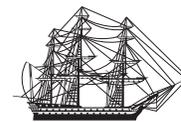


The Active-Passive Debate: Bear Market Performance

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Executive summary. We often hear of the benefits active equity management can provide during periods of market stress. One familiar point is that an active manager can alter a portfolio's makeup to invest in defensive stocks or in cash to protect against, or benefit from, an impending or ongoing bear market, while an index fund manager must adhere to the stated objective of tracking a benchmark's return regardless of market direction. However, when related data is examined in detail, we find little evidence to support the theoretical benefits of active management during periods of market stress—in fact, active managers have not *consistently* delivered superior performance relative to a benchmark during such periods.

In *The Case for Indexing* (Philips and Ambrosio, 2008), we showed that the U.S. active management universe performed inconsistently during and immediately following U.S. bear markets. Using average excess returns, we showed that in 3 of 6 bear markets since 1970, active managers failed to outperform the U.S. stock market. In addition, we found inconsistent performance immediately following the bear markets. We surmised that the primary difficulty facing active managers is that in relatively efficient markets, it is difficult to consistently and correctly time market moves and to consistently identify winning investments across market cycles. As we will show, in keeping with the concept of the zero-sum game,¹ the combination of cost, security selection, and market-timing proves a difficult hurdle to overcome in any market environment.

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¹ For a description of the zero-sum game, refer to Philips and Ambrosio (2007).

In this research, we look not only to deepen the analysis of U.S.-domiciled funds during U.S. bear markets but also to broaden it by including the performance of European- and offshore-domiciled funds during European bear markets. Specifically, we first evaluate the performance of active funds during each bear market. Next, we evaluate the sustainability of prior winners and evaluate the performance of those winners in subsequent bull markets. Finally, we examine style-box performance, acknowledging that the performance of certain market segments relative to the broad market (large value versus the market, for example) may contribute more toward outperformance than manager skill.

Introduction

Historically, the bond and cash markets have offered the best protection from a bear market. However, the challenges with portfolio-wide tactical asset allocation shifts are well-known (Tokat and Stockton, 2006), and a larger strategic allocation to fixed income would result in less exposure to the long-term benefits of the equity risk premium. As a result, many investors interested in mitigating the downside risk of equity investments during a bear market may instead turn to active equity managers because active managers can reposition a portfolio defensively while maintaining equity market exposure.

By definition, active management must differ from a benchmark in some respect to offer the opportunity to outperform. However, the challenge an active manager faces is that a market benchmark is the optimal forward-looking portfolio (in hindsight it may or may not have actually *been* the optimal portfolio). At any point in time, a market-cap-weighted benchmark represents the collective information, views, holdings, strategies, and processes of all market participants. Over time, as new information becomes available and as investors adjust positions,

views, and strategies, the market adjusts seamlessly—immediately accounting for all new information. It should not be surprising then that over longer time periods, it has been difficult for active funds to *consistently* outperform the market benchmark after cost.

While the likelihood of outperforming the market decreases over time, actively managed funds do offer the *opportunity* to add value at any point in time. Traditionally, the common view has been that actively managed funds can generally outperform a given index during bear markets, thereby protecting investors better than a similar index fund could. When looking at the data from the most recent U.S. bear market, we found that 60% of active funds outperformed the U.S. stock market. We found a similar success rate among European and offshore funds in the European market during an earlier bear market period where 66% of active funds outperformed the European market. But how consistent is that outperformance? Do the bear market “winners” carry that success over to bull markets? Do those winners succeed when evaluated against their style benchmark?

Notes on risk: Investing is subject to risk. Investments in bonds are subject to interest, credit, and inflation risk. Foreign investing involves additional risks including currency fluctuations and political uncertainty. Past performance is not a guarantee of future returns. The performance of an index is not an exact representation of any particular investment, as you cannot invest directly in an index.

