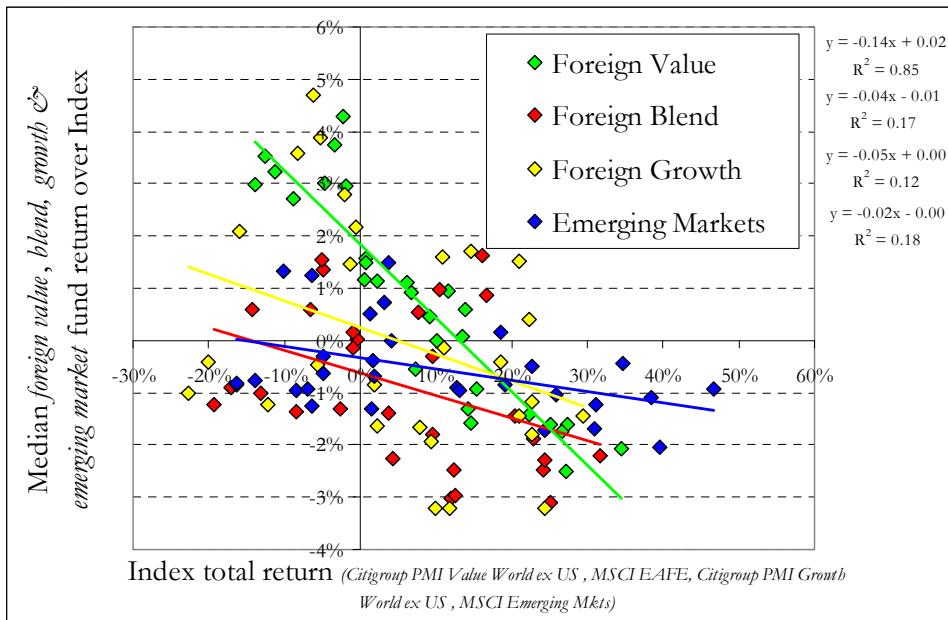
### Exhibit 6

Median small cap value, blend, growth, and REIT fund outperformance vs. index return (Rolling 3-year periods between January 1, 1997 - December 31, 2006)



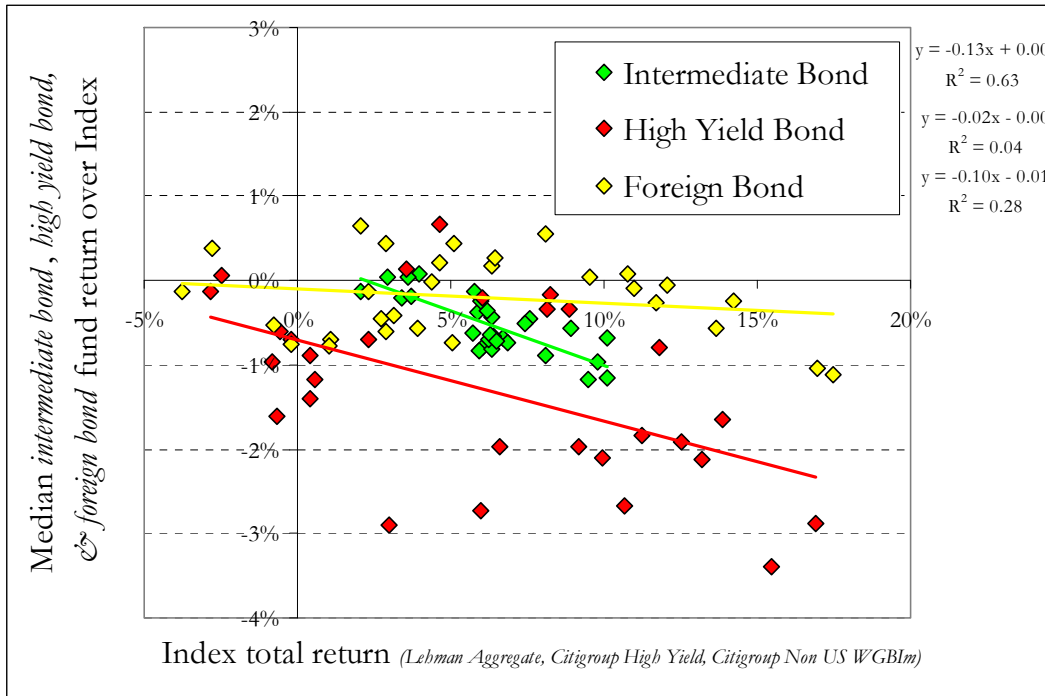
### Exhibit 7

Median foreign value, blend, growth, and emerging markets fund outperformance vs. index return (Rolling 3-year periods between January 1, 1997 - December 31, 2006)



### Exhibit 8

Median *intermediate bond, high yield bond, and foreign bond* fund outperformance vs. index return  
(Rolling 3-year periods between January 1, 1997 - December 31, 2006)



Why did indexes tend to perform better than active managers in bull markets? Why was the reverse true in bear markets? There are several possible explanations. When markets are falling, the small cash position typically held by managers can buttress declines (cash is not a component of equity indexes), but act as a headwind in momentum-driven bull markets. Another explanation has to do with index construction. By definition, the market return is a function of how stocks perform relative to their index weight. Therefore, when the index is at its best, any portfolio of stocks in a different proportion than the index is disadvantaged.

The indexes used to measure manager performance are generally *cap-weighted*, causing them to be heavily levered to the largest securities in the index. For example, Exxon Mobile recently made up about 8 percent of the Russell 1000 Value Index. Most managers would find it imprudent to hold an 8 percent position in a single stock. Therefore, when Exxon was one of the best performers, driving the index upward, all managers with less than an 8 percent weight faced a headwind.

### What Peer Group Rank Was Required to Beat Indexes?

As Exhibit 9 shows, most funds in the *large cap value, mid cap value, intermediate bond, and high yield bond* categories had difficulty keeping pace with their index over the last decade. On the other hand, funds in the *large cap growth, small cap growth, small cap blend, and international value* categories fared much better.

