NBER WORKING PAPER SERIES

SPILLOVER EFFECTS IN MUTUAL FUND COMPANIES

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Working Paper 17292
http://www.nber.org/papers/w17292

NATIONAL BUREAU OF ECONOMIC RESEARCH
1050 Massachusetts Avenue
Cambridge, MA 02138
August 2011

We thank Long Chen, Susan Christoffersen, Wayne Ferson, Andre Guettler, Jennifer Huang, Jiekun Huang, Inmoo Lee, Michael Lemmon, Lubos Pastor, Lukasz Pomorski, Veronika Pool, Laura Starks, Sheridan Titman, Mitch Warachka, Scott Weisbenner, Zoran Ivkovich, and seminar participants at the 2011 China International Conference in Finance, the 2011 Financial Intermediation Research Society Meeting, the 2011 National Taiwan University International Conference on Economics, Finance, and Accounting, the Cheung Kong Graduate School of Business, the Korea Advanced Institute of Science and Technology, the Hong Kong Baptist University, and the University of Texas at Austin for helpful comments. The views expressed herein are those of the authors and do not necessarily reflect the views of the National Bureau of Economic Research.

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NBER Working Paper No. 17292
August 2011
JEL No. G11,G23,G30

ABSTRACT

Our paper investigates spillover effects across different business segments of publicly traded mutual fund management companies. We find that the prior stock price performance of the management company has a significant impact on the money flows and the management turnover of the affiliated mutual funds. Mutual funds managed by poorly performing firms experience unexpectedly low flows of new money and exhibit a significantly higher attrition of fund managers even if the mutual funds themselves performed well. Our results remain strong for companies where mutual funds account for only a small fraction of the overall revenues and hold for both equity and bond mutual funds. These results indicate that the financial health of a diversified firm has a significant impact on the prospects of the various business segments.

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1 Introduction

Mutual funds are often managed by financial firms that are also active in other business segments, such as banking and insurance. Such diversified companies can exhibit spillovers across the various business segments. Our paper investigates whether the prior stock price performance of the management company has an impact on the money flows into affiliated mutual funds and the turnover of mutual fund managers.

A relation between the performance of the management company and the activities of the affiliated mutual funds can occur for two primary reasons. First, the performance of the management company can simply be a reflection of the performance of the mutual fund segment. Companies that manage successful mutual funds might exhibit superior stock price performance because the stock price capitalizes the value of the mutual fund sector to the financial conglomerate. It is therefore important to control for the performance of the mutual fund segment. This direct spillover effect is particularly pronounced for management companies where the mutual fund segment accounts for a large fraction of the company's revenues.

Second, indirect spillover effects between the various business segments can affect the money flows and the management turnover of mutual funds. Poorly performing firms are more constrained and might have to reduce the expenditures for all their business segments. For example, a decrease in the generosity of the compensation to their managers could result in increased attrition of skilled fund managers, which would justify the money outflows. In addition, poorly performing firms might also cross-subsidize different business segments and extract resources from their well-performing mutual fund segment. On the other hand, mutual fund investors could extrapolate irrationally from the performance of the diversified company to the mutual fund segment. Thus, investors and fund managers might abandon mutual funds associated with poorly performing management companies even if the funds themselves

exhibit superior performance.

To investigate the relation between the stock price performance of management companies and the money flows and manager turnover of their affiliated mutual funds, we collect a sample of 118 publicly traded companies that manage mutual funds over the period from 1992 to 2009. Whereas some companies focus their activities on mutual fund management, most companies derive only a small fraction of their revenues from their mutual fund segments. Comparing the spillover effects between firms with differential dependence on the mutual fund segment enables us to study in more depth the economic determinants of the spillover effects.

Whereas the impact of prior fund performance on fund flows has received significant attention in the mutual fund literature (e.g., Chevalier and Ellison (1997), Sirri and Tufano (1998), and Huang, Wei, and Yan (2007)), no papers have studied the impact of the performance of the management company on fund flows. Our main result shows that the prior management company performance plays an important role in explaining mutual fund flows. For example, equity funds affiliated with fund companies in the top industry-adjusted performance decile over the prior 36 months increase their assets under management in the subsequent month by 0.29%. On the other hand, equity funds from companies in the bottom decile lower their assets by 0.33% in the subsequent month. The importance of company performance as a predictor of fund flows is robust using alternative performance measures, using alternative evaluation periods, and after controlling for prior fund performance and other fund characteristics. Thus, there are important spillovers across different divisions of diversified companies.

We separately study the money flows and the management turnover of both equity and bond mutual funds. The impact of the stock price performance of the management company on the money flows for bond mutual funds has a similar economic magnitude as for equity funds. For example, bond funds affiliated with fund companies in the top industry-adjusted performance decile over the prior 36 months increase their assets under management in the

subsequent month by 0.14%, whereas bond funds from companies in the bottom decile lower their assets by 0.23% in the subsequent month. Finding consistent results for both bond and equity mutual funds strengthens our confidence that the results are not spurious and are not driven by equity-specific fundamental factors.

To study the economic reasons for the spillover effects, we separate the mutual funds companies into two groups by their relative size of the mutual fund segment. If the correlation between prior stock price performance and fund flows is simply a reflection of the performance of the mutual funds, then we should observe a stronger relation for companies with relatively large mutual fund segments. On the other hand, if the economic magnitude of the relation between fund flows and company performance does not depend on the relative size of the fund segment, then indirect spillover effects are more important in driving this relation. The mutual fund segment is relatively small for most of the publicly-traded management mutual fund companies in our sample. The revenues of equity (bond) mutual funds account for only 0.32% (0.14%) of the total revenues of the median management company. Thus, the mutual fund segment is of minor importance for most management companies. Although the relative importance of the mutual fund segment differs substantially between below and above median equity funds (0.11% vs. 9.63% of total company revenues), we find that the impact of company performance on fund flows is almost identical across the two groups of companies. This result indicates that the relation between flows and company returns is unlikely to simply reflect the superior performance of the mutual funds.

To investigate whether there is a non-linear relation between company performance and family flows, we estimate whether flows react more to inferior or superior company performance. Whereas the mutual fund literature has shown a higher sensitivity to fund performance for funds with superior performance, we find a higher sensitivity to company performance for firms with inferior prior performance. This result shows that funds managed by distressed

companies with poor industry-adjusted stock returns experience significantly larger outflows than expected by their prior fund performance. Thus, our results give an indication of the costs of financial distress in financial conglomerates.

We also study whether there is an impact of the company performance on the labor market of mutual fund managers. We find a negative relation between manager departures and the performance of the management company even after controlling for the fund performance. This result contributes to the mutual fund literature that has shown that the fund performance has a significant impact on fund manager turnover (e.g., Khorana (1996)).

Our final question addresses whether the response of fund investors to the company performance is justified. To answer this question, we estimate the relation between the prior performance of management companies and the subsequent fund performance. Although these performance predictability tests have limited power, we find that funds affiliated with poorly performing management companies tend to exhibit relatively poor subsequent performance. Thus, fund investors might rationally withdraw funds from poorly performing management companies in anticipation of inferior subsequent performance.

There is a large mutual fund literature that investigates the impact of fund performance on money flows and manager turnover.[1] Although the relation between the performance of individual funds and subsequent fund flows has received a lot of attention in the mutual fund literature, no papers have analyzed the relation between the performance of the management company and the subsequent money flows and manager turnover.

[1]Papers on the relation between prior performance and subsequent flows include Ippolito (1992), Brown, Harlow, and Starks (1996), Chevalier and Ellison (1997), Goetzmann and Peles (1997), Sirri and Tufano (1998), Koski and Pontiff (1999), Zheng (1999), DelGuercio and Tkac (2002), Lynch and Musto (2003), Berk and Green (2004), Nanda, Wang, and Zheng (2004), Huang, Wei, and Yan (2007), Ivkovich and Weisbenner (2009), Spiegel and Zhang (2010), Chapman, Evans, and Xu (2010), Pastor and Stambaugh (2010), and Huang, Sialm, and Zhang (2011). Papers on the relation between manager turnover and fund performance include Chevalier and Ellison (1999), Hu, Hall, and Harvey (2000), Khorana (2001), Massa, Reuter, and Zitzewitz (2010), and Deuskar, Pollet, Wang, and Zheng (2010).

Whereas the early mutual fund literature has focused on individual mutual funds, several recent papers have studied the implications of family affiliation and the ownership of the mutual fund families. Massa and Rehman (2008) document that approximately 40% of the mutual funds between 1990 and 2004 belonged to financial conglomerates. The literature on the economics of mutual fund families has investigated investment strategies, risk taking, and incentives in families.[2] Our paper contributes to this literature by studying the relation between the past performance of the management company and the future money flows and management turnover in mutual funds.

Studying the spillovers in mutual fund management companies helps us to better understand the industrial organization of diversified conglomerates. Offering mutual funds as part of a financial conglomerate has advantages because the mutual fund segment can benefit from synergies, information spillovers, diversification, economies of scope, and easier access to capital markets. On the other hand, conglomerates have more complex and less transparent structures and might exacerbate agency problems.[3]

In addition, our paper also sheds light on the literature discussing the economic costs of financial distress. The corporate finance literature has indicated that financially distressed firms might lose their customers and employees. However, it has been difficult to find direct evidence for such spillover effects.[4] Our paper provides direct evidence that the stock price performance of mutual fund management companies has a significant impact on the fund customers (mutual fund flows) and on the fund employees (fund managers) even if the mutual

[2]Papers in this literature include Khorana and Servaes (1999), Massa (2003), Chen, Hong, Huang, and Kubik (2004), Nanda, Wang, and Zheng (2004), Gaspar, Massa, and Matos (2006), Gervais, Lynch, and Musto (2006), Ivkovich (2006), Reuter (2006), Kempf and Ruenzi (2008), Massa and Rehman (2008), Bhattacharya, Lee, and Pool (2010), Evans (2010), and Gallaher, Kaniel, and Starks (2010).

[3]See the surveys of Stein (2003) and Maksimovic and Philips (2007) for additional information on the theoretical and empirical literature on conglomerates.

[4]See the surveys by Parsons and Titman (2008) and Graham and Leary (2011) for reviews of the literature on capital structure and corporate strategy.

fund segment accounts for a very small fraction of the total company revenues.

The remainder of the paper is structured as follows. Section 2 describes the construction of our database and summarizes the distribution of the various variables. Sections 3 and 4 study the relation between management company performance and fund flows for stock and bond funds. Section 5 describes the relation between company performance and fund manager turnover. Finally, Section 6 investigates whether the sensitivity of fund flows to the management company performance is justified by subsequent differences in fund performance.

2 Data and Summary Statistics

We describe in this section the sample construction and report some key summary statistics.

2.1 Sample Construction

The data on mutual funds is obtained from the survivorship bias-free mutual fund database provided by the Center for Research in Security Prices (CRSP). We focus on the period between January 1992 to December 2009, for which management company information is available. The first sample includes all diversified U.S. equity funds. We exclude specialized sector funds, international funds and balanced funds.[5] The second sample includes all taxable U.S. government and corporate bonds funds. We exclude municipal bond funds since these funds are tax-exempt and cannot be compared directly with taxable bond funds. We also exclude money market funds and bond funds with more than 50% holdings in equity securities.[6]

Mutual funds must further satisfy the following criteria: First, the management company

[5]Funds with Lipper objective codes EI, EIEI, ELCC, G, GI, LCCE, LCGE, LCVE, MC, MCCE, MCGE, MCVE, MLCE, MLGE, MLVE, MR, SCCE, SCGE, SCVE, and SG are retained as equity funds.

[6]Bond funds with Lipper objective codes A, BBB, GB, GI, GUT, GUS, HY, IID, IUG, MSI, SID, SII, SIU, SUS, SUT, and USM are retained.

is publicly traded or a subsidiary of a publicly traded company. Second, the funds must have non-missing management company names, non-missing monthly total net assets, non-missing turnover and expense ratios, and non-missing Lipper investment objective codes. Third, the funds must have at least 24 months of non-missing returns.