Evaluating active manager performance during bear markets

To evaluate whether theory matches reality, we examined the Morningstar Direct database of equity mutual funds. For the U.S. market, we evaluated retail funds domiciled in the United States and compared them with the Dow Jones Wilshire 5000 Index. For the European market, we evaluated offshore- and European-domiciled retail and institutional funds and compared them with the MSCI Europe Index.^{2,3} While acknowledging that the traditional definition of a bear market is a 20% decline in prices over successive months, we modified this definition to include total return declines greater than 10%. This modification permitted us to evaluate six distinct bear markets in the United States and five in Europe.⁴

In **Figure 1**, we show the performance of actively managed funds during the identified bear markets. To be considered, the fund must have reported 12 months of returns before the bear market, must have reported returns in each month during the bear market, and must have reported returns for the 12 months following the bear market. For example, in the United States, for the 1973–1974 bear market, 110 funds met these criteria, with 43% of those funds outperforming the U.S. stock market. Of course, it is important to note that the data and results do not account for survivorship bias. For example, the 37 funds identified during the 1990 European bear market are funds that were not only in operation in 1990 *but remain in operation today*. Funds that may have shut down, merged, or otherwise gone out of business are excluded from the data set. As a result, these statistics represent the “best of the best” or “survivors” only.

Figure 1. Performance of active funds during bear markets

U.S. funds versus Dow Jones Wilshire 5000 Index

Bear market	Number of funds	Percentage outperforming market benchmark
1/1973–9/1974	110	43%
12/1980–7/1982	167	78
9/1987–11/1987	291	57
6/1990–10/1990	405	44
7/1998–8/1998	1,082	39
9/2000–3/2003	1,405	60

European/offshore funds versus MSCI Europe Index

Bear market	Number of funds	Percentage outperforming market benchmark
7/1990–9/1990	37	57%
6/1992–9/1992	81	33
2/1994–9/1994	128	66
7/1998–9/1998	378	39
9/2000–3/2003	796	23

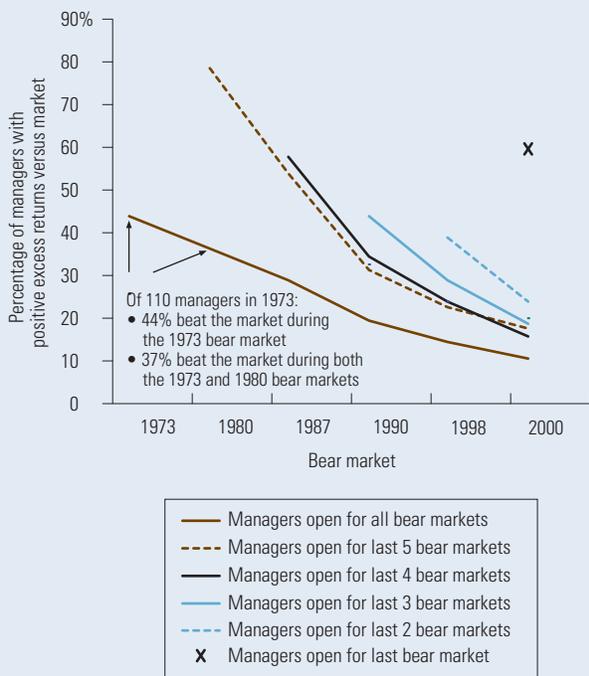
Sources: Fund data provided by Morningstar; index data provided by Thompson Financial and MSCI.

Despite the bias toward survivors, we observe that a majority of active managers outperformed the market in just 3 of 6 U.S. bear markets and in 2 of 5 European bear markets. To be sure, in each bear market, funds existed that successfully outperformed the broad market. However, these results clearly indicate a lack of consistency with respect to the success of active funds in general.