**Exhibit 9**

Index returns compared to median and top quartile funds  
(ten-years ending 12/31/06)<sup>1, 2</sup>

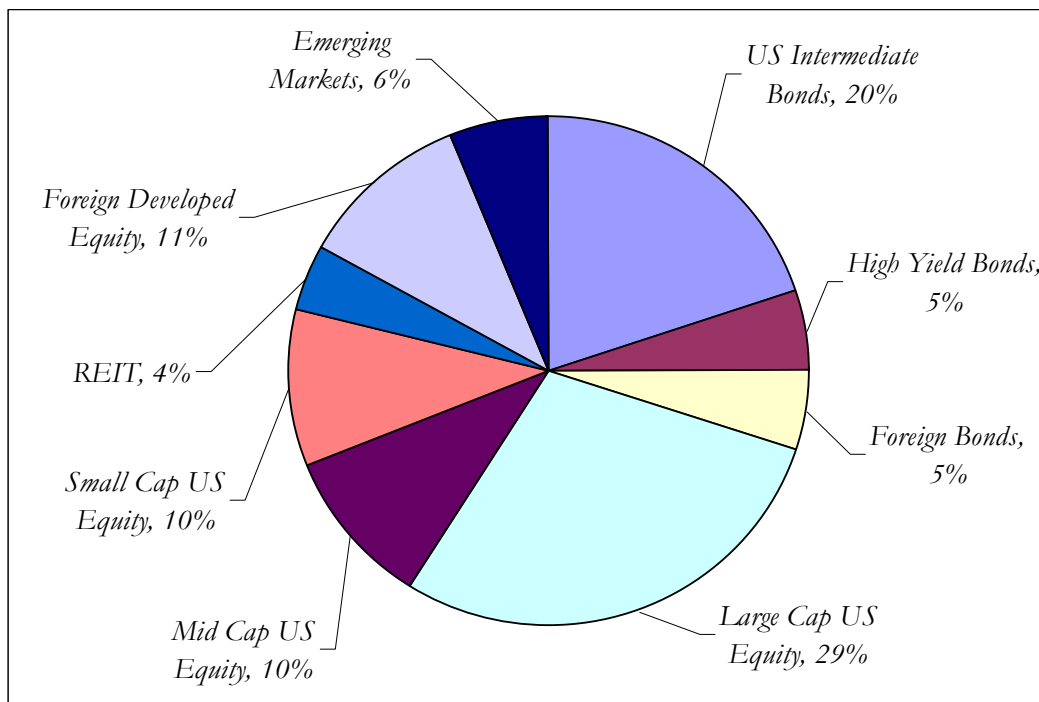
Category	Index Peer Group Rank	Median manager return over index	Top quartile manager return over index
Intermediate bond	19%	-0.5%	-0.1%
HY Bond	22%	-1.0%	-0.1%
Foreign Bond	60%	0.4%	1.4%
Large Cap Value	16%	-1.8%	-0.8%
Large Cap Blend	33%	-0.4%	0.3%
Large Cap Growth	63%	0.8%	2.4%
Mid Cap Value	15%	-2.2%	-0.6%
Mid Cap Blend	49%	0.0%	1.0%
Mid Cap Growth	54%	0.3%	2.2%
Small Cap Value	36%	-0.4%	0.5%
Small Cap Blend	77%	1.5%	4.1%
Small Cap Growth	83%	3.9%	6.4%
REIT	54%	0.1%	0.7%
Foreign Value	69%	0.9%	1.8%
Foreign Blend	34%	-0.5%	0.5%
Foreign Growth	51%	0.1%	1.8%
Emerging Markets	54%	0.7%	2.1%

<sup>1</sup>Indexes: Lehman Aggregate, Citigroup High Yield, Citigroup Non U.S. WGBIm, Russell 1000 Value, S&P 500, Russell 1000 Growth, Russell Mid Cap Value, Russell Mid Cap, Russell Mid Cap Growth, Russell 2000 Value, Russell 2000, Russell 2000 Growth, Dow Jones Wilshire RESI, Citigroup PMI Value World ex U.S. , MSCI EAFE, Citigroup PMI Growth World ex U.S. , MSCI Emerging Mkts

<sup>2</sup>Impact of survivorship bias on the Morningstar database is not quantified.

What average peer group rank was required to justify active management at the aggregate portfolio level? The following hypothetical allocation mix (in Exhibit 10) represents a traditional 70 percent equity and 30 percent fixed income portfolio. The equities are allocated among *value*, *blend*, and *growth* styles.

**Exhibit 10**  
Hypothetical Asset Allocation Mix



As Exhibit 11 shows, the weighted average ten-year index return for this hypothetical mix was 8.42 percent. If this hypothetical investor owned the 48<sup>th</sup> percentile fund across all asset classes (where 1<sup>st</sup> percentile is highest), the weighted average portfolio return would have matched the index return<sup>1</sup>. The categories in which 48<sup>th</sup> percentile was below index (e.g., *large cap value*) were offset by the other categories in which 48<sup>th</sup> percentile was above index (e.g., *small cap growth*). Therefore, the positive alpha bogey for the hypothetical investor was a peer group rank of 48<sup>th</sup> percentile<sup>2</sup>.

<sup>1</sup>This analysis does not factor in rebalancing among funds.

<sup>2</sup>This analysis does not adjust for survivorship bias.

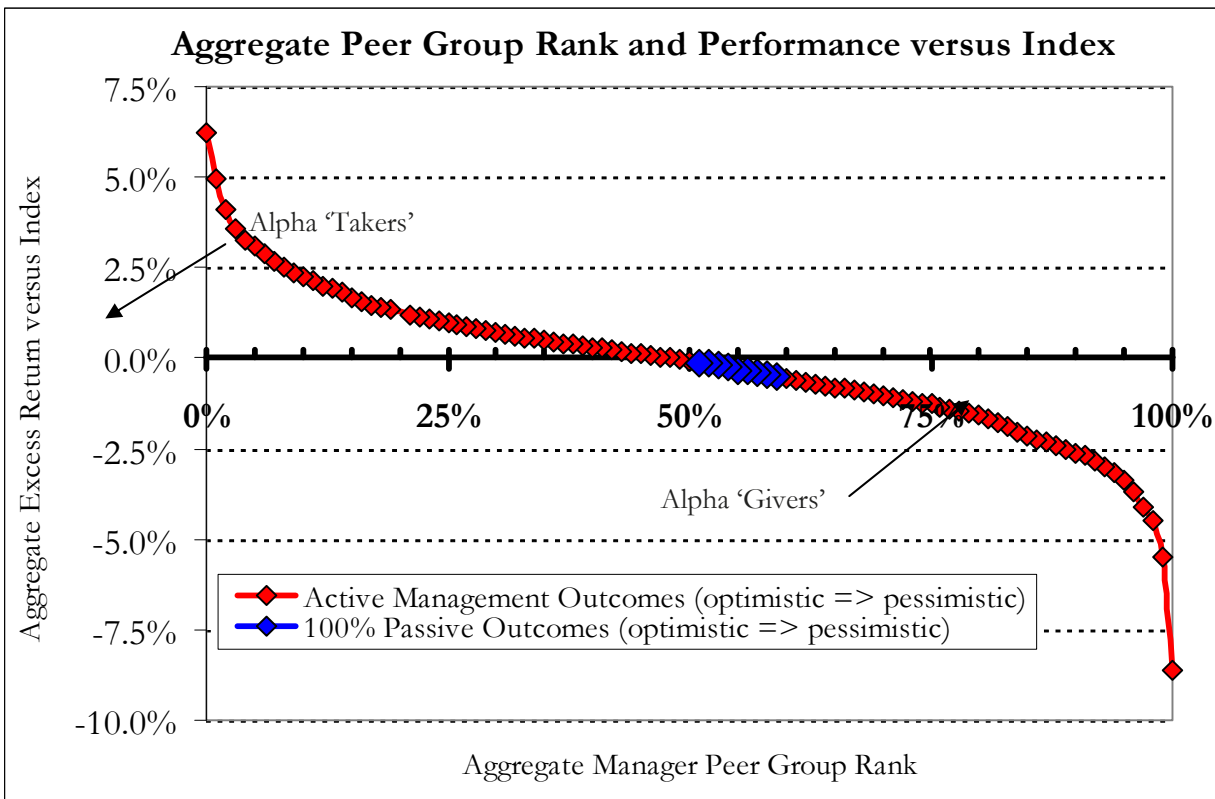
**Exhibit 11**  
48<sup>th</sup> Percentile Fund Selection for Hypothetical Portfolio