From the CRSP mutual fund database, we obtain the names of management companies and their corresponding management codes. Using these names, we manually search through the CRSP stock database to find the CUSIPs of the corresponding publicly traded stocks. To take into account mergers affecting management companies or their parents, we extract a list of mergers from the SDC Platinum database and assign the funds to the merged companies after the effective date of the mergers. Using the matched CUSIPs, we obtain monthly stock returns of management companies or their publicly-traded parent companies (if the management company is a subsidiary) from the stock files provided by CRSP. We find that 91.4% of mutual funds in our sample share the same names as their parent company.

We use Compustat to obtain annual revenues of the management company and the CRSP mutual fund database to obtain management fees for each fund which allow us to compute the dependency of the management company on revenues generated by its fund management segment. To examine fund manager turnover, we receive from Morningstar the identities of managers and their starting and ending dates at the respective funds.

Overall, our mutual fund sample includes 6,102 equity funds and 3,155 bond funds after applying our selection criteria. For most of our analyses, we separately aggregate the equity and the bond funds offered by each management company. These mutual funds are affiliated with 118 publicly traded fund management companies. These identified fund families account for 71% of the assets under management in the mutual fund sector.

2.2 Summary Statistics

This section explains the construction of the variables used in our study and reports some key summary statistics.

2.2.1 Management Company Performance

We measure the performance of a management company using the industry-adjusted stock returns. We first employ the 48 industry classification by Fama and French to sort management companies into industries according to their SIC codes.[7] We then obtain the value-weighted portfolio returns for each industry from Kenneth French's website and compute management company performance as the average of its industry-adjusted returns (CR) over the past 12, 24, and 36 months, respectively. We require a company to have at least 12 months of available data to compute the industry-adjusted returns. As investors are more likely to react to persistent rather than transient management company performance, a 36-month time horizon allows us to better capture the longer term performance of a firm. However, a 12-month performance allows us to examine shorter term sensitivity of investors to management company performance.

As robustness tests, we use alternative measures of management company performance. Instead of using industry-adjusted returns, we use the raw average returns of management companies (CRR) or the risk-adjusted returns according to the Fama-French-Carhart four factor model ($CFFR$). To obtain the Fama-French-Carhart risk-adjusted returns, we estimate the OLS factor loadings of funds on a rolling basis using 24 months of company returns. The risk-adjusted company return over the prior 12, 24, and 36 months ($CFFR$) is obtained by averaging the differences between the actual monthly fund returns and the expected fund

[7] The 48 industry classification is available from Kenneth French's website: (http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/index.html).

returns using the estimated betas. The factor loadings of company j are computed using the Fama-French-Carhart four-factor model (FFM):

$$\begin{aligned} R_{j,t} - R_{TB,t} &= \alpha_{j,t} + \beta_{j,t}^{M}(R_{M,t} - R_{TB,t}) + \beta_{j,t}^{SMB}(R_{S,t} - R_{B,t}) \\ &\quad + \beta_{j,t}^{HML}(R_{H,t} - R_{L,t}) + \beta_{j,t}^{UMD}(R_{U,t} - R_{D,t}) + \epsilon_{j,t}. \end{aligned} \tag{1}$$

The return of company j during time period t is denoted by $R_{i,t}$. The index M corresponds to the market portfolio and the index TB to the risk-free Treasury bill rate. Portfolios of small and large stocks are denoted by S and B, respectively; portfolios of stocks with high and low ratios between their book values and their market values are denoted by H and L, respectively; and portfolios of stocks with relatively high and low returns during the previous year are denoted by U and D, respectively. The Carhart (1997) model nests the CAPM model (which includes only the market factor) and the Fama and French (1993) model (which includes the size and the book-to-market factors in addition to the market factor).

Panel A of Table 1 reports the characteristics of companies that offer equity mutual funds.[8] The average management company in our equity sample experiences an industry-adjusted return of 0.25% per month over the prior 12 months. The publicly traded companies in the sample exhibit significant variation in their average monthly industry-adjusted performance, as reflected by the standard deviation of 2.67%. The mean raw return of management companies equals 1.28% per month over the prior 12 months and the mean four-factor adjusted return equals 0.37% per month. Whereas the first three rows list the moments of the mean company performance over the prior 12 months, the subsequent three rows list the moments of the standard deviations of the company performance over the prior 12 months. We also compute the moments of the company performance over the prior 24 and 36 months. The distribution of these moments is not summarized for brevity.

[8]The characteristics of management companies differ slightly across the equity and the bond samples because not all management companies offer both bond and equity funds over all time periods.

To obtain an impression of the importance of the mutual fund revenues relative to the total revenues of management companies, we compute for each fund in each year the dollar amount of management fees as the product of the annual management fees listed in the CRSP mutual fund database and the average of the total monthly net assets over the past 12 months. Using annual revenues obtained from Compustat, we sum the dollar management fees across all member funds under the same management company and divide by the company's annual revenue to obtain the revenue percentage ($REVPCT$). As the management fee data are only available from 1998 onwards, the analyses involving $REVPCT$ are restricted to the sub-sample period 1998-2009. For the equity (bond) funds sample, $REVPCT$ measures the revenue derived from the management of equity (bond) funds in our sample only.[9]

Mutual funds account for a relatively small fraction of the revenues for most management companies. The management fees of equity (bond) mutual funds account on average for only 4.90% (1.13%) of the revenues of the management companies. Half of our management companies have management fees from equity (bond) mutual funds that are below 0.32% (0.14%) of their total revenues. In some of our analyses, we focus on these companies with below median revenue dependencies.

2.2.2 Mutual Fund Variables

Since most of our analyses are performed at the management company level, we aggregate flows into each fund family separately for bond funds and equity funds. First, we sum the monthly new money (dollar) flows into each fund family following Zheng (1999) and Nanda, Wang, and Zheng (2004). The monthly new money flow into each family is defined as the dollar change in the monthly total net asset value (TNA) minus the price appreciation of

[9]Our results are not affected qualitatively if we use the expense ratio as a proxy for the fund revenues instead. The expense ratio is available over the whole time period but might include revenues that do not accrue to the management company.

family assets over the month (R). Assuming that new money is invested at the end of each month, new money flow into family f in month t is defined as:

$$FLOW_{f,t} = TNA_{f,t} - TNA_{f,t-1}(1 + R_{f,t}), \tag{2}$$

where $R_{f,t}$ is the weighted-average investor return of all equity or bond mutual funds of a family and $TNA_{f,t}$ is the sum of the total net asset values of all equity or bond mutual funds of the management company. To obtain the new money growth rate for fund family f in month t, we divide the family flows by the aggregate assets of all member funds at the beginning of the month:

$$NMG_{f,t} = \frac{FLOW_{f,t}}{TNA_{f,t-1}}, \tag{3}$$

Panel B of Table 1 summarizes the results for the equity fund sample and Panel C summarizes the results for the bond fund sample. To remove outliers, we winsorize NMG at the 1% and 99% levels. The mean mutual fund family experiences an inflow of 0.05% per month for their equity funds and 0.03% for their bond funds. The distribution of the new money growth is skewed to the right as the median is smaller than the mean.

The flows to a mutual fund family are affected by the aggregate flows to the mutual fund sector. Individual fund families are likely experiencing fund inflows in periods where the aggregate mutual fund flows are large. Spiegel and Zhang (2010) suggest using changes in market share to capture changes in the competitive environment of mutual funds. The change in the market share $CMKTS$ of fund family f at time t is defined as follows:

$$CMKTS_{f,t} = \frac{TNA_{f,t}}{\sum_f TNA_{f,t}} - \frac{TNA_{f,t-1}}{\sum_f TNA_{f,t-1}}. \tag{4}$$

Alternatively, we also compute the percentage change in market share $PCMKTS$:

$$PCMKTS_{f,t} = \frac{\frac{TNA_{f,t}}{\sum_f TNA_{f,t}} - \frac{TNA_{f,t-1}}{\sum_f TNA_{f,t-1}}}{\frac{TNA_{f,t-1}}{\sum_f TNA_{f,t-1}}}. \tag{5}$$

For equity funds, we compute the risk-adjusted returns of all member funds within the fund family using the Fama-French-Carhart four-factor model as described in equation (1). We use rolling OLS regressions to estimate the factor loadings over the prior 24 months. The risk-adjusted return $FR_{i,t}$ of fund i in month t is computed by averaging the difference between the fund return and the expected return using the estimated Fama-French-Carhart factor loadings. This method eliminates young funds with fewer than 24 trading months. The family abnormal returns are computed by taking the TNA-weighted averages of the individual abnormal returns. The mean monthly four-factor adjusted return of equity mutual funds in a family equals -0.12% over the prior 12 months. Fund families differ significantly in the performance of their equity mutual funds. The interquartile range of the mean equity four-factor adjusted fund family return over the prior 12 months equals [-0.34%, 0.07%].

An alternative method to control for the performance of mutual funds is to adjust the fund return for the median return of funds with the same investment styles. Thus, we adjust the returns of each member fund by the median return of funds within the same Lipper investment objective code, value-weight these adjusted fund returns by the prior $TNAs$, and sum these weighted adjusted returns across all member funds to obtain the monthly style-adjusted fund returns in a family. We then average the style-adjusted returns over the prior 12, 24 and 36 months to obtain the style-adjusted fund return $FSAR$.

Equity funds in our sample outperformed the median Lipper fund in the same objective code on average by 0.02% over the prior 12 months, whereas bond funds underperformed the median Lipper fund in the same objective code on average by -0.01%. Not surprisingly, the cross-sectional deviation of fund performance differs more for equity funds than for bond funds. The interquartile range of the mean style-adjusted fund return over the prior 12 months equals [-0.21%, 0.24%] for equity funds and [-0.07%, 0.09%] for bond funds.

To capture the strategy chosen by the fund family, we follow Nanda, Wang, and Zheng

(2004) in constructing (i) a cross-sectional standard deviation of the abnormal fund returns ($Std.Dev.FR$), (ii) an indicator variable ($STAR_{f,t}$) that indicates the presence of at least one member fund with a five-star rating by Morningstar within the family, and (iii) the number of member funds in the family ($NUMFDS_{f,t}$). In each month, the cross-fund return standard deviation is constructed as the standard deviation of the abnormal risk-adjusted returns (or investment objective-adjusted returns) of all member funds within fund family. The mean cross-fund standard deviation for equity funds is 1.36% using four-factor adjusted returns. The cross-sectional standard deviation of bond funds is lower and equals 0.53% for style-adjusted returns. Fund families in our sample manage on average 25.11 equity funds and 14.48 bond funds and around 36% of families manage a star equity fund, whereas 29% of families manage a star bond fund. Following extant studies, we also control for the size, the turnover ratio, and the expense ratio at the fund family level. The family turnover and expense ratio is computed by aggregating the TNA-weighted measures at the individual fund level across all member funds. Equity mutual funds have an average turnover of around 70% and charge an expense ratio of 1.14%. The turnover of bond funds equals around 134% and their expense ratio equals 0.90%.

2.2.3 Management Turnover

To examine if the management company performance is a potential determinant of individual fund manager's departure, we first match the list of manager names obtained from Morningstar to our sample funds using the fund's CUSIP. As not all of our sample funds from CRSP have non-missing CUSIPs and some funds with available CUSIPs are not covered in the list of funds with manager names from Morningstar, we have a reduced sample of funds for the analyses pertaining to management turnover. Thus, we only have available fund manager data for 1,203 equity funds and for 633 bond funds.

To identify managers who leave the fund, we compare the ending date of each manager to the last trading date of the fund. If the ending date of the manager precedes the last trading date of the fund, we assign a $DEPART$ indicator variable to unity, and zero otherwise. Note that we do not know the reason for departures and cannot distinguish whether the manager is forced to quit or leaves voluntarily. However, we exclude forced departures due to fund mergers and liquidations. For funds with multiple managers, we consider that there is a departure if at least one manager leaves in any month. In each month, we further compute the manager's tenure ($TENURE$) at the fund using the current date minus the starting date of the manager. For funds with multiple managers, we use the average tenure across all managers of the fund. The average tenure equals 48 months for an equity manager and 49 months for a bond manager. We also keep track of whether mutual funds are team managed or single managed. Team managed funds account for 60% of equity funds and 57% of bond funds.

