

Spillover Effects in Mutual Fund Companies*

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June 29, 2012

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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. Investment flows into mutual funds increase significantly with the prior performance of the management company even if the company performance does not predict future fund performance. These results indicate that the financial health of a diversified firm has a significant impact on the prospects of the various business segments.

JEL Classification: G20, G23

Keywords: Mutual Fund Flows, Conglomerates, Financial Distress

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.

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.¹ In addition, the corporate finance literature has indicated that financially distressed firms might lose their customers and employees. However, it has been difficult to find evidence for such spillover effects.² Our paper provides direct evidence that the performance of mutual fund management companies has a significant impact on the fund customers (mutual fund flows) and on the fund employees (fund managers). Studying publicly traded mutual fund management companies enables us to separately observe the performance of the mutual fund segment and the stock price performance of the overall diversified company.

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

¹See the surveys of Stein (2003) and Maksimovic and Philips (2007) for additional information on the theoretical and empirical literature on conglomerates.

²See the surveys by Parsons and Titman (2008) and Graham and Leary (2011) for reviews of the literature on capital structure and corporate strategy.

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 should be 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 irrationally extrapolate 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 substantial 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 24 months increase their assets under management in the subsequent month by 0.60%. On the other hand, equity funds from companies in the bottom decile lower their assets by 0.65% 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.

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 is similar as for equity funds. For example, bond funds affiliated with fund companies in the top industry-adjusted performance decile over the prior 24 months increase their assets under management in the subsequent month by 0.57%, whereas bond funds from companies in the bottom decile increase their assets by only 0.09% 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 whether the spillover effects are direct or indirect, 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 only observe a substantial relation for companies with relatively large mutual fund segments. The mutual fund segment is relatively small for most

of the publicly traded mutual fund companies in our sample. The revenues of equity (bond) mutual funds account for only 0.35% (0.21%) of the total revenues of the median management company. Thus, the mutual fund segment is typically of minor importance for most management companies. The relation between company performance and subsequent fund flows remains economically and statistically significant for firms with below median mutual fund fee revenues. This result indicates that the relation between flows and company returns is unlikely to simply reflect the superior performance of the mutual funds.

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. The flow response would be justified if the prior company performance predicts future fund performance and enables fund investors to make superior investment decisions by conditioning on the prior company performance. Whereas we find that the past *fund* performance predicts future fund returns, we do not find any evidence that the past *company* performance predicts future fund returns. Thus, fund investors do not benefit by reallocating their mutual fund assets according to the prior performance of the management company. Our performance results do not provide a justification for the substantial inflows into funds managed by well-performing management companies and the substantial outflows of funds managed by poorly-performing management companies.

There is a large mutual fund literature that investigates the impact of fund performance on money flows and manager turnover.³ Our paper shows that the performance of the man-

³Papers on mutual fund flows and performance include Ippolito (1992), Brown, Harlow, and Starks (1996),

agement company also has an economically and statistically significant impact on the fund flows.

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.⁴ 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.

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.

Chevalier and Ellison (1997), Goetzmann and Peles (1997), Sirri and Tufano (1998), Koski and Pontiff (1999), Zheng (1999), Coval and Moskowitz (2001), DelGuercio and Tkac (2002), Lynch and Musto (2003), Berk and Green (2004), Nanda, Wang, and Zheng (2004), Cohen, Coval, and Pastor (2005), Huang, Wei, and Yan (2007, 2012), Ivkovich and Weisbenner (2009), Spiegel and Zhang (2010), Chapman, Evans, and Xu (2010), Pastor and Stambaugh (2010), Huang, Sialm, and Zhang (2011), and Sialm, Starks, and Zhang (2012). 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 (2011).

⁴Papers 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), Evans (2010), Gallaher, Kaniel, and Starks (2010), Chen, Sanger, and Slovin (2011), and Bhattacharya, Lee, and Pool (2012).

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. Our base sample excludes balanced funds, index funds, international funds, and sector 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 index funds, money market funds, and bond funds with more than 50% holdings in equity securities.⁶ We aggregate the different share classes of a fund using MFLINKS based on Wermers (2000) and using the fund names.

Mutual funds must further satisfy the following criteria: First, the management company 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 36 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

⁵Funds 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. We analyze equity index funds separately in a robustness test.

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

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 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 2,303 equity funds and 1,462 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 publicly traded fund families account for 40% of the assets under management in the mutual fund sector. Our sample excludes funds offered by Fidelity and Vanguard since these fund families are not publicly traded.

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

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

The return of company j during time period t is denoted by $R_{i,t}$. The index M corresponds

⁷The 48 industry classification is available from Kenneth French’s website: (<http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/index.html>). The three largest industries in our sample are banking, trading, and insurance with 55%, 33%, and 12% of our observations, respectively.

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 0.23% per month over the prior 24 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 1.78%. The industry-adjusted performance over the prior 24 months ranges from an average return of -4.32% per month for Morgan Stanley in 1992 to 4.08% for Calamos Advisors in 2009. The mean raw return of management companies equals 1.34% per month over the prior 24 months and the mean four-factor adjusted return equals 0.35% per month. Whereas the first three rows list the moments of the mean company performance over the prior 24 months, the subsequent three rows list the moments of the standard deviations of the company performance over the prior 24 months. The industry-adjusted company return has an average time-series standard deviation of 7.61% over the prior 24 months. Thus, we have significant cross-sectional variation in company performance.

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

⁸The 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. We only report the summary statistics for the returns using a 24-month horizon to economize on space.

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 amount on average to only 4.70% (1.78%) of the revenues of the management companies. Half of our management companies have management fees from equity (bond) mutual funds that are below 0.35% (0.21%) of their total revenues. In some of our analyses, we focus on the companies with below median mutual fund 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 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:

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

⁹Our 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.

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:

$$NMG_{f,t} = \frac{FLOW_{f,t}}{TNA_{f,t-1}}, \quad (3)$$

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 0.11% per month for their equity funds and 0.33% for their bond funds.

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 36 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. 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 -0.04% over the prior 36 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 24 months equals [-0.17%, 0.07%]. To capture the variation of fund returns, we define the time-series standard deviation of the abnormal fund returns ($Std.Dev.FR$).

An alternative method to control for the performance of mutual funds is to adjust the fund return for the 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 TNA s, 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 $FSAR$.

Bond funds in our sample outperformed the median Lipper fund in the same objective codes on average by 0.01% over the prior 24 months. Not surprisingly, the cross-sectional deviation of fund performance differs less for bond funds. The interquartile range of the mean style-adjusted fund return over the prior 24 months equals [-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 an indicator variable ($STAR_{f,t}$) that captures the presence of at least one member fund with a five-star rating by Morningstar within the family. We also compute the number of member funds in the family ($NUMFDS_{f,t}$). Fund families in our sample manage on average 21.32 equity funds and 21.89 bond funds and around 21% of families manage a star equity fund using factor-adjusted returns, whereas 28% of families manage a star bond fund using style-adjusted returns.

Following extant studies, we also control for the size, the age, the turnover ratio, the expense ratio, and the total loads of funds. The age, turnover ratio, and the expense ratio at the family level are computed by aggregating the TNA -weighted measures at the individual fund level across all member funds. The loads are computed as the TNA -weighted average sum of the maximum front- and back-end loads. The average sizes of the equity and bond funds in a family equal \$5.50 and \$6.48 billion, respectively. Equity and bond funds both have an average age of around eight years. Equity mutual funds have an average turnover of around 71% and charge an average expense ratio of 1.15% and an average load of 2.68%. The mean turnover of bond funds equals 111%, their mean expense ratio equals 0.89%, and their

mean load equals 1.48%.

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 938 equity funds and for 771 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 51 months for an equity manager and 52 months for a bond manager. We also keep track of whether mutual funds are team managed or single managed following Massa, Reuter, and Zitzewitz (2010). Team managed funds account for 62% of equity funds and 60% 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 24 months increase their assets under management in the subsequent month by 0.60%. On the other hand, equity funds from companies in the bottom decile lower their assets under management by 0.65% in the subsequent month. The relation for the 24-month horizon is perfectly monotonic resulting in a Spearman rank correlation of 1, which is statistically significant at a 1% confidence level. The relation is similar for the 12- and 36-month horizons. The differences in flows between

top and bottom decile management companies are statistically significant at a 1% level over all three horizons.

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. 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 clustered by management company following Petersen (2009).

The three panels of Table 2 report the mean monthly new money growth rates for funds sorted according to the fund and company performance levels over the prior 12, 24, or 36 months, respectively. 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. Panel A indicates that the inflows into funds of top quartile management companies exceed the net inflows of bottom quartile management companies by between 0.302 and 0.583 percentage points per month. The results increase slightly if we

lengthen the prior performance horizon to 24 or 36 months, as shown in Panels B and C.¹⁰

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 management company:

$$\begin{aligned}
 NMG_{f,t} = & \beta_1 CR_{f,t-1} + \beta_2 FR_{f,t-1} + \beta_3 Std.Dev.CR_{f,t-1} + \beta_4 Std.Dev.FR_{f,t-1} \\
 & + \beta_5 LOG(TNA_{f,t-1}) + \beta_6 LOG(AGE_{f,t-1}) + \beta_7 TO_{f,t-1} + \beta_8 EXP_{f,t-1} \\
 & + \beta_9 LOAD_{f,t-1} + \beta_{10} LOG(NUMFDS_{f,t-1}) + \beta_{11} STAR_{f,t-1} + \beta_{0,t} + \epsilon_{f,t}, \quad (4)
 \end{aligned}$$

where CR is the performance of the management company, FR is the performance 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 time-series standard deviation of the four-factor adjusted fund returns, TNA is the total assets under management for the equity mutual funds of the management company, AGE is the average age of the funds, TO is the average turnover, EXP is the average expense ratio, $LOAD$ is the average maximum total load, $NUMFDS$ 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.¹¹

¹⁰By 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 compute the average four-factor adjusted fund returns over the previous 12, 24, and 36 months. We find little additional variation in the fund performance within the four FR quartiles.

