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# INSIGHTS

"Insights" features the thoughts and views of the top authorities from academia and the profession. This section offers unique perspectives from the leading minds in investment management.

## MUTUAL FUND OUTPERFORMANCE AND GROWTH

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*Does better performance lead to more assets? We examine nearly 30,000 mutual funds to determine the effect that a fund's outperformance relative to its peers has on the fund's later asset size. We find that a fund that earns ten percent more than the size-weighted average of its peers in its style group in one year will on average experience an extra 5% excess asset growth in the subsequent year. The findings are robust to all types of fund styles and all fund sizes, with two exceptions: small funds of any style and very large fixed income funds.*

### 1 Introduction

Does better performance of fund managers lead to more assets? Several recent papers studied this question. Del Guercio and Tkac (2002) showed that pension funds investors do not abandon underperforming managers and do not flock to outperforming managers. Jaihn and Wu (2000) proved that 294 mutual funds advertising their historical performance in Barron's or Money magazine attracted significantly more money, in comparison with a group of control funds.

We examine nearly 30,000 mutual funds in the CRSP Survivor-Bias-Free US Mutual Fund Database having style classification data to determine the effect that a fund's outperformance relative to its peers has on the fund's later asset size. We find that a fund that earns 10% more than the size-weighted average of its peers in its style group in one year will on average experience an extra 5% excess asset growth in the subsequent year. The findings are robust to all types of fund styles and all fund sizes, with two exceptions: small funds of any style and very large fixed income funds.

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## 2 Data

We use all available data from the Center for Research in Security Prices (CRSP) Survivor-Bias-Free US Mutual Fund Database both for monthly fund values and categorization information. Monthly, we have for each fund its total net asset value and its total return. For categorization, we use the CRSP Objective Style Code, a sequence of one to four characters representing the style of the fund.

The raw data comprises nearly 5 million fund-month rows for about 50,000 mutual funds, with dates ranging from January 1962 through September 2012.

About 13% of the CRSP monthly data has missing data in at least one column, and these were eliminated. It does not appear as if the eliminated data was important: for example, the total NAV, when available, for fund-months with missing return data was only $3 million in aggregate across all 50+ years and 50,000 funds.

The CRSP dataset also provides for classification of mutual fund style. This CRSP Style Code integrates the Wiesenberger Objective codes from 1962 to 1993, the Strategic Insight Objective codes from 1993 to 1998, and the Lipper Objective codes after 1998 into a single consistent code. The code comprises up to four characters, read from left-to-right in increasing detail. Codes with fewer than four characters mean that the style for that fund is defined to a smaller degree of granularity. See CRSP (2013) for more information.

About 21,000 of those mutual funds did not have CRSP classification data. Eliminating such funds reduced the monthly fund data universe by about a third. Out of the nearly 30,000 funds with CRSP style codes, 381 had more than one such code in its history, presumably reflecting a change in the focus of the fund. For such funds, all but the most recent categorization code were discarded.

Figure 1 shows the distribution of data among these funds with classified styles. The bar chart shows the median number of funds per style per year, whereas the embedded pie chart with matching colors for each parent style shows the overall distribution of fund-month data among the major fund styles, defined as the first two characters of the CRSP Style Code when available, or otherwise just the first character.

The funds are categorized into 55 distinct CRSP styles. The inset pie chart in Figure 1 shows the amount of data in our universe for each of the 13 broad categories. The first character in each CRSP code is "E" for equity funds, "I" for fixed income funds, "M" for mixed fixed income and equity funds, and "O" for other.

Some of the funds with the "O" fund styles further subdivide into "OM" for mortgage-backed funds and "OC" for currency funds, but none of them have much data.

"ED" and "EF" funds are domestic and international equities, respectively, and are the biggest single broad categories. These funds further divide into more specific categories, for those focusing on a specific sector, size of stocks, or growth/value and other tilts.

"IU" and "IM" funds are municipal and money market funds, respectively, and are the biggest single broad categories among fixed income funds. Other fixed income categories include government ("IG"), foreign ("IF"), and corporate ("IC"). Many fixed income funds do not have more specific categorization and are so assigned to the general "I" fixed income style.

Finally, for each fund style, only months with more than 20 matching funds, for at least ten consecutive years ending with the most recent year,