3 Flows of Equity Mutual Funds

In this section, we analyze whether the performance of the management company affects the flows into equity mutual funds. Individual investors might avoid holding mutual funds affiliated with companies that performed poorly. On the other hand, funds affiliated with management companies with a good reputation might benefit. Since the performance of the management company might reflect the performance of its mutual funds, it is important to control for the performance of the funds. In addition, we also study subsamples of management companies, where the mutual funds account for a very small portion of the overall revenues of the publicly traded firms.

3.1 Univariate Relation

To obtain a first impression of the relation between firm performance and mutual fund flows, we sort management companies monthly into deciles according to their industry-adjusted performance over the prior 12, 24, and 36 months. Panel A of Figure 1 depicts the new money growth rates over the subsequent month of equity funds managed by companies in different performance deciles.

Our main result shows that the prior management company performance plays an important role in explaining mutual fund flows. For example, equity funds affiliated with fund companies in the top industry-adjusted performance decile over the prior 36 months increase their assets under management in the subsequent month by 0.29%. On the other hand, equity funds from companies in the bottom decile lower their assets under management by 0.33% in the subsequent month. Since the prior company performance is measured over a relatively long time period, the composition of the decile portfolios remains very stable over time and the fund flows persist over extended time periods. These results indicate that company performance has a significant impact on fund flows.

3.2 Bivariate Summary Statistics

To investigate whether the results are robust after controlling for fund performance, we double-sort funds according to their management company and their fund performance. We sort management companies monthly into quartiles according to their industry-adjusted performance over the prior 12, 24, and 36 months, respectively. We independently sort the management companies into quartiles according to the four-factor adjusted performance of their equity mutual funds. The mean family flows to equity funds are reported in Table 2. The rows correspond to companies with different stock performance and the columns correspond to companies with different mutual fund performance. The standard errors are double-clustered

by time and management company following Petersen (2009).

Panel A1 of Table 2 reports the mean monthly new money growth rates for funds sorted according to the fund and company performance levels over the prior 12 months. Consistent with the prior literature, we find that families with superior fund performance exhibit higher net flows. In addition, we also find that funds of management companies with superior performance also attract significantly higher flows even after keeping fund performance constant. The inflows into funds of top quartile management companies exceed the net inflows of bottom quartile management companies by between 0.12 (for bottom quartile fund performers) and 0.46 percentage points (for second quartile fund performers) per month.

The economic and statistical significance of the results increases substantially if we lengthen the prior performance horizon, as shown in Panels A2 and A3. For example, the flow difference between top and bottom management company performance quartiles ranges between 0.48 and 0.60 percentage points using a 24-month performance window. In this case, all the flow differences are statistically significant at a one percentage point level.

By sorting the families into quartiles according to their fund performance, we already control for the variation of contemporaneous fund performance across the four fund performance groups. To study whether there is additional variation in fund performance within the four groups, we report in Panels B1-B3 the average four-factor adjusted fund returns over the previous 12, 24, and 36 months. The fund performance increases when we move across columns simply because the fund families are sorted according to the fund performance. However, we find very little additional variation in the fund performance within the four FR quartiles. For example, the return differences between the fourth and the first CR quartiles in Panel B1 are effectively zero for the two interior portfolios $FR2$ and $FR3$, which exhibited in Panel A1 the largest differences in fund flows. This result indicates that the stock price performance of management companies is primarily driven by different factors than the performance of the

affiliated mutual funds. Thus, the sensitivity of flows to company performance summarized in Panels A1-A3 is unlikely driven by contemporaneous differences in fund performance.

3.3 Multivariate Regressions

To explore in more depth the impact of the company's performance on equity flows, we use multivariate OLS regressions including time fixed effects. We cluster the standard errors by both time and management company:

$$\begin{aligned} NMG_{f,t} &= \beta_{0,t} + \beta_1 CR_{f,t-1} + \beta_2 FR_{f,t-1} + \beta_3 Std.Dev.CR_{f,t-1} \\ &+ \beta_4 Std.Dev.FR_{f,t-1} + \beta_5 LOG(TNA_{f,t-1}) + \beta_6 TO_{f,t-1} \\ &+ \beta_7 EXP_{f,t-1} + \beta_8 LOG(1 + NUMFDS_{f,t-1}) + \beta_9 STAR_{f,t-1} + \epsilon_{f,t}, \end{aligned} \tag{6}$$

where CR is the industry-adjusted return of the management company, FR is the four-factor adjusted return of the equity mutual funds in a fund family, $Std.Dev.CR$ is the time-series standard deviation of CR, $Std.Dev.FR$ is the cross-sectional standard deviation of the fund-specific four-factor adjusted returns within a fund family, TNA is the total assets under management for the equity mutual funds of the management company, TO is the average turnover, EXP is the average expense ratio, $NUMFDS$ is the number of equity funds managed by the fund family, and $STAR$ is an indicator variable of whether the fund family manages a five-star equity fund following Nanda, Wang, and Zheng (2004). We expect β_1 to be positive if the stock performance of the management company attracts flows into the fund family after controlling for fund performance and other fund characteristics.[10]

The first three columns of Table 3 report the coefficient estimates using four-factor adjusted fund returns. A one percentage point increase in the industry-adjusted performance of

[10]Whereas our paper analyzes the impact of performance on flows, a related literature has studied the impact of flows on fund returns. Gruber (1996), Edelen (1999), Zheng (1999), Wermers (2003), Coval and Stafford (2007), Chen, Hanson, Hong, and Stein (2008), Zhang (2008), Chen, Goldstein, and Jiang (2010), and Lou (2009) provide evidence that mutual fund flows have an impact on subsequent fund performance.

the management company increases the new money growth rate by between 0.080 and 0.158 percentage points per month, depending on whether we measure performance over the prior 12 or prior 36 months. Consistent with Chevalier and Ellison (1997), Sirri and Tufano (1998), and Huang, Wei, and Yan (2007) we find that prior abnormal fund performance has also a significant impact on fund flows. When interpreting the economic magnitude of company and fund returns, it is important to take into account that the standard deviation of the company return is around five times larger than the standard deviation of the risk-adjusted fund return. For example, a one-standard deviation increase in the performance of the management company CR during the prior 36 months (which amounts to 1.82%) increases the flows into equity funds in the subsequent month by 0.29 percentage points. Similarly, a one-standard deviation increase in the performance of the mutual fund FR during the prior 36 months (which amounts to 0.41%) increases the flows into equity funds in the subsequent month also by 0.29 percentage points. The coefficient estimates on the management company performance remain economically and statistically significant if we use the raw fund return (middle three columns) or the style-adjusted returns (last three columns) to control for the fund performance. Thus, the impact of the company performance has an economically meaningful impact on the fund flows.

Consistent with Nanda, Wang, and Zheng (2004) we find that families that manage star equity funds attract significant new money flows. The remaining control variables are less important in explaining fund flows.

In the base case results, the new money growth is taken in the month immediately subsequent to the 12, 24, and 36 month return window. In an unreported robustness test we find that the results are almost identical if we include a time gap of one month. Thus, the results are not driven by short-term factors that might affect fund flows.

The new money growth rate is fairly persistent over time. In an unreported robustness

test, we find that the company performance remains statistically significant if we include the lagged new money growth rate as one additional explanatory variable.

Finally, the results are very similar using a Fama and MacBeth (1973) methodology. In this specification, we first estimate cross-sectional regressions of new money growth on company performance, fund performance, and the other control variables. In a second stage, we average the cross-sectional coefficients over the 203 months and compute Newey-West standard errors using a lag length of 12. For example, the Fama-MacBeth coefficient using a 24 month performance window equals 0.168 with a standard error of 0.040, which is very similar to the corresponding coefficient of 0.158 (0.043) in the pooled regression.

Table 4 shows that the results are also robust using alternative measures of the performance of the management companies. The different sets of columns show the results using industry-adjusted company returns, raw company returns, and four-factor adjusted company returns. The fact that the results are almost identical for industry-adjusted company returns as for raw company returns indicates that the results are driven by firm-specific and not by macro-economic industry factors.

3.4 Piecewise Linear Specification

To examine whether the performance-flow relation is non-linear, we estimate the sensitivity of fund flows separately for underperforming and outperforming funds:

$$\begin{aligned} NMG_{f,t} &= \beta_{0,t} + \beta_1 Min(CR_{f,t-1}, 0) + \beta_2 Max(CR_{f,t-1}, 0) + \beta_3 Min(FR_{f,t-1}, 0) + \\ &+ \beta_4 Max(FR_{f,t-1}, 0) + \beta_5 Std.Dev.CR_{f,t-1} + \beta_6 Std.Dev.FR_{f,t-1} + \beta_7 LOG(TNA_{f,t-1}) \\ &+ \beta_8 TO_{f,t-1} + \beta_9 EXP_{f,t-1} + \beta_{10} LOG(1 + NUMFDS_{f,t-1}) + \beta_{11} STAR_{f,t-1} + \epsilon_{f,t}. \end{aligned} \tag{7}$$

The first three columns of Table 5 use the four-factor adjusted fund returns and the last three columns use the style-adjusted fund returns. Although the slope coefficients are

positive for both segments, the coefficients are usually more significant for underperforming funds. Fund management companies that perform poorly relative to their peers tend to experience lower inflows. Thus, the impact of company performance appears to be particularly pronounced for fund companies that experience poor stock performance and are financially distressed. In contrast, we find that fund flows are generally more sensitive to positive fund performance than to negative fund performance, especially if we also take into account the impact of star performers.

3.5 Revenue Dependance

A relation between the performance of the management company and the activities of the affiliated mutual funds can occur due to direct and indirect spillover effects. On the one hand, the performance of the management company might simply be a reflection of the performance of the mutual fund segment. Companies that manage successful mutual funds might exhibit superior stock price performance because the stock price capitalizes the value of the mutual fund sector to the conglomerate. This direct spillover effect would be particularly pronounced for management companies where the mutual fund segment accounts for a large fraction of the company's revenues. On the other hand, indirect spillover effects between the various business segments could affect the money flows and the management turnover of mutual funds.

To address this question, we repeat the previous analysis separately for management companies with low (below sample median) and high (above sample median) revenue dependency on the fund management businesses. As reported in Table 1, the median percentage share of revenues from equity mutual funds is just 0.32% of the total revenues of the fund management companies. The revenue percentage due to equity funds differs significantly across the two subsamples. Whereas below median families generate on average only 0.11% of their revenues from equity mutual funds, above median families generate on average 9.63% of their

revenues from the equity mutual funds. Thus, it is unlikely that the fund performance would have a substantial direct impact on the stock price performance of management companies with below median revenue percentages. This result also confirms the low contemporaneous correlation between fund and company returns reported in Panels B1-B3 of Table 2.

Table 6 shows that the results are similar across the two subsamples. For example, a ten percentage point increase in the average industry-adjusted company performance over the prior 36 months increases the monthly flows by 1.80 percentage points for below median revenue percentage companies and by 1.95 percentage points for above median companies. Thus, our results are not just driven by companies where mutual funds are their main revenue source. Since the management fee is not available over the whole time period, the sample size decreases from 11,951 to 8,992 observations. However, in unreported results, we find similar results if we form the two subsamples according to the expense ratio, which is available over the whole sample period.

3.6 Subperiod Analysis

To study whether the results are robust over different time periods and economic environments, we divide our sample into subperiods. To economize on space, we only report the results using the fund and company performance over the prior 24 months. The first two columns of Table 7 report the results over the 1992-2000 and the 2001-2009 subperiods. The last two columns divide the sample by the economic environment as proxied by an indicator variable for NBER recessions.[11] Overall, we find slightly stronger results over the 2001-2009 subperiod and during NBER recessions.

[11] The NBER recession dates are available from http://www.nber.org.

3.7 Changes in Market Share

Following Spiegel and Zhang (2010), we use the change in the market share to capture changes in the competitive environment of mutual funds. The results summarized in Table 8 indicate that the performance of the management company has a significant impact on the change in the market share of mutual fund families. Well-performing fund management companies increase their market share.