¹¹Whereas 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

Table 3 reports the coefficient estimates using different measures of company performance. The first three columns summarize the base-case results using industry-adjusted fund returns. A one percentage point increase in the industry-adjusted performance of the management company increases the new money growth rate by between 0.128 and 0.202 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 significance of company and fund returns, it is important to take into account that the standard deviation of the company return is more than seven 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 24 months (which amounts to 1.78%) increases the flows into equity funds in the subsequent month by 0.32 percentage points. Similarly, a one-standard deviation increase in the performance of the mutual fund *FR* during the prior 24 months (which amounts to 0.24%) increases the flows into equity funds in the subsequent month also by 0.32 percentage points. Thus, the company performance has an economically meaningful impact on the fund flows. The remaining control variables are less important in explaining fund flows.

The coefficient estimates on the management company performance remain economically and statistically significant if we use the raw company return (middle three columns) or the four-factor adjusted company return (last three columns) as proxies for company performance. The fact that the results are almost identical for the various company performance measures indicates that the results are driven by firm-specific and not by macro-economic industry

(2007), Chen, Hanson, Hong, and Stein (2008), Zhang (2008), Frazzini and Lamont (2009), Chen, Goldstein, and Jiang (2010), and Lou (2009) provide evidence that mutual fund flows are correlated with subsequent fund performance.

factors. Although several papers have documented the relation between fund performance and subsequent fund flows, our paper is the first paper that demonstrates the relation between company performance and subsequent 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.

Finally, the results are very similar using the 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 216 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 0.214 with a standard error of 0.024, which is very similar to the corresponding coefficient of 0.181 (0.052) in the pooled regression.

Table 4 shows that the results are also robust using alternative measures of the fund performance. The different sets of columns show the results using four-factor adjusted fund returns (base case), raw fund returns, and style-adjusted fund returns.

3.4 Revenue Dependence

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 0.35% 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 0.08% of their revenues from equity mutual funds, above median families generate on average 6.85% 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.

Table 5 shows that the results are economically and statistically significant across both subsamples. The coefficient estimates on the company performance at all three horizons are not statistically different between the two subsamples at a 10% significance level. Thus, our results are not just driven by companies where the mutual fund business segment is their main revenue generator. Since the management fee is not available over the whole time period, the sample size decreases from 10,489 to 6,639 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.

3.5 Piecewise Linear Specification

To examine whether the performance-flow relation is non-linear, we estimate two different piecewise linear specifications. The first specification separately estimates performance-flow

coefficients for underperforming and outperforming companies and funds. In this specification, we replace $CR_{f,t}$ from equation (4) with $MIN(CR_{f,t}, 0)$ and $MAX(CR_{f,t}, 0)$ and FR with $MIN(FR_{f,t}, 0)$ and $MAX(FR_{f,t}, 0)$.

The second specification follows Sirri and Tufano (1998) and estimates a three-segment piecewise linear specification. In a first step, we compute in each period the percentile rank $RANK_{f,t}$ based on industry-adjusted company returns or four-factor adjusted fund returns. Funds in the worst performance percentile obtain a rank of 0.01 and funds in the best performance percentile obtain a rank of 1.00. In a second step, we define the three performance segments. The performance in the bottom quintile is given by $LOWRANK_{f,t} = MIN(RANK_{f,t}, 0.2)$, the performance in the three middle quintiles is given by $MIDRANK_{f,t} = MIN(RANK_{f,t} - LOWRANK_{f,t}, 0.6)$, and the performance in the top quintile is given by $HIGHRANK_{f,t} = (RANK_{f,t} - LOWRANK_{f,t} - MIDRANK_{f,t})$. Finally, we replace CR and FR from equation (4) with the corresponding $LOWRANK_{f,t}$, $MIDRANK_{f,t}$, and $HIGHRANK_{f,t}$ variables.

The first three columns of Table 6 correspond to the signed company performance and the last three columns correspond to the Sirri-Tufano rank groups. Although the slope coefficients on the company performance are similar for top and bottom performing funds, the coefficient estimates are statistically more significant for underperforming funds. We find relatively small sensitivity of flows to company performance for the three middle quintiles compared to the extreme performance quintiles. To economize on space, Table 6 only reports the coefficients on the performance variables. However, the remaining regression coefficients do not differ qualitatively from the coefficients summarized in Table 3.

3.6 Subperiod Analysis

To study whether the results are robust over different time periods and economic environments, we divide our sample into subperiods. We only report the results using the fund and company performance over the prior 24 months. The first two columns report the results over the 1992-2000 and the 2001-2009 subperiods. Although the coefficients on the company return are statistically significant for both subsamples, the results are slightly stronger over the 2001-2009 subperiod.

The last two columns of Table 7 divide the sample by the economic environment as proxied by an indicator variable for NBER recessions.¹² The results are very similar across the two economic environments.

3.7 Individual Fund Level Analysis

The previous analyses are performed at the management company level since the company performance is only available at that aggregation level. As a robustness test, we examine in Table 8 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, fund age, turnover, expenses, total fund loads, and whether the fund is a star fund. To control for cross-correlation in the residuals, we cluster the standard errors by management company. In addition, we also include time-fixed effects. The results are not affected substantially using this alternative disaggregated sample. The performance of the management company continues to have a significant impact on the flows into the company's equity funds.

¹²The NBER recession dates are available from <http://www.nber.org>.

3.8 Subsample Results

To investigate in more detail the mechanism of the spillover, we separate in Table 9 the individual mutual funds into different subsamples. In the first subsample, we separate mutual funds depending on whether the name of the mutual fund management company corresponds to the name of the mutual fund. We only observe a significant relationship between company performance and fund flows for funds that share the name of the management company. This result indicates that many fund investors might not recognize the relation between the fund management company and the mutual funds if they do not share the same names. Fund management companies can therefore insulate their mutual fund segment from potential spillover effects by naming their funds differently from their management company.

The second subsample separates funds following Chen, Hong, and Kubik (2011) by whether the funds are managed in-house or outsourced. We only find a significantly positive relation between company performance and fund flows for funds managed in-house. These results indicate that mutual fund investors do not associate the outsourced mutual funds with the company that distributes these funds.

An avoidance of mutual funds managed by distressed management companies might be justified if fund shareholders expect the funds to perform poorly in the future because a distressed management company might reduce the resources available to the mutual fund segment. Such a reduction in resources should matter less to investors of index funds than to investors of actively managed funds, since the management of passively managed index funds is relatively mechanical and does not require significant investment resources. To investigate this hypothesis, we report in the last two columns of Table 9 the relation between management company performance and the flows into index funds. Although the coefficient estimate for index funds is not significantly different from zero, the magnitude of the coefficient for index

funds is similar to the coefficient for actively managed funds. Unfortunately, index funds account for less than 8% of our sample, reducing the power of econometric tests. Thus, the impact of company performance on fund flows is similar for active funds and for index 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 company performance decile using a 24-month window experience inflows of 0.09% per month, funds in the highest company performance decile experience inflows of 0.57% per month. The Spearman rank correlation for the 24-month horizon equals 0.98, which is statistically significant at a 1% level. The relation is similar for the 12- and 36-month horizons.

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.

Table 10 shows 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 quartile performing management companies ranges between 0.22 and 0.53 percentage points per month for the four bond fund performance quartiles using a 24-month performance window. Although the results are not as strongly statistically significant as for equity funds, we find qualitatively similar effects for both types of funds.

4.3 Multivariate Regressions

Table 11 shows that the prior performance of the management company has a significant impact on the subsequent flows into bond mutual funds after controlling for the prior 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 performance, or the four-factor adjusted performance.¹³ The magnitude of the results is smaller for bond funds (0.074) than for equity funds (0.181) using the 24-month window. However, the relation remains statistically significant.

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.

¹³In 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.

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 objective code and average the adjusted returns over 12, 24, and 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 linear probability model with standard errors clustered by the fund management company:

$$\begin{aligned}
 DEPART_{f,t} = & \beta_1 CR_{f,t-1} + \beta_2 FR_{f,t-1} + \beta_3 Std.Dev.CR_{f,t-1} + \beta_4 Std.Dev.FR_{f,t-1} \\
 & + \beta_5 LOG(TENURE_{f,t-1}) + \beta_6 LOG(TEAM_{f,t-1}) + \beta_7 LOG(TNA_{f,t-1}) \\
 & + \beta_8 LOG(AGE_{f,t-1}) + \beta_9 TO_{f,t-1} + \beta_{10} EXP_{f,t-1} + \beta_{11} LOAD_{f,t-1} \\
 & + \beta_{12} STAR_{f,t-1} + \beta_{0,t} + \epsilon_{f,t},
 \end{aligned} \tag{5}$$

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.

In addition to the fund and company performance measures, we control for the tenure of the fund manager (*TENURE*), whether a fund is team managed (*TEAM*), the fund size (*TNA*), fund age (*AGE*), the fund's turnover ratio (*TO*), the fund's expense ratio (*EXP*), its load (*LOAD*), and its star status (*STAR*).