Asset Class	Representative Index	Asset Allocation Mix	10-Year Index Return	48 <sup>th</sup> -ile Manager Return	Excess Return
Intermediate bond	Lehman Aggregate	20%	6.2%	5.8%	-0.4%
HY Bond	Citigroup High Yield	5%	6.8%	5.8%	-1.0%
Foreign Bond	Citigroup Non US WGBI	5%	4.7%	5.2%	0.5%
Large Cap Value	Russell 1000 Value	6%	11.0%	9.2%	-1.8%
Large Cap Blend	S&P 500	17%	8.4%	8.0%	-0.4%
Large Cap Growth	Russell 1000 Growth	6%	5.4%	6.5%	1.1%
Mid Cap Value	Russell Mid Cap Value	3%	13.6%	11.6%	-2.1%
Mid Cap Blend	Russell Mid Cap	4%	12.1%	12.2%	0.0%
Mid Cap Growth	Russell Mid Cap Growth	3%	8.6%	9.0%	0.4%
Small Cap Value	Russell 2000 Value	3%	13.3%	12.9%	-0.4%
Small Cap Blend	Russell 2000	4%	9.4%	11.1%	1.7%
Small Cap Growth	Russell 2000 Growth	3%	4.9%	9.0%	4.1%
REIT	Dow Jones Wilshire RESI	4%	15.1%	15.2%	0.1%
Foreign Value	Citigroup PMI Value World ex US	4%	10.0%	10.9%	0.9%
Foreign Blend	MSCI EAFE	3%	8.1%	7.6%	-0.4%
Foreign Growth	Citigroup PMI Growth World ex US	4%	7.4%	7.9%	0.5%
Emerging Markets	MSCI Emerging Mkts	6%	9.4%	10.1%	0.7%
Total:		100%	8.42%	8.42%	0.00%

### Important Alpha and Beta Considerations

The betas (or risk premiums) of the asset classes, represented by indexes, created an 8.42 percent return over the last decade. Any (unleveraged) return above 8.42 percent for this investor must have come at the expense of another investor. Unlike beta, alpha is a zero sum game so it has no risk-premium. As one can see from Exhibit 12 below, the red diamonds reflect the total opportunity set of active management over the last ten years for this hypothetical portfolio. If an investor picked only the funds destined to be the best performers across all asset classes and styles (an extremely unlikely scenario indeed!), active management would have added about 6.24 percent of alpha annually to the 8.42 percent index return (for a 14.66 percent total annual return). On the other hand, if the investor picked only the funds destined to be the worst performers ten years ago (an equally unlikely scenario), active management would have trimmed 8.64 percent off the 8.42 percent annual index return (for a - 0.22 percent total annual return). The positive alpha earned by the top investors must come at the expense of the bottom investors.

**Exhibit 12**  
Hypothetical Portfolio Alpha Opportunity (1/1/1997 – 12/31/06)



The blue diamonds in Exhibit 12 represent a theoretical opportunity set for passive management, factoring in management fees, opportunity costs, index replication error, and trading costs. For illustrative purposes, these costs are estimated to be somewhere between an optimistic 0.13 percent and a pessimistic 0.50 percent. Of course, better and worse outcomes for passive management are possible.

In theory, the only way median managers can outperform an index net of fees is for there to be an asymmetric relationship between top and bottom investor alpha<sup>1</sup>. In this case, it appears that the very bad managers destroyed more value than the very good managers created (distribution skewness = -0.36). The distribution is also leptokurtic, meaning it is more peaked around the mean with extreme values at both ends of the spectrum (distribution kurtosis = 2.37). So long as the very bad investors destroy more value than the very good investors create, it is possible for the median investor to be near the index return (if not better) net of expenses. In a rare turn of events, this is one area where survivorship bias may make for a rosier picture for median managers in the future. If the truly terrible performers went away, the extremely negative alpha illustrated on the left side of Exhibit 13 (below) may be understated. Extremely negative alpha generation by bad investors gives the rest of the investment universe, including good and mediocre managers, more active management opportunities to add value over an index.

<sup>1</sup>Hedge funds, individual investors, and other investors that are not mutual funds are likely 'taking' and 'giving' alpha in their endeavors. Their impact is not measured in this analysis.

Assuming that (unleveraged) positive alpha exists only at the expense of negative alpha generators, the alpha takers grabbed an average of about 1.37 percent of alpha per year over the last ten years. On average, the alpha givers gave up 1.76 percent of alpha. Presumably, the 0.39 percent difference results from management fees, trading costs, survivorship bias, cash positions, and other error terms that invariably exist in this imperfect exercise. Assuming this alpha relationship is consistent across the entire global capital market (MSCI Global Capital Markets index has about \$45 trillion in assets), the takers and givers of alpha are vying for about \$617 billion of global alpha (net of fees) every year. *The Appendix contains a list of top alpha takers and givers in each category during the last ten years.*

