Financial Analysts Journal ›

Volume 57, 2001 - Issue 5

PERFORMANCE

Return Dispersion and Active Management

Harindra de Silva, Steven Sapra & Steven Thorley

Pages 29-42 | Published online: 02 Jan 2019

Cite this article https://doi.org/10.2469/faj.v57.n5.2479

Abstract

The cross-sectional variation of U.S. stock returns has been unusually high in the past few years. The wide dispersion in security returns has led to correspondingly wide dispersion in fund returns. For example, the cross-sectional standard deviation of returns on actively managed domestic equity mutual funds was 24 percent in 1999, compared with only 5 percent in 1996. We argue that the wide dispersion in fund performance is a natural result of increased security return dispersion and has little to do with changes in the informational efficiency of the market or the range of managerial talent. The dramatic increase in return dispersion warrants a reexamination of traditional methodologies for measuring fund performance that implicitly assume constant dispersion. We show how performance benchmarking can be extended to incorporate the information embedded in return dispersion, as well as the benchmark mean return, by correcting fund alphas with a period- and asset-class-specific measure of security return dispersion.

The cross-sectional variation in U.S. stock returns jumped to unusually high levels in the fall of 1998. The spread in returns between individual stocks was wider in 1999 and 2000 than at any other point in modern market history. The return spread is best measured by dispersion—the cross-sectional standard deviation of individual security returns within an asset class. Dispersion can be thought of as the cross-sectional analog to volatility—the standard deviation of returns on a security or portfolio over time.

Economic historians believe that periods of wide equity return dispersion are associated with structural shifts in the underlying economy resulting from political or technological disruptions. The fundamental restructuring of the economic order leads to large corporate revaluations, with some companies going up in value while others decline. A possible candidate for the current episode of equity market dispersion is a technological shift—the emergence of new information technologies and the perceived changes in corporate competitive advantages associated with their use.

The recent increase in security return dispersion has important implications for active management. Portfolio theory predicts that wide security dispersion will translate into wide dispersion of fund returns. We document the accuracy of this prediction. We found a very high correspondence between individual-security return dispersion and fund return dispersion on a year-to-year basis. For example, not only was 1999 a year of unusually wide dispersion for security returns, but it was also a year in which the dispersion of returns of actively managed domestic equity mutual funds was at an all-time high—24 percent compared with the typical range of 5–10 percent.

An appreciation for the correspondence between dispersion in security and fund returns can help reverse some common misconceptions about active management. For example, publicity about the recently large spread in fund returns can be misinterpreted as evidence of a larger variation in managerial talent. In fact, it is simply an artifact of wider-than-normal return dispersion in the security pool from which managers can choose. Misunderstanding the cause of increased cross-sectional variation in fund performance can also lead to the counterintuitive conclusion that market efficiency has suddenly decreased. We reiterate Sharpe's logic that active management measured against marketwide benchmarks is a zero-sum game before costs and a negative-sum game after costs. The arithmetic of active management dictates that when the performance of all investor groups is properly accounted for, exactly half will outperform a total market index before costs. After research and transaction costs, fewer than half will outperform. Thus, the percentage of all actively

managed funds that beat the market in any period is unrelated to market efficiency. Rather, it is determined by the magnitude of return dispersion around the mean and the costs of active management. We show that as return dispersion increases, the percentage of outperformers also increases.

Perhaps the most important implication of intertemporal variation in return dispersion is in the area of individual-fund performance measurement. During a year with marketwide fund dispersion of 5 percent, a positive alpha (return in excess of the benchmark) of 10 percentage points is a significant achievement. In a year when fund dispersion is 20 percent, a 10 percentage point alpha means a lot less. Averaging alphas over time without consideration for intertemporal variations in dispersion can lead to a material misstatement of relative performance.

We show how performance benchmarking can be extended to incorporate the information embedded in return dispersion, as well as information on the benchmark mean, by correcting fund alphas with a period- and asset-class-specific measure of security return dispersion. Weighting alpha observations by the inverse of return dispersion can be characterized as an econometric correction for heteroscedasticity. We argue that multiperiod performance statistics that correct for intertemporal variations in return dispersion are better indicators of managerial talent and may provide improved predictions of future added value. Return dispersion corrections are particularly relevant in the measurement of U.S. equity portfolio performance over the past several years.

We acknowledge the helpful suggestions of Roger Clarke. This study also benefited from the ideas in a research proposal on return dispersion co-authored with Grant McQueen.

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