3.8 Individual Fund Level Analysis

The previous analyses are performed at the management company level. As a robustness test, we examine in Table 9 the impact of the management company performance on the new money growth into individual funds while controlling for lagged individual fund characteristics such as fund size, expenses, turnover ratio, fund age, and whether the fund is a star fund. The first three columns use the four-factor adjusted fund performance as a control variable and the last three columns use the style-adjusted fund performance as a control variable. To control for cross-correlation in the residuals, we cluster the standard errors by time and management company. The results are not affected substantially using this alternative estimation method. The performance of the management company continues to have a significant impact on the flows into the company's equity funds.

3.9 Index Funds

The spillover effects between the management company and the mutual funds could be caused by changes in the perception of the investment ability of fund managers. For example, investors might withdraw money from poorly performing management companies because they anticipate that the investment ability of the fund managers might deteriorate. Deterioration of investment ability of the fund managers should matter less to investors of index funds since

these funds are passively managed. To investigate this hypothesis, we compute the relation between management company performance and the flows into index funds. Unfortunately, focusing on passively managed funds reduces our sample size from 11,951 to 3,133 observations and reduces the power of our tests. The coefficient on the industry-adjusted 36-month performance β_1 from equation (4) equals 0.078 for the index fund sample, whereas the corresponding coefficient equals 0.158 for the actively managed fund sample. These results indicate that about half of the effect of company performance carries over to index funds.

3.10 Investor Clienteles

The sensitivity of fund flows to company performance might depend on the clienteles of mutual funds. Mutual funds offered through defined contribution (DC) retirement plans might exhibit different sensitivity to firm performance than funds offered directly to investors. We obtain annual data on the size of the mutual fund assets held in the DC accounts from the 1997-2010 Pensions & Investments surveys of mutual fund families following Christoffersen, Geczy, Musto, and Reed (2006) and Sialm and Starks (2011). Unfortunately, we only have data on the proportion of DC assets for 34% of our sample. Using this restricted sample, we do not find a statistically significant difference in the relation between company performance and fund flows between above and below median DC funds.

4 Flows of Bond Mutual Funds

In the previous section, we relate returns of the equity securities of fund management companies to the flows of their equity mutual funds. It is possible that the equity securities of the management companies might be affected by the same fundamental factors as the equity funds. To alleviate this concern, we study in this subsection the relation between flows into fixed-income mutual funds and the stock performance of fund management companies.

4.1 Univariate Relation

The univariate relation between firm performance and bond fund flows is reported in Panel B of Figure 1. Consistent with the equity fund results, we find that the flows into bond funds are positively related to the prior performance of the affiliated management company. Whereas bond funds affiliated with management companies in the lowest five performance deciles using a 36-month window experience outflows, funds in the highest five performance deciles experience inflows. Furthermore, bond funds in the top performance decile over the prior 36 months attract flows of 0.14 percentage points per month, whereas funds in the bottom decile lose flows of 0.23 percentage points.

4.2 Bivariate Summary Statistics

To study the relation between flows into bond mutual funds and the stock performance of fund management companies, we sort management companies into 16 groups according to the style-adjusted performance of the fixed-income mutual funds of a management company and according to the industry-adjusted stock return of the management company. The sorting into quartiles is performed independently across the two dimensions. The performance measures of the bond mutual funds and the management company stocks are measured over the prior 12, 24, and 36 months.

Panels A1 to A3 of Table 10 show that bond funds attract higher inflows of new money if the stock of their management company outperforms their industry peers. The flow difference between top and bottom performing management companies ranges between 0.11 and 0.42 percentage points per month for the four bond fund performance quartiles using a 12-month performance window. The magnitude of the results increases if we sort funds based on the returns over the prior 24 and 36 months. Although the results are not as strongly statistically significant as for equity funds, we find qualitatively similar effects for both types of funds.

Consistent with the bivariate sorts on equity funds, we do not find a strong contemporaneous correlation between the prior industry-adjusted company returns and the contemporaneous style-adjusted bond fund returns, as shown in Panels B1-B3.

4.3 Multivariate Regressions

Table 11 shows that the performance of the management company over the prior 24 and 36 months has a significant impact on the subsequent flows into bond mutual funds after controlling for the prior style-adjusted bond fund performance and other fund characteristics. The results are not sensitive to whether we measure the performance of the management company relative to their industry peers, the raw return, or the four-factor adjusted management company performance.[12]

The results on both bond and equity mutual funds indicate that the performance of the parent company has an impact on the perception of the clients. Mutual fund investors of poorly performing mutual fund companies tend to withdraw funds at an accelerated rate even if the mutual funds themselves experience relatively superior fund performance.

5 Management Turnover

Poorly performing companies do not just lose some of their customers, as demonstrated in the previous two sections, they might also lose some of their key employees. In this section, we investigate whether the prior performance of the management company has an impact on the turnover of fund managers.

Khorana (1996) finds that fund's past returns and asset growth predict turnover of managers. We adjust a fund's returns by the median value of funds with the same investment

[12]In unreported results, we show that the relation between bond flows and the performance of the management company stock remains significant if we control for the style-adjusted performance of an individual bond mutual fund instead of aggregating all bond mutual funds at the family level.

objective code and average the adjusted returns over 36 months. These measures are then used as proxies for managerial ability.

To examine whether the management company performance is a predictor of managerial turnover after controlling for the performance and other fund characteristics, we estimate a logit model with standard errors clustered by the fund management company:

$$\begin{aligned} DEPART_{f,t} &= \beta_{0,t} + \beta_1 CR_{f,t-1} + \beta_2 FR_{f,t-1} \\ &+ \beta_3 LOG(TNA_{f,t-1}) + \beta_4 LOG(AGE_{f,t-1}) + \beta_5 TO_{f,t-12} + \beta_6 EXP_{f,t-12} \\ &+ \beta_7 STAR_{f,t-1} + \beta_8 LOG(TENURE_{f,t-1}) + \beta_9 LOG(TEAM_{f,t-1}) + \epsilon_{f,t}, \end{aligned} \tag{8}$$

where $DEPART$ is an indicator variable that takes on unity if any manager at fund f departs in month t, and zero otherwise. We run this specification separately for equity and bond funds including time fixed effects.

Khorana (1996) finds that higher turnover of the fund predicts managerial departure and attributes this finding to the tendency of managers to window-dress by churning the fund's holdings excessively. We control for the fund's turnover ratio (TO), its size (TNA), and its age (AGE). Berk and Green (2004) argue that managers with higher ability will extract rents in the form of expenses charged to investors. Therefore, we also control for the fund's expense ratio (EXP). A star fund rating can provide certification for the fund manager's ability and affects manager turnover. Thus, we also include a $STAR$ dummy that indicates whether the fund has a star rating in the previous month. Lastly, we control for the tenure of the fund manager and whether the fund is team managed.

The first three columns report the results for equity mutual funds and the last three columns report the results for bond mutual funds. Although not all results are statistically significant, we observe that companies with worse stock price performance generally experience a higher attrition of managers. In addition, we find higher turnover levels in larger fund

families, for managers with shorter tenure, and for team managed funds.

6 Subsequent Fund Performance

Fund investors might rationally withdraw funds from poorly performing management companies in anticipation of inferior subsequent performance. To study whether the response of fund investors to the company performance is justified, we again sort management companies into 16 groups according to the fund and the management company performance. Table 13 summarizes in Panel A the four-factor adjusted equity fund returns and in Panel B the style-adjusted bond fund returns in the subsequent month.

Whereas the prior fund performance has significant predictability, we find less pronounced predictability using the company performance. Panel A shows that equity funds that exhibit the lowest prior fund and the lowest prior company performance exhibit the worst performance over the subsequent month. Whereas the average equity fund exhibits a four-factor alpha of -0.13% per month, funds in the lowest fund and company performance quartile exhibit a four-factor alpha of -0.26%. The performance difference between the highest and the lowest company performance quartiles is statistically significant for the two lower fund performance quartiles, but is insignificant for the two higher fund performance quartiles. The results are weaker for bond funds. It must be kept in mind that the performance predictability tests have limited power due to the large standard errors in our limited sample of fund families. In addition, the performance results could also be muted since the fund flows might be sufficiently large to eliminate a significant amount of performance predictability as suggested by Berk and Green (2004). Overall, our results indicate that the withdrawals from poorly performing mutual funds might be justified due to the relatively poor subsequent performance of funds affiliated with distressed management companies.

7 Conclusions

We investigate whether there are important spillover effects across different business segments of publicly traded firms that also manage mutual funds. We find that the prior stock price performance of the conglomerate has a significant impact on the money flows and the management turnover of the affiliated mutual funds. Mutual funds managed by poorly performing firms experience unexpectedly low flows of new money and exhibit a significantly higher attrition of talented fund managers even if the mutual funds themselves perform well. The economic magnitude of the relation between firm performance and money flows is similar in magnitude to the well-established relation between fund performance and money flows. These results indicate that the financial health of a conglomerate has a significant impact on the prospects of the various business segments. Our results also shed light on the economic costs of financial distress. Diversified companies that experience poor stock price performance tend to lose customers and key employees even in business segments that exhibit superior performance. On the other hand, business segments do not appear to benefit to a proportional degree if their parent company exhibits superior stock market performance.

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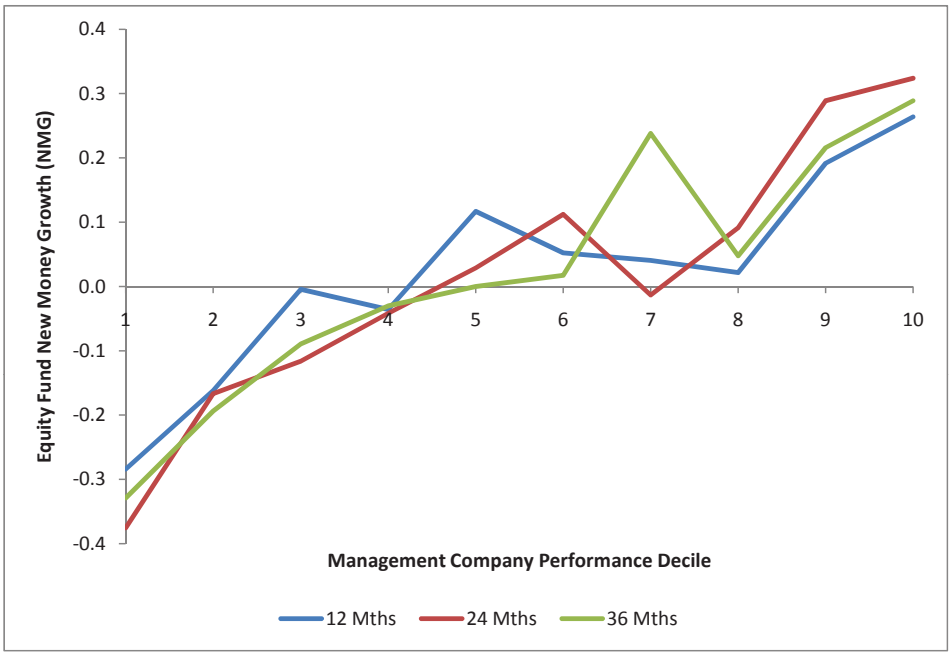
Panel A: Equity Funds



Panel B: Bond Funds

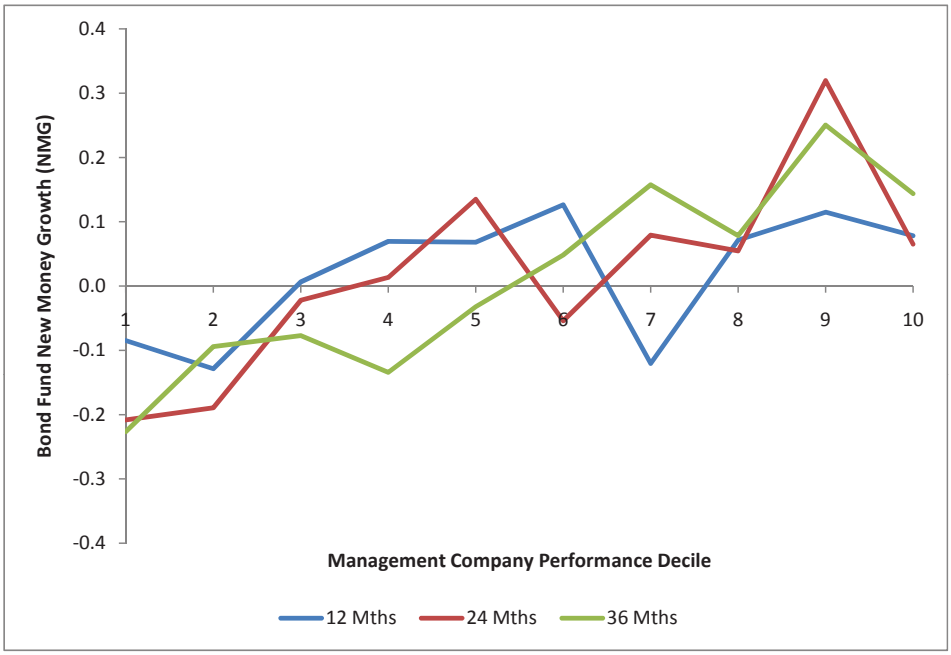


Figure 1: **Money Flows to Mutual Funds by Management Company Performance** These figures depict the relation between management company performance deciles and new money growth for equity and bond funds, where the industry-adjusted management company performance is measured over the prior 12, 24, and 36 months.

