



## Do Low Correlations Favor Active Managers?

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Recently, there has been much debate regarding the challenges for active managers in market environments with persistently high correlations. Some argue that high correlations hinder active managers seeking to generate alpha through security selection. Indeed, in a recent study, we at FundQuest found, among other things, that active managers were more likely to succeed in low-correlation environments.

This study is laid out in a 2011 white paper on active and passive management, [Correlation Retreats: Active vs. Passive Investment Strategies](#), the latest in a series of annual research studies that FundQuest has produced since 2007. The research series explores the effects of market environments on active and passive management, attempting to identify the Morningstar asset-class categories in which investors should use active or passive management. This most recent study, however, takes a fresh approach –examining active manager performance during market environments that exhibited correlations persistently above or below the long-term average.

In the context of this paper, correlation is based on the weighted correlation of the top 750 stocks by market cap. We examined:

- Whether managers perform better or worse in higher or lower correlation market environments
- In what Morningstar asset-class categories correlation most affected managers' performance
- Whether correlations affect a manager's risk taking

### The study

This study analyzed over 32,000 mutual funds in 84 categories, representing approximately \$8.5 trillion in assets as of February 2011. Approximately 12,000 obsolete funds were included in the analysis to minimize survivorship bias. If a fund offered different share classes, each share class was treated as a different fund in order to capture the impact of different expense ratios on portfolio returns. Returns were analyzed net of management fees and other expenses.

Each fund's behavior and performance were analyzed over five full market cycles, from January 1, 1980 through February 28, 2011. Within that time horizon, we identified four



time periods during which correlations remained above long-term averages and four periods where they remained below long-term averages (based on data from 1926 through the end of 2010) for one year or longer.

Further, for each of the five market cycles, we identified whether it had a low-, neutral- or high-correlation bias, based on the percentage of high- and low-correlation time periods it contained. This allowed us to judge the consistency of our findings across market cycles.

We then used 86 indices – provided by Morningstar and chosen to represent a broad range of different asset classes, market segments, and investment strategies – and regressed all of them against each mutual fund for each of the market cycles and time periods. FundQuest believes that the particular indices we chose have been sufficiently inclusive to reflect the range of style categories the funds included in the study represent.

Morningstar classified the fund universe into 84 categories in 2011. For the purpose of this paper, we narrowed our findings to 66 categories and excluded the 18 remaining categories that consisted of muni single-state and target-date series as due to limited best fit benchmark information. A best-fit benchmark is a benchmark that best explains the fund's broader market movement. We also further grouped these 66 categories into seven broad asset categories: U.S. Equity, International Equity, Fixed Income, Allocation, U.S. Muni, Alternatives and Commodities. To gauge broader trends, we noted real alpha, manager success rate, beta, and upside/downside capture for these seven broad asset-class categories. However, specific Morningstar categories within each broad asset class could differ significantly from the overarching asset class category.

Our findings are summarized below:

1. *Investment categories in which active managers provided real alpha (Real alpha is used to formulate FundQuest's recommendation of an active or passive bias or neutral determination):*

Of the 66 Morningstar categories in the 2011 study, FundQuest recommends active management in 21 categories, passive management in 17 categories, and deems 28 categories to be neutral, exhibiting no bias either way. Across all 66 categories, FundQuest recommends 12% of the assets fall under an active recommendation, 16% fall under a passive recommendation, and the remaining 72% fall into a neutral classification. Compared with FundQuest's 2010 study, active/passive recommendations were changed for 14 categories based on 2011 research findings. Notable changes are natural resources (from a passive recommendation in 2010 to an active recommendation in 2011) and equity energy (from an active recommendation in 2010 to a passive recommendation in 2011). Both categories have only two market cycles of data to support the recommendation, which means results were easily affected by short-term market movements.



The study summarized the recommended active/passive bias, manager success rate range (expressed as a percentage of managers that generated 0.5% or more real alpha), and number of active and obsolete funds for each Morningstar category. Manager success rate is the percentage of actively managed mutual funds within each category that outperformed their respective category benchmarks. Real alpha is defined as the additional return truly stemming from the unique ability and skill set of the investment manager. This summary can be used during portfolio construction to help determine whether, within a specific asset category, an actively managed fund might be a better candidate than a passive index fund or ETF. Moreover, the data can help when optimizing a portfolio's exposure to a category by using multiple investments and incorporating an active or passive bias rather than an all-active or all-passive approach. For example, an actively managed mutual fund may be selected for 60% of a portfolio's foreign large value allocation (based on the manager success rate range), and an ETF or index mutual fund may be selected for the remaining 40% of the allocation.

2. *In general, more managers succeeded in low-correlation environments.*

There are individual managers generating positive real alpha, even in categories where active managers have historically underperformed their benchmarks. It is generally more difficult, however, to find successful active managers in those categories with passive recommendations than those categories with active recommendations. Manager success rate, defined as the percentage of managers in each investment category that outperformed their respective category benchmarks, varied significantly from category to category.