**Exhibit 13**  
Histogram of alpha for hypothetical portfolio (1/1/1997 – 12/31/06)

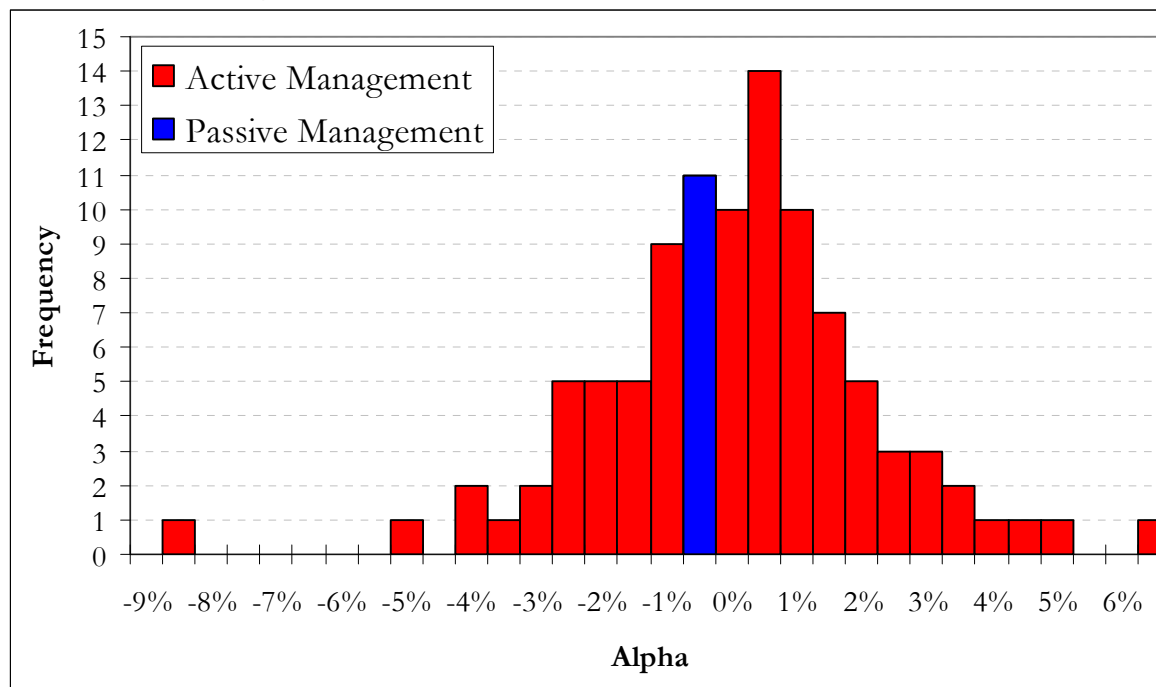


Exhibit 14 (below) summarizes consequences of *stellar, good, mediocre (or passive), poor* and *terrible* manager selection for the hypothetical allocation. The 51<sup>st</sup>–59<sup>th</sup> percentile approximates a theoretical optimistic to pessimistic rank for a completely passively managed portfolio. The optimistic scenario assumes a 0.13 percent trail relative to the index. The pessimistic scenario assumes a 0.50 percent trail to the index. This passively managed range seeks to factor in possible management, trading, opportunity, replication, and other costs.

### Exhibit 14

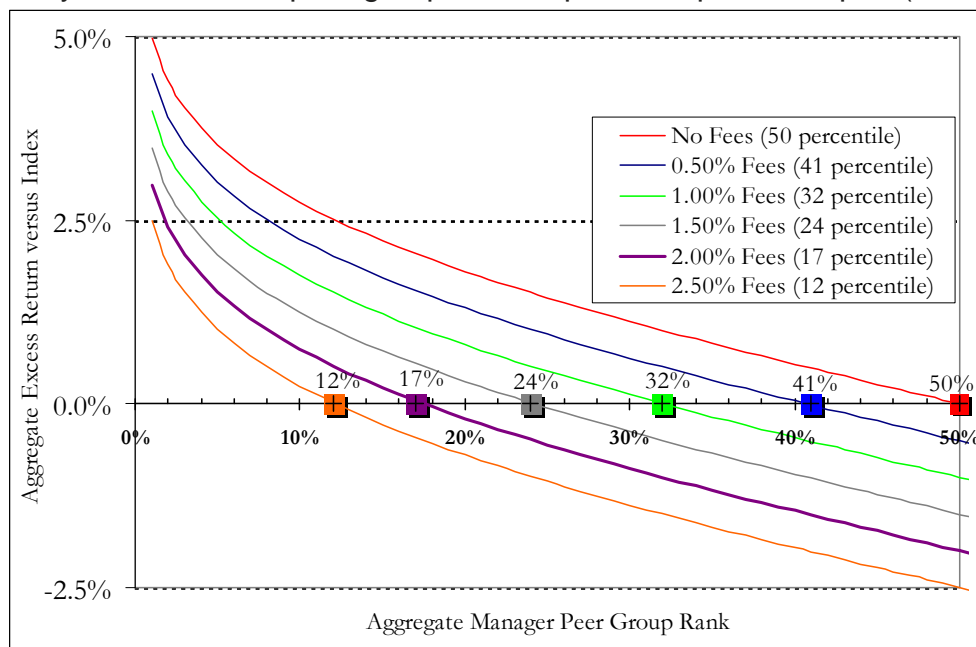
#### Possible Range of Fund Selection Outcomes for Hypothetical Portfolio