Table 1: **Summary Statistics of Mutual Funds**
This table presents summary statistics for both equity and bond funds. The sample period is from January 1992 to December 2009.

Panel A: Fund Management Companies					
Variables	Mean	Std.Dev.	25th Perc	Median	75th Perc
CR (Industry-Adjusted Return; 12 Mths; in %)	0.25	2.67	-1.08	0.12	1.37
CRR (Raw Return; 12 Mths; in %)	1.28	3.03	-0.12	1.35	2.77
CFFR (Four-Factor Adjusted Return; 12 Mths; in %)	0.37	2.52	-0.94	0.23	1.51
Std. Dev. CR (12 Mths, in %)	7.64	5.09	4.61	6.21	9.20
Std. Dev. CRR (12 Mths, in %)	8.69	5.76	5.23	7.20	10.31
Std. Dev. CFFR (12 Mths, in %)	7.66	4.92	4.77	6.36	8.96
REVPCT Equity Funds (Revenue Percent)	4.90	12.38	0.09	0.32	1.86
REVPCT Bond Funds (Revenue Percent)	1.13	4.98	0.03	0.14	0.47
Panel B: Equity Mutual Funds					
Variable	Mean	Std.Dev.	25th Perc	Median	75th Perc
NMG (New Money Growth; in %)	0.05	2.81	-1.03	-0.14	0.85
CMKTS (Change in Market Share; in 1000s)	-0.01	0.34	-0.04	-0.00	0.02
PCMKTS (Percent Change in Market Share; in %)	-0.23	3.15	-1.65	-0.34	1.07
FR (Four-Factor Adjusted Return; 12 Mths; in %)	-0.12	0.49	-0.34	-0.13	0.07
FRR (Raw Return; 12 Mths; in %)	0.56	1.64	-0.24	0.86	1.58
FSAR (Style-Adjusted Return; 12Mths; in %)	0.02	0.62	-0.21	0.02	0.24
Std. Dev. FR (12 Mths; in %)	1.36	1.05	0.74	1.15	1.73
Std. Dev. FRR (12 Mths; in %)	1.76	1.44	0.88	1.43	2.26
Std. Dev. FSAR (12 Mths; in %)	1.48	1.23	0.74	1.19	1.88
NUMFDS (Number of Funds)	25.11	34.97	3	9	33
STAR (Star Fund)	0.36	0.48	0	0	1
TNA (Total Net Assets; in $M)	9,094	17,723	247	1,342	9,850
TO (Turnover; in %)	70.30	51.39	36.50	61.87	86.50
EXP (Expense Ratio; in %)	1.14	0.37	0.96	1.14	1.33
Panel C: Bond Mutual Funds					
Variable	Mean	Std.Dev.	25th Perc	Median	75th Perc
NMG (New Money Growth; in %)	0.03	3.14	-1.16	-0.19	1.03
CMKTS (Change in Market Share; in 1000s)	-0.01	0.43	-0.06	-0.00	0.03
PCMKTS (Percent Change in Market Share; in %)	-0.07	3.77	-1.70	-0.37	1.22
FSAR (Style-Adjusted Return; 12Mths; in %)	-0.01	0.33	-0.07	0.01	0.09
FRR (Raw Return; 12 Mths; in %)	0.44	0.69	0.19	0.48	0.77
Std. Dev. FSAR (12 Mths; in %)	0.53	0.65	0.17	0.35	0.66
Std. Dev. FRR (12 Mths; in %)	1.15	1.22	0.37	0.78	1.51
NUMFDS (Number of Funds)	14.48	16.87	3	7	21
STAR (Star Fund)	0.29	0.45	0	0	1
TNA (Total Net Assets; in $M)	4,714	13,475	179	833	5,059
TO (Turnover; in %)	133.94	119.37	54.00	95.24	183.02
EXP (Expense Ratio; in %)	0.90	0.30	0.72	0.86	1.07

Table 2: **Equity Fund Flows by Management Company Performance (CR) and Equity Fund Performance (FR)**

The table independently sorts management companies into quartiles by their prior industry-adjusted stock returns (CR) and by the four-factor adjusted return of their equity funds (FR). Panels A1, A2, and A3 summarize the mean new money growth rates in the subsequent month based on the fund and company performance over the prior 12, 24, and 36 months. The family fund flows are computed for each of the 16 groups as the average percentage new money growth rates (NMG). Panels B1, B2, and B3 summarize the mean four-factor adjusted return of the mutual funds over the prior 12, 24, and 36 months. The sample period ranges from January 1992 to December 2009. The standard errors of the differences are clustered by time and management company and are shown in parentheses. *, **, and *** represent statistical significance at the 10%, 5%, and 1% level, respectively.

Panel A1: New Money Growth (12 Month Performance)						
	ALL	FR 1	FR 2	FR 3	FR 4	4-1
ALL		−0.52	0.00	0.12	0.82	1.34***
						(0.08)
CR 1	−0.02	−0.61	−0.22	−0.03	0.76	1.37***
						(0.16)
CR 2	0.10	−0.50	−0.02	0.10	0.80	1.30***
						(0.15)
CR 3	0.08	−0.49	−0.01	0.17	0.67	1.16***
						(0.16)
CR 4	0.26	−0.49	0.25	0.26	1.03	1.52***
						(0.16)
4-1	0.29***	0.12	0.46***	0.30**	0.26	
	(0.07)	(0.14)	(0.15)	(0.14)	(0.18)	
Panel A2: New Money Growth (24 Month Performance)						
	ALL	FR 1	FR 2	FR 3	FR 4	4-1
ALL		−0.54	−0.03	0.17	0.77	1.31***
						(0.07)
CR 1	−0.16	−0.90	−0.32	−0.14	0.72	1.62***
						(0.16)
CR 2	0.02	−0.58	−0.07	0.07	0.67	1.25***
						(0.14)
CR 3	0.10	−0.38	−0.01	0.27	0.49	0.87***
						(0.19)
CR 4	0.40	−0.30	0.26	0.46	1.20	1.50***
						(0.16)
4-1	0.56***	0.59***	0.58***	0.60***	0.48***	
	(0.07)	(0.15)	(0.17)	(0.13)	(0.17)	
Panel A3: New Money Growth (36 Month Performance)						
	ALL	FR 1	FR 2	FR 3	FR 4	4-1
ALL		−0.54	−0.07	0.29	0.72	1.26***
						(0.08)
CR 1	−0.12	−0.78	−0.31	−0.04	0.65	1.43***
						(0.15)
CR 2	0.04	−0.59	−0.19	0.35	0.60	1.19***
						(0.14)
CR 3	0.12	−0.37	0.11	0.28	0.48	0.85***
						(0.15)
CR 4	0.36	−0.41	0.12	0.57	1.17	1.58***
						(0.17)
4-1	0.48***	0.37**	0.43***	0.61***	0.51***	
	(0.08)	(0.16)	(0.14)	(0.13)	(0.17)	

Panel B1: Fund Abnormal Returns over Prior 12 Months						
	ALL	FR 1	FR 2	FR 3	FR 4	4-1
ALL		−0.59	−0.24	−0.04	0.31	0.90***
						(0.04)
CR 1	−0.15	−0.61	−0.24	−0.04	0.29	0.91***
						(0.05)
CR 2	−0.14	−0.60	−0.23	−0.04	0.32	0.92***
						(0.04)
CR 3	−0.15	−0.61	−0.24	−0.04	0.28	0.90***
						(0.04)
CR 4	−0.13	−0.55	−0.24	−0.05	0.33	0.88***
						(0.05)
4-1	0.02	0.06*	0.00	0.00	0.04	
	(0.02)	(0.03)	(0.01)	(0.01)	(0.04)	

Panel B2: Fund Abnormal Returns over Prior 36 Months						
	ALL	FR 1	FR 2	FR 3	FR 4	4-1
ALL		−0.50	−0.21	−0.06	0.23	0.73***
						(0.04)
CR 1	−0.14	−0.53	−0.22	−0.06	0.25	0.78***
						(0.05)
CR 2	−0.14	−0.51	−0.21	−0.05	0.22	0.73***
						(0.04)
CR 3	−0.14	−0.49	−0.21	−0.06	0.20	0.70***
						(0.04)
CR 4	−0.14	−0.49	−0.21	−0.06	0.24	0.73***
						(0.05)
4-1	0.00	0.04	0.01	0.00	−0.01	
	(0.03)	(0.04)	(0.01)	(0.01)	(0.05)	

Panel B3: Fund Abnormal Returns over Prior 36 Months						
	ALL	FR 1	FR 2	FR 3	FR 4	4-1
ALL		−0.47	−0.20	−0.07	0.21	0.68***
						(0.04)
CR 1	−0.14	−0.53	−0.20	−0.07	0.25	0.78***
						(0.06)
CR 2	−0.13	−0.46	−0.20	−0.06	0.20	0.67***
						(0.04)
CR 3	−0.13	−0.44	−0.20	−0.07	0.17	0.62***
						−0.03
CR 4	−0.12	−0.45	−0.20	−0.07	0.22	0.67***
						(0.06)
4-1	0.02	0.08*	0.00	0.00	−0.03	
	(0.03)	(0.05)	(0.01)	(0.01)	(0.07)	

Table 3: **Equity Fund Flows by Management Company Performance: Alternative Fund Performance Measures**

This table uses OLS regressions to examine the relation between stock performance of management companies and aggregate fund flows into diversified U.S. equity funds managed by these companies. The dependent variable is family-level new money growth (NMG) in month t. The stock price performance of management companies is measured using the average industry-adjusted returns over the prior 12, 24, and 36 months (CR). FR is the average four-factor adjusted equity fund returns, the average raw equity fund returns, or the average investment objective-adjusted equity fund returns over the prior 12, 24, and 36 months. $Std.Dev.CR$ is the time-series standard deviation of CR. $Std.Dev.FR$ is the cross-sectional standard deviation of the fund-specific performance within a fund family. TNA is the family-level monthly total net assets value. TO is the TNA-weighted turnover ratio at the family-level. EXP is the TNA-weighted expense ratio at the family-level. $NUMFDS$ is the number of equity funds for the management company. $STAR$ is an indicator variable that takes on unity if the family has at least one member fund rated as a star fund. The sample period is from January 1992 to December 2009. Time dummies are included. Standard errors are clustered by time and management companies. All independent variables are lagged by one month. Standard errors are reported in parentheses. *, **, and *** represent statistical significance at the 10%, 5%, and 1% level, respectively.