Historical data from this analysis suggest that manager success rate was meaningfully higher during low-correlation market environments than during high-correlation market environments. If correlation retreats to below the long-term average, the data suggest investors may wish to shift additional assets into active management. On the other hand, this study also indicates that, over time, manager success rate has been declining. For example, manager success rate was 42% during the first market cycle in the study, while it was only 27% during the most recent market cycle. Although a trend toward low correlations prevailed during that first market cycle, that likely does not account for the full disparity. FundQuest recognizes that markets were less efficient in earlier time periods – meaning that active managers were more likely to add value – and less skillful managers have entered the marketplace and diluted performance. FundQuest recommends a balanced view to interpret the data from these two angles.



3. *Active managers' outperformance in low-correlation environments was most evident in equities.*

The data analysis from the 2011 study suggests that active managers tended to perform better in low-correlation market environments in terms of real-alpha generation and manager success rate, though results were less evident to non-equity categories. This is not surprising, given that high- and low-correlation market periods were identified by examining the correlation of the top 750 stocks by market capitalization. To determine consistency, we examined results from the five full market cycles based on their high or low correlation bias. It appeared that managers performed better in low correlation-biased market cycles as compared with high correlation-biased market cycles.

- In terms of real alpha generation, U.S. equity median alpha during low-correlation periods was 0.51% vs. -1.06% during high-correlation environments. Long-term alpha of -0.41% was based on the five full market cycles. International equity median alpha during the second market cycle (high-correlation bias) was 2.10%, compared with 2.38% during the third market cycle (low-correlation bias).
- In terms of manager success rate, for the US equity broad category, 70% of managers generated an alpha higher than 50bps during low-correlation market environments, while only 44% achieved excess alpha during high-correlation market environments. Over the longer term encompassing the five market cycles, roughly 49% of managers succeeded in providing excess alpha. The international equity category's manager success rate during the second market cycle (high-correlation bias) was 79%, compared with 67% during the third market cycle (low-correlation bias).

If correlations are expected to retreat to below long-term averages for equity-related categories advisors could shift their bias towards active management. Historical data show that active managers tended to perform better in low-correlation market environments in terms of how much alpha they generated. The chance of finding successful managers also increases as there are more managers succeeding in generating real alpha.

4. *How a Morningstar category responded to correlations can infer an active or passive bias.*

In order to assess the impact of correlation on a manager's ability to generate alpha, the study examined each Morningstar category's real alpha during high-correlation and low-correlation market environments. A negative impact to the Morningstar category implies that during high-correlation environments, there is worse performance of that category. A positive impact to the Morningstar category implies



that in high-correlation environments, there is better performance of that category. The 20 Morningstar categories that were most negatively affected by correlation were mostly equity-related, with a few exceptions (convertibles, world allocation and emerging-market bonds). The nine Morningstar categories most positively affected by correlation were either non-equity, sector-specific or regional-focused categories that could behave very differently when the broad equity market is influenced by correlation.

It is important to recognize the limitation of the data set, as time periods when equity markets exhibit higher-than-average or lower-than-average correlation might not be relevant to some asset categories. For example, equity market correlations might affect the bond market, but this paper does not provide insight as to how and whether that happens. Nonetheless, FundQuest has provided information on all categories as a reference tool.

If correlations are expected to retreat to below long-term averages, investors could establish a bias towards active management in equity categories that were most negatively impacted by correlation. For example, the small blend category has a neutral recommendation, but historical data exhibited a meaningful negative impact on this asset class when correlations were high, making it a candidate for active bias. On the other hand, for categories most positively affected by high correlations, investors could establish a bias towards passive management. For example, foreign small/mid-value has an active recommendation, but the category saw a meaningful positive effect (-4.10%) from correlation, so a neutral or even passive bias may make sense.

##### 5. *Correlation did not alter manager's risk-taking.*

Overall, correlation did not meaningfully affect active-manager beta. Over the five full market cycles and through both high-correlation and low-correlation market environments, the median beta for all funds was 0.92, 0.93 and 0.91, respectively. However, managers' downside capture ratio (95.2%) was worse during high-correlation market environments than during low-correlation market environments (90.3%). Active managers were risk-conscious and have generally assumed lower risk than the market. Generally speaking, active managers as a whole did not add value through upside capture (an upside capture ratio of 91.8%). Instead, they added value through preserving capital in down markets (a downside capture ratio of 93.9%).



## **Conclusion**

Correlation has remained persistently above long-term averages since the beginning of 2007. Eventually, correlation is expected to retreat and revert to mean. FundQuest believes the results from this latest study can help investors optimize their allocations to active and passive investing within each investment category included in their portfolio. Findings from the study can also be useful for advisors to position portfolios in high- or low-correlation market environments.

## **Disclosure**

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