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Spillover Effects in Mutual Fund Companies

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Our paper investigates spillover effects across different business segments of publicly traded financial conglomerates. We find that the investment decisions of mutual fund shareholders do not depend only on the prior performance of the mutual funds; they also depend on the prior performance of the funds' management companies. Flows into equity and bond mutual funds increase with the prior stock price performance of the funds' management companies after controlling for fund performance and other fund characteristics. The sensitivity of flows to the management company's performance is not justified by the subsequent performance of the affiliated funds. The results indicate that the reputation of a company's brand has a significant impact on the behavior of its customers.

Keywords: mutual fund flows; financial conglomerates; umbrella branding; performance predictability
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1. Introduction

Mutual funds are often managed by diversified financial conglomerates that are also active in other business segments, such as banking and insurance. Such diversified companies can exhibit spillovers across the various business segments, because the performance of the nonmutual fund segments can have an impact on the mutual fund segments. Our paper investigates whether the prior stock price performance of the management company is related to the money flows and the performance of its affiliated mutual funds.

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, Huang et al. 2007), no papers have studied the impact of the performance of the management company on mutual fund flows. Fund investors might consider the prior company performance in addition to the prior fund performance because the company's performance might be informative about the future performance of the affiliated mutual funds. For example, poorly performing fund management companies might be financially constrained and might reduce the allocation of resources to their affiliated mutual funds. In addition, they might also struggle to retain and hire qualified fund managers. Thus, fund investors might expect the subsequent fund performance to be positively related to the prior performance of the fund management company. In this case, one should observe superior subsequent performance for funds affiliated with successful fund management companies.

On the other hand, mutual fund investors might mistakenly associate the stock price performance of the management company with the performance of the mutual funds and consequently overestimate the impact of the management company's performance on its mutual fund segment. In this case, one should not observe superior subsequent performance for funds affiliated with successful fund management companies. In fact, the performance of the affiliated mutual funds might even decline with the management company's performance if there are diseconomies of scale in asset management as postulated by Berk and Green (2004).

To investigate the relation between the stock price performance of management companies and the money flows of their affiliated mutual funds, we collect a sample of 109 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 reasons for the spillover effects.

Our main result shows that the prior performance of the management company plays an important role in explaining mutual fund flows. For example, equity

funds affiliated with fund companies in the top performance decile over the prior 24 months increase their assets under management in the subsequent month by 0.55%. On the other hand, equity funds from companies in the bottom performance decile decrease their assets by 0.34% in the subsequent month. The importance of company performance as a predictor of fund flows is robust after controlling for prior fund performance and other fund and family characteristics, such as risk, size, age, expenses, advertising expenditures, employment growth, and the detection of mutual fund scandals.

We study the money flows 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 to that for equity funds. For example, bond funds affiliated with fund companies in the top performance decile over the prior 24 months increase their assets under management in the subsequent month by 0.58%, whereas bond funds from companies in the bottom decile increase their assets by just 0.08% in the subsequent month. Finding consistent results for both bond and equity mutual funds strengthens our confidence that the results are robust and are not driven by equity-specific fundamental factors.

The relation between company performance and fund flows could simply occur because the company performance reflects 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. 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. Despite substantial cross-sectional differences in the relative size of the mutual fund segment, we do not find any significant differences between the sensitivity of fund flows to company performance for companies with below- and above-median revenue percentages. This result indicates that the relation between flows and company returns is primarily driven by indirect spillover effects and is unlikely to simply reflect the superior performance of the mutual funds.

To investigate in more depth the economic reasons of the spillover effects, we study whether the effects differ across mutual funds. In the first subsample, we separate mutual funds according to whether the mutual fund name includes the name of the mutual fund management company. Many fund investors might not recognize the affiliation between the fund management company and the mutual funds if they do not share the same names. We only observe a significant relation between company performance and fund flows for funds that share the name of the management company. The second subsample separates funds according to whether the funds have a low or high name fluency score based on Green and Jame (2013). We only find spillover effects for funds with short, easy-to-pronounce names. These results indicate that our findings are more likely driven by reputational or brand spillovers and less likely driven by the rational learning of the investment ability of fund managers.

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 enables fund investors to make superior investment decisions. Whereas we do find a positive relation between past fund performance and future fund performance, we do not find a positive relation between past company performance and future fund performance. Indeed, the relation between future fund returns and prior company performance is significantly negative at longer-term horizons. Thus, our performance results do not provide a justification for the positive relation between fund flows and prior company performance.

There is a large literature that investigates the impact of mutual fund performance on money flows.[1] Our paper is the first to provide evidence that the performance of the management company also has an economically and statistically significant impact on fund flows. Consistent with the umbrella branding literature, we provide evidence for reputational spillover effects between products that are cobranded.[2]

Several recent papers have studied the implications of family affiliation and the ownership of the mutual fund families. This literature has investigated investment strategies, risk taking, and incentives in families.[3] Our paper also contributes to this literature by studying the relation between past performance of the management company and the future money flows in mutual funds. Although the mutual fund literature has studied spillover effects within mutual fund

[1] Papers on mutual fund flows and fund performance include Brown et al. (1996), Chevalier and Ellison (1997), Sirri and Tufano (1998), Zheng (1999), Del Guercio and Tkac (2002, 2008), Lynch and Musto (2003), Berk and Green (2004), Nanda et al. (2004), Huang et al. (2007, 2012), Ivkovich and Weisbenner (2009), Chapman et al. (2010), Spiegel and Zhang (2013), Pastor et al. (2014), Berk and Van Binsbergen (2015), and Sialm et al. (2015).