Asset Class	Allocation Mix	10-Year Index Return	Stellar Manager Selection		Good Manager Selection		Pessimistic Passive Management Bogy				Poor Manager Selection		Terrible Manager Selection!	
			top 10% managers	Excess Return	top 25% managers	Excess Return	percentile managers	Excess Return	percentile managers	Excess Return	25% managers	Excess Return	10% managers	Excess Return
Intermediate bond	20%	6.2%	6.5%	0.2%	6.1%	-0.1%	5.8%	-0.5%	5.6%	-0.6%	5.4%	-0.8%	5.1%	-1.1%
HY Bond	5%	6.8%	7.6%	0.8%	6.7%	-0.1%	5.7%	-1.1%	5.6%	-1.2%	4.9%	-1.9%	3.6%	-3.2%
Foreign Bond	5%	4.7%	6.8%	2.1%	6.1%	1.4%	5.1%	0.4%	4.8%	0.1%	4.1%	-0.6%	3.0%	-1.7%
Large Cap Value	6%	11.0%	11.8%	0.8%	10.2%	-0.8%	9.1%	-1.9%	8.7%	-2.3%	7.8%	-3.2%	6.6%	-4.4%
Large Cap Blend	17%	8.4%	10.6%	2.2%	8.7%	0.3%	8.0%	-0.5%	7.8%	-0.7%	6.9%	-1.6%	5.7%	-2.8%
Large Cap Growth	6%	5.4%	9.3%	3.9%	7.9%	2.4%	6.1%	0.7%	5.7%	0.3%	4.7%	-0.7%	3.2%	-2.3%
Mid Cap Value	3%	13.6%	14.2%	0.5%	13.0%	-0.6%	11.4%	-2.2%	10.7%	-3.0%	9.7%	-4.0%	6.5%	-7.1%
Mid Cap Blend	4%	12.1%	14.3%	2.2%	13.2%	1.0%	12.1%	-0.1%	11.7%	-0.4%	10.2%	-2.0%	7.3%	-4.9%
Mid Cap Growth	3%	8.6%	13.6%	5.0%	10.8%	2.2%	8.8%	0.2%	8.3%	-0.3%	6.7%	-1.9%	4.4%	-4.3%
Small Cap Value	3%	13.3%	14.9%	1.6%	13.8%	0.5%	12.8%	-0.5%	12.3%	-1.0%	11.4%	-1.9%	10.3%	-3.0%
Small Cap Blend	4%	9.4%	14.6%	5.2%	13.5%	4.1%	10.8%	1.4%	10.4%	1.0%	9.7%	0.3%	7.8%	-1.7%
Small Cap Growth	3%	4.9%	13.4%	8.5%	11.3%	6.4%	8.7%	3.8%	7.7%	2.8%	6.2%	1.4%	3.1%	-1.7%
REIT	4%	15.1%	16.4%	1.4%	15.8%	0.7%	15.1%	0.1%	14.5%	-0.5%	14.2%	-0.8%	13.4%	-1.7%
Foreign Value	4%	10.0%	12.5%	2.5%	11.8%	1.8%	10.8%	0.9%	10.7%	0.7%	9.8%	-0.2%	8.9%	-1.1%
Foreign Blend	3%	8.1%	11.2%	3.1%	8.6%	0.5%	7.5%	-0.6%	7.3%	-0.8%	6.6%	-1.5%	5.3%	-2.8%
Foreign Growth	4%	7.4%	13.0%	5.6%	9.2%	1.8%	7.4%	0.0%	7.1%	-0.3%	6.1%	-1.3%	3.1%	-4.3%
Emerging Markets	6%	9.4%	12.2%	2.8%	11.5%	2.1%	10.1%	0.7%	8.6%	-0.8%	8.0%	-1.4%	6.9%	-2.5%
Weighted Average Return:		8.4%	10.7%	2.3%	9.4%	1.0%	8.3%	-0.1%	7.9%	-0.5%	7.1%	-1.3%	5.8%	-2.6%

Are there any rules of thumb to help determine where or if one should seek alpha over the next decade? In the preceding analysis, the ten-year standard deviation of alpha was about 2.14 percent for our hypothetical allocation (with the 17 different investment categories). In other words, about two-thirds of investors fell somewhere between taking and giving about 2.14 percent of annual alpha. If we assume the alpha distribution is similar (but normal) over the next ten years, Exhibit 15 shows theoretical alpha targets one might consider for managers based on their management expenses.

### Exhibit 15

#### Theoretical ten-year forecast of peer group rank required for positive alpha (based on fees)



If one could convince managers to work for free (no small task), one only needs them to be about median over the next ten years to expect them to match the index. On the other hand, if the managers have a 0.50 percent weighted-average expense (*including management fees and other costs*), they need to finish, on average, in the top 41 percent of their peer groups (before fees) to match the index. If managers have a 1.00 percent weighted-average expense, the hurdle gets more difficult; they would need a top 32 percent finish to match the index. As expenses increase to 2.5 percent, you had better be an incredible judge of investment manager talent! Managers must generate a top 12 percent peer group rank (before fees) to match the index.

As a helpful exercise, you may want to calculate the weighted-average expense of your current managers. If it is close to 1 percent, for example, gauge your confidence level that they will be top 32 percentile or better over the coming decade. If your confidence is low, you may want to replace your low conviction managers, seek managers with lower fees, or consider passive management. When competing for one or two percent of annual alpha, the impact of fees is tremendous! The lower the expenses, the less smart (or lucky) one has to be to have a fighting chance at positive alpha. Past fees tend to be a terrific predictor of future fees. On the other hand, past performance has far less predictive power.

### **Owning Index Funds is Not Owning Indexes:**

One fact often overlooked in the active-passive debate is that an investor cannot buy an actual index. Index funds seek to mimic indexes, but perfect replication is not always possible. Index portfolios still have trading costs, management fees, and cash flows. Exhibit 16 (below) shows it could cost in excess of 0.13 percent in management fees alone for an institution to passively manage a diversified portfolio.

Some categories, of course, are cheap and relatively easy to index. For example, the Vanguard Institutional 500 Index (I share has a \$5 million minimum) only has a 0.05 percent management fee and has had minimal tracking error (0.07 percent annually for the last decade) to the benchmark. As a group, S&P 500 index funds have largely been successful at tracking the index within their expense ratios. *Large cap U.S. equity* is also reputed to be one of the most efficient segments of the global market. Therefore, it is a logical place to consider indexing.

However, some categories including *emerging markets* and U.S. *intermediate bonds* can be implicitly or explicitly expensive to index. The *Lehman Aggregate Bond Index*, a widely used index for U.S. *intermediate bonds*, has about 6,600 holdings and is much more difficult to replicate than the S&P 500 Index. For example, the *Vanguard Total Bond Market Index*, which seeks to replicate returns of the *Lehman Aggregate Bond Index*, underperformed its bogey by 2 percent in 2002. With a shortage of liquid energy and telecom sector bonds to own from the index, Vanguard chose to get full sector exposure from disproportionate weights to Enron and WorldCom, two of the largest and well-regarded issuers of corporate debt. In hindsight, this was not a wise decision. However, buying all 6,600 bonds in the index is impractical, if not impossible for a fund of Vanguard's size. Vanguard subsequently changed their sampling process with the goal of preventing such a reoccurrence. Moreover, unanticipated index replication problems rarely seem to lead to outperformance. One of the main reasons to own an index fund in the first place is to avoid short-term underperformance. In *emerging markets*, index replication can also be suboptimal for several reasons. For one, index replication can be very difficult because of the multitude of relatively small markets and a lack of liquidity. *Emerging markets* index funds also carry a higher price tag than many other categories. (*Vanguard levies a 0.30 percent management fee for investors with less than \$5 million*).

The bogey in the active-passive debate should not be the index. Rather, the minimum objective of active management should be to match the opportunity set, which is the return one should expect an index fund to deliver. Therefore, the investor must consider the index manager's fees, trading costs, opportunity costs, and any potential index replication errors. Exhibit 16 shows a summary of our hypothetical portfolio with \$75 million to invest. The current managers, which are biased towards active management, have a weighted-average management fee of 0.41 percent. If we opt for passive management in all asset classes (where available), our expected best-case scenario may be to trail the weighted-average index by at least 0.13 percent. Therefore, a more appropriate minimum hurdle for active management to add value is probably closer to 0.28 percent (0.41 percent - 0.13 percent), rather than 0.41 percent.