	Dependent Variable: Monthly Family Flows (NMG)								
	Four-Factor Adjusted Fund Return			Raw Fund Return			Style- Adjusted Fund Return		
	12 Mths	24 Mths	36 Mths	12 Mths	24 Mths	36 Mths	12 Mths	24 Mths	36 Mths
CR	0.080***	0.158***	0.158***	0.071***	0.154***	0.156***	0.067***	0.139***	0.141***
	(0.024)	(0.043)	(0.049)	(0.024)	(0.041)	(0.047)	(0.023)	(0.041)	(0.047)
FR	0.804***	0.780***	0.712***	0.629***	0.557***	0.452***	0.877***	1.080***	1.053***
	(0.145)	(0.187)	(0.212)	(0.095)	(0.118)	(0.115)	(0.118)	(0.170)	(0.201)
Std. Dev. CR	0.003	0.024	0.035	0.005	0.024	0.035	0.003	0.021	0.033
	(0.018)	(0.026)	(0.032)	(0.017)	(0.025)	(0.030)	(0.017)	(0.025)	(0.030)
Std. Dev. FR	0.032	0.027	0.024	0.036	0.040	0.046	0.093**	0.078*	0.079*
	(0.048)	(0.048)	(0.049)	(0.037)	(0.037)	(0.038)	(0.043)	(0.043)	(0.044)
LOG(TNA)	0.001	0.001	0.000	0.001	0.001	0.001	0.000	0.000	0.000
	(0.000)	(0.001)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
TO	−0.001	−0.001	−0.001	−0.002	−0.002	−0.002	−0.002	−0.002	−0.002
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
EXP	0.123	0.031	−0.007	0.097	0.027	−0.002	0.074	−0.019	−0.063
	(0.243)	(0.224)	(0.220)	(0.232)	(0.213)	(0.209)	(0.232)	(0.212)	(0.207)
LOG(1+NUMFDS)	−0.002***	−0.002**	−0.002**	−0.002**	−0.002**	−0.002**	−0.002**	−0.001	−0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
STAR	0.007***	0.007***	0.007***	0.006***	0.006***	0.007***	0.006***	0.006***	0.006***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Observations	11,951	11,951	11,951	11,980	11,980	11,980	11,951	11,951	11,951
R-Squared	0.093	0.097	0.092	0.101	0.102	0.096	0.109	0.114	0.106

Table 4: **Equity Fund Flows by Management Company Performance: Alternative Company Performance Measures**

This table uses OLS regressions to examine the relation between stock performance of management companies and aggregate fund flows into diversified U.S. equity funds managed by these companies. The dependent variable is family-level new money growth (NMG) in month t. The stock price performance of management companies is measured using the average industry-adjusted returns, the average raw returns, and the average four-factor adjusted returns over the prior 12, 24, and 36 months (CR). FR is the average four-factor adjusted equity fund returns over the prior 12, 24, and 36 months. $Std.Dev.CR$ is the time-series standard deviation of CR. $Std.Dev.FR$ is the cross-sectional standard deviation of the fund-specific performance within a fund family. TNA is the family-level monthly total net assets value. TO is the TNA-weighted turnover ratio at the family-level. EXP is the TNA-weighted expense ratio at the family-level. $NUMFDS$ is the number of equity funds for the management company. $STAR$ is an indicator variable that takes on unity if the family has at least one member fund rated as a star fund. The sample period is from January 1992 to December 2009. Time dummies are included. Standard errors are clustered by time and management companies. All independent variables are lagged by one month. Standard errors are reported in parentheses. *, **, and *** represent statistical significance at the 10%, 5%, and 1% level, respectively.

	Dependent Variable: Monthly Family Flows (NMG)								
	Industry-Adjusted Company Return			Raw Company Return			Four-Factor- Adjusted Company Return		
	12 Mths	24 Mths	36 Mths	12 Mths	24 Mths	36 Mths	12 Mths	24 Mths	36 Mths
CR	0.080***	0.158***	0.158***	0.082***	0.156***	0.155***	0.073**	0.126**	0.126**
	(0.024)	(0.043)	(0.049)	(0.027)	(0.050)	(0.055)	(0.031)	(0.050)	(0.059)
FR	0.804***	0.780***	0.712***	0.797***	0.768***	0.701***	0.998***	1.158***	1.205***
	(0.145)	(0.187)	(0.212)	(0.145)	(0.189)	(0.212)	(0.167)	(0.245)	(0.298)
Std. Dev. CR	0.003	0.024	0.035	0.004	0.018	0.024	0.020	0.040	0.053
	(0.018)	(0.026)	(0.032)	(0.015)	(0.024)	(0.029)	(0.022)	(0.032)	(0.036)
Std. Dev. FR	0.032	0.027	0.024	0.031	0.028	0.026	0.037	0.033	0.029
	(0.048)	(0.048)	(0.049)	(0.048)	(0.048)	(0.049)	(0.051)	(0.051)	(0.053)
LOG(TNA)	0.001	0.001	0.000	0.001	0.000	0.000	0.001	0.000	0.000
	(0.000)	(0.001)	(0.001)	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
TO	−0.001	−0.001	−0.001	−0.001	−0.001	−0.001	−0.001	−0.001	−0.001
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
EXP	0.123	0.031	−0.007	0.124	0.047	0.018	0.089	0.031	−0.003
	(0.243)	(0.224)	(0.220)	(0.245)	(0.229)	(0.229)	(0.265)	(0.250)	(0.246)
LOG(1+NUMFDS)	−0.002***	−0.002**	−0.002**	−0.002***	−0.002**	−0.002**	−0.002**	−0.002**	−0.002*
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
STAR	0.007***	0.007***	0.007***	0.007***	0.007***	0.007***	0.007***	0.006***	0.006***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Observations	11,951	11,951	11,951	11,980	11,980	11,980	11,956	11,956	11,956
R-Squared	0.093	0.097	0.092	0.092	0.094	0.09	0.097	0.099	0.097

Table 5: **Equity Fund Flows by Management Company Performance: Piecewise Linear Regression**

This table uses OLS regressions to examine the relation between stock performance of management companies and aggregate fund flows into diversified U.S. equity funds managed by these companies. The dependent variable is family-level new money growth (NMG) in month t. The industry-adjusted performance of the management company (CR) and the four-factor adjusted performance of the equity mutual funds (FR) are divided into two piece-wise linear terms. The performance is measured over the past 12, 24, and 36 months. $Std.Dev.CR$ is the time-series standard deviation of CR. $Std.Dev.FR$ is the cross-sectional standard deviation of the fund-specific performance within a fund family. TNA is the family-level monthly total net assets value. TO is the TNA-weighted turnover ratio at the family-level. EXP is the TNA-weighted expense ratio at the family-level. $NUMFDS$ is the number of equity funds for the management company. $STAR$ is an indicator variable that takes on unity if the family has at least one member fund rated as a star fund. The sample period is from January 1992 to December 2009. Time dummies are included. Standard errors are clustered by time and management companies. All independent variables are lagged by one month. Standard errors are reported in parentheses. *, **, and *** represent statistical significance at the 10%, 5%, and 1% level, respectively.

	Dependent Variable: Monthly Family Flows (NMG)					
	Four-Factor Adjusted Fund Return			Style-Adjusted Fund Return		
	12 Mths	24 Mths	36 Mths	12 Mths	24 Mths	36 Mths
Min(CR, 0)	0.087**	0.185***	0.206***	0.062	0.157***	0.187***
	(0.041)	(0.056)	(0.065)	(0.039)	(0.053)	(0.064)
Max(CR, 0)	0.075*	0.136*	0.119	0.068*	0.122	0.105
	(0.040)	(0.076)	(0.080)	(0.038)	(0.075)	(0.078)
Min(FR, 0)	0.828**	0.634	0.111	0.745***	0.878***	0.905***
	(0.376)	(0.438)	(0.413)	(0.191)	(0.269)	(0.271)
Max(FR, 0)	0.794***	0.840***	0.949***	1.009***	1.284***	1.200***
	(0.163)	(0.211)	(0.265)	(0.184)	(0.296)	(0.348)
Std. Dev. CR	0.004	0.027	0.041	0.002	0.024	0.038
	(0.014)	(0.023)	(0.031)	(0.014)	(0.022)	(0.029)
Std. Dev. FR	0.001	0.001	0.001	0.000	0.000	0.000
	(0.000)	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)
LOG(TNA)	−0.001	−0.001	−0.001	−0.002	−0.002	−0.001
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
TO	0.134	0.050	0.023	0.098	0.006	−0.038
	(0.237)	(0.221)	(0.219)	(0.229)	(0.206)	(0.204)
EXP	0.032	0.029	0.028	0.095**	0.079*	0.082*
	(0.048)	(0.048)	(0.049)	(0.043)	(0.043)	(0.044)
LOG(1+NUMFDS)	−0.003***	−0.002**	−0.002**	−0.002**	−0.002*	−0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
STAR	0.007***	0.007***	0.007***	0.006***	0.006***	0.006***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Observations	11,951	11,951	11,951	11,951	11,951	11,951
R-squared	0.094	0.097	0.094	0.109	0.115	0.107

Table 6: **Equity Fund Flows by Management Company Performance and Fund Performance: Subsamples by Revenue Percentage**

This table uses OLS regressions to examine the relation between stock performance of management companies and aggregate fund flows into diversified U.S. equity funds managed by these companies. The equity funds are partitioned into two groups according to the management company's revenue dependency ($REVPCT$) in the previous year. $REVPCT$ is the percentage of revenues of the management company that is generated from management of U.S. equity mutual funds, and is computed as the product of the annual management fees multiplied by average family TNA over the 12 months in the year and divided by total revenues of the management company. The dependent variable is family-level new money growth (NMG) in month t. The stock price performance of management companies is measured using the average industry-adjusted returns over the prior 12, 24, and 36 months (CR). FR is the average four-factor adjusted equity fund returns over the past 12, 24, and 36 months. $Std.Dev.CR$ is the time-series standard deviation of CR. $Std.Dev.FR$ is the cross-sectional standard deviation of the fund-specific performance within a fund family. TNA is the family-level monthly total net assets value. TO is the TNA-weighted turnover ratio at the family-level. EXP is the TNA-weighted expense ratio at the family-level. $NUMFDS$ is the number of equity funds for the management company. $STAR$ is an indicator variable that takes on unity if the family has at least one member fund rated as a star fund. The sample period is from January 1998 to December 2009. Time dummies are included. Standard errors are clustered by time and management companies. All independent variables are lagged by one month. Standard errors are reported in parentheses. *, **, *** represent statistical significance at the 10%, 5%, and 1% level, respectively.

	Dependent Variable: Monthly Family Flows (NMG)					
	Below Median Revenue Percentage			Above Median Revenue Percentage		
	12 Mths	24 Mths	36 Mths	12 Mths	24 Mths	36 Mths
CR	0.062**	0.179***	0.180***	0.109***	0.177***	0.195***
	(0.025)	(0.045)	(0.064)	(0.037)	(0.061)	(0.062)
FR	0.692***	0.736***	0.597*	0.932***	1.043***	1.064***
	(0.200)	(0.259)	(0.322)	(0.223)	(0.299)	(0.377)
Std. Dev. CR	0.001	0.038	0.041	−0.002	0.007	0.024
	(0.025)	(0.034)	(0.039)	(0.018)	(0.029)	(0.045)
Std. Dev. FR	0.095	0.098	0.095	−0.050	−0.069	−0.084
	(0.087)	(0.086)	(0.086)	(0.074)	(0.076)	(0.075)
LOG(TNA)	0.003***	0.002**	0.002**	0.000	0.000	0.000
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
TO	0.000	0.001	0.001	−0.004	−0.004	−0.004
	(0.002)	(0.002)	(0.002)	(0.003)	(0.003)	(0.003)
EXP	0.224	0.127	0.075	0.440	0.322	0.247
	(0.304)	(0.302)	(0.303)	(0.478)	(0.395)	(0.355)
LOG(1+NUMFDS)	−0.004***	−0.004***	−0.004**	−0.003*	−0.002	−0.002
	(0.002)	(0.001)	(0.001)	(0.002)	(0.002)	(0.002)
STAR	0.008***	0.007***	0.007***	0.005**	0.006**	0.006**
	(0.002)	(0.002)	(0.002)	(0.003)	(0.002)	(0.002)
Observations	4,506	4,506	4,506	4,486	4,486	4,486
R-Squared	0.084	0.093	0.088	0.150	0.156	0.154

Table 7: **Equity Fund Flows by Management Company Performance and Fund Performance: Time Subsamples**

This table uses OLS regressions to examine the relation between stock performance of management companies and aggregate fund flows into diversified U.S. equity funds managed by these companies. The sample is divided into subsamples based on the time period (1992-2000 and 2001-2009) and based on the economic environment as proxied by an indicator variable for NBER recessions. The dependent variable is family-level new money growth (NMG) in month t. The stock price performance of management companies is measured using the average industry-adjusted returns over the prior 24 months (CR). FR is the average four-factor adjusted equity fund returns over the past 24 months. $Std.Dev.CR$ is the time-series standard deviation of CR. $Std.Dev.FR$ is the cross-sectional standard deviation of the fund-specific performance within a fund family. TNA is the family-level monthly total net assets value. TO is the TNA-weighted turnover ratio at the family-level. EXP is the TNA-weighted expense ratio at the family-level. $NUMFDS$ is the number of equity funds for the management company. $STAR$ is an indicator variable that takes on unity if the family has at least one member fund rated as a star fund. Time dummies are included. Standard errors are clustered by time and management companies. All independent variables are lagged by one month. Standard errors are reported in parentheses. *, **, *** represent statistical significance at the 10%, 5%, and 1% level, respectively.