The first three columns report the results for equity mutual funds and the last three columns report the results for bond mutual funds. Consistent with Khorana (1996), we find an inverse relation between fund performance and the probability of managerial replacement. In addition, we find that the prior company performance has an economically and statistically significant impact on managerial turnover. For example, a one-standard deviation increase in the industry-adjusted company performance over the prior 24 months (1.78%) decreases the probability of manager turnover during the subsequent month by 0.17%. On the other hand, a one-standard deviation increase in the four-factor adjusted equity fund performance over the prior 24 months (0.24%) decreases the probability of manager turnover during the subsequent month by 0.09%. The prior company performance has a relatively shorter term impact on managerial turnover than on investment flows. Whereas the coefficients on the company performance are significant using a 12 and 24 month window, the coefficients are not significantly different from zero using a 36 month window. In addition, we find higher turnover levels for managers with shorter tenure, for larger funds, and for equity funds with higher turnover. The team management variable is also highly statistically significant since a departure of at least one manager is more likely for funds with multiple managers. The results are consistent across equity and bond mutual funds.

This section demonstrates that the prior performance of the fund management company does not just affect the fund's customers it also affects the fund's employees. Poorly performing companies tend to lose customers and key employees, whereas well-performing companies tend to retain and gain customers and key employees.

6 Subsequent Fund Performance

The flows of fund investors might rationally react to the performance of the management company if the company performance is an indication of future fund performance. For example, poorly performing firms might have to reduce the expenditures for all their business segments. 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 unjustifiably extrapolate 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.

The sensitivity of fund flows to prior management company performance could be justified if the subsequent fund performance is predicted by the prior company performance. To study whether past management company performance predicts future fund performance, we regress the abnormal returns of equity and bond funds in month t on the past company and fund performance and on additional lagged control variables:

$$\begin{aligned}
 FR_{f,t} = & \beta_1 CR_{f,t-1} + \beta_2 FR_{f,t-1} + \beta_3 Std.Dev.CR_{f,t-1} + \beta_4 Std.Dev.FR_{f,t-1} \\
 & + \beta_5 LOG(TNA_{f,t-1}) + \beta_6 LOG(AGE_{f,t-1}) + \beta_7 TO_{f,t-1} + \beta_8 EXP_{f,t-1} \\
 & + \beta_9 LOAD_{f,t-1} + \beta_{10} LOG(NUMFDS_{f,t-1}) + \beta_{11} STAR_{f,t-1} + \beta_{0,t} + \epsilon_{f,t}. \quad (6)
 \end{aligned}$$

Table 13 shows that the predictability of fund performance by company performance is neither statistically nor economically significant in contrast to the predictability by prior fund performance. The sign on the company performance coefficient actually has the opposite sign

for equity funds.¹⁴

Overall, our performance results do not indicate that the prior company performance has significant effects on the future fund performance. Thus, these performance results do not provide a justification for the substantial inflows into funds managed by well-performing management companies and the substantial outflows of funds managed by poorly-performing management companies.¹⁵

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 fund managers even if the mutual funds themselves perform well. The economic magnitude of the relation between firm performance and money flows is similar 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.

¹⁴The results are qualitatively similar if we use alternative performance measures, such as raw returns, style-adjusted returns, factor adjusted returns, or holdings-based performance measures.

¹⁵The performance results could be muted since the fund flows might be sufficiently large to eliminate a significant amount of performance predictability due to diseconomies of scale in fund management as suggested by Berk and Green (2004). However, it would be puzzling why there would be some performance predictability for fund performance (which should have a direct impact on the the fund investors' perception of the investment ability of a fund manager), but not for company performance (which should only have an indirect impact on the perception of the investment ability of a fund manager).

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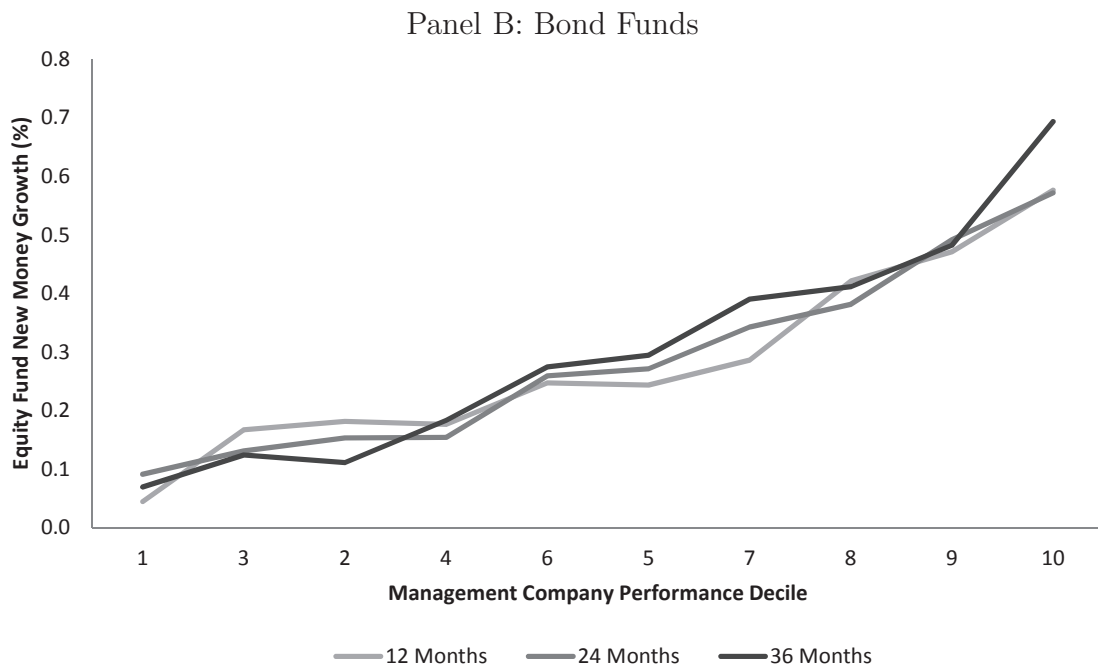
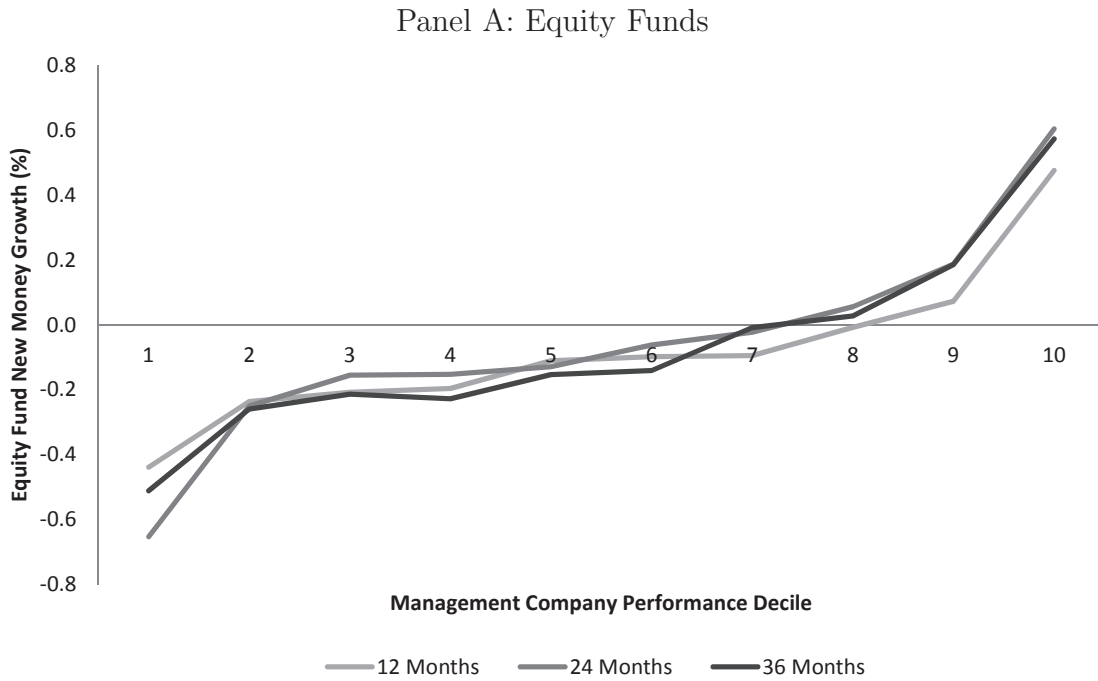


