



## Luck versus Skill in Active Mutual Funds

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August 5, 2008

A recurring question in the topic of active versus passive management is the degree to which active mutual fund managers who outperform their benchmark can be considered to have done so through skill versus luck. An academic [study](#), described in an [article](#) by Mark Hulbert in the New York Times several weeks ago, answers this question through a new statistical technique.

The study's authors are Russ Wermers, a professor of finance at the University of Maryland, Laurent Barras of the Swiss Finance Institute, and Oliver Scaillet of the University of Geneva. We spoke with Professor Wermers on July 25, 2008.

### The False Discovery Rate

If all active fund managers were to choose stocks by throwing darts, inevitably some small percentage would deliver alpha, even over some large period of time. However, they would do so through random luck. Fund managers are not dart throwers, yet some percentage of them will nonetheless deliver alpha through luck. Wermers' tool, known as the False Discovery Rate (FDR), identifies the size of the group delivering alpha through skill, and well as the size of the group failing to deliver alpha through lack of skill.

The FDR technique begins by segregating fund returns into three groups: negative alpha, zero alpha, and positive alpha. The zero alpha group consists of those funds that earn returns just sufficient to match their benchmark, net of expenses. They deliver zero alpha to their investors. Based on the number of funds that exhibit an alpha close to zero, which are almost all funds without skills, the FDR technique estimates the number of funds without skills that end up with positive (or negative) alphas simply by luck (good or bad). Then, it is simply a matter of subtracting the actual size of the positive alpha group from the expected size (based on luck alone) to determine the size of the group of funds that delivered alpha through skill. A similar procedure is used to determine the size of the group that deliver negative alpha (net of expenses) through lack of skills.

The study used the Center for Research in Securities Prices (CRSP) data, and matched it with Thomson's CDA data for fund investment-objective information. The data is free of survivorship bias and only funds with at least 60 months of returns were included. Share classes were consolidated (dollar weighted) into a



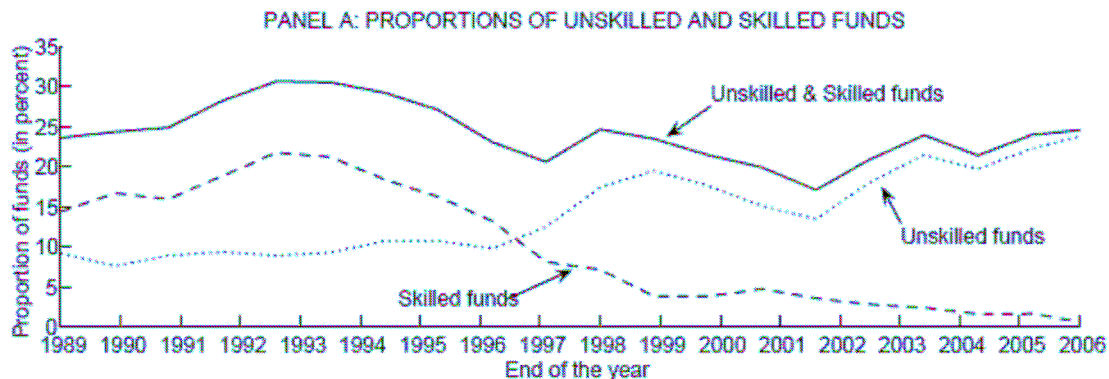
single fund. Sales loads were not modeled (if they were, it is likely an even smaller percentage of funds would have delivered alpha).

## Key Findings

Over the 32 year period studied by Wermers and his co-authors, from 1975 to 2006, only 0.6% of funds delivered positive alpha through skill, as opposed to luck alone. The FDR cannot determine which funds delivered alpha through skill; it can only estimate the size of this group. Those select few funds (approximately 12 out of the 2,076 studied) will remain anonymous.

Of the remaining funds, 24.0% are unskilled and 75.4% are zero alpha (delivering excess returns sufficient to only cover fees and expenses).

A very interesting finding is that the proportion of skilled managers decreases over time, specifically from 1990 to 2006. In 1990, 14.4% of funds fell into the “skilled” category, while 9.2% were in the unskilled category. These numbers were 24.0% and 0.6%, respectively, in 2006. As the study notes, “although the number of actively managed funds has dramatically increased, skilled managers (those capable of picking stocks well enough to overcome their trading costs and expenses) have become increasingly rare.” The decay in alpha is shown in the graph below:



Funds were categorized into three investment objectives: Growth, Growth & Income, and Aggressive Growth. Wermers noted that this categorization was the only one consistently available for the 32 year time period he and his coauthors studied. The funds in the Aggressive Growth category exhibited the greatest degree of skill. These funds tilt toward small cap, low book-to-market, and momentum stocks. The Growth & Income category, which includes traditional value and core funds, had no funds that exhibited skill, along with a substantial portion that were unskilled, a finding that the study terms “remarkable.”



Another curious finding concerns the relationship between skill and fund size. In general, larger funds were more prevalent in the high alpha “right tail” of the data. We asked Wermers about this, since intuition would suggest that smaller “boutique” funds would exhibit greater skill, and that skill would erode as fund size grows and managers are forced to invest in a smaller universe of stocks. Wermers believes that these findings are inconclusive, though, since the vast majority of right-tail funds are there by luck alone—a more detailed examination of the funds within the right and left tails is underway.

### **Implications for Advisors**

Mark Hulbert posed the question of why skill declined over the 32 year period, and offered three possibilities: high fees and expenses, increased market efficiency, and the movement of skilled mutual fund managers to the hedge fund industry.

The study showed that over their entire histories, 9.6% of funds produced truly positive alphas *before* expenses, while almost none produced significantly positive alphas *after* expenses. This indicated to the authors that, even though expenses for actively managed funds declined over the period studied, expenses eliminated the good performance of a lot of managers who appeared to have true stock picking skills. Given that only 0.6% of funds produced alpha over this period, skills are dropping faster than expenses. Wermers said that “expenses are too high, relative to the ability of fund managers to generate alphas.” He added that a “prescription is to pay close attention to the expenses charged by funds, as higher expenses do not seem to be associated with higher skills.” We concur, as does the overwhelming body of academic studies on mutual fund expenses.

Regarding the possibility that the market has become more efficient over this period, Wermers noted that several recent studies have shown this to be true. The FDR test has not yet been applied to hedge fund or separately managed account databases. If it did, and it revealed a similar decay in skill, that would support the hypothesis that the market has become more efficient.

We believe the fundamental reason for the decline in skill is the movement of skilled managers to the hedge funds, and this factor overwhelms any other possible explanation. The hedge fund industry is the most profitable industry ever conceived, and its performance-based fees insure that skilled managers will be handsomely compensated. By contrast, very few mutual funds utilize performance-based fees. The asset-based fees in the mutual fund industry will naturally select for those managers who cannot succeed in the hedge fund industry.



One aspect of the fund's methodology troubled us. We believe a more meaningful question to ask is whether fund managers possess skill, not whether the fund possesses skill. This could be answered by applying the FDR test at the manager level, not the fund level. Wermers noted that the referees from the *Journal of Finance* who reviewed the study raised the same issue, and he plans to add these findings once he completes the analysis.

The final question is whether the study proves that it is "almost hopeless" to find skilled active managers, as Mark Hulbert notes in his article. Wermers thinks not. He said "there is a role for smart sophisticated advisors to make a difference, because it is so hard to find a skilled active manager." He added that advisors should also be prepared to say when it is appropriate for clients to go passive. "Advisors add value by looking at management, strategies, track records, expenses, and all other factors to determine whether skilled managers really work hard to find good active alpha," he said.

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