Swedroe: Scale’s Effect On Active Performance

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There is a large body of overwhelming evidence that past performance is at best a poor predictor of active managers’ future performance. That is why the SEC requires that common and familiar disclaimer.

There are many explanations for the difficulty that active managers face in delivering persistent outperformance. Among them is that there are well-documented diseconomies of scale in terms of trading costs (and problems associated with closet indexing for managers who seek to minimize trading costs), which sow the seeds of destruction for even successful active managers as their performance brings in new assets.

Campbell Harvey and Yan Liu contribute to the literature with their November 2016 study “Does Scale Impact Skill?” One of their contributions is that their model controlled for both the size of the individual fund (total assets under management) and the size of the overall fund industry. The authors note: “Intuitively, a $100 million fund in 1991 should be treated differently from a $100 million fund in 2011 given the mutual fund industry has grown substantially during this period.”

Their data sample covered domestic equity funds over the period 1991 through 2011. They required funds to have AUM above $10 million and more than 80% of their holdings in stocks. The authors’ sample covered 3,623 mutual funds. To determine a fund’s alpha, they used the Carhart four-factor (market beta, size, value and momentum) model.

The Impact Of Scale
Their first major finding was that, consistent with prior research, scale has a large impact at the individual fund level. They observe: “In particular, for an average fund in the cross-section that doubles its size in one year, its alpha drops by around 20bp per annum. The impact of scale is significant both statistically and economically.”

Importantly, they noted that there is a decreasing impact of scale as fund size increases. Thus, larger funds imply a milder response than smaller funds to changes in industry-level scale.

For example, they found that the impact for very small funds (i.e., the bottom 20% by fund size) is almost double the impact for very large funds (i.e., the top 20% by fund size). This is intuitive, as they explain. Small funds often trade illiquid stocks and, given the limited supply of small and illiquid stocks, it becomes more difficult to invest in such stocks. The result is a decline in alpha.

In contrast, for large funds, the impact is less. Even if they also grow by 100%, the market has a larger capacity for large and liquid stocks. As a result, large funds aren’t impacted as negatively by an increase in assets under management (unless they are trading in small-cap stocks).
This led Harvey and Liu to conclude that their findings lend considerable support to the model proposed by Jonathan Berk and Richard Green in their 2004 paper “Mutual Fund Flows and Performance in Rational Markets.”

**Investors Undermine Performance**

Berk and Green explain that, in their model, “… investments with active managers do not outperform passive benchmarks because investors competitively supply funds to managers and there are decreasing returns for managers in deploying their superior ability. Managers increase the size of their funds, and their own compensation, to the point at which expected returns to investors are competitive going forward. The failure of managers as a group to outperform passive benchmarks does not imply that they lack skill. Furthermore, the lack of persistence does not imply that differential ability across managers is unrewarded, that gathering information about performance is socially wasteful, or that chasing performance is pointless. It merely implies that the provision of capital by investors to the mutual fund industry is competitive.”

Berk and Green continue: “Performance is not persistent in the model precisely because investors chase performance and make full, rational use of information about funds’ histories in doing so. High performance is rationally interpreted by investors as evidence of the manager’s superior ability. New money flows to the fund to the point at which expected excess returns going forward are competitive. This process necessarily implies that investors cannot expect to make positive excess returns, so superior performance cannot be predictable. The response of fund flows to performance is simply evidence that capital flows to investments in which it is most productive.”

Harvey and Liu also found that industry-level scale had a significant impact, estimating that a 1% increase in industry scale implies a 0.05% drop in per-year alpha for the average fund. They concluded that the impact of scale at the individual fund level is higher (more than twice as high, in fact) than at the industry level.

They added that the impact of fund size can be estimated with a much higher precision than the impact of industry size (the 90% confidence ranges were much tighter for fund size).

**Scale Isn’t The Only Issue**

Unfortunately, diseconomies of scale aren’t the only problem for successful actively managed funds. Thanks to Richard Evans, Javier Gil-Bazo and Marc Lipson, authors of the November 2016 study “Diseconomies of Scope and Mutual Fund Manager Performance,” we have another explanation for this lack of persistence. Their study covered the U.S. fund industry over the period 1997 through 2015, and about 10,000 funds.