Figure 1: Money Flows to Mutual Funds by Management Company Performance
 These figures depict the relation between management company performance deciles and new money growth for equity and bond funds, where the industry-adjusted management company performance is measured over the prior 12, 24, and 36 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 |
| <i>CR</i> (Industry-Adjusted Returns; 24 Mths; in %) | 0.23 | 1.78 | -0.72 | 0.15 | 1.08 |
| <i>CRR</i> (Raw Returns; 24 Mths; in %) | 1.34 | 2.03 | 0.31 | 1.33 | 2.45 |
| <i>CFFR</i> (Four-factor Adjusted Returns; 24 Mths; in %) | 0.35 | 1.63 | -0.56 | 0.29 | 1.18 |
| <i>Std.Dev.CR</i> (24 Mths, in %) | 7.61 | 4.44 | 4.83 | 6.34 | 9.07 |
| <i>Std.Dev.CRR</i> (24 Mths, in %) | 8.51 | 4.56 | 5.47 | 7.46 | 10.29 |
| <i>Std.Dev.CFFR</i> (24 Mths, in %) | 7.49 | 4.05 | 4.95 | 6.47 | 8.77 |
| <i>REVPCT</i> Equity Funds (Revenue Percent) | 4.70 | 12.10 | 0.10 | 0.35 | 2.11 |
| <i>REVPCT</i> Bond Funds (Revenue Percent) | 1.78 | 5.45 | 0.06 | 0.21 | 0.72 |
| Panel B: Equity Mutual Funds | | | | | |
| Variables | Mean | Std.Dev. | 25th Perc | Median | 75th Perc |
| <i>NMG</i> (New Money Growth; in %) | 0.11 | 2.83 | -1.14 | 0.12 | 0.74 |
| <i>FR</i> (Four-Factor Adjusted Returns; 24 Mths, in %) | -0.04 | 0.24 | -0.17 | -0.06 | 0.07 |
| <i>Std.Dev.FR</i> (24 Mths, in %) | 0.11 | 0.08 | 0.05 | 0.09 | 0.14 |
| <i>FRR</i> (Raw Returns; 24 Mths, in %) | 0.61 | 1.26 | -0.01 | 0.84 | 1.39 |
| <i>Std.Dev.FRR</i> (24 Mths, in %) | 4.19 | 1.74 | 2.73 | 3.94 | 5.37 |
| <i>FSAR</i> (Style-Adjusted Returns; 24 Mths, in %) | 0.02 | 0.41 | -0.17 | 0.01 | 0.19 |
| <i>Std.Dev.FSAR</i> (24 Mths, in %) | 1.24 | 0.93 | 0.63 | 0.98 | 1.51 |
| <i>TNA</i> (Total Net Assets; in \$B) | 5.50 | 10.91 | 0.21 | 0.99 | 6.06 |
| <i>AGE</i> (in Mths) | 91.80 | 57.17 | 44 | 87 | 135 |
| <i>TO</i> (Turnover; in %) | 71.32 | 48.74 | 39.39 | 63.43 | 87.49 |
| <i>EXP</i> (Expense Ratio; in %) | 1.15 | 0.34 | 0.95 | 1.11 | 1.31 |
| <i>LOAD</i> (Total Loads; in %) | 2.68 | 2.24 | 0.38 | 2.46 | 4.75 |
| <i>NUMFDS</i> (Number of Funds) | 21.32 | 32.89 | 3 | 9 | 33 |
| <i>STAR</i> by FR (Star Fund; 24 Mths) | 0.21 | 0.41 | 0 | 0 | 0 |
| Panel C: Bond Mutual Funds | | | | | |
| Variables | Mean | Std.Dev. | 25th Perc | Median | 75th Perc |
| <i>NMG</i> (New Money Growth; in %) | 0.33 | 3.17 | -0.97 | -0.07 | 1.11 |
| <i>FSAR</i> (Style-Adjusted Returns; 24 Mths, in %) | 0.01 | 0.21 | -0.07 | 0.01 | 0.09 |
| <i>Std.Dev.FSAR</i> (24 Mths, in %) | 0.61 | 0.56 | 0.25 | 0.41 | 0.74 |
| <i>FRR</i> (Raw Returns; 24 Mths, in %) | 0.50 | 0.63 | 0.26 | 0.52 | 0.79 |
| <i>Std.Dev.FRR</i> (24 Mths, in %) | 1.92 | 1.23 | 1.01 | 1.49 | 2.57 |
| <i>TNA</i> (Total Net Assets; in \$B) | 6.48 | 14.67 | 0.22 | 1.16 | 7.62 |
| <i>AGE</i> (in Mths) | 90.84 | 56.92 | 44 | 83 | 134 |
| <i>TO</i> (Turnover; in %) | 110.81 | 90.35 | 49.73 | 83.01 | 147.76 |
| <i>EXP</i> (Expense Ratio; in %) | 0.89 | 0.32 | 0.71 | 0.85 | 1.06 |
| <i>LOAD</i> (Total Loads; in %) | 1.48 | 1.72 | 0 | 0.63 | 2.67 |
| <i>NUMFDS</i> (Number of Funds) | 21.89 | 27.66 | 3 | 10 | 33 |
| <i>STAR</i> (Star Fund by FSAR; 24 Mths) | 0.28 | 0.45 | 0 | 0 | 1 |

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 A, B, and C 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*). The sample period ranges from January 1992 to December 2009. The standard errors of the differences are clustered by management company and are shown in parentheses. *, **, and *** represent statistical significance at the 10%, 5%, and 1% level, respectively.

| Panel A: New Money Growth (12 Month Performance) | | | | | | |
|--|----------------------|----------------------|----------------------|----------------------|---------------------|---------------------|
| | ALL | <i>FR</i> 1 | <i>FR</i> 2 | <i>FR</i> 3 | <i>FR</i> 4 | 4-1 |
| ALL | | -0.684*** (0.098) | -0.316*** (0.079) | 0.008 (0.081) | 0.589*** (0.163) | 1.273*** (0.162) |
| <i>CR</i> 1 | -0.319*** (0.113) | -0.883*** (0.144) | -0.530*** (0.123) | -0.295*** (0.113) | 0.430* (0.223) | 1.313*** (0.253) |
| <i>CR</i> 2 | -0.164** (0.082) | -0.726*** (0.125) | -0.312** (0.133) | 0.002 (0.100) | 0.348*** (0.132) | 1.074*** (0.176) |
| <i>CR</i> 3 | -0.087 (0.090) | -0.715*** (0.167) | -0.198* (0.104) | 0.108 (0.105) | 0.477*** (0.155) | 1.192*** (0.219) |
| <i>CR</i> 4 | 0.198 (0.139) | -0.385*** (0.187) | -0.228** (0.098) | 0.212 (0.131) | 1.013*** (0.325) | 1.398*** (0.299) |
| 4-1 | 0.517*** (0.132) | 0.503** (0.223) | 0.302** (0.146) | 0.507*** (0.143) | 0.583* (0.318) | |
| Panel B: New Money Growth (24 Month Performance) | | | | | | |
| | ALL | <i>FR</i> 1 | <i>FR</i> 2 | <i>FR</i> 3 | <i>FR</i> 4 | 4-1 |
| ALL | | -0.793*** (0.109) | -0.229*** (0.079) | 0.038 (0.093) | 0.569*** (0.152) | 1.362*** (0.169) |
| <i>CR</i> 1 | -0.375*** (0.107) | -1.120*** (0.184) | -0.304** (0.143) | -0.154 (0.139) | 0.196 (0.176) | 1.316*** (0.215) |
| <i>CR</i> 2 | -0.152 (0.089) | -0.853*** (0.162) | -0.240** (0.117) | -0.014 (0.125) | 0.444*** (0.146) | 1.296*** (0.225) |
| <i>CR</i> 3 | -0.139 (0.100) | -0.670*** (0.183) | -0.339** (0.133) | -0.016 (0.138) | 0.409*** (0.155) | 1.079*** (0.224) |
| <i>CR</i> 4 | 0.280* (0.157) | -0.452** (0.178) | -0.059 (0.112) | 0.296** (0.146) | 1.125*** (0.349) | 1.577*** (0.332) |
| 4-1 | 0.655*** (0.161) | 0.668*** (0.230) | 0.245 (0.174) | 0.450** (0.187) | 0.929*** (0.338) | |
| Panel C: New Money Growth (36 Month Performance) | | | | | | |
| | ALL | <i>FR</i> 1 | <i>FR</i> 2 | <i>FR</i> 3 | <i>FR</i> 4 | 4-1 |
| ALL | | -0.808*** (0.119) | -0.298*** (0.081) | 0.0516 (0.094) | 0.638*** (0.168) | 1.446*** (0.198) |
| <i>CR</i> 1 | -0.358*** (0.104) | -0.983*** (0.178) | -0.495*** (0.167) | -0.148 (0.134) | 0.309 (0.203) | 1.293*** (0.263) |
| <i>CR</i> 2 | -0.233** (0.091) | -0.835*** (0.179) | -0.363*** (0.111) | 0.05 (0.143) | 0.256** (0.125) | 1.091** (0.214) |
| <i>CR</i> 3 | -0.039 (0.096) | -0.737*** (0.200) | -0.238* (0.129) | 0.103 (0.122) | 0.576*** (0.194) | 1.313*** (0.290) |
| <i>CR</i> 4 | 0.245 (0.155) | -0.630*** (0.172) | -0.119 (0.119) | 0.179 (0.162) | 1.273*** (0.371) | 1.903*** (0.404) |
| 4-1 | 0.603*** (0.158) | 0.354 (0.236) | 0.376* (0.202) | 0.327* (0.191) | 0.964*** (0.363) | |

Table 3: **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 time-series standard deviation of the fund-specific performance within a fund family. *TNA* is the family-level monthly total net assets value. *AGE* is the *TNA*-weighted fund age in a family. *TO* is the *TNA*-weighted turnover ratio at the family-level. *EXP* and *LOAD* are the *TNA*-weighted expense ratio and the total load 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. All independent variables are lagged by one month. Standard errors are clustered by management companies and are reported in parentheses. *, **, and *** represent statistical significance at the 10%, 5%, and 1% level, respectively.