	Dependent Variable: Monthly Family Flows (NMG)			
	Subperiods		Economic Environment	
	1992-2000	2001-2009	NBER Recessions	NBER Booms
CR	0.095**	0.157***	0.152***	0.145***
	(0.048)	(0.050)	(0.050)	(0.045)
FR	1.096***	1.030***	0.679**	1.122***
	(0.257)	(0.211)	(0.318)	(0.182)
Std. Dev. CR	−0.018	0.026	0.045***	0.016
	(0.027)	(0.026)	(0.017)	(0.028)
Std. Dev. FR	0.085*	0.017	0.034	0.087**
	(0.048)	(0.072)	(0.098)	(0.044)
LOG(TNA)	0.000	0.000	0.000	0.000
	(0.001)	(0.001)	(0.001)	(0.000)
TO	0.000	−0.003	0.000	−0.002
	(0.004)	(0.002)	(0.002)	(0.002)
EXP	0.227	−0.223	−0.712*	0.072
	(0.364)	(0.282)	(0.389)	(0.220)
LOG(1+NUMFDS)	0.000	−0.001	−0.001	−0.001
	(0.002)	(0.001)	(0.001)	(0.001)
STAR	0.006**	0.006***	0.005***	0.006***
	(0.002)	(0.002)	(0.002)	(0.001)
Constant	−0.011	−0.004	0.003	−0.009*
	(0.010)	(0.006)	(0.007)	(0.005)
Observations	4,266	7,685	1,768	10,183
R-squared	0.124	0.107	0.100	0.117

Table 8: **Equity Fund Flows by Management Company Performance and Fund Performance: Change in Market Share**

This table uses OLS regressions to examine the relation between stock performance of management companies and aggregate market share of diversified U.S. equity funds managed by these companies. The dependent variable is either the family-level change in the market share or the percentage change in the market share in month t. The market share is defined as the total value of equity funds managed by a family divided by the total value of all equity funds. The stock price performance of management companies is measured using the average industry-adjusted returns over the prior 12, 24, and 36 months (CR). FR is the average four-factor adjusted equity fund returns over the past 12, 24, and 36 months. $Std.Dev.CR$ is the time-series standard deviation of CR. $Std.Dev.FR$ is the cross-sectional standard deviation of the fund-specific performance within a fund family. TNA is the family-level monthly total net assets value. TO is the TNA-weighted turnover ratio at the family-level. EXP is the TNA-weighted expense ratio at the family-level. $NUMFDS$ is the number of equity funds for the management company. $STAR$ is an indicator variable that takes on unity if the family has at least one member fund rated as a star fund. The sample period is from January 1992 to December 2009. Time dummies are included. Standard errors are clustered by time and management companies. All independent variables are lagged by one month. Standard errors are reported in parentheses. *, **, *** represent statistical significance at the 10%, 5%, and 1% level, respectively.

	Dependent Variable:					
	Change in Market Share x100			Percentage Change in Market Share		
	12 Mths	24 Mths	36 Mths	12 Mths	24 Mths	36 Mths
CR	0.083***	0.147***	0.163**	0.088***	0.159***	0.147***
	(0.032)	(0.057)	(0.074)	(0.024)	(0.044)	(0.052)
FR	0.664***	0.750***	0.837**	0.928***	0.851***	0.766***
	(0.219)	(0.286)	(0.353)	(0.182)	(0.228)	(0.257)
Std. Dev. CR	−0.017	−0.016	−0.018	0.012	0.034	0.045
	(0.014)	(0.018)	(0.022)	(0.018)	(0.026)	(0.032)
Std. Dev. FR	−0.001	−0.001	−0.001	0.017	0.013	0.009
	(0.001)	(0.001)	(0.001)	(0.054)	(0.054)	(0.054)
LOG(TNA)	−0.003**	−0.003**	−0.003**	0.001	0.000	0.000
	(0.002)	(0.002)	(0.002)	(0.001)	(0.001)	(0.001)
TO	0.112	0.068	0.054	−0.002	−0.002	−0.002
	(0.212)	(0.217)	(0.222)	(0.002)	(0.002)	(0.002)
EXP	−0.07	−0.072	−0.076	0.032	−0.066	−0.101
	(0.053)	(0.053)	(0.054)	(0.263)	(0.246)	(0.243)
LOG(1+NUMFDS)	−0.002	−0.001	−0.001	−0.002**	−0.002**	−0.002*
	(0.002)	(0.002)	(0.002)	(0.001)	(0.001)	(0.001)
STAR	0.007***	0.006***	0.006***	0.007***	0.007***	0.007***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Observations	11,951	11,951	11,951	11,951	11,951	11,951
R-Squared	0.033	0.035	0.035	0.098	0.098	0.094

Table 9: **Equity Fund Flows by Management Company Performance and Fund Performance: Individual Fund Analysis**
This table uses OLS regressions to examine the relation between stock performance of management companies and fund flows into diversified U.S. equity funds managed by these companies. The dependent variable is fund-level new money growth (NMG) in month t. The stock price performance of management companies is measured using the average industry-adjusted returns over the prior 12, 24, and 36 months (CR). FR is the average four-factor adjusted equity fund return or the style-adjusted fund return over the past 12, 24, and 36 months. $Std.Dev.CR$ is the time-series standard deviation of CR. $Std.Dev.FR$ is the cross-sectional standard deviation of the fund-specific performance within a fund family. TNA is the monthly total net assets value of a fund. TO is the turnover ratio at the fund level. EXP is the expense ratio at the fund level. AGE is the time period in months since the inception of the fund. $STAR$ is an indicator variable that takes on unity if the fund is rated as a star fund in the previous month, and zero otherwise. The sample period is from January 1992 to December 2009. Time dummies are included. Standard errors are clustered by time and management companies. All independent variables are lagged by one month. Standard errors are reported in parentheses. *, **, and *** represent statistical significance at the 10%, 5%, and 1% level, respectively.

	Dependent Variable: Monthly Fund Flows (NMG)					
	Four-Factor Adjusted Fund Return			Style-Adjusted Fund Return		
	12 Mths	24 Mths	36 Mths	12 Mths	24 Mths	36 Mths
CR	0.048**	0.075**	0.073**	0.049**	0.104***	0.119***
	(0.019)	(0.029)	(0.033)	(0.019)	(0.031)	(0.036)
FR	1.533***	1.955***	2.158***	1.280***	1.647***	1.890***
	(0.106)	(0.151)	(0.168)	(0.104)	(0.132)	(0.146)
Std. Dev. CR	−0.002	0.006	0.009	−0.002	0.004	0.006
	(0.010)	(0.014)	(0.018)	(0.011)	(0.015)	(0.018)
Std. Dev. FR	0.064	−0.019	−0.054	0.123***	0.081*	0.046
	(0.070)	(0.091)	(0.095)	(0.042)	(0.046)	(0.049)
LOG(TNA)	−0.003***	−0.003***	−0.003***	−0.003***	−0.003***	−0.003***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
TO	0.000	0.000	0.000	0.000	0.000	0.000
	(0.000)	(0.000)	(0.001)	(0.000)	(0.000)	(0.001)
EXP	−0.984***	−0.939***	−0.918***	−1.022***	−0.985***	−0.955***
	(0.119)	(0.121)	(0.121)	(0.117)	(0.118)	(0.118)
Log(Age)	−0.002	−0.001	−0.001	−0.002	−0.002	−0.002
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
STAR	0.024***	0.023***	0.023***	0.023***	0.022***	0.022***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Observations	301,121	301,121	301,121	301,121	301,121	301,121
R-squared	0.054	0.056	0.055	0.059	0.06	0.06

Table 10: **Bond Fund Flows by Management Company Performance (CR) and Bond Fund Performance (FSAR)**

The table independently sorts management companies into quartiles by their prior industry-adjusted stock returns (CR) and by the style-adjusted return of their bond funds (FSAR). Panels A1, A2, and A3 summarize the mean new money growth rates in the subsequent month based on the fund and company performance over the prior 12, 24, and 36 months. The family fund flows are computed for each of the 16 groups as the average percentage new money growth rates (NMG). Panels B1, B2, and B3 summarize the mean style-adjusted return of the bond mutual funds over the prior 12, 24, and 36 months. The sample period ranges from January 1992 to December 2009. The standard errors of the differences are clustered by time and management company and are shown in parentheses. *, **, and *** represent statistical significance at the 10%, 5%, and 1% level, respectively.

Panel A1: New Money Growth (12 Month Performance)						
	ALL	FSAR 1	FSAR 2	FSAR 3	FSAR 4	4-1
ALL		−0.33	0.08	0.03	0.55	0.88***
						(0.10)
CR 1	−0.02	−0.50	0.12	−0.11	0.41	0.91***
						(0.19)
CR 2	0.11	−0.05	−0.10	0.14	0.43	0.48***
						(0.17)
CR 3	0.05	−0.38	0.08	−0.05	0.54	0.92***
						(0.18)
CR 4	0.20	−0.38	0.24	0.13	0.83	1.21***
						(0.17)
4-1	0.22**	0.11	0.13	0.24	0.42**	
	(0.10)	(0.17)	(0.21)	(0.19)	(0.18)	

Panel A2: New Money Growth (24 Month Performance)						
	ALL	FSAR 1	FSAR 2	FSAR 3	FSAR 4	4-1
ALL		−0.38	0.00	0.11	0.65	1.03***
						(0.10)
CR 1	−0.12	−0.67	−0.03	0.02	0.19	0.86***
						(0.18)
CR 2	0.11	−0.13	0.01	0.07	0.47	0.59***
						(0.18)
CR 3	0.10	−0.33	−0.06	−0.01	0.80	1.12***
						(0.17)
CR 4	0.29	−0.41	0.09	0.36	1.13	1.54***
						(0.19)
4-1	0.41***	0.27*	0.12	0.34*	0.95***	
	(0.09)	(0.16)	(0.17)	(0.20)	(0.20)	

Panel A3: New Money Growth (36 Month Performance)						
	ALL	FSAR 1	FSAR 2	FSAR 3	FSAR 4	4-1
ALL		−0.35	0.00	0.07	0.56	0.91***
						(0.10)
CR 1	−0.14	−0.54	0.04	−0.23	0.17	0.71***
						(0.19)
CR 2	−0.02	−0.26	−0.17	0.00	0.35	0.61***
						(0.17)
CR 3	0.08	−0.25	−0.01	−0.01	0.59	0.83***
						(0.17)
CR 4	0.36	−0.36	0.13	0.53	1.13	1.49***
						(0.19)
4-1	0.50***	0.18	0.09	0.76***	0.96***	
	(0.10)	(0.18)	(0.18)	(0.18)	(0.20)	