[2] See Wernerfelt (1988), Erdem (1998), and Erdem and Sun (2002) for influential papers on umbrella branding.

[3] Papers in this literature include Khorana and Servaes (1999), Massa (2003), Chen et al. (2004), Nanda et al. (2004), Gaspar et al. (2006), Gervais et al. (2006), Ivkovich (2006), Reuter (2006), Cohen et al. (2008), Kempf and Ruenzi (2008), Massa and Rehman (2008), Evans (2010), Gallaher et al. (2010), Bhattacharya et al. (2013), Chen et al. (2013), and Ferreira et al. (2014).

families, our paper studies spillover effects between the mutual fund segments of diversified financial conglomerates and other divisions.

2. Data and Summary Statistics

In this section, we describe the sample construction and report some key summary statistics.

2.1. Sample Construction

The data on mutual funds are 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 and 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.[4] The second sample includes all taxable U.S. government and corporate bond funds. We exclude index funds, money market funds, and municipal bond funds.[5] We aggregate the different share classes of a fund using MFLINKS based on Wermers (2000) and using the fund names for funds not listed in the MFLINKS database.

Our sample 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 nonmissing management company names; nonmissing monthly total net assets; nonmissing turnover, expense ratios, and loads; and nonmissing Lipper investment objective codes. Third, the funds must have at least 36 months of nonmissing returns. Fourth, the funds must have total net assets above $5 million at the beginning of each month.

From the CRSP mutual fund database, we obtain the names of management companies and their corresponding management codes. Using these names, we manually search through the CRSP stock database to find the CUSIPs of the common stocks of management companies that are publicly traded. 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. The exact merger dates are verified using Edgar, Factiva, or Google. 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 allows us to compute the dependency of the management company on revenues generated by its fund management segment.

Overall, our mutual fund sample includes 1,224 equity funds and 1,128 bond funds after applying our selection criteria. The mutual funds are affiliated with 109 publicly traded fund management companies. These publicly traded fund families account for 36.8% of the assets under management in the mutual fund sector.[6]

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 market-adjusted stock returns (*CR*) over the past 12, 24, and 36 months, respectively. The market-adjusted return is obtained by subtracting the value-weighted stock market return obtained from CRSP from the stock return of the management company. Investors are more likely to react to persistent, rather than transient, management company performance, so a 36-month time horizon allows us to better capture the longer-term performance of a firm. However, a 12-month performance enables us to examine the shorter-term sensitivity of investors to management company performance.

Panel A of Table 1 reports the characteristics of companies that offer equity mutual funds.[7] The average management company in our equity sample experiences an average market-adjusted return of 0.69% per month over the prior 24 months. The publicly traded companies in the sample exhibit significant variation in their average monthly performance, as reflected by the standard deviation of

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

[5] Bond funds with Lipper objective codes A, BBB, GB, GUT, GUS, HY, IID, IUG, MSI, SID, SII, SIU, SUS, SUT, and USM are retained. We also exclude bond funds with more than 50% holdings in equity securities.

[6] The sample of publicly traded fund management companies might not be a random sample of management companies and might be more subject to agency problems, as discussed by Ferris and Yan (2009). For example, our sample excludes funds offered by Fidelity and Vanguard since these fund families are not publicly traded. Examples of fund management companies included in our sample are ABN AMRO, Allianz, Bank of New York, Chase, Dreyfus, J. P. Morgan, Janus, Metlife, Morgan Stanley, Prudential, T. Rowe Price, and UBS.