| | Dependent Variable: Monthly Family Flows (<i>NMG</i>) | | | | | | | | |
|----------------------|---|---------------------|---------------------|---------------------|---------------------|---------------------|--------------------------------------|---------------------|---------------------|
| | 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 |
| <i>CR</i> | 0.128*** (0.032) | 0.181*** (0.052) | 0.202*** (0.062) | 0.132*** (0.037) | 0.185*** (0.056) | 0.200*** (0.062) | 0.092** (0.038) | 0.122* (0.065) | 0.154** (0.075) |
| <i>FR</i> | 1.131*** (0.144) | 1.334*** (0.190) | 1.455*** (0.217) | 1.138*** (0.144) | 1.357*** (0.192) | 1.486*** (0.220) | 1.273*** (0.174) | 1.636*** (0.246) | 1.875*** (0.293) |
| <i>Std.Dev.CR</i> | -0.002 (0.020) | 0.013 (0.032) | 0.022 (0.043) | 0.005 (0.018) | 0.023 (0.029) | 0.032 (0.037) | 0.027 (0.027) | 0.056 (0.039) | 0.069 (0.046) |
| <i>Std.Dev.FR</i> | 0.129 (0.129) | 0.126 (0.184) | 0.179 (0.234) | 0.123 (0.130) | 0.118 (0.186) | 0.171 (0.239) | 0.234** (0.117) | 0.253 (0.169) | 0.304 (0.231) |
| LOG(<i>TNA</i>) | -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) |
| LOG(<i>AGE</i>) | -0.001 (0.001) | -0.001 (0.001) | -0.001 (0.001) | -0.001 (0.001) | -0.001 (0.001) | -0.001 (0.001) | -0.003 (0.002) | -0.003 (0.002) | -0.003 (0.002) |
| <i>TO</i> | -0.001 (0.002) | -0.001 (0.002) | -0.001 (0.002) | -0.001 (0.002) | 0.000 (0.002) | -0.001 (0.002) | 0.000 (0.002) | 0.000 (0.002) | 0.000 (0.002) |
| <i>EXP</i> | 0.011 (0.193) | -0.019 (0.200) | -0.051 (0.220) | -0.007 (0.195) | -0.029 (0.202) | -0.059 (0.221) | -0.035 (0.221) | -0.101 (0.218) | -0.119 (0.237) |
| <i>LOAD</i> | -0.020 (0.035) | -0.018 (0.034) | -0.018 (0.035) | -0.019 (0.035) | -0.019 (0.034) | -0.020 (0.034) | -0.016 (0.040) | -0.013 (0.040) | -0.015 (0.039) |
| LOG(<i>NUMFDS</i>) | 0.002 (0.002) | 0.002 (0.002) | 0.003 (0.002) | 0.002 (0.002) | 0.002 (0.002) | 0.003 (0.002) | 0.002 (0.002) | 0.002 (0.002) | 0.003 (0.002) |
| <i>STAR</i> | 0.002 (0.001) | 0.003** (0.001) | 0.002 (0.002) | 0.002 (0.001) | 0.003** (0.001) | 0.002 (0.001) | 0.001 (0.001) | 0.003** (0.001) | 0.002 (0.001) |
| Observations | 10,489 | 10,489 | 10,489 | 10,489 | 10,489 | 10,489 | 9,096 | 9,096 | 9,096 |
| R-Squared | 0.104 | 0.108 | 0.106 | 0.104 | 0.108 | 0.107 | 0.104 | 0.111 | 0.114 |

Table 4: **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 time-series standard deviation of the fund-specific performance within a fund family. *TNA* is the family-level monthly total net assets value. *AGE* is the *TNA*-weighted fund age in a family. *TO* is the *TNA*-weighted turnover ratio at the family-level. *EXP* and *LOAD* are the *TNA*-weighted expense ratio and the total load 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. All independent variables are lagged by one month. Standard errors are clustered by management companies and are reported in parentheses. *, **, and *** represent statistical significance at the 10%, 5%, and 1% level, respectively.

| | Dependent Variable: Monthly Family Flows (<i>NMG</i>) | | | | | | | | |
|----------------------|---|---------------------|---------------------|---------------------|---------------------|---------------------|----------------------------|---------------------|---------------------|
| | 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 |
| <i>CR</i> | 0.128*** (0.032) | 0.181*** (0.052) | 0.202*** (0.062) | 0.122*** (0.034) | 0.168*** (0.051) | 0.180*** (0.057) | 0.116*** (0.032) | 0.160*** (0.049) | 0.165*** (0.056) |
| <i>FR</i> | 1.131*** (0.144) | 1.334*** (0.190) | 1.455*** (0.217) | 0.654*** (0.087) | 0.635*** (0.115) | 0.602*** (0.126) | 1.083*** (0.130) | 1.414*** (0.197) | 1.397*** (0.224) |
| <i>Std.Dev.CR</i> | -0.002 (0.020) | 0.013 (0.032) | 0.022 (0.043) | 0.000 (0.023) | 0.014 (0.035) | 0.022 (0.046) | 0.002 (0.022) | 0.018 (0.034) | 0.028 (0.044) |
| <i>Std.Dev.FR</i> | 0.129 (0.129) | 0.126 (0.184) | 0.179 (0.234) | -0.039 (0.063) | -0.078 (0.067) | -0.091 (0.074) | 0.013 (0.093) | -0.026 (0.107) | -0.041 (0.122) |
| LOG(<i>TNA</i>) | -0.001 (0.001) | -0.001 (0.001) | -0.001 (0.001) | 0.000 (0.001) | -0.001 (0.001) | -0.001 (0.001) | -0.001 (0.001) | -0.001 (0.001) | -0.001 (0.001) |
| LOG(<i>AGE</i>) | -0.001 (0.001) | -0.001 (0.001) | -0.001 (0.001) | -0.001 (0.001) | -0.002 (0.001) | -0.001 (0.001) | -0.002 (0.001) | -0.001 (0.001) | -0.001 (0.001) |
| <i>TO</i> | -0.001 (0.002) | -0.001 (0.002) | -0.001 (0.002) | -0.001 (0.002) | -0.001 (0.002) | -0.001 (0.002) | -0.001 (0.002) | -0.001 (0.001) | -0.001 (0.001) |
| <i>EXP</i> | 0.011 (0.193) | -0.019 (0.200) | -0.051 (0.220) | 0.108 (0.194) | 0.080 (0.191) | 0.048 (0.199) | 0.019 (0.189) | 0.019 (0.187) | -0.064 (0.197) |
| <i>LOAD</i> | -0.020 (0.035) | -0.018 (0.034) | -0.018 (0.035) | -0.016 (0.035) | -0.011 (0.035) | -0.005 (0.035) | -0.014 (0.034) | -0.007 (0.033) | 0.001 (0.033) |
| LOG(<i>NUMFDS</i>) | 0.002 (0.002) | 0.002 (0.002) | 0.003 (0.002) | 0.001 (0.002) | 0.000 (0.002) | 0.000 (0.002) | 0.001 (0.002) | 0.001 (0.002) | 0.001 (0.002) |
| <i>STAR</i> | 0.002 (0.001) | 0.003** (0.001) | 0.002 (0.002) | 0.002* (0.001) | 0.005*** (0.002) | 0.006*** (0.002) | 0.002* (0.001) | 0.003** (0.001) | 0.005*** (0.002) |
| Observations | 10,489 | 10,489 | 10,489 | 10,489 | 10,489 | 10,489 | 10,489 | 10,489 | 10,489 |
| R-Squared | 0.104 | 0.108 | 0.106 | 0.100 | 0.105 | 0.103 | 0.114 | 0.120 | 0.119 |

Table 5: **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 time-series standard deviation of the fund-specific performance within a fund family. *TNA* is the family-level monthly total net assets value. *AGE* is the *TNA*-weighted fund age in a family. *TO* is the *TNA*-weighted turnover ratio at the family-level. *EXP* and *LOAD* are the *TNA*-weighted expense ratio and the total load 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. All independent variables are lagged by one month. Standard errors are clustered by management companies and reported in parentheses. *, **, *** represent statistical significance at the 10%, 5%, and 1% level, respectively.

| | Dependent Variable: Monthly Family Flows (<i>NMG</i>) | | | | | |
|----------------------|---|--------------------|--------------------|---------------------------------|---------------------|---------------------|
| | Below Median Revenue Percentage | | | Above Median Revenue Percentage | | |
| | 12 Mths | 24 Mths | 36 Mths | 12 Mths | 24 Mths | 36 Mths |
| <i>CR</i> | 0.095*** (0.031) | 0.119** (0.050) | 0.125** (0.059) | 0.180*** (0.044) | 0.260*** (0.092) | 0.309*** (0.103) |
| <i>FR</i> | 0.595*** (0.209) | 0.444 (0.296) | 0.449 (0.392) | 0.882*** (0.226) | 1.065*** (0.275) | 1.181*** (0.340) |
| <i>Std.Dev.CR</i> | -0.028 (0.024) | -0.027 (0.032) | -0.039 (0.040) | 0.021 (0.018) | 0.058** (0.028) | 0.095* (0.048) |
| <i>Std.Dev.FR</i> | 0.293* (0.158) | 0.210 (0.187) | 0.274 (0.265) | 0.456*** (0.133) | 0.572*** (0.202) | 0.665** (0.288) |
| LOG(<i>TNA</i>) | 0.001 (0.001) | 0.000 (0.001) | 0.000 (0.001) | -0.001 (0.001) | -0.001 (0.001) | -0.001 (0.001) |
| LOG(<i>AGE</i>) | -0.004* (0.002) | -0.004* (0.002) | -0.004* (0.002) | 0.000 (0.001) | 0.002 (0.001) | 0.003* (0.001) |
| <i>TO</i> | 0.001 (0.001) | 0.001 (0.001) | 0.001 (0.001) | -0.005 (0.004) | -0.005 (0.003) | -0.005* (0.003) |
| <i>EXP</i> | 0.152 (0.327) | -0.012 (0.349) | 0.001 (0.376) | 0.159 (0.514) | 0.113 (0.443) | 0.099 (0.435) |
| <i>LOAD</i> | -0.033 (0.053) | -0.026 (0.054) | -0.028 (0.055) | 0.043 (0.067) | 0.036 (0.059) | 0.028 (0.054) |
| LOG(<i>NUMFDS</i>) | 0.002 (0.003) | 0.001 (0.003) | 0.001 (0.003) | 0.002 (0.002) | 0.003* (0.002) | 0.004** (0.002) |
| <i>STAR</i> | -0.002 (0.001) | 0.001 (0.002) | 0.000 (0.002) | 0.004** (0.002) | 0.003 (0.002) | 0.001 (0.002) |
| Observations | 3,312 | 3,312 | 3,312 | 3,327 | 3,327 | 3,327 |
| R-Squared | 0.092 | 0.087 | 0.087 | 0.184 | 0.206 | 0.221 |