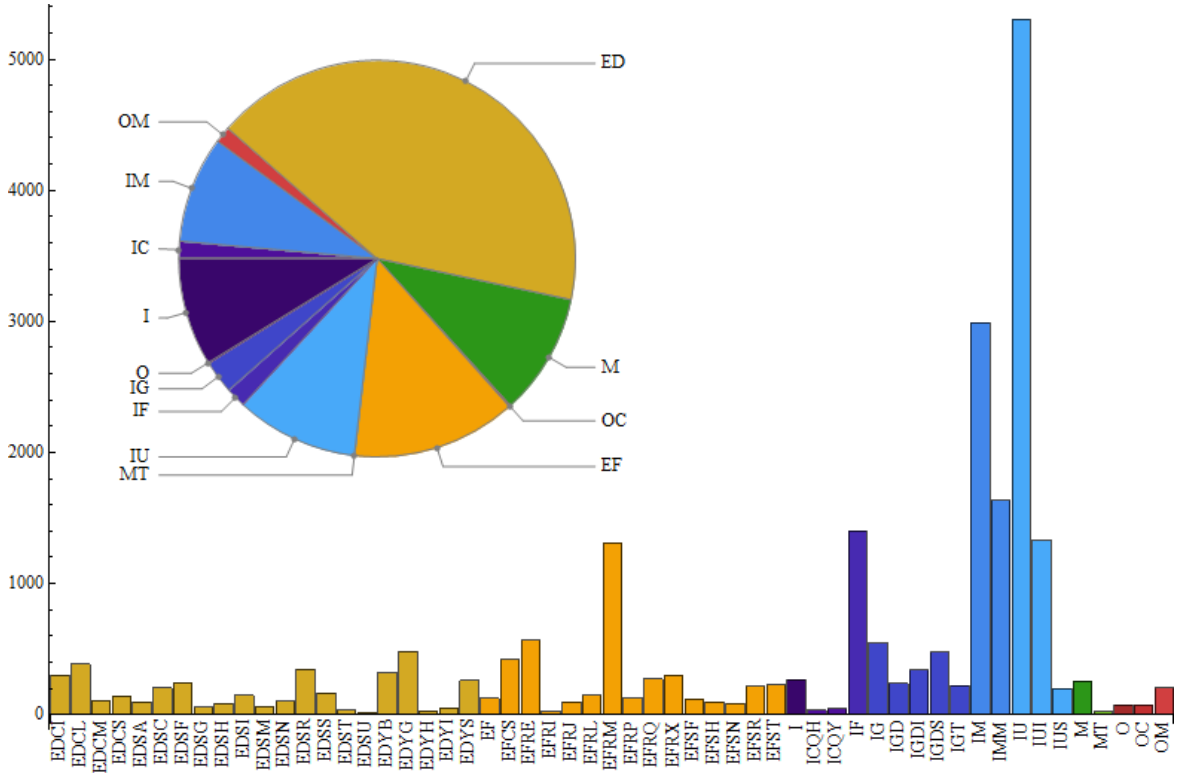


**Figure 1** Data available per CRSP style codes.

were retained. This eliminated two funds and one fund style ("MT": mixed equity-fixed income target funds) and brought the date range to December 1985 through September 2012.

All told, from the initial fund-month dataset containing nearly 5 million rows for over 50,000 funds, nearly 3 million rows of complete data for just under 30,000 funds across 54 fund styles remained.

## 3 Methodology and results

We define the benchmark assets and returns for each month and for each of the 54 fund styles as, respectively, the total of all the assets, and the asset-weighted average return, for all funds in that style for that month.

For each fund and each calendar year, we calculate the fund's *excess returns* as the fund's excess compounded return for that year relative to its benchmark's compounded return for that year, and the fund's *excess growth* as the fund's excess percentage growth in asset size (net of the fund's return) relative to its benchmark's percentage growth in asset size (net of the benchmark's return).

We regress the excess growth in one year on the excess returns from the preceding year. Because the benchmark's excess growth and excess returns are zero by definition, the regressions are done without an intercept. Furthermore, because there is no overlap in data, a standard regression may be performed.

The relationship is not statistically significant when viewed across all fund styles and all fund sizes: the $t$-statistic is a mere $-0.09$. But this first pass hides the true relationship: the amount a fund can expect its future assets to grow as a function