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

Table 1 Summary Statistics of Mutual Funds

Variables	Mean	Std. dev.	25th perc.	Median	75th perc.
Panel A: Fund management companies					
CR (Market-adjusted returns, 24 months, in %)	0.69	1.80	−0.26	0.58	1.49
Std.Dev.CR (24 months, in %)	7.56	3.79	4.78	6.60	9.30
REVPCT Equity Funds (Revenue share, in %)	4.88	11.64	0.18	0.51	4.74
REVPCT Bond Funds (Revenue share, in %)	3.12	8.70	0.09	0.35	3.07
AI (Advertising intensity, 24 months, in %)	0.83	1.83	0.00	0.00	1.11
EG (Employment growth, 24 months, in %)	6.60	12.58	−1.33	3.44	11.14
SG (Sales growth, 24 months, in %)	13.33	17.73	2.08	10.65	21.18
ROE (Return on equity, 24 months, in %)	20.15	39.46	12.85	18.14	24.04
SCANDAL (Indicator for 6 months postscandal, in %)	0.96	9.73	0.00	0.00	0.00
Panel B: Equity mutual funds					
NMG (New money growth, in %)	0.10	5.01	−1.35	−0.14	1.72
FR (Market-adjusted returns, 24 months, in %)	−0.00	0.70	−0.34	−0.07	0.26
Std.Dev.FR (24 months, in %)	2.19	1.50	1.18	1.79	2.69
TNA (Total net assets, in $M)	695.21	1,194.36	66.80	214.70	690.80
AGE (in months)	120.82	132.22	41.00	81.65	141.34
TO (Turnover, in %)	84.51	113.44	36.00	65.63	109.00
EXP (Expense ratio, in %)	1.21	0.44	0.95	1.17	1.48
LOAD (Total loads, in %)	2.26	1.99	0.30	1.94	3.92
STAR (Star fund, 24 months)	6.53	24.70	0.00	0.00	0.00
FLUENCY (Fund fluency score, [0, 4])	2.01	0.78	2.00	2.00	2.00
Panel C: Bond mutual funds					
NMG (New money growth, in %)	0.58	4.70	−1.51	−0.24	1.53
FR (Market-adjusted returns, 24 months, in %)	−0.10	0.93	−0.21	−0.05	0.17
Std.Dev.FR (24 months, in %)	1.90	1.94	0.39	1.00	2.92
TNA (Total net assets, in $M)	648.12	999.95	89.90	245.10	703.00
AGE (in months)	130.27	125.03	53.13	100.02	161.43
TO (Turnover, in %)	138.07	188.63	44.00	80.99	156.00
EXP (Expense ratio, in %)	0.94	0.42	0.66	0.88	1.16
LOAD (Total loads, in %)	1.34	1.81	0.00	0.19	2.5
STAR (Star fund, 24 months, in %)	5.18	22.16	0.00	0.00	0.00

Notes. This table presents summary statistics for both equity and bond funds. The sample period is from January 1992 to December 2009.

average market-adjusted returns of 1.80%. The average time-series standard deviation of the monthly market-adjusted returns over the prior 24 months (*Std.Dev.CR*) equals 7.56%.

To obtain an impression of the importance of the mutual fund revenues relative to the total revenues of management companies, we compute for each fund in each year the dollar amount of management fees as the product of the annual management fees listed in the CRSP mutual fund database and the average of the total monthly net assets over the past 12 months. Using annual revenues obtained from Compustat, we sum the dollar management fees across all member funds under the same management company and divide by the company's annual revenue to obtain the revenue percentage (*REVPCT*).[8] 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 4.88% (3.12%) of the revenues of the management companies. Half of our management companies have management fees from equity (bond) mutual funds that are below 0.51% (0.35%) of their total revenues. In some of our analyses, we focus on the companies with below-median mutual fund revenue dependencies to be able to distinguish between direct and indirect spillover effects.

We use several additional accounting variables based on annual Compustat data. Advertising intensity (*AI*) is defined as the ratio between advertising expenditures and net sales over the prior year. The mean advertising intensity equals 0.83%. To capture the growth rate of the corporations, we compute the employment growth (*EG*) and the sales growth (*SG*) over the prior year. Finally, the return on equity (*ROE*) captures the profitability of a company. We winsorize the accounting variables at the 2.5% and 97.5% levels to remove the influence of outliers.

Since fund investors might withdraw money from their mutual funds in response to corporate scandals, we define an indicator variable for mutual fund scandals (*SCANDAL*) that equals one if a fund management company had an announcement of a scandal

[8] Our results are not affected qualitatively if we use the expense ratio instead of management fees as a proxy for the fund revenues instead. However, the expense ratio might include revenues that do not accrue to the management company.

over the prior six months. We obtain our list of scandals from Houge and Wellman (2005). We construct this variable over the years from 2000 to 2009 since the mutual fund scandals occur during this subperiod. We find that slightly less than 1% of our observations in this subperiod are affected by mutual fund scandals.

2.2.2. Mutual Fund Variables. The monthly 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, the new money growth rate (*NMG*) into fund f in month t is defined as

$$NMG_{f,t} = \frac{TNA_{f,t} - TNA_{f,t-1}(1+R_{f,t})}{TNA_{f,t-1}(1+R_{f,t})}, \qquad (1)$$

where $R_{f,t}$ is the investor return of fund f and $TNA_{f,t}$ is the total net asset value of fund f. We normalize the dollar flows by the appreciated lagged *TNA* to ensure that the flows never fall below -100%.[9]

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 equity (bond) mutual fund experiences an inflow of 0.10% (0.58%) per month.

We compute the market-adjusted fund return (*FR*) relative to the CRSP value-weighted market index for equity funds and relative to the U.S. Aggregate Bond Index from Barclays for bond funds.[10] The performance differs significantly across funds. The interquartile range of the mean market-adjusted return over the prior 24 months equals $[-0.34\%, 0.26\%]$ for equity funds and $[-0.21\%, 0.17\%]$ for bond funds. To capture the variation of fund returns, we define the time-series standard deviation of the market-adjusted fund returns over the prior 24 months (*Std.Dev.FR*).

Following extant studies, we also control for the size, the age, the turnover ratio, the expense ratio, the total loads, and the name fluency score of funds. The loads are defined as the sum of the maximum front- and back-end loads. We follow Nanda et al. (2004) in constructing an indicator variable (*STAR*) that equals one if a fund obtained a five-star rating from Morningstar. The average sizes of the equity and bond funds equal \$695 and \$648 million, respectively. Equity and bond funds have average ages of 121 and 130 months, respectively. Equity (bond) mutual funds have an average turnover of approximately 85% (138%) and on average charge expense ratios of 1.21% (0.94%) and total loads of 2.26% (1.34%). Approximately 6.53% of equity funds and 5.18% of bond funds are classified as star funds.