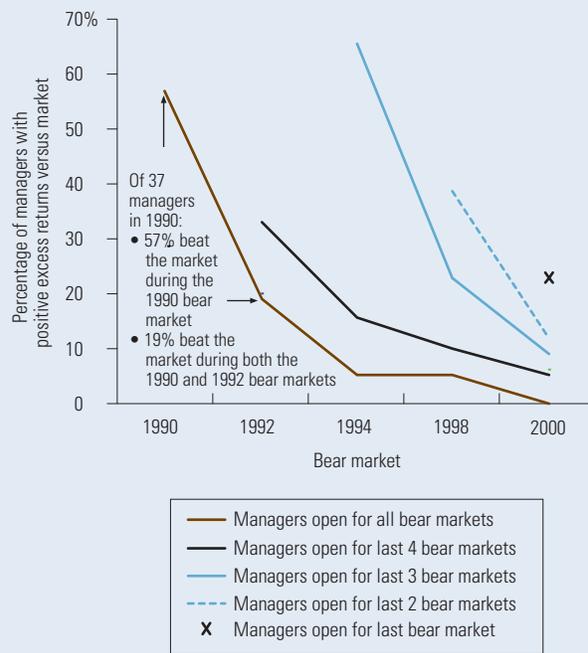
- For the European/offshore analysis we focused on funds domiciled in offshore regions including: Luxembourg; Dublin, Ireland; the Channel Islands; the Cayman Islands; Bermuda; and other international fund centers as well as funds domiciled in various European countries. Funds domiciled in Luxembourg account for 27% of all registrants in Morningstar’s universe. The next largest five are France at 14%, United Kingdom at 10%, Spain at 8%, Germany at 6%, and Italy at 5%. All fund and benchmark returns are denominated in euros. Database includes both institutional and retail share classes.
- Because the euro was created and widely implemented after 1999, we use a synthetic euro conversion through Thompson Financial. We have similar results using the Dow Jones STOXX 600 Index. The European Index offered by FTSE extends back only to 1994.
- This modification also resulted in modest shifts to several bear market start and end dates. For example, in terms of total return, the most recent bear market started in September 2000, while in terms of prices it would have started in March 2000. These modest differences do not impact the results of our analysis.

Figure 2. The pool of winners in successive bear markets diminishes rapidly

U.S. funds versus Dow Jones Wilshire 5000 Index



European/offshore funds versus MSCI Europe Index



Sources: Fund data provided by Morningstar; index data provided by Thompson Financial and MSCI.

It's also interesting to note that of the three common (U.S. and European) bear markets (1990, 1998, and 2000–2003), we see similar performance in only the 1998 bear market, where 39% of funds outperformed the market in both samples. Finally, while 60% of all active funds outperformed the U.S. stock market from September 2000 through March 2003, only 23% of active funds outperformed the European stock market over the same period. The underlying reasons for these differences may be impossible to discern fully,

but possible causes include higher expenses, fewer funds in the sample, and unique market dynamics underlying each bear market.⁵ Broadly, however, the conclusion from Figure 1 is that actively managed funds have been inconsistent when it comes to bear market performance. As a result, it should not be assumed that an indexed investor is at an immediate disadvantage during a bear market relative to an actively managed fund, despite the *opportunity* for the manager to add value.

5 By market dynamics, we not only mean whether the bear market was driven primarily by large-cap stocks or even large-cap growth stocks, but also the characteristics of the fund universe. For example, if large-cap stocks led the market down because of poor performance, but a majority of funds held smaller stocks, then we would expect a majority of funds to outperform the market, all else being equal. Similarly, if small-cap funds were more prevalent in the United States than in Europe, we would expect a greater percentage of U.S. funds to outperform the U.S. market over this time period.

Does success in one bear market mean success in subsequent bear markets?

In Figure 1, we demonstrated that in each bear market, success by a majority of active funds was difficult to attain. In addition, we showed that success by a majority of funds did not carry over from one bear market to the next. But it's also true that in each bear market a group of active funds did outperform. Therefore, a logical follow-up question is whether those funds successful at outperforming during one bear market experienced success in subsequent bear markets. In other words, have funds demonstrated an ability to consistently outperform during bear markets?