### Exhibit 16

#### Sample active-passive performance hurdle

Asset Class / Style	Current Manager	Allocation	Allocation	Expense	Passive Alternative	Expense	Δ Expense
Intermediate Bond	Bond Manager	\$15,000,000	20.0%	0.30%	Vanguard Total Bond Idx I	0.07%	-0.23%
HY Bond	High Yield Manager	\$3,750,000	5.0%	0.50%	N.A. (Assume retain same mgr)	0.50%	0.00%
Foreign Bond	Foreign Bond Manager	\$3,750,000	5.0%	0.50%	N.A. (Assume retain same mgr)	0.50%	0.00%
Large Cap Value	Large Value Manager	\$4,500,000	6.0%	0.52%	Vanguard 500 I	0.05%	-0.47%
Large Cap Blend	Large Blend Index Manager	\$12,750,000	17.0%	0.05%		0.05%	0.00%
Large Cap Growth	Large Growth Manager	\$4,500,000	6.0%	0.36%		0.05%	-0.31%
Mid Cap Value	Mid Value Manager	\$2,250,000	3.0%	0.66%	Vanguard Mid Cap Index I	0.08%	-0.58%
Mid Cap Blend	N.A. (average of value & growth)	\$3,000,000	4.0%	0.65%		0.08%	-0.57%
Mid Cap Growth	Mid Growth Manager	\$2,250,000	3.0%	0.63%		0.08%	-0.55%
Small Cap Value	Small Value Manager	\$2,250,000	3.0%	0.55%	Vanguard Small Cap Index I	0.08%	-0.47%
Small Cap Blend	N.A. (average of value & growth)	\$3,000,000	4.0%	0.59%		0.08%	-0.51%
Small Cap Growth	Small Growth Manager	\$2,250,000	3.0%	0.62%		0.08%	-0.54%
REIT	REIT Manager	\$3,000,000	4.0%	0.98%	Vanguard REIT Adm	0.14%	-0.84%
Foreign Value	Foreign Value	\$3,000,000	4.0%	0.70%	Vanguard Dev. Mkts. Index I	0.12%	-0.58%
Foreign Blend	N.A. (average of value & growth)	\$2,250,000	3.0%	0.62%		0.12%	-0.50%
Foreign Growth	Foreign Growth	\$3,000,000	4.0%	0.53%		0.12%	-0.41%
Emerging Markets	Emerging Markets Manager	\$4,500,000	6.0%	0.22%	Vanguard Em. Mkts Index Adm	0.30%	0.08%

Total: \$75,000,000 100.00%

Weighted Average Current Management Expense:	0.41%
Weighted Average Expense (Passive Management):	0.13%
Active Management Hurdle Rate (over passive):	0.28%

Many of the inexpensive Vanguard Index funds shown in Exhibit 16 changed their index benchmark in the last several years (from *Russell* to *MSCI* indexes), clouding the picture for apples-to-apples performance comparisons. However, Exhibit 17 shows a small sample of index funds that have had the same index bogey throughout their existence.

### Exhibit 17

#### Sample of index fund returns versus indexes<sup>1</sup>

Category	Index	Fund	Alpha	Tracking Error
Intermediate Bond	Lehman Aggregate Bond	Vanguard Instl Total Bond Mkt	-0.08%	0.14%
Intermediate Bond	Lehman Aggregate Bond	DWS US Bond Index	-0.18%	0.24%
Large Cap	S&P 500	Vanguard 500 I	0.05%	0.07%
Mid Cap Value	Russell Mid Cap Value	TIAA CREF Mid Cap Value	-0.17%	0.10%
Mid Cap Blend	Russell Mid Cap	Principal Mid Cap S&P 400	-0.65%	0.27%
Mid Cap Growth	Russell Mid Cap Growth	TIAA CREF Mid Cap Growth	-0.19%	0.09%
Small Cap	S&P 600	Principal Small Cap S&P 600	-0.29%	0.13%
REIT	MSCI REIT	Vanguard REIT Index	-0.13%	0.41%
Foreign Equity	MSCI EAFE	Vanguard Total Intl Stock	-0.28%	1.72%
Foreign Equity	MSCI EAFE	TIAA CREF Intl Index	-0.65%	0.30%
Foreign Equity	MSCI EAFE	Fidelity Spar Intl Index	-0.28%	0.90%

## **Arguments for Active Management**

There are many strong arguments for active management. For one, active managers often do better than indexes in down markets. Presumably, skillful managers can protect capital better than the average manager. For example, assume an index compounds annually at 10 percent for the ten-year period following a 45 percent bear market decline (e.g., the *S&P 500 Index* 2000-2002 drawdown). If a manager can lessen the bleeding by losing 25 percent (instead of 45 percent), the portfolio needs only to compound at 6.6 percent annually over the next decade to keep pace with the index. Protecting capital in down markets has important long-term implications for performance! (See the *'The Low Volatility Dividend'* paper at [www.dimeoschneider.com](http://www.dimeoschneider.com)).

If everybody got 'index religion' at the same time and invested passively, the market weights of securities within indexes would not change and market efficiency would cease. Every dollar invested and divested would be pro-rata for all securities in the index based on their market weight. The more investors think the market is efficient, the more they will passively invest and the less efficient the market actually becomes. For better or worse, we need active management so that capital is deployed (at least somewhat) efficiently.

Theoretically, active managers can react to news quickly and add or remove a stock at will. However, a stock stays in an index until removed, usually because of a change in market cap or a valuation metric (for style-specific indexes). Active managers can sidestep the short-term volatility of hype, momentum, and short-term earnings focus to concentrate on long-term trends of secular growth or industry trends. While indexes are stuck with rising sector weights in the areas with the most recent outperformance, active managers are able to focus on the sectors that are trading at valuations that are more reasonable and may outperform in the future. Indexes will do well in momentum-led markets, but will also capture the full decline when that momentum turns. Active managers can step out of the way and be contrarian. By definition, indexes can never be contrarian.