The fluency score for the names of mutual funds is based on Green and Jame (2013).[11] They define fund name fluency as the sum of its length score, its Englishness score, and its dictionary score.[12] Equity mutual funds have a mean fund fluency score of 2.01 with a standard deviation of 0.78.

3. Mutual Fund Flows

In this section, we analyze whether the performance of the management company affects the flows into equity and bond 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 market-adjusted performance over the prior 24 months. Panels A and B of Figure 1 depict the new money growth rates over the subsequent month of equity and bond 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. Equity funds affiliated with fund companies in the top market-adjusted performance decile over the prior 24 months increase their assets under management in the subsequent month by 0.55%. On the other hand, equity funds from companies in the bottom decile lower their

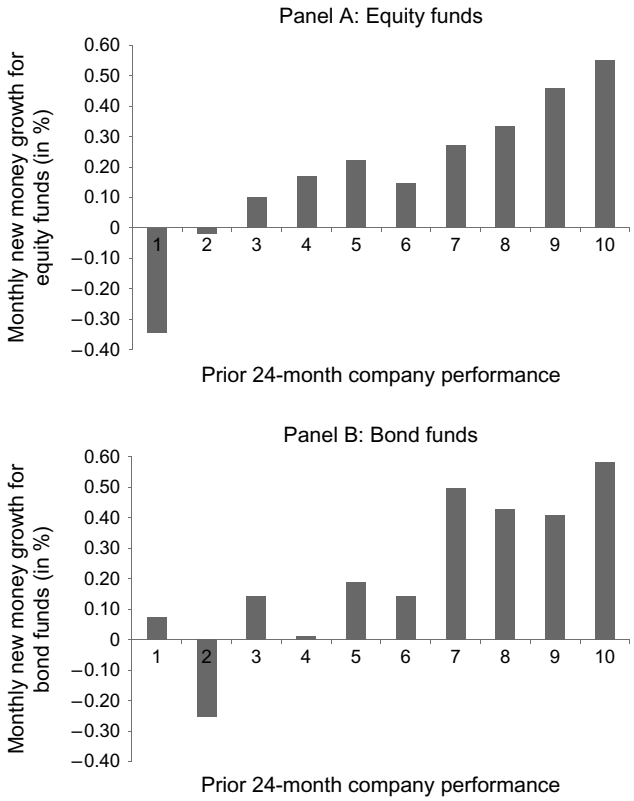
[9] The introduction of new funds does not affect our flows since we require that funds have 36 months of prior returns before including these funds in our sample.

[10] We thank Barclays for providing us with the monthly total returns of the U.S. Aggregate Bond Index.

[11] We thank Clifton Green and Russell Jame for sharing their fund name fluency scores with us.

[12] Green and Jame (2013) assign funds with name lengths below the 25th percentile (three words) a length score of 3, funds with name lengths between the 25th and 75th percentile (four words) a length score of 2, and funds with name lengths greater than the 75th percentile a length score of 1. Funds in the bottom quintile of Englishness as defined by Travers and Olivier (1978) are given an Englishness score of 0, and all other funds are given an Englishness score of 1. For the dictionary score, they assign a dictionary score of 1 if the proportion of dictionary words in the fund name is greater than the median and 0 otherwise.

Figure 1 **Money Flows to Mutual Funds by Management Company Performance**



Notes. These figures depict the relation between management company performance deciles and new money growth for equity and bond funds, where the market-adjusted management company performance is measured over the prior 24 months. New money growth is expressed in percent per month.

assets under management by 0.34% in the subsequent month. The relation for the 24-month horizon is almost monotonic, resulting in a Spearman rank correlation of 0.96, which is statistically significant ($p = 0.00001$). The relation is similar for the 12- and 36-month horizons, which are not depicted separately. The differences in flows between top and bottom decile management companies are statistically significant at a 1% level over all three horizons.

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 0.08% per month, funds in the highest company performance decile experience inflows of 0.58% per month. The Spearman rank correlation for the 24-month horizon equals 0.88, which is statistically significant at a 1% level ($p = 0.00081$). The relation is similar for the 12- and 36-month horizons.

Since the prior company performance is measured over a relatively long time period, the composition of the decile portfolios remains relatively 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 Relation

To investigate whether the results are robust after controlling for fund performance, we double-sort funds monthly into quartiles according to the market-adjusted return of their management company over the prior 24 months and into quartiles according to the market-adjusted fund return over the prior 24 months. The two-dimensional sorts are performed independently of each other. Panel A of Table 2 reports the results for the equity funds, and panel B reports the results for the bond funds. The rows correspond to the management company performance quartiles, and the columns correspond to the fund performance quartiles. The standard errors are clustered by management company.