In Figure 2, we evaluated the winners during each bear market and tracked their performance during subsequent bear markets. For example, of the 37 total European/offshore funds reporting during the 1990 European bear market, 21 (57%) successfully outperformed the MSCI Europe Index. We then evaluated the performance of those 21 funds during the 1992, 1994, 1998, and 2000 bear markets to determine if their prior success was replicable. We found that, in most cases, a majority of these previously successful funds failed to replicate their success going forward. For example, of the 21 winners in 1990, only seven were winners in both 1990 and 1992. By the 2000 bear market, none of those winners from the 1990 bear market remained in the winning group. This trend is mirrored if we start the analysis in later bear markets or if we evaluate the winners in the U.S. market. With respect to the U.S. market, it is interesting to point out that there were, in fact, a small percentage of funds that successfully outperformed in all six bear markets (12 of the original 110 winners, or 11%). Of course, because the pool of winners gets smaller with each bear market, even selecting a fund that outperformed during 5 of the last 5 bear markets does not guarantee that it will outperform during the next bear market.

However, because there are some funds that do outperform from period to period, we also conducted a simple test to determine whether the probability of a fund outperforming (or underperforming) from one period to the next was statistically significant. Specifically, we performed a conventional "contingency table" whereby we calculated the historical probability of out- or underperformance from one bear market to the next—in other words, persistence of excess returns. Within each region, we separated the funds into four categories based on excess returns from one bear market to the next: win-win, win-lose, lose-win, and lose-lose. Twenty-five percent of the observations in each category would characterize a lack of persistence. For the U.S.-domiciled funds, our contingency table resulted in 31%, 17%, 23%, and 28%, respectively, suggesting the possibility of modest persistence. To verify, we conducted a simple chi-squared test, which resulted in a two-tailed p-value of 0.207⁶. Such a value is not considered statistically significant in the conventional sense, meaning the percentages were statistically no different from 25% across the board. However, for the European and offshore funds, our table resulted in 10%, 22%, 12%, and 56%, respectively, suggesting a significant chance of persistently *underperforming*. Indeed the same chi-squared test resulted in a p-value of less than 0.0001, which would be considered extremely significant.

Therefore, despite the fact that we are not including funds that shut down or closed, it's clear that success in one bear market does not guarantee success in subsequent bear markets. In fact, the degree of attrition among winners from one period to the next would seem to indicate that successfully navigating one or even two bear markets might have a stronger link to simple luck than skill.

⁶ **Chi-squared**, a statistical test to determine how closely an observed distribution matches a theoretical one. **P-value**, the probability that random chance could explain a result in a statistical test.

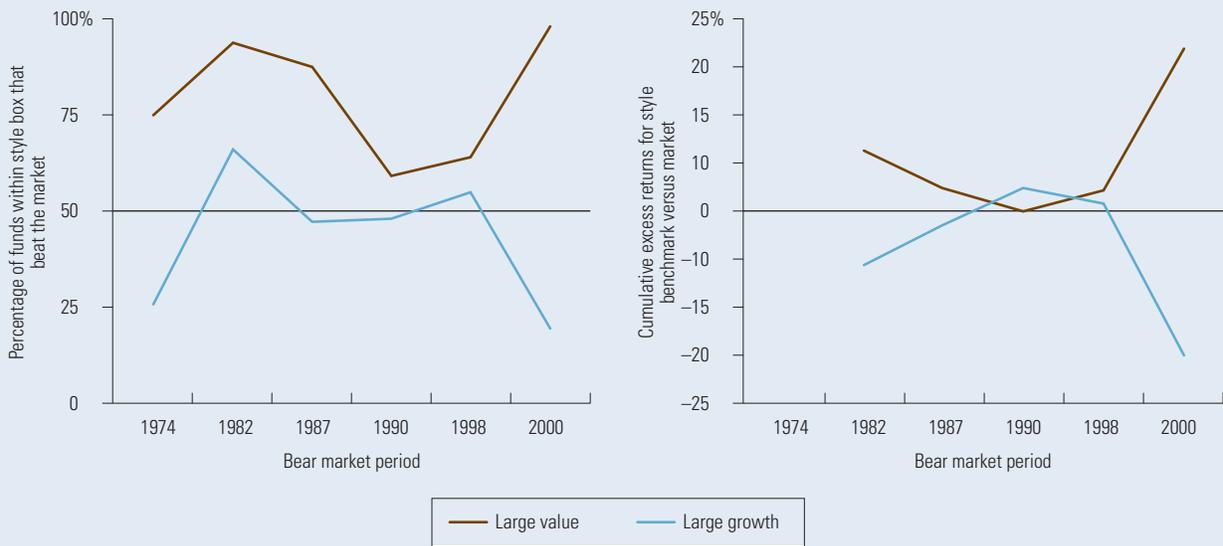
Of course for those managers who successfully navigated all U.S. bear markets, it is also important to delineate between skill and risk factor exposures. For example, a deep-value fund would be expected to consistently outperform during bear markets, but would also be expected to underperform during bull markets simply because the deep-value style has traditionally followed this pattern.