Panel B1: Fund Style-Adjusted Returns over Prior 12 Months						
	ALL	FSAR 1	FSAR 2	FSAR 3	FSAR 4	4-1
ALL		−0.29	−0.03	0.05	0.24	0.53***
						(0.05)
CR 1	−0.03	−0.37	−0.03	0.05	0.25	0.62***
						(0.11)
CR 2	0.01	−0.24	−0.03	0.05	0.23	0.47***
						(0.04)
CR 3	0.00	−0.25	−0.02	0.06	0.23	0.48***
						(0.04)
CR 4	0.01	−0.29	−0.02	0.06	0.26	0.55***
						(0.05)
4-1	0.04	0.08	0.00	0.01	0.01	
	(0.04)	(0.10)	(0.00)	(0.00)	(0.03)	

Panel B2: Fund Style-Adjusted Returns over Prior 24 Months						
	ALL	FSAR 1	FSAR 2	FSAR 3	FSAR 4	4-1
ALL		−0.21	−0.02	0.04	0.19	0.39***
						(0.03)
CR 1	−0.01	−0.25	−0.02	0.04	0.20	0.44***
						(0.07)
CR 2	0.02	−0.16	−0.02	0.04	0.20	0.36***
						(0.03)
CR 3	0.00	−0.21	−0.02	0.04	0.17	0.37***
						(0.03)
CR 4	0.01	−0.20	−0.02	0.04	0.19	0.38***
						(0.03)
4-1	0.01	0.05	0.00	0.00	−0.01	
	(0.03)	(0.06)	(0.00)	(0.00)	(0.03)	

Panel B3: Fund Style-Adjusted Returns over Prior 36 Months						
	ALL	FSAR 1	FSAR 2	FSAR 3	FSAR 4	4-1
ALL		−0.17	−0.02	0.03	0.16	0.34***
						(0.03)
CR 1	0.01	−0.20	−0.02	0.04	0.20	0.40***
						(0.05)
CR 2	0.02	−0.13	−0.02	0.03	0.17	0.30***
						(0.03)
CR 3	0.00	−0.15	−0.02	0.04	0.13	0.29***
						(0.02)
CR 4	0.00	−0.19	−0.01	0.03	0.16	0.35***
						(0.04)
4-1	−0.01	0.02	0.01	0.00	−0.04	
	(0.02)	(0.03)	(0.00)	(0.00)	(0.02)	

Table 11: **Bond Fund Flows by Management Company Performance and Fund Performance**
This table uses OLS regressions to examine the relation between the stock performance of management companies and aggregate fund flows into U.S. bond funds managed by these companies. The dependent variable is family-level new money growth (NMG) into bond funds in month t. The stock price performance of management companies is measured using the average industry-adjusted returns, the average raw returns, and the four-factor adjusted returns over the prior 12, 24, and 36 months. $FSAR$ is the average investment objective-adjusted bond fund return over the past 12, 24, and 36 months. $Std.Dev.CR$ is the time-series standard deviation of CR. $Std.Dev.FR$ is the cross-sectional standard deviation of the fund-specific performance within a fund family. TNA is the family-level monthly total net assets value. TO is the TNA-weighted turnover ratio at the family-level. EXP is the TNA-weighted expense ratio at the family-level. $NUMFDS$ is the number of bond funds for the management company. $STAR$ is an indicator variable that takes on unity if the family has at least one fund rated as a star fund. The sample period is from January 1992 to December 2009. Time dummies are included. Standard errors are clustered by time and management companies. All independent variables are lagged by one month. Standard errors are reported in parentheses. *, **, *** represent statistical significance at the 10%, 5%, and 1% level, respectively.

	Dependent Variable: Monthly Fund Flows (NMG)								
	Industry-Adjusted Company Return			Raw Company Return			Four-Factor Adjusted Company Return		
	12 Mths	24 Mths	36 Mths	12 Mths	24 Mths	36 Mths	12 Mths	24 Mths	36 Mths
CR	0.015	0.075*	0.117**	0.020	0.086**	0.115**	0.045	0.102**	0.138**
	(0.030)	(0.042)	(0.050)	(0.030)	(0.043)	(0.049)	(0.032)	(0.048)	(0.055)
FSAR	1.435***	2.184***	2.738***	1.438***	2.205***	2.775***	1.411***	2.190***	2.760***
	(0.232)	(0.394)	(0.537)	(0.235)	(0.398)	(0.540)	(0.239)	(0.411)	(0.562)
Std. Dev. CR	0.017	0.028	0.03	0.022	0.032	0.035	0.032	0.047*	0.055**
	(0.021)	(0.024)	(0.027)	(0.018)	(0.022)	(0.025)	(0.020)	(0.025)	(0.028)
Std. Dev. FSAR	0.186*	0.141	0.082	0.182*	0.137	0.078	0.172*	0.127	0.064
	(0.097)	(0.092)	(0.088)	(0.097)	(0.092)	(0.087)	(0.103)	(0.097)	(0.091)
LOG(TNA)	−0.001*	−0.002**	−0.002**	−0.001**	−0.002**	−0.002**	−0.001	−0.001	−0.001*
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
TO	−0.001	−0.001	−0.001	−0.001	−0.001	−0.001	−0.001*	−0.001*	−0.001*
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
EXP	−0.59	−0.576	−0.56	−0.590	−0.567	−0.543	−0.637	−0.563	−0.504
	(0.420)	(0.416)	(0.409)	(0.419)	(0.419)	(0.414)	(0.452)	(0.453)	(0.451)
LOG(1+NUMFDS)	0.003	0.003*	0.004**	0.003	0.003*	0.004**	0.003	0.003	0.003*
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
STAR	0.002*	0.002*	0.002*	0.002*	0.002	0.002	0.002*	0.002*	0.002*
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Observations	11,103	11,103	11,103	11,103	11,103	11,103	11,123	11,123	11,123
R-Squared	0.085	0.088	0.087	0.086	0.089	0.088	0.084	0.088	0.087

Table 12: **Fund Manager Turnover by Management Company Performance and Fund Performance**

This table presents results from a logit model, where the dependent variable is a $DEPART$ indicator variable that equals one if an individual fund has a departing manager. For funds with multiple managers, $DEPART$ takes on unity if there is at least one manager who departs. The first three columns investigate departures of equity funds and the last three columns investigate departures of managers of bond funds. The stock price performance of management companies is measured using the average industry-adjusted returns over the prior 12, 24, and 36 months (CR). FR is the average four-factor adjusted equity return over the past 36 months or the style-adjusted bond fund return over the past 36 months. TO is the turnover ratio at the fund-level. EXP is the expense ratio at the fund-level. $STAR$ is an indicator variable that takes on unity if the fund is a star fund in the previous month. In each month, we compute the average tenure ($TENURE$) of all managers of the fund. $TEAM$ is an indicator variable for whether the fund is a team managed fund. Time dummies are included. Standard errors are clustered by fund and time. All independent variables are lagged by one month. Standard errors are reported in parentheses. *, **, *** represent statistical significance at the 10%, 5%, and 1% level, respectively.

	Dependent Variable: Management Turnover					
	Equity Funds			Bond Funds		
	12 Mths	24 Mths	36 Mths	12 Mths	24 Mths	36 Mths
CR	−3.925***	−3.941***	−1.612	−2.147	−1.393	−0.096
	(1.250)	(1.504)	(1.452)	(1.681)	(2.117)	(2.141)
FR	−8.866**	−12.106***	−14.896***	−7.633	−4.926	−10.503
	(3.637)	(4.552)	(4.637)	(9.700)	(14.585)	(16.303)
LOG(TNA)	0.077***	0.077***	0.077***	0.065***	−0.861	−0.882
	(0.019)	(0.019)	(0.019)	(0.021)	(0.021)	(0.021)
LOG(AGE)	−0.060	−0.060	−0.050	−0.019	−0.014	−0.009
	(0.078)	(0.078)	(0.078)	(0.119)	(0.120)	(0.119)
TO	0.008	0.004	−0.003	−0.041*	−0.042*	−0.041*
	(0.034)	(0.035)	(0.036)	(0.024)	(0.024)	(0.024)
EXP	4.213	3.909	3.842	−21.422*	−21.392*	−21.861*
	(6.244)	(6.279)	(6.305)	(11.921)	(11.942)	(11.882)
STAR	−0.270**	−0.255**	−0.249**	−0.074	−0.078	−0.068
	(0.118)	(0.119)	(0.117)	(0.192)	(0.194)	(0.194)
LOG(TENURE)	−1.013***	−1.011***	−1.012***	−1.051***	−1.052***	−1.051***
	(0.032)	(0.032)	(0.032)	(0.038)	(0.037)	(0.037)
TEAM	0.525***	0.529***	0.529***	0.522***	0.525***	0.524***
	(0.064)	(0.063)	(0.064)	(0.085)	(0.085)	(0.085)
Observations	94,870	94,870	94,870	55,817	55,817	55,817
R-Squared	0.150	0.149	0.149	0.160	0.160	0.160

Table 13: **Future Performance of Equity and Bond Funds by Management Company Performance (CR) and Fund Performance (FR)**
The table independently sorts management companies into quartiles by their prior industry-adjusted stock returns (CR) and by the adjusted return of their equity and bond funds (FR and FSAR). Panel A summarizes the four-factor adjusted returns of equity funds in the subsequent month based on the equity fund and company performance over the prior 12 months. Panel B summarizes the style-adjusted returns of bond funds in the subsequent month based on the bond fund and company performance over the prior 12 months. The sample period ranges from January 1992 to December 2009. The standard errors of the differences are clustered by time and fund and are shown in parentheses. *, **, and *** represent statistical significance at the 10%, 5%, and 1% level, respectively.

Panel A: Equity Funds Using Prior 12 Month Performance						
	ALL	FR 1	FR 2	FR 3	FR 4	4-1
ALL		−0.18***	−0.15***	−0.13***	−0.07	0.11**
		(0.04)	(0.04)	(0.04)	(0.05)	(0.05)
CR 1	−0.16***	−0.26***	−0.19***	−0.12**	−0.07	0.19**
	(0.04)	(0.06)	(0.05)	(0.05)	(0.06)	(0.08)
CR 2	−0.12***	−0.23***	−0.13***	−0.13***	−0.03	0.20**
	(0.04)	(0.07)	(0.05)	(0.05)	(0.06)	(0.09)
CR 3	−0.14***	−0.13**	−0.20***	−0.13**	−0.09	0.05
	(0.04)	(0.06)	(0.05)	(0.05)	(0.07)	(0.07)
CR 4	−0.11***	−0.12**	−0.09*	−0.14***	−0.09	0.03
	(0.04)	(0.05)	(0.05)	(0.05)	(0.08)	(0.09)
4-1	0.05	0.15**	0.09*	−0.02	−0.02	
	(0.03)	(0.06)	(0.06)	(0.05)	(0.07)	

Panel B: Bond Funds Using Prior 12 Month Performance						
	ALL	FSAR 1	FSAR 2	FSAR 3	FSAR 4	4-1
ALL		−0.15***	−0.00	0.04	0.08***	0.22***
		(0.04)	(0.01)	(0.01)	(0.03)	(0.06)
CR 1	−0.02	−0.24*	0.00	0.05	0.10***	0.34**
	(0.03)	(0.13)	(0.01)	(0.02)	(0.04)	(0.14)
CR 2	−0.02	−0.15***	−0.01	0.03*	0.04	0.19***
	(0.02)	(0.04)	(0.02)	(0.02)	(0.04)	(0.07)
CR 3	−0.00	−0.11***	0.00	0.05***	0.05	0.16**
	(0.02)	(0.04)	(0.01)	(0.01)	(0.04)	(0.06)
CR 4	0.02	−0.08	−0.01	0.02	0.11***	0.19***
	(0.02)	(0.05)	(0.01)	(0.02)	(0.04)	(0.07)
4-1	0.04	0.16	−0.01	−0.03	0.01	
	(0.04)	(0.14)	(0.02)	(0.02)	(0.04)	