We find that funds of management companies with superior stock price performance attract significantly higher flows even after controlling for the fund performance quartiles. Fund flows of top-quartile management companies exceed the flows of bottom quartile management companies for all fund performance quartiles by between 0.11 and 0.45 percentage points per month for equity funds and by between 0.63 and 0.99 percentage points per month for bond funds. The differences in flows between top- and bottom-quartile management companies are statistically significant at the 5% level for all fund performance quartiles except one.[13]

Consistent with Chevalier and Ellison (1997), Sirri and Tufano (1998), and Huang et al. (2007), we find that funds with superior prior fund performance exhibit higher net flows. For example, the differences in monthly flows between the top and the bottom prior performance quartiles equal 2.62 percentage points per month for equity funds and 0.76 percentage points per month for bond funds.

These double-sort results demonstrate that fund and company returns capture different performance aspects. Furthermore, the fact that the prior performance of the equity securities of the management

[13] By sorting the funds into quartiles according to their prior 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 also compute the average prior fund returns. We find little additional variation in the fund performance within the four *FR* quartiles. The results are not affected qualitatively if we measure the prior company and fund performance over a 12- or a 36-month horizon.

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

	ALL	*FR* 1	*FR* 2	*FR* 3	*FR* 4	4-1
			Panel A: Equity funds			
ALL		−1.04***	−0.27***	0.48***	1.58***	2.62***
		(0.07)	(0.06)	(0.06)	(0.09)	(0.10)
CR 1	−0.13**	−1.25***	−0.37***	0.20***	1.33***	2.58***
	(0.06)	(0.08)	0.07)	(0.08)	(0.14)	(0.16)
CR 2	0.18***	−1.11***	−0.22***	0.51***	1.63***	2.74***
	(0.06)	(0.08)	(0.08)	(0.07)	(0.10)	(0.11)
CR 3	0.24***	−0.87***	−0.23***	0.57***	1.57***	2.44***
	(0.05)	(0.08)	(0.08)	(0.08)	(0.11)	(0.11)
CR 4	0.46***	−0.88***	−0.26***	0.65***	1.72***	2.60***
	(0.07)	(0.09)	(0.08)	(0.09)	(0.13)	(0.14)
4-1	0.59***	0.37***	0.11	0.45***	0.39**	
	(0.08)	(0.10)	(0.09)	(0.11)	(0.17)	
			Panel B: Bond funds			
ALL		−0.38***	−0.06	0.28***	0.38***	0.76***
		(0.10)	(0.09)	(0.07)	(0.08)	(0.11)
CR 1	−0.38***	−0.72***	−0.32***	−0.27***	−0.07	0.64***
	(0.08)	(0.16)	(0.11)	(0.10)	(0.10)	(0.17)
CR 2	−0.09	−0.44***	−0.26***	0.14*	0.12	0.56***
	(0.06)	(0.12)	(0.09)	(0.08)	(0.09)	(0.13)
CR 3	0.24***	−0.22**	0.03	0.51***	0.53***	0.75***
	(0.05)	(0.09)	(0.09)	(0.08)	(0.08)	(0.12)
CR 4	0.45***	−0.05	0.31***	0.72***	0.92***	0.97***
	(0.07)	(0.11)	(0.11)	(0.10)	(0.12)	(0.15)
4-1	0.83***	0.67***	0.63***	0.99***	0.99***	
	(0.08)	(0.15)	(0.12)	(0.11)	(0.12)	

Notes. The table independently sorts mutual funds into quartiles by the market-adjusted stock returns of their management company (*CR*) and by their market-adjusted fund return (*FR*) over the prior 24 months. Panels A and B summarize the mean new money growth rates in the subsequent month based on the fund and company performance for equity and bond funds. The fund flows are computed for each group 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% levels, respectively.

company predicts future flows of both equity and bond funds indicates that the results are not driven by equity-specific fundamental factors.

3.3. Multivariate Regressions

To explore in more depth the impact of the company's performance on fund flows, we employ multivariate ordinary least squares (OLS) regressions including time fixed effects:

$$\begin{aligned} NMG_{f,t} = {} & \beta_1 CR_{f,t-1} + \beta_2 FR_{f,t-1} + \beta_3 FAMFR_{f,t-1} \\ & + \beta_4 STAR_{f,t-1} + \beta_5 Std.Dev.CR_{f,t-1} \\ & + \beta_6 Std.Dev.FR_{f,t-1} + \beta_7 \mathrm{LOG}(TNA_{f,t-1}) \\ & + \beta_8 \mathrm{LOG}(AGE_{f,t-1}) + \beta_9 TO_{f,t-1} \\ & + \beta_{10} EXP_{f,t-1} + \beta_{11} LOAD_{f,t-1} \\ & + \beta_t + \epsilon_{f,t}, \end{aligned} \tag{2}$$

where *CR* is the prior performance of the management company of mutual fund f, *FR* is the prior performance of fund f, *FAMFR* is the value-weighted prior performance of the other mutual funds in the same fund family as fund f, and *STAR* is an indicator variable that measures whether the fund is a star fund. The company and fund performance measures are defined as the average market-adjusted returns of the stock prices of the management companies and of the average market-adjusted net fund returns over the prior 12, 24, and 36 months. *Std.Dev.CR* and *Std.Dev.FR* are the time-series standard deviations of *CR* and *FR*, respectively. *TNA* is the total net assets of fund f, *AGE* is the fund age in months, *TO* is the portfolio turnover, *EXP* is the expense ratio, and *LOAD* is the maximum total load. We cluster the standard errors by management company. 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.