The authors investigated the changes in the performance of mutual fund managers that result from alterations in the scope of their duties.

First, as we would expect, they confirmed that the scope of manager responsibilities is expanded in response to positive past performance. They found that managers with higher relative four-factor (beta, size, value and momentum) alphas see an expansion in the scope of their responsibilities, defined as an increase in the number of funds under control or an increase in the total size of assets under management following a change in control (a reallocation of funds) that keeps the number of funds constant.

They also found that managers with lower relative alphas see a similarly defined contraction in their scope of responsibilities.

However, Evans, Gil-Bazo and Lipson then demonstrated that instead of such expanding scope leading to superior performance, it negatively impacts subsequent performance even after controlling for effects related to fund size. Their results were robust to various tests. It serves as yet another example of successful active
management sowing the seeds of its own destruction and the Peter principle (which posits that managers rise to the level of their incompetence) at work.

It is also worth noting the authors found symmetry in their results insofar as that, after a scope reduction, the poor performance of ostensibly worse managers is curtailed, thus providing further support to the scope hypothesis.

The authors concluded: “Our results suggest a significant diseconomy of scope exists with respect to performance similar to the diseconomies of scale previously highlighted and that, together, these two effects may explain the observed attenuation over time in abnormal relative mutual fund returns.”

More Explanations
There are yet other explanations for the difficulty that active managers have in delivering persistent outperformance beyond the problems of scale and scope. In our book, “The Incredible Shrinking Alpha,” Andrew Berkin and I provide four other explanations.

First, while markets are not perfectly efficient, as there are many well-known anomalies, they are highly efficient, and the anomalies can be exploited through low-cost, passive strategies that use systematic approaches to capture well-known premiums. Academic research has been converting what once were sources of alpha, which active managers could exploit, into pure commodities, or beta (loading on some common factor, or characteristic).

For example, active managers used to generate alpha and claim outperformance simply by investing in small stocks, value stocks, momentum stocks and quality stocks. But that is no longer the case today because investors can access these investment factors through passively managed vehicles.

Second, to generate alpha, which even before expenses is a zero-sum game, active managers must have a victim to exploit. And the supply of victims (retail investors) has been shrinking persistently since World War II. Seventy years ago, about 90% of stocks were held directly by individual investors. Today that figure is less than 20%. In addition, 90% or more of trading is done by institutional investors. Thus, the competition is getting tougher as the supply of sheep that can be regularly sheared shrinks.

Third, the competition is much more highly skilled today. As Charles Ellis explained in a recent issue of Financial Analysts Journal, “over the past 50 years, increasing numbers of highly talented young investment professionals have entered the competition. … They have more-advanced training than their predecessors, better analytical tools, and faster access to more information.”

Legendary hedge funds, such as Renaissance Technology and D.E. Shaw, hire Ph.D. scientists, mathematicians and computer scientists. MBAs from top schools, such as Chicago, Wharton and MIT, flock to investment management armed with powerful computers and massive databases.

Fourth, there’s been a huge increase in the pool of assets chasing alpha. Consider that, just 20 years ago, hedge fund assets were in the hundreds of billions. Today they are about $3 trillion. Thus, you have many more dollars trying to exploit a shrinking pool of alpha at the same time that the competition has gotten much tougher. Not exactly a likely prescription for success.

Conclusion

The evidence keeps piling up that Ellis was correct when, almost 20 years ago, he labeled active management a loser’s game, noting that while it wasn’t impossible to win that game, the odds of doing so were so poor that it wasn’t prudent to try.
Trends in cash flows indicate that investors, increasingly, are agreeing with him, as there has been a persistent, and perhaps now accelerating, trend from active to passive management. In my view, the persistence of this trend has almost the same odds of continuing as the odds that the sun will rise in the east. Contrary to “conventional wisdom,” that will make it even harder for the remaining active investors to deliver alpha.

The reason is that, as we explain in “The Incredible Shrinking Alpha,” the investors who are abandoning the game of active management are almost certainly the prior losers. That means the remaining competition keeps getting tougher (higher average level of skill) and, thus, harder to exploit.

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