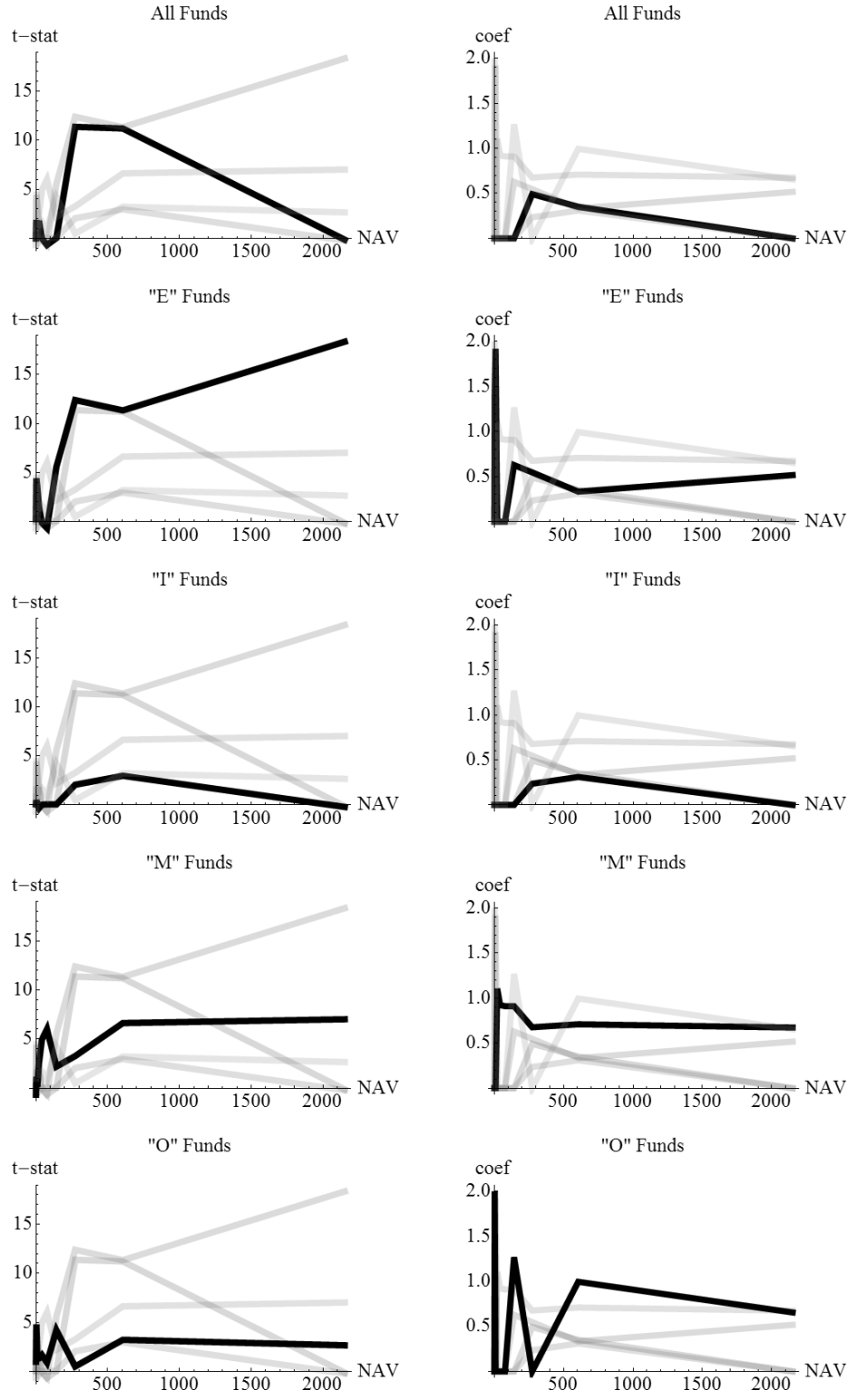


**Figure 2** Regressions of future excess growth on current excess returns.

of its current outperformance depends on the fund style and the fund size.

Figure 2 presents the statistical results for funds by different fund styles, and within deciles by size, with size decile breaks determined from all styles of funds. Net asset values on the *x*-axis are in millions of dollars. The left column of graphs shows the *t*-statistics from the regressions on the *y*-axis. On each graph, the *t*-statistics for various NAVs are plotted for: all funds, equity funds, fixed income funds, mixed funds, and other funds. Each graph shows all five plots in the background in gray to ease comparison, with the highlighted values in black for that particular fund style. Similarly, the right column of graphs shows the coefficients from the regression on the *y*-axis. Again, each graph shows all five plots in gray with the highlighted values in black.

Overall, across all fund styles, an outperforming fund can expect future asset growth to grow if its current size is between $250 million and $2 billion, and its peak relationship is around $250 million when its coefficient is 0.5. A coefficient of 0.5 means a fund outperforming by 10% can expect additional asset growth relative to its benchmark of 5% over the subsequent year, net of future excess returns.

However, the overall picture continues to hide the different relationship experiences within different fund styles. Equities are significant from $250 million and above, continuing to be significant even above $2 billion, with a coefficient on average of about 0.5. Fixed income funds, however, are only mildly significant between $250 million and $2 billion, and with a much smaller coefficient of approximately 0.2. Mixed fixed income and equity funds, not surprisingly, offer a combination of the two, with significance across all asset sizes above $250 million and an average coefficient even higher than equity funds. Other or miscellaneous fund styles are roughly similar to mixed fund styles, only starting with a minimum asset size of at least $500 million.

The bottom line is that an extra 10% of excess returns in one year by a midsize fixed income fund or a midsize or larger fund in any other style will on average lead to an extra 5–10% of excess asset growth in the subsequent year.

## 4 Conclusion

Managers often seek to decide whether to embark on additional potential alpha-generating strategies. However, mutual fund managers are rarely paid with incentive fees. Instead, they earn a management fee on the assets they manage. Thus, their focus is on growing their asset base. For this reason, it may be thought that they are less inclined to pursue innovative strategies that may generate excess return, because they seemingly do not participate in the upside.

In this paper we have shown that this is false. In fact, even managers without incentive fees should always prefer to increase their alpha, even if they are already beating their own benchmarks or peers.

In particular, we have shown using a clean historical mutual fund database that an excess return in one year relative to one's peers leads to additional excess asset growth in the subsequent year. As a rule of thumb, the future excess asset growth will be about half as much as the current excess return. This rule applies to all funds with two exceptions: small funds of any style with less than $250 million of assets, and large fixed income funds with greater than $2 billion of assets.

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