Table 3 reports the coefficient estimates using different return horizons. The first three columns correspond to equity funds. We find a positive relation between prior company performance and subsequent equity fund flows regardless of the return horizon. The relation between company performance and

Table 3 Fund Flows by Management Company Performance

	Dependent variable: Monthly fund flows (*NMG*)					
	Equity funds			Bond funds		
	12 months	24 months	36 months	12 months	24 months	36 months
CR	0.052**	0.083**	0.087*	0.024	0.062*	0.070*
	(0.024)	(0.042)	(0.052)	(0.022)	(0.035)	(0.042)
FR	0.986***	1.244***	1.260***	0.644***	0.883***	0.918***
	(0.050)	(0.085)	(0.110)	(0.057)	(0.077)	(0.100)
FAMFR	−0.098	−0.111	−0.185	0.071	0.155	0.168
	(0.087)	(0.138)	(0.163)	(0.124)	(0.139)	(0.158)
STAR	0.011***	0.012***	0.010***	0.013***	0.013***	0.015***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Std.Dev.CR	0.005	0.019	0.020	0.012	0.022	0.024
	(0.013)	(0.018)	(0.022)	(0.012)	(0.016)	(0.017)
Std.Dev.FR	−0.048*	−0.107***	−0.150***	−0.070**	−0.084***	−0.128***
	(0.026)	(0.028)	(0.030)	(0.030)	(0.032)	(0.031)
LOG(*TNA*)	0.000	−0.001	−0.001**	0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
LOG(*AGE*)	−0.009***	−0.008***	−0.008***	−0.008***	−0.008***	−0.008***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
TO	−0.001**	−0.001*	−0.001*	0.000	0.000	0.000
	(0.001)	(0.001)	(0.001)	(0.000)	(0.000)	(0.000)
EXP	−0.324**	−0.306**	−0.293**	−0.293**	−0.283**	−0.259*
	(0.144)	(0.137)	(0.139)	(0.145)	(0.142)	(0.144)
LOAD	0.091***	0.083***	0.082***	0.062**	0.056*	0.052*
	(0.028)	(0.026)	(0.027)	(0.031)	(0.030)	(0.030)
Observations	78,061	78,061	78,061	83,799	83,799	83,799
R-squared	0.126	0.126	0.113	0.067	0.066	0.064

Notes. This table uses OLS regressions to examine the relation between stock performance of management companies and fund flows into diversified U.S. equity and bond funds managed by these companies. The dependent variable is fund-level new money growth (*NMG*) in month *t*. The stock price performance of management companies is measured using the average market-adjusted returns over the prior 12, 24, and 36 months (*CR*). *FR* and *FAMFR* are the average market-adjusted fund and fund family returns over the prior 12, 24, and 36 months. *STAR* is an indicator variable that takes on unity if the fund is rated as a star fund. *Std.Dev.CR* and *Std.Dev.FR* are the time-series standard deviations of *CR* and *FR*, respectively. *TNA* is the total net asset value of a fund. *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. The sample period is from January 1992 to December 2009. Time fixed effects 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% levels, respectively.

subsequent fund flows is also economically significant. For example, a one-standard-deviation increase in the performance of the management company during the prior 24 months (which amounts to 1.80%) increases the flows into equity funds in the subsequent month by 0.15 percentage points, using the coefficient estimates from the 24-month horizon.

Consistent with the bivariate analysis in Table 2, we find that fund flows are strongly positively related with the prior fund performance. For example, a one-standard-deviation increase in the performance of the mutual fund during the prior 24 months (which amounts to 0.70%) increases the flows into equity funds in the subsequent month by 0.87 percentage points. Additional fund characteristics are also related to the flows of equity funds, although the economic significance of these variables is generally lower than the performance-based variables. For example, equity fund flows decline with the volatility of fund returns, fund age, and fund turnover. Furthermore, fund flows are negatively related to fund expenses and positively related to fund loads. Loads might have a different impact on fund flows than expenses, because loads are often used to compensate financial brokers for helping individual investors to select mutual funds, as discussed by Bergstresser et al. (2009) and Christoffersen et al. (2013).

The last three columns of Table 3 show that the performance of the management company over the prior 24 and 36 months also has a positive impact on the subsequent flows into bond mutual funds. The magnitude and the statistical significance of the effects is slightly reduced for bond funds compared to equity funds.

In unreported results, we show that the results are not sensitive to whether we measure the performance of the management company relative to their industry peers or a four-factor benchmark model. The results