## **Arguments for Passive Management**

Many of the arguments for active management are based on what managers 'can do' or 'should do', and not on what they 'actually do'. Beyond the traditional efficient market hypothesis mantra, advocates for passive management make several points that are difficult to refute. For one, median manager underperformance relative to indexes is widespread. The impact of survivorship bias is hard to measure, but likely overstates of effectiveness of active managers as a whole. Presumably, the worst managers go away and fall out of the peer group. They also point to a lack of performance persistency. As the ubiquitous disclaimer states, "*Past performance is a poor predictor of future performance.*" On the other hand, "*past management fees are an excellent predictor of future management fees.*"

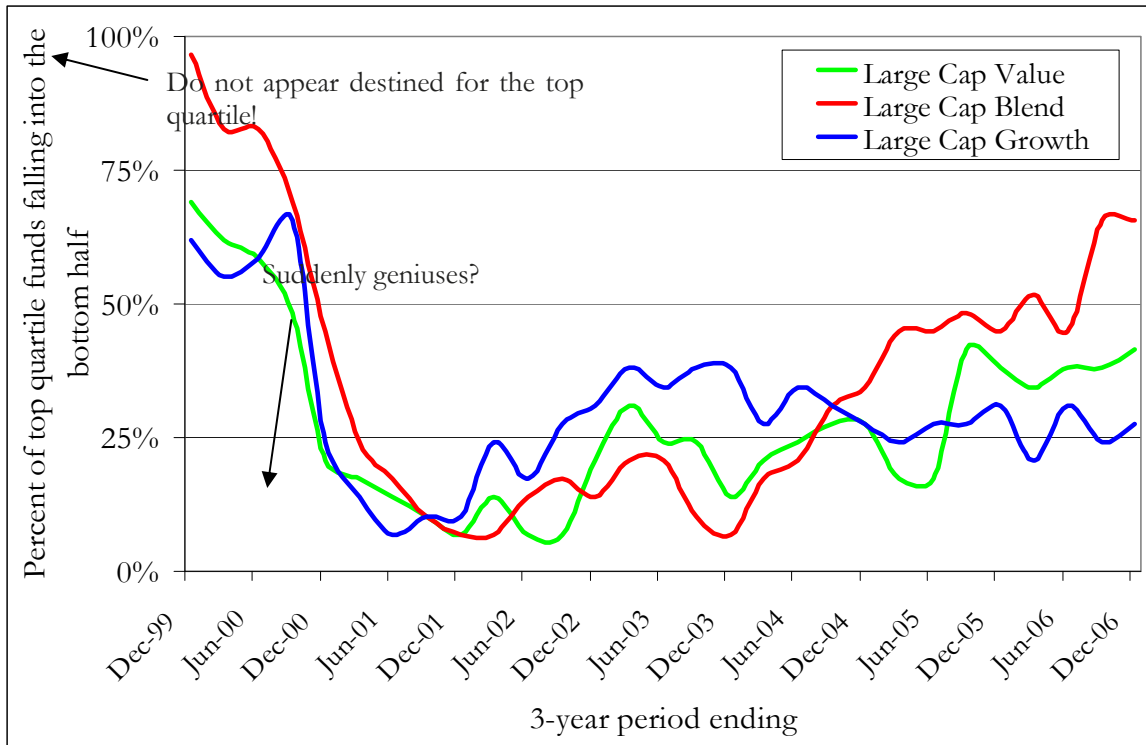
## **The Behavior Finance Factor**

It is possible to disavow efficient market theory and still be an advocate for passive management. Human behavioral quirks can be difficult to overcome. Many investors understand the importance of handicapping managers' historical performance based on style and other factors, but still end up gravitating to best near-term performers. Even when presented with overwhelming evidence that recent returns have no predictive value, many still seem hardwired to chase hot performance, especially when they have difficulty differentiating managers on other criteria. Picking the best recent performer can also represent the path of least resistance in a committee setting. Investors are also not overly patient. They often fire managers quickly after a short run of underperformance. Rarely do they fire managers who outperform over shorter periods because of style change, even though it may be the best strategy for the long run. Further complicating matters, many of the best performing managers during the ten-year periods tended to be the weakest performers over certain three and five-year

periods. For example, 97 percent of the top quartile funds in the Morningstar *large cap blend* peer group (over ten years ending 2006) were in the bottom half of the peer group during the 3-year period ending December 1999! Disappointed by the short-term underperformance, many investors jumped ship for better performers, who were largely overweight to technology and the giant cap stocks that fueled much of the run. Ironically, the winners and losers in the large cap space rapidly changed places during the 2000-2002 bear market (see Exhibit 18 below). This dynamic often leads investors to hire managers at highs and fire them at lows, virtually assuring underperformance.

**Exhibit 18**

Losers Become the Winners: Percentage of ten-year top quartile managers that fell into bottom half during each of the following 3-year periods.



**Conclusion: Patience or Passive**

Investors should decide before any investment endeavor to be either *patient* with their active managers, or they should probably seek a *passively* managed approach. As illustrated, the vast majority of long-term top performing managers will endure periods of lousy performance. A combination of short-term greed and impatience is a perilous mix that invariably leads investors to fail

Some asset classes scream for passive management. In relatively efficient market segments, where index returns are easily replicable on a cost-effective basis and manager persistency is particularly poor, investors should strongly consider passive management. On the other hand, where indexing is costly, as in *emerging markets*, or the index is difficult to replicate, like *intermediate U.S. bonds*, low-cost active management may be the preferred route.

Assuming managers only invest in securities within their index, active management is a zero sum game around the index return. For every (unleveraged) dollar of alpha 'taken' by one investor, a dollar of alpha must be 'given' by another. Factoring in fees, it becomes less than a zero sum game. Average and below average investors, including those responsible for selecting managers, are better off indexing because the consequences of falling to the bottom of the peer group can be dire. On the other hand, if all below average investors indexed, who would give the alpha to the rest of us? Ask yourself a question. "*What attributes do I possess that make me better at selecting managers than others?*" Perhaps your investment consulting firm is better than competitors. Perhaps you are just a great judge of investment talent. Perhaps you have better quantitative and qualitative tools to evaluate managers. **Perhaps you are more patient than the crowd, giving you a leg up on the competition.** As the old poker adage goes, "*Look around the table and see if you can spot the sucker. If you can't, it is you.*" On the other hand, we always need generous investors willing to give alpha to the rest of us.