In **Figure 3**, we show that a significant percentage of large-cap value funds outperformed the broad market during each U.S. bear market. However, the chart on the right also shows that the relative success of value funds to the broad market tends to coincide with the relative success of the value benchmark versus the broad market. This is no more apparent than in the most recent bear market, where 97% of value funds

beat the broad market (left-hand chart), largely benefiting from the 20% cumulative outperformance of the large-cap value benchmark versus the market (right-hand chart). On the flip side, the fact that 3% of the funds failed to beat the market, despite a 20% excess return tailwind, characterizes the risk inherent to active management.

In **Figure 4**, therefore, we compared each active fund with its style benchmark. For example, we compared large-cap value funds with a large-cap value benchmark and small-cap growth funds with a small-cap growth benchmark. Unfortunately, style benchmarks for mid-cap funds started in 1986, meaning we could not evaluate the 1974 and 1982 bear markets. That said, we were able to effectively cover the remaining four periods in the United States with some interesting results.⁷

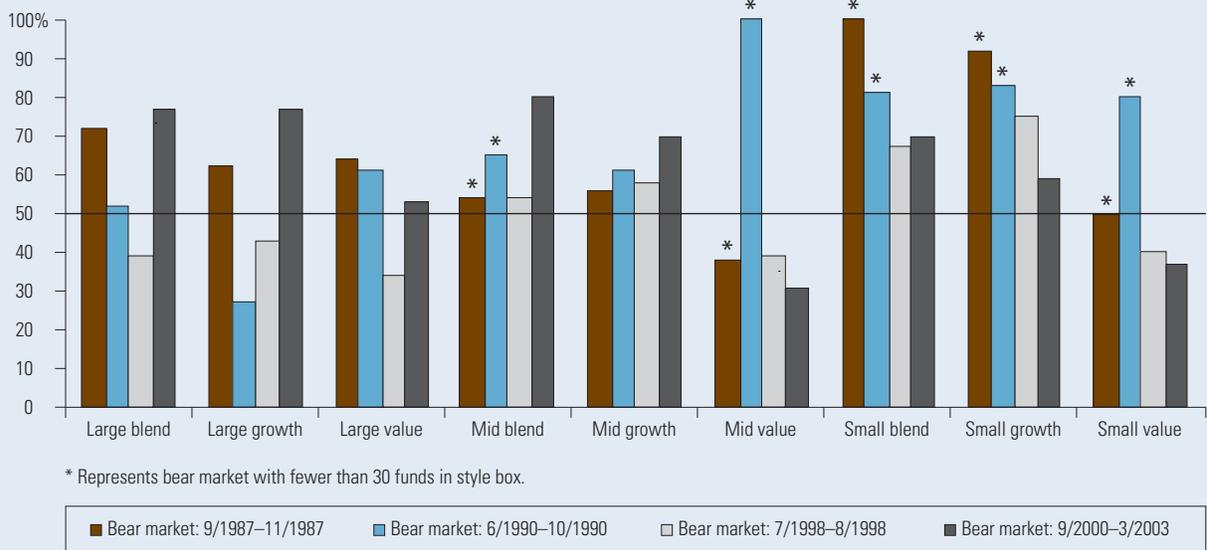
Figure 3. Outperformance may be due in significant part to risk factor exposures