Table 4 Family-Level Fund Flows by Management Company Performance

	Dependent variable: Monthly fund family flows (*NMG*)					
	Equity funds			Bond funds		
	12 months	24 months	36 months	12 months	24 months	36 months
CR	0.049	0.111**	0.120**	0.005	0.061*	0.072**
	(0.035)	(0.054)	(0.052)	(0.023)	(0.036)	(0.033)
FR	0.371***	0.710***	0.737***	0.488***	0.652***	0.690***
	(0.057)	(0.188)	(0.233)	(0.119)	(0.166)	(0.186)
STAR	0.005***	0.006***	0.006***	0.003***	0.004***	0.004***
	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Std.Dev.CR	0.024	0.037	0.057	0.021	0.024	0.026
	(0.021)	(0.030)	(0.040)	(0.018)	(0.022)	(0.022)
Std.Dev.FR	−0.040	−0.070	−0.069	−0.041	−0.085	−0.116*
	(0.050)	(0.056)	(0.061)	(0.058)	(0.063)	(0.068)
LOG(*TNA*)	0.001*	0.001	0.000	0.001	0.000	0.000
	(0.000)	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)
LOG(*AGE*)	−0.005***	−0.004***	−0.004***	−0.004***	−0.004***	−0.004***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
TO	−0.003*	−0.003*	−0.003**	0.001	0.001	0.001
	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
EXP	−0.004	−0.022	−0.043	−0.167	−0.174	−0.177
	(0.259)	(0.248)	(0.253)	(0.273)	(0.278)	(0.280)
LOAD	0.016	0.016	0.017	−0.011	−0.009	−0.012
	(0.041)	(0.038)	(0.039)	(0.043)	(0.044)	(0.044)
Observations	10,913	10,913	10,913	11,313	11,313	11,313
R-squared	0.111	0.125	0.122	0.112	0.114	0.112

Notes. This table uses OLS regressions to examine the relation between stock performance of management companies and aggregate fund flows into diversified U.S. equity and bond 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 market-adjusted returns over the prior 12, 24, and 36 months (*CR*). *FR* is the average market-adjusted family fund returns over the prior 12, 24, and 36 months. *STAR* is an indicator variable that takes on unity if the family has at least one member fund rated as a star fund. *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. The sample period is from January 1992 to December 2009. Time fixed effects 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% levels, respectively.

are also not affected qualitatively if we measure fund performance using market-adjusted, style-adjusted, or factor-adjusted returns.

The previous specification estimates the relation between company performance and fund flows at the fund level. This specification weights all funds equally regardless of fund size. Aggregating flows at the family level generates very similar results, as reported in Table 4.

The results on both bond and equity mutual funds indicate that the performance of the parent company has an economically significant impact on how clients perceive its mutual fund segment. Mutual fund investors react to both the performance of the mutual funds and the performance of the funds' parent companies.

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 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 of mutual funds through a branding effect.

To address this question, we repeat the previous analysis separately for management companies with low (below median) and high (above 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

0.51% 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 0.20% of their revenues from equity mutual funds, above-median families generate on average 9.56% of their revenues from the equity mutual funds. It is unlikely that fund performance has a substantial direct impact on the stock price performance of management companies with below-median revenue percentages.

Table 5 shows that the results are similar across both subsamples. The coefficient estimates on the prior company performance are not statistically different between the two subsamples at a 5% significance level. Thus, our results are not just driven by companies where the mutual fund business segment is their main revenue generator.

3.5. Piecewise Linear Specification

To examine whether the company performance–flow relation is driven primarily by firms with superior performance or by firms with inferior performance, we separately estimate the performance–flow coefficients for underperforming and outperforming companies and funds. In this specification, we replace $CR_{f,t}$ from Equation (2) 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 company and fund performances are measured after adjusting for market returns.

Table 6 reports the results using the signed company performance measure. Whereas we find a convex

Table 5 Equity Fund Flows by Management Company Performance and Fund Performance: Subsamples by Revenue Percentage

	Dependent variable: Monthly fund flows (*NMG*)					
	12 months		24 months		36 months	
	Low *REVPCT*	High *REVPCT*	Low *REVPCT*	High *REVPCT*	Low *REVPCT*	High *REVPCT*
CR	0.073**	0.077**	0.116*	0.131**	0.085	0.144*
	(0.035)	(0.033)	(0.063)	(0.058)	(0.089)	(0.074)
FR	0.974***	1.041***	1.075***	1.368***	1.091***	1.374***
	(0.105)	(0.077)	(0.158)	(0.125)	(0.171)	(0.158)
FAMFR	−0.090	0.001	−0.090	−0.123	−0.068	−0.139
	(0.300)	(0.146)	(0.320)	(0.213)	(0.324)	(0.220)
STAR	0.016***	0.013***	0.018***	0.013***	0.015***	0.009***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
Std.Dev.CR	0.008	−0.003	0.020	0.006	0.009	0.008
	(0.022)	(0.016)	(0.027)	(0.025)	(0.033)	(0.036)
Std.Dev.FR	−0.091**	−0.020	−0.098*	−0.108**	−0.137**	−0.149***
	(0.043)	(0.044)	(0.053)	(0.040)	(0.061)	(0.039)
LOG(*TNA*)	−0.002***	−0.002***	−0.002***	−0.003***	−0.002***	−0.003***
	(0.001)	(0.000)	(0.001)	(0.000)	(0.001)	(0.000)
LOG(*AGE*)	−0.019***	−0.009***	−0.019***	−0.008***	−0.019***	−0.008***
	(0.002)	(0.001)	(0.002)	(0.001)	(0.002)	(0.001)
TO	−0.002*	−0.002*	−0.002*	−0.002	−0.001	−0.002
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
EXP	−0.657***	−0.685***	−0.847***	−0.632***	−0.931***	−0.628***
	(0.229)	(0.181)	(0.236)	(0.178)	(0.232)	(0.184)
LOAD	0.168**	0.092**	0.156**	0.090**	0.152**	0.093**
	(0.064)	(0.040)	(0.062)	(0.037)	(0.062)	(0.038)
Observations	37,875	37,797	37,875	37,797	37,875	37,797
R-squared	0.193	0.255	0.188	0.249	0.178	0.242

Notes. 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 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 fund-level new money growth (*NMG*) in month *t*. The stock price performance of management companies is measured using the average market-adjusted returns over the prior 12, 24, and 36 months (*CR*). *FR* and *FAMFR* are the average market-adjusted fund and fund family returns over the prior 12, 24, and 36 months, respectively. *Std.Dev.CR* and *Std.Dev.FR* are the time-series standard deviations of *CR* and *FR*, respectively. *TNA* is the total net asset value of a fund. *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. The sample period is from January 1992 to December 2009. Time fixed effects 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% levels, respectively.