Table 6: **Equity Fund Flows by Management Company Performance: Piecewise Linear Regressions**

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 either into two piecewise linear terms based on the industry-adjusted company returns or into three piecewise linear terms based on the percentile ranks of the industry-adjusted company returns. The flow regressions using three segments follow Sirri and Tufano (1998) and are defined as $LOWRANK_{f,t} = MIN(RANK_{f,t}, 0.2)$, $MIDRANK_{f,t} = MIN(RANK_{f,t} - LOWRANK_{f,t}, 0.6)$; and $HIGHRANK_{f,t} = (RANK_{f,t} - LOWRANK_{f,t} - MIDRANK_{f,t})$, where $RANK_{f,t}$ corresponds to the percentile rank based on industry-adjusted company returns or four-factor adjusted fund returns. The performance is measured over the past 12, 24, and 36 months. The table does not report the estimates for the additional control variables summarized in Table 3. The sample period is from January 1992 to December 2009. Time dummies are included. All independent variables are lagged by one month. Standard errors are clustered by management companies and reported in parentheses. *, **, and *** represent statistical significance at the 10%, 5%, and 1% level, respectively.

| | Dependent Variable: Monthly Family Flows (NMG) | | | | | |
|------------------|--|---------------------|---------------------|-------------------------|---------------------|---------------------|
| | Signed Company Performance | | | Performance Rank Groups | | |
| | 12 Mths | 24 Mths | 36 Mths | 12 Mths | 24 Mths | 36 Mths |
| MIN($CR,0$) | 0.133*** (0.041) | 0.173*** (0.064) | 0.193*** (0.070) | | | |
| MAX($CR,0$) | 0.125* (0.069) | 0.181 (0.112) | 0.199* (0.110) | | | |
| LOWRANK(CR) | | | | 0.022** (0.011) | 0.039*** (0.012) | 0.020 (0.015) |
| MIDRANK(CR) | | | | 0.004 (0.002) | 0.002 (0.003) | 0.005 (0.003) |
| HIGHRANK(CR) | | | | 0.026 (0.017) | 0.031 (0.021) | 0.024 (0.020) |
| MIN($FR,0$) | 1.424*** (0.206) | 1.886*** (0.306) | 2.149*** (0.421) | | | |
| MAX($FR,0$) | 0.750*** (0.256) | 0.644** (0.308) | 0.578 (0.429) | | | |
| LOWRANK(FR) | | | | 0.034*** (0.011) | 0.042*** (0.013) | 0.026* (0.016) |
| MIDRANK(FR) | | | | 0.013*** (0.002) | 0.013*** (0.003) | 0.017*** (0.003) |
| HIGHRANK(FR) | | | | 0.040** (0.016) | 0.031** (0.015) | 0.027* (0.015) |
| Observations | 10,489 | 10,489 | 10,489 | 10,489 | 10,489 | 10,489 |
| R-Squared | 0.105 | 0.110 | 0.109 | 0.110 | 0.115 | 0.116 |

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) or 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 time-series standard deviation of the fund-specific performance within a fund family. TNA is the family-level monthly total net assets value. AGE is the TNA -weighted fund age in a family. TO is the TNA -weighted turnover ratio at the family-level. EXP and $LOAD$ are the TNA -weighted expense ratio and the total load 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. All independent variables are lagged by one month. Standard errors are clustered by management companies and 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 | Booms | Recessions |
| CR | 0.137*** (0.041) | 0.216** (0.083) | 0.185*** (0.054) | 0.197*** (0.069) |
| FR | 1.457*** (0.227) | 1.150*** (0.259) | 1.427*** (0.195) | 0.443 (0.410) |
| $Std.Dev.CR$ | -0.052 (0.035) | 0.031 (0.032) | 0.009 (0.036) | 0.020 (0.028) |
| $Std.Dev.FR$ | -0.131 (0.239) | 0.363** (0.176) | 0.133 (0.201) | 0.215 (0.232) |
| $LOG(TNA)$ | -0.001 (0.001) | -0.001* (0.001) | -0.001 (0.001) | -0.001* (0.001) |
| $LOG(AGE)$ | 0.001 (0.001) | -0.003* (0.001) | -0.002 (0.001) | 0.001 (0.002) |
| TO | 0.001 (0.002) | -0.002 (0.002) | -0.001 (0.002) | 0.000 (0.001) |
| EXP | 0.220 (0.351) | -0.219 (0.240) | 0.050 (0.214) | -0.797** (0.312) |
| $LOAD$ | -0.074 (0.049) | 0.011 (0.047) | -0.024 (0.036) | 0.019 (0.064) |
| $LOG(NUMFDS)$ | 0.002 (0.003) | 0.003* (0.002) | 0.002 (0.002) | 0.002 (0.002) |
| $STAR$ | 0.005** (0.002) | 0.002 (0.002) | 0.003** (0.001) | 0.003 (0.002) |
| Observations | 4,723 | 5,766 | 9,069 | 1,420 |
| R-Squared | 0.117 | 0.096 | 0.110 | 0.078 |

Table 8: **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 performance of management companies is measured using the average industry-adjusted returns, the raw returns, and the four-factor adjusted returns over the prior 12, 24, and 36 months (*CR*). *FR* is the average four-factor adjusted equity 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 time-series standard deviation of the fund-specific performance within a fund family. *TNA* is the monthly total net assets value of a fund. *AGE* is the fund age. *TO* is the turnover ratio at the fund level. *EXP* and *LOAD* are the expense ratio and the total load 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. All independent variables are lagged by one month. Standard errors are clustered by management companies and reported in parentheses. *, **, and *** represent statistical significance at the 10%, 5%, and 1% level, respectively.

| | Dependent Variable: Monthly Fund Flows (<i>NMG</i>) | | | | | | | | |
|-------------------|---|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| | Industry Adjusted | | | Raw | | | Four-Factor Adjusted | | |
| | Company Return | | | Company Return | | | Company Return | | |
| | 12 Mths | 24 Mths | 36 Mths | 12 Mths | 24 Mths | 36 Mths | 12 Mths | 24 Mths | 36 Mths |
| <i>CR</i> | 0.077*** (0.023) | 0.118*** (0.039) | 0.119** (0.052) | 0.077*** (0.024) | 0.115*** (0.040) | 0.113** (0.053) | 0.083*** (0.028) | 0.137*** (0.044) | 0.164*** (0.053) |
| <i>FR</i> | 0.997*** (0.116) | 1.067*** (0.145) | 1.129*** (0.144) | 0.997*** (0.117) | 1.068*** (0.146) | 1.128*** (0.144) | 1.240*** (0.086) | 1.434*** (0.132) | 1.498*** (0.152) |
| <i>Std.Dev.CR</i> | -0.014 (0.016) | -0.012 (0.024) | -0.014 (0.030) | 0.001 (0.012) | 0.005 (0.018) | 0.000 (0.021) | 0.010 (0.017) | 0.021 (0.026) | 0.024 (0.031) |
| <i>Std.Dev.FR</i> | -0.114 (0.101) | -0.149 (0.109) | -0.159 (0.108) | -0.114 (0.101) | -0.151 (0.108) | -0.161 (0.107) | 0.059 (0.066) | 0.027 (0.078) | -0.025 (0.088) |
| LOG(<i>TNA</i>) | -0.001*** (0.000) | -0.001*** (0.000) | -0.001*** (0.000) | -0.001*** (0.000) | -0.001*** (0.000) | -0.001*** (0.000) | -0.001*** (0.000) | -0.001*** (0.000) | -0.001*** (0.000) |
| LOG(<i>AGE</i>) | 0.000 (0.001) | 0.000 (0.001) | 0.000 (0.001) | 0.000 (0.001) | 0.000 (0.001) | 0.000 (0.001) | -0.001 (0.001) | -0.001 (0.001) | -0.001 (0.001) |
| <i>TO</i> | -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) |
| <i>EXP</i> | -0.305* (0.155) | -0.284* (0.152) | -0.271* (0.154) | -0.309** (0.153) | -0.290* (0.149) | -0.272* (0.151) | -0.392** (0.153) | -0.369** (0.145) | -0.349** (0.145) |
| <i>LOAD</i> | 0.048 (0.029) | 0.046 (0.028) | 0.047* (0.028) | 0.047 (0.029) | 0.045 (0.028) | 0.046 (0.028) | 0.070** (0.030) | 0.072** (0.030) | 0.076** (0.030) |
| <i>STAR</i> | 0.013*** (0.002) | 0.016*** (0.002) | 0.013*** (0.002) | 0.013*** (0.002) | 0.016*** (0.002) | 0.013*** (0.002) | 0.011*** (0.002) | 0.013*** (0.002) | 0.011*** (0.002) |
| Observations | 66,527 | 66,527 | 66,527 | 66,527 | 66,527 | 66,527 | 60,273 | 60,273 | 60,273 |
| R-Squared | 0.087 | 0.088 | 0.08 | 0.086 | 0.087 | 0.08 | 0.087 | 0.091 | 0.085 |