Sources: Fund data provided by Morningstar; index data provided by Thompson Financial, Russell, and MSCI. Style benchmarks represented by Russell style indexes from January 1979 through May 1992, and MSCI style indexes thereafter.

7 Reliable style benchmarks for European stocks are unavailable for most of the time periods, preventing a similar analysis.

Figure 4. Percentage of U.S. managers outperforming their respective style benchmark



Sources: Fund data provided by Morningstar; index data provided by Thompson Financial, Russell, and MSCI. Style benchmarks represented by Russell style indexes from January 1979 through May 1992, and MSCI style indexes thereafter.

Note: Refer to Davis et al. (2007) and Philips and Ambrosio (2008) for additional details on why small-cap managers appear to perform exceedingly well against Russell benchmarks, but in reality are more similar to managers in other style boxes.

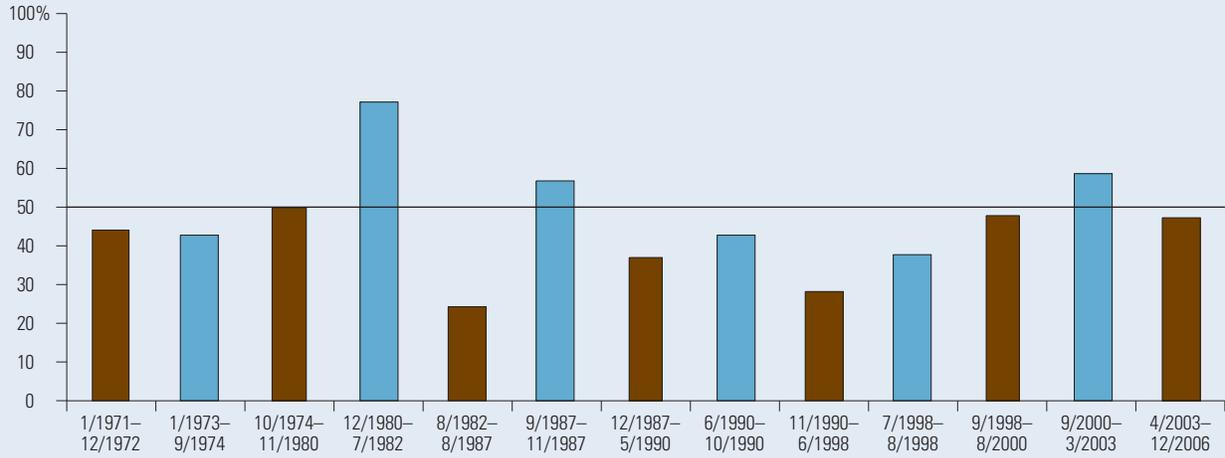
Most interestingly, among style boxes with at least 30 funds across all bear markets, there was no consistent pattern of outperformance (of note is the mid-cap growth segment, where active funds outperformed the mid-cap growth benchmark during each bear market). For example, while large-cap growth funds outperformed during the 1987 and 2000 bear markets, they fell short of the large-cap growth benchmark during the 1990 and 1998 bear markets. On the other hand, large-cap blend and large-cap value funds outperformed in each bear market except 1998. Therefore, just as active funds proved inconsistent at beating the market during bear markets, it's clear that on average, they are just as inconsistent at beating their style benchmark.