For more information on this study, contact Matt Rice at 312-853-1000 or [mrice@dimeoschneider.com](mailto:mrice@dimeoschneider.com)

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## APPENDIX

*The forty three ten-year top quartile funds (ending 12/31/2006) that avoided a below median 3-year period  
(Disclaimer: There is no assurance that these fund would avoid below median performance in the future)*

Category	Mutual Fund	Longest Tenured Manager(s)	Years manager was responsible	Manager Start Date
Intermediate Bond	Western Asset Core Bond Institutional	S. Kenneth Leech & Stephen A. Walsh	10.0	9/4/1990
Intermediate Bond	PIMCO Total Return Instl	Bill Gross	10.0	5/11/1987
Intermediate Bond	PIMCO Total Return III Instl	Bill Gross	10.0	5/1/1991
Intermediate Bond	DWS Core Fixed Income Inst	Gary W. Bartlett	10.0	3/13/1995
Intermediate Bond	Managers Fremont Bond	Bill Gross	10.0	3/1/1994
Intermediate Bond	Hartford Total Return Bond HLS IA	Nasri Toutoungi	4.0	1/3/2003
Intermediate Bond	Harbor Bond Instl	Bill Gross	10.0	12/29/1987
Intermediate Bond	Goldman Sachs Core Fixed-Inc Instl	Peter Dion, James McCarthy & Mark Van Wyk	10.0	12/31/1995
Intermediate Bond	Federated Total Return Bond Instl	Joseph M. Balestrino	10.0	9/30/1996
Intermediate Bond	Fidelity U.S. Bond Index	Ford G. O'Neil	5.2	10/7/2001
Intermediate Bond	Dodge & Cox Income	Dana Emery, John Gunn, Peter Lambert	10.0	1/3/1989
Intermediate Bond	American Performance Bond N/L Inv	Brian Henderson	10.0	1/1/1993
HY Bond	American Funds American Hi Inc Tr A	Abner D. Goldstine	10.0	2/19/1988
Foreign Bond	Oppenheimer International Bond A	Arthur P. Steinmetz	2.7	4/21/2004
Large Cap Value	Eaton Vance Large-Cap Value A	Michael Mach	7.0	1/1/2000
Large Cap Value	Dodge & Cox Stock	John A. Gunn	10.0	1/1/1977
Large Cap Blend	Victory Diversified Stock A	Lawrence G. Babin	10.0	10/20/1989
Large Cap Blend	Selected American Shares S	Christopher Cullom Davis	10.0	12/1/1994
Large Cap Blend	Legg Mason Partners Capital I	Brian S. Posner & Brian M. Angerame	0.5	7/12/2006
Large Cap Blend	Principal Inv SAM Strategic Gr A	Randall L. Yoakum	7.9	1/31/1999
Large Cap Blend	Hartford Capital Appreciation A	Saul J. Pannell	10.0	7/22/1996
Large Cap Blend	Hartford Capital Appreciation HLS IA	Saul J. Pannell	10.0	7/1/1991
Large Cap Growth	Waddell & Reed Adv Vanguard A	Philip J. Sanders	0.5	6/30/2006
Large Cap Growth	Janus Growth & Income	Minyoung Sohn	3.0	1/1/2004
Large Cap Growth	AIM Leisure Inv	Mark Greenberg	10.0	1/29/1996
Large Cap Growth	Calvert Large Cap Growth I	John Montgomery	10.0	8/5/1994
Large Cap Growth	Amana Trust Growth	Nicholas Kaiser	10.0	2/3/1994
Large Cap Growth	American Funds Grth Fund of Amer A	James E. Drasdo & R. Michael Shanahan	10.0	1/1/1986
Mid Cap Value	T. Rowe Price Mid-Cap Value	David J. Wallack	6.0	12/31/2000
Mid Cap Value	Hotchkis and Wiley Mid-Cap Value I	James B. Miles	10.0	1/2/1997
Mid Cap Blend	Excelsior Mid Cap Value & Restruct I	Timothy W. Evinin & John McDermott	6.4	8/1/2000
Mid Cap Growth	Vanguard Capital Opportunity	Theo Kolokotronis, Joel Fried & Howard Schow	8.9	2/1/1998
Small Cap Growth	Wasatch Micro Cap	Daniel Chace	2.9	1/31/2004
Small Cap Growth	N/I Numeric Investors Emerging Growth	Arup Datta	9.3	9/25/1997
REIT	Phoenix Real Estate Securities A	Michael Schatt	8.8	3/1/1998
Foreign Blend	MFS Research International A	Jose Luiz Garcia & Thomas Melendez	1.6	5/31/2005
Foreign Blend	Fidelity International Discovery	William J. Kennedy	2.2	10/31/2004
Foreign Blend	Julius Baer International Equity A	Richard C. Pell & Rudolph-Riad Younes	10.0	4/1/1995
Foreign Blend	American Funds EuroPacific Gr A	Stephen E. Bepler	10.0	4/16/1984
Foreign Growth	William Blair International Growth N	W. George Greig	10.0	7/23/1996
Foreign Growth	Laudus International MarketMasters Inv	Laura M. Albers	5.0	12/30/2001
Foreign Growth	Fidelity Diversified International	William Bower	5.8	4/1/2001
Emerging Markets	GMO Emerging Markets III	Arjun Divecha	10.0	12/9/1993
Average:			7.9	3/4/1996

### Top Alpha 'Takers' and 'Givers' between January 1, 1997 and December 31, 2006

Category	10-Year Index Return	Top Alpha 'Takers'		Top Alpha 'Givers'	
		Mutual Fund	10-Year Alpha	Mutual Fund	10-Year Alpha
Intermediate bond	6.24%	Loomis Sayles Investment Grade Bond Y	2.60%	AIM Income A	-2.22%
HY Bond	6.80%	Loomis Sayles Instl High Income	1.75%	Morgan Stanley High-Yield Secs D	-8.77%
Foreign Bond	4.70%	Oppenheimer International Bond A	4.20%	Target International Bond	-2.49%
Large Cap Value	11.00%	Weitz Partners Value	3.30%	Atlas Dual Focus A	-8.28%
Large Cap Blend	8.42%	Quaker Strategic Growth A	9.06%	Midas Special	-9.92%
Large Cap Growth	5.44%	AIM Leisure Inv	9.43%	American Growth D	-10.88%
Mid Cap Value	13.65%	Hotchkis and Wiley Mid-Cap Value I	4.45%	Van Eck Mid Cap Value A	-9.00%
Mid Cap Blend	12.14%	Meridian Value	5.37%	First American Small-Mid Cap Core A	-11.53%
Mid Cap Growth	8.62%	Kinetics Internet	11.52%	Putnam OTC Emerging Growth A	-9.98%
Small Cap Value	13.27%	Royce Opportunity Inv	4.07%	First Focus Small Company Instl	-3.67%
Small Cap Blend	9.44%	FMI Focus	11.22%	Frontier MicroCap	-38.11%
Small Cap Growth	4.88%	Wasatch Micro Cap	18.71%	Ameritor Investment	-40.97%
REIT	15.05%	CGM Realty	4.71%	GMO Real Estate III	-2.49%
Foreign Value	9.98%	Brandes Instl International Equity	5.56%	Hansberger Instl International Value	-3.40%
Foreign Blend	8.06%	Julius Baer International Equity A	8.93%	Pioneer International Value A	-4.41%
Foreign Growth	7.43%	William Blair International Growth N	7.51%	Harbor International Growth Instl	-6.35%
Emerging Markets	9.40%	GMO Emerging Markets III	5.28%	Fidelity Emerging Markets	-4.66%