Table 9: **Equity Fund Flows by Management Company Performance and Fund Performance: Individual Fund 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 fund names (funds that include the management company name or a different name in the fund name), fund structure (in-house and outsourced), and based on the activeness of the investment strategy (actively-managed funds and index funds). 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 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 time-series standard deviation of the fund-specific performance. *TNA* is the monthly total net assets value. *AGE* is the fund age. *TO* is the turnover ratio of a fund. *EXP* and *LOAD* are the expense ratio and the total load of a fund. *Age* is the age of a fund. *STAR* is an indicator variable that takes on unity if a fund is rated as a star fund. Time dummies are included. All independent variables are lagged by one month. Standard errors are clustered by management companies and reported in parentheses. *, **, *** represent statistical significance at the 10%, 5%, and 1% level, respectively.

| | Dependent Variable: Monthly Family Flows (<i>NMG</i>) | | | | | |
|-------------------|---|----------------------|----------------------|---------------------|----------------------|----------------------|
| | Fund Names | | Fund Structure | | Activeness | |
| | Family Name Funds | Different Name Funds | In-House Funds | Outsourced Funds | Active Funds | Index Funds |
| <i>CR</i> | 0.121*** (0.044) | 0.044 (0.077) | 0.142** (0.066) | -0.036 (0.064) | 0.118*** (0.039) | 0.092 (0.107) |
| <i>FR</i> | 1.059*** (0.156) | 1.122*** (0.231) | 0.981*** (0.127) | 0.736*** (0.210) | 1.067*** (0.145) | 1.505*** (0.416) |
| <i>Std.Dev.CR</i> | -0.011 (0.026) | 0.025 (0.041) | -0.015 (0.033) | 0.019 (0.029) | -0.012 (0.024) | 0.016 (0.035) |
| <i>Std.Dev.FR</i> | -0.146 (0.118) | -0.185* (0.095) | 0.094 (0.085) | -0.216 (0.165) | -0.149 (0.109) | 0.388 (0.233) |
| LOG(<i>TNA</i>) | -0.001*** (0.000) | -0.001 (0.001) | -0.002*** (0.001) | 0.000 (0.001) | -0.001*** (0.000) | -0.003** (0.001) |
| LOG(<i>AGE</i>) | 0.016*** (0.002) | 0.011*** (0.003) | 0.015*** (0.003) | 0.020*** (0.005) | 0.016*** (0.002) | 0.068*** (0.010) |
| <i>TO</i> | -0.001* (0.001) | -0.002 (0.002) | -0.003*** (0.001) | 0.002 (0.001) | -0.001* (0.001) | 0.000 (0.002) |
| <i>EXP</i> | -0.313* (0.184) | -0.099 (0.352) | -0.478** (0.231) | -0.683** (0.300) | -0.284* (0.152) | -1.687*** (0.496) |
| <i>LOAD</i> | 0.040 (0.029) | 0.060 (0.075) | 0.040 (0.032) | 0.094 (0.060) | 0.046 (0.028) | 0.171 (0.172) |
| <i>STAR</i> | 0.000 (0.001) | -0.003*** (0.001) | -0.001 (0.001) | 0.000 (0.002) | 0.000 (0.001) | -0.003 (0.002) |
| Observations | 60,430 | 6,097 | 30,343 | 9,568 | 66,527 | 4,588 |
| R-Squared | 0.088 | 0.149 | 0.088 | 0.101 | 0.088 | 0.176 |

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 A, B, and C 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). The sample period ranges from January 1992 to December 2009. The standard errors are clustered by management company and are shown in parentheses. *, **, and *** represent statistical significance at the 10%, 5%, and 1% level, respectively.

| Panel A: New Money Growth (12 Month Performance) | | | | | | |
|--|---------------------|----------------------|--------------------|---------------------|---------------------|---------------------|
| | ALL | $FSAR$ 1 | $FSAR$ 2 | $FSAR$ 3 | $FSAR$ 4 | 4-1 |
| ALL | | -0.263** (0.112) | 0.224** (0.102) | 0.352*** (0.108) | 0.973*** (0.167) | 1.236*** (0.181) |
| CR 1 | 0.267** (0.121) | -0.462** (0.187) | 0.372* (0.210) | 0.138 (0.175) | 1.023*** (0.225) | 1.486*** (0.296) |
| CR 2 | 0.225** (0.088) | -0.230** (0.114) | 0.179 (0.141) | 0.372*** (0.129) | 0.613*** (0.140) | 0.843*** (0.153) |
| CR 3 | 0.269** (0.109) | -0.395*** (0.145) | 0.128 (0.136) | 0.389*** (0.139) | 0.889*** (0.233) | 1.284*** (0.260) |
| CR 4 | 0.564*** (0.133) | 0.068 (0.221) | 0.228 (0.159) | 0.484*** (0.155) | 1.283*** (0.246) | 1.215*** (0.319) |
| 4-1 | 0.297** (0.149) | 0.531** (0.270) | -0.144 (0.267) | 0.346* (0.201) | 0.260 (0.278) | |

| Panel B: New Money Growth (24 Month Performance) | | | | | | |
|--|---------------------|----------------------|-------------------|---------------------|---------------------|---------------------|
| | ALL | $FSAR$ 1 | $FSAR$ 2 | $FSAR$ 3 | $FSAR$ 4 | 4-1 |
| ALL | | -0.223* (0.123) | 0.111 (0.101) | 0.306*** (0.116) | 1.084*** (0.168) | 1.307*** (0.182) |
| CR 1 | 0.179 (0.115) | -0.446*** (0.183) | -0.083 (0.159) | 0.169 (0.173) | 0.967*** (0.211) | 1.413*** (0.279) |
| CR 2 | 0.230** (0.101) | -0.211 (0.172) | 0.288* (0.153) | 0.015 (0.129) | 0.928*** (0.223) | 1.139*** (0.268) |
| CR 3 | 0.344*** (0.124) | -0.305 (0.248) | 0.076 (0.153) | 0.251* (0.148) | 1.075*** (0.232) | 1.380*** (0.320) |
| CR 4 | 0.562*** (0.131) | 0.086 (0.239) | 0.137 (0.147) | 0.549*** (0.160) | 1.315*** (0.251) | 1.229*** (0.339) |
| 4-1 | 0.383** (0.168) | 0.533* (0.285) | 0.220 (0.213) | 0.380 (0.244) | 0.348 (0.321) | |

| Panel C: New Money Growth (36 Month Performance) | | | | | | |
|--|---------------------|---------------------|------------------|---------------------|---------------------|---------------------|
| | ALL | $FSAR$ 1 | $FSAR$ 2 | $FSAR$ 3 | $FSAR$ 4 | 4-1 |
| ALL | | -0.223* (0.136) | 0.124 (0.091) | 0.361*** (0.107) | 1.005*** (0.165) | 1.228*** (0.190) |
| CR 1 | 0.172 (0.125) | -0.461* (0.248) | 0.058 (0.132) | -0.089 (0.115) | 1.037*** (0.267) | 1.498*** (0.365) |
| CR 2 | 0.144 (0.095) | -0.371** (0.165) | 0.143 (0.142) | 0.087 (0.132) | 0.764*** (0.192) | 1.135*** (0.246) |
| CR 3 | 0.348*** (0.122) | -0.149 (0.249) | 0.173 (0.151) | 0.526*** (0.159) | 0.855*** (0.224) | 1.004*** (0.311) |
| CR 4 | 0.646*** (0.145) | 0.104 (0.239) | 0.167 (0.120) | 0.855*** (0.209) | 1.271*** (0.263) | 1.179*** (0.358) |
| 4-1 | 0.474*** (0.182) | 0.565* (0.335) | 0.109 (0.163) | 0.944*** (0.226) | 0.234 (0.370) | |

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 raw company return, and the four-factor adjusted company return over the prior 12, 24, and 36 months. The fund performance is measured by the average style-adjusted and raw 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 time-series standard deviation of the fund-specific performance within a fund family. *TNA* is the family-level monthly total net assets value. *AGE* is the *TNA*-weighted fund age in a family. *TO* is the *TNA*-weighted turnover ratio at the family-level. *EXP* and *LOAD* are the *TNA*-weighted expense ratio and the total load 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. All independent variables are lagged by one month. Standard errors are clustered by management companies and reported in parentheses. *, **, *** represent statistical significance at the 10%, 5%, and 1% level, respectively.