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

	Dependent variable: Monthly fund flows (*NMG*)		
	12 months	24 months	36 months
MIN(*CR*, 0)	0.097**	0.167**	0.146
	(0.038)	(0.069)	(0.113)
MAX(*CR*, 0)	0.070*	0.127**	0.139**
	(0.038)	(0.057)	(0.065)
MIN(*FR*, 0)	0.492***	0.425***	0.313**
	(0.060)	(0.093)	(0.120)
MAX(*FR*, 0)	1.272***	1.520***	1.574***
	(0.085)	(0.128)	(0.138)
FAMFR	−0.384***	−0.655***	−0.675***
	(0.096)	(0.127)	(0.133)
STAR	0.012***	0.012***	0.009***
	(0.001)	(0.002)	(0.002)
Std.Dev.CR	−0.001	0.012	0.012
	(0.017)	(0.023)	(0.027)
Std.Dev.FR	−0.142***	−0.188***	−0.220***
	(0.026)	(0.032)	(0.036)
LOG(*TNA*)	−0.001***	−0.001***	−0.002***
	(0.000)	(0.000)	(0.000)
LOG(*AGE*)	−0.014***	−0.013***	−0.013***
	(0.001)	(0.001)	(0.001)
TO	−0.003***	−0.003***	−0.003***
	(0.001)	(0.001)	(0.001)
EXP	−0.452***	−0.454***	−0.450***
	(0.171)	(0.164)	(0.166)
LOAD	0.143***	0.138***	0.137***
	(0.037)	(0.036)	(0.036)
Observations	78,061	78,061	78,061
R-squared	0.222	0.220	0.211

Notes. This table uses OLS regressions to examine the relation between stock performance of management companies and fund flows into diversified U.S. equity funds managed by these companies. The dependent variable is fund-level new money growth (*NMG*) in month *t*. The stock price performance of management companies is measured using the average market-adjusted returns over the prior 12, 24, and 36 months (*CR*). *FR* and *FAMFR* are the average market-adjusted fund and fund family returns over the prior 12, 24, and 36 months, respectively. *STAR* is an indicator variable that takes on unity if the fund is rated as a star fund. *Std.Dev.CR* and *Std.Dev.FR* are the time-series standard deviations of *CR* and *FR*, respectively. *TNA* is the total net asset value of a fund. *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. The sample period is from January 1992 to December 2009. Time fixed effects 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% levels, respectively.

performance–flow relation for fund returns, we find a close-to-linear performance–flow relation for company returns. The slope coefficients on the company performance are not statistically significantly different for companies with negative or positive market-adjusted performance. This differential relation in second-order effects for company and fund performance could be due to the fact that the flows to mutual funds affiliated with highly performing management companies are distributed across all funds within a family, whereas the flows to highly performing funds are highly concentrated on a small number of star funds, as documented by Chevalier and Ellison (1997) and Sirri and Tufano (1998).

3.6. Alternative Drivers of Flows

The previous analyses use the stock price performance of the management companies as a statistic that aggregates the economic fundamentals of the management companies. In Table 7, we use additional measures to capture the fundamentals of the firm. Prior company and fund performance are measured in all specifications using a 24-month window.

Jain and Wu (2000) and Gallaher et al. (2010) show that advertising has significant effects on investor flows into mutual funds. Companies that exhibit a superior stock price performance might increase their advertising expenditures, which could attract additional assets to their mutual fund sector. To investigate this mechanism, we control in the first column of Table 7 for the advertising intensity (i.e., advertising expenditures divided by net sales of the management companies during the previous year using Compustat data). We find a significantly positive impact of advertising intensity at the management company level on fund flows. A one-standard-deviation increase in the advertising intensity increases fund flows during the next month by 19 basis points. However, the market-adjusted stock performance of the management company remains economically and statistically significant after controlling for advertising intensity.

Similarly, companies with superior stock market performance might be able to increase their sales force, which could generate higher future fund flows. In the second column of Table 7, we show that employment growth over the prior year also leads to an increase in fund flows. However, the stock price performance of the management company continues to explain future fund flows to a significant degree.

The next two columns of Table 7 study whether the impact of company stock performance remains if we include two measures of the accounting performance of management companies. The first measure is the sales growth over the prior year (*SG*) and the second measure is the return on equity over the prior year (*ROE*). Consistent with our stock performance results, we find that fund flows also increase with these accounting measures of firm performance. However, the results using these accounting measures are economically and statistically weaker than the results using the stock performance. Thus, fund flows are related to both