The impact of bull markets

As previously mentioned, the combination of cost, security selection, and market-timing proves a difficult hurdle to overcome in any market environment. Specifically, to consistently beat both the market and style benchmark, a manager must accurately time the start and end of the bear market and must accurately select winning stocks during each period. In Davis and Philips (2007), we demonstrated the challenges with identifying sectors that consistently outperform during recessions and bear markets. Ultimately, the challenge comes down to the likelihood of a "false positive" combined with performance difficulties. Therefore, the results demonstrated thus far seem to confirm the challenges associated with correctly identifying a bear market and subsequently investing in the

Figure 5. Percentage of active funds outperforming market during bull and bear cycles

U.S. funds versus Dow Jones Wilshire 5000 Index



European/offshore funds versus MSCI Europe Index



Sources: Fund data provided by Morningstar; index data provided by Thompson Financial and MSCI.

bear market to take advantage of the poor market performance. However, ultimate success versus a market or a style benchmark also depends on above-average performance during bull markets. As such, this analysis would not be complete without an evaluation of performance during the bull markets that came before and after each identified bear market.

In **Figure 5**, we expand Figure 1 to include both the bear markets in blue and the intervening bull market periods in brown. Of note is that in most instances, bull markets were characterized by fewer active funds outperforming the broad market in both the United States and Europe. Interpretation of these results could lead to any number of possible causes, but at a high level, it would appear that a majority of funds are generally defensively positioned relative to the market. This may protect them on the downside on average, but is a clear drag on the upside. Finally, we also found that a majority of funds failed to beat their style benchmark during bull markets. In fact, in analysis not shown here, we found that in most cases fewer than 40% of active funds beat their style benchmark during the bull markets that preceded or followed the bear markets.

Conclusion

During periods of market stress, it is common to hear that active managers can help investors by selecting securities or by maintaining a significant cash position. However, our evidence does not support this. We have shown that actively managed funds, on average, tend to underperform a broad market benchmark. We have also demonstrated that past success does not ensure future success. While performance improves slightly when compared with style benchmarks, we again found little consistency with respect to outperformance. Finally, we discovered that despite some evidence of outperformance during bear markets, bull markets were significant challenges for active funds. Overall, this analysis concludes that while there will always be a group of funds that outperforms in every market cycle, consistently selecting those winning funds in advance is difficult at best. When accounting for the difficulties in identifying bear and bull markets, security selection, and the difficulty in overcoming higher costs over the long term, we conclude that an indexed investor is not at a disadvantage when investing in bear or bull markets.

References

Carhart, Mark, 1997. "On Persistence in Mutual Fund Performance," *Journal of Finance*. 52: 57–82.

Davis, Joseph H.; Glenn Sheay; Yesim Tokat; and Nelson Wicas, 2007. *Evaluating Small-Cap Active Funds*. Valley Forge, Pa.: Vanguard Investment Counseling & Research, The Vanguard Group.

Davis, Joseph H. and Christopher B. Phillips, 2007. *Defensive Equity Investing: Appealing Theory, Disappointing Reality*. Valley Forge, Pa.: Vanguard Investment Counseling & Research, The Vanguard Group.

Phillips, Christopher B. and Frank J. Ambrosio, 2008. *The Case for Indexing*. Valley Forge, Pa.: Vanguard Investment Counseling & Research, The Vanguard Group.

Phillips, Christopher B. and Sarah Floyd, 2008. *The Case for Indexing: European- and Offshore-Domiciled Funds*. Valley Forge, Pa.: Vanguard Investment Counseling & Research, The Vanguard Group.

Phillips, Christopher B. and Francis M. Kinniry, 2008. *The Active-Passive Debate: Market Cyclicalities and Leadership Volatility*. Valley Forge, Pa.: Vanguard Investment Counseling & Research, The Vanguard Group.

Tokat, Yesim and Kimberly A. Stockton, 2006. *A Primer on Tactical Asset Allocation Strategy Evaluation*. Valley Forge, Pa.: Vanguard Investment Counseling & Research, The Vanguard Group.



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