| | Dependent Variable: Monthly Fund Flows (<i>NMG</i>) | | | | | | | | |
|----------------------|---|-----------|-----------|--------------------|-----------|-----------|-------------------------------------|----------|----------|
| | 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 |
| <i>CR</i> | 0.040* | 0.074** | 0.116*** | 0.031 | 0.069* | 0.108** | 0.089*** | 0.143*** | 0.146*** |
| | (0.020) | (0.034) | (0.043) | (0.024) | (0.037) | (0.046) | (0.027) | (0.042) | (0.053) |
| <i>FR</i> | 1.801*** | 2.103*** | 2.484*** | 1.824*** | 2.133*** | 2.518*** | 1.499*** | 2.032*** | 2.464*** |
| | (0.256) | (0.344) | (0.439) | (0.256) | (0.343) | (0.434) | (0.208) | (0.320) | (0.396) |
| <i>Std.Dev.CR</i> | 0.014 | 0.019 | 0.027 | 0.036* | 0.031* | 0.037** | 0.019 | 0.033* | 0.043** |
| | (0.021) | (0.018) | (0.022) | (0.018) | (0.016) | (0.018) | (0.014) | (0.019) | (0.022) |
| <i>Std.Dev.FR</i> | -0.183 | -0.207 | -0.231 | -0.212 | -0.221 | -0.247 | -0.203 | -0.278** | -0.318** |
| | (0.171) | (0.150) | (0.159) | (0.167) | (0.147) | (0.155) | (0.125) | (0.131) | (0.138) |
| LOG(<i>TNA</i>) | -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) | (0.001) |
| LOG(<i>AGE</i>) | -0.003* | -0.002* | -0.002 | -0.003* | -0.002 | -0.002 | -0.003* | -0.003* | -0.003 |
| | (0.001) | (0.001) | (0.001) | (0.001) | (0.001) | (0.001) | (0.002) | (0.002) | (0.002) |
| <i>TO</i> | -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) |
| <i>EXP</i> | -0.141 | -0.131 | -0.133 | -0.138 | -0.118 | -0.110 | -0.059 | -0.049 | -0.016 |
| | (0.300) | (0.299) | (0.302) | (0.304) | (0.300) | (0.303) | (0.304) | (0.307) | (0.309) |
| <i>LOAD</i> | -0.102*** | -0.102*** | -0.099*** | -0.099*** | -0.101*** | -0.100*** | -0.061 | -0.050 | -0.048 |
| | (0.036) | (0.036) | (0.036) | (0.036) | (0.036) | (0.036) | (0.039) | (0.037) | (0.036) |
| LOG(<i>NUMFDS</i>) | 0.002* | 0.002* | 0.003** | 0.002* | 0.002* | 0.003** | 0.001 | 0.001 | 0.002 |
| | (0.001) | (0.001) | (0.001) | (0.001) | (0.001) | (0.001) | (0.001) | (0.001) | (0.001) |
| <i>STAR</i> | 0.002 | 0.003*** | 0.004*** | 0.002 | 0.003** | 0.004*** | 0.002** | 0.004*** | 0.004*** |
| | (0.001) | (0.001) | (0.001) | (0.001) | (0.001) | (0.001) | (0.001) | (0.001) | (0.001) |
| Observations | 13,656 | 13,656 | 13,656 | 13,656 | 13,656 | 13,656 | 11,947 | 11,947 | 11,947 |
| R-Squared | 0.092 | 0.097 | 0.099 | 0.093 | 0.097 | 0.100 | 0.084 | 0.091 | 0.091 |

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

This table presents results from a linear probability 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 in month t . 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 24 months (*CR*). *FR* for equity funds is the four-factor adjusted fund return and for bond funds is the style-adjusted fund return. *TENURE* is measured as the (average) tenure of fund manager(s) for a particular fund. *TNA* is the size of a fund. *AGE* is the fund age. *TO* is the turnover ratio at the fund-level. *EXP* and *LOAD* are the expense ratio and the total load of a fund. *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. All independent variables are lagged by one month. Standard errors are clustered by fund and 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 |
| <i>CR</i> | -0.112** (0.045) | -0.097* (0.058) | -0.036 (0.083) | -0.125** (0.049) | -0.121** (0.057) | -0.046 (0.072) |
| <i>FR</i> | -0.330** (0.154) | -0.375** (0.154) | -0.468*** (0.153) | -0.650*** (0.180) | -0.867*** (0.192) | -1.115*** (0.226) |
| <i>Std.Dev.CR</i> | 0.034 (0.023) | 0.034 (0.028) | 0.024 (0.030) | 0.037 (0.023) | 0.023 (0.026) | 0.014 (0.029) |
| <i>Std.Dev.FR</i> | 0.008 (0.065) | 0.004 (0.061) | 0.034 (0.060) | -0.098 (0.104) | -0.076 (0.098) | -0.013 (0.097) |
| LOG(<i>TENURE</i>) | -0.006*** (0.001) | -0.006*** (0.001) | -0.006*** (0.001) | -0.006*** (0.001) | -0.006*** (0.001) | -0.006*** (0.001) |
| <i>TEAM</i> | 0.031*** (0.002) | 0.031*** (0.002) | 0.031*** (0.002) | 0.029*** (0.002) | 0.030*** (0.002) | 0.030*** (0.002) |
| LOG(<i>TNA</i>) | 0.000 (0.001) | 0.000 (0.001) | 0.000 (0.001) | 0.000 (0.000) | 0.000 (0.000) | 0.000 (0.000) |
| LOG(<i>AGE</i>) | -0.001 (0.002) | -0.001 (0.002) | -0.001 (0.002) | -0.001 (0.002) | -0.001 (0.002) | -0.001 (0.002) |
| <i>TO</i> | 0.005*** (0.001) | 0.005*** (0.001) | 0.005*** (0.001) | 0.000 (0.000) | 0.000 (0.000) | 0.000 (0.000) |
| <i>EXP</i> | 0.311* (0.185) | 0.304* (0.182) | 0.281 (0.179) | 0.421** (0.200) | 0.414** (0.201) | 0.382* (0.207) |
| <i>LOAD</i> | 0.024 (0.040) | 0.027 (0.040) | 0.026 (0.040) | -0.002 (0.037) | -0.001 (0.037) | -0.002 (0.037) |
| <i>STAR</i> | -0.002 (0.003) | -0.001 (0.003) | -0.002 (0.003) | 0.003 (0.002) | 0.003 (0.002) | 0.002 (0.003) |
| Observations | 50,455 | 50,455 | 50,455 | 60,160 | 60,160 | 60,160 |
| R-Squared | 0.024 | 0.024 | 0.024 | 0.023 | 0.023 | 0.023 |

Table 13: **Future Fund Performance**

This table uses OLS regressions to examine the relation between stock performance of management companies and next month's fund performance by U.S. equity funds managed by these companies. The dependent variable for equity funds is the four factor adjusted fund return in month t and for bond funds is the style-adjusted fund return 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 over the prior 12, 24, and 36 months. $Std.Dev.CR$ is the time-series standard deviation of CR . $Std.Dev.FR$ is the time-series standard deviation of the fund-specific performance within a fund family. TNA is the family-level monthly total net assets value. AGE is the TNA -weighted fund age in a family. TO is the TNA -weighted turnover ratio at the family-level. EXP and $LOAD$ are the TNA -weighted expense ratio and the total load 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. All independent variables are lagged by one month. Standard errors are clustered by management companies and reported in parentheses. *, **, and *** represent statistical significance at the 10%, 5%, and 1% level, respectively.

| | Dependent Variable: Raw Fund Return During the Next Month | | | | | |
|-----------------|---|---------------------|---------------------|---------------------|---------------------|--------------------|
| | Equity Funds | | | Bond Funds | | |
| | 12 Mths | 24 Mths | 36 Mths | 12 Mths | 24 Mths | 36 Mths |
| CR | -0.001 (0.006) | -0.005 (0.010) | -0.008 (0.012) | 0.007 (0.005) | 0.007 (0.007) | 0.007 (0.008) |
| FR | 0.116** (0.048) | 0.118* (0.060) | 0.112* (0.063) | 0.355*** (0.078) | 0.230** (0.101) | 0.192* (0.112) |
| $Std.Dev.CR$ | 0.003 (0.004) | 0.004 (0.005) | 0.004 (0.005) | 0.005 (0.003) | 0.006* (0.003) | 0.004 (0.003) |
| $Std.Dev.FR$ | -0.028 (0.042) | -0.031 (0.042) | -0.012 (0.042) | -0.191** (0.083) | -0.178** (0.086) | -0.151* (0.085) |
| LOG(TNA) | 0.000 (0.000) | 0.000 (0.000) | 0.000 (0.000) | 0.000 (0.000) | 0.000 (0.000) | 0.000 (0.000) |
| LOG(AGE) | 0.000 (0.000) | 0.000 (0.000) | 0.000 (0.000) | 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) | 0.000 (0.000) | 0.000 (0.000) |
| EXP | -0.089* (0.048) | -0.075 (0.049) | -0.085* (0.049) | -0.021 (0.048) | -0.042 (0.049) | -0.059 (0.047) |
| $LOAD$ | 0.004 (0.005) | 0.005 (0.005) | 0.006 (0.005) | 0.001 (0.006) | 0.001 (0.006) | 0.001 (0.005) |
| LOG($NUMFDS$) | 0.000 (0.000) | 0.000 (0.000) | 0.000 (0.000) | 0.000 (0.000) | 0.000 (0.000) | 0.000 (0.000) |
| $STAR$ | 0.002*** (0.000) | 0.001*** (0.000) | 0.001*** (0.000) | 0.000 (0.000) | 0.000 (0.000) | 0.000 (0.000) |
| Observations | 10,489 | 10,489 | 10,489 | 13,656 | 13,656 | 13,656 |
| R-Squared | 0.154 | 0.150 | 0.150 | 0.067 | 0.054 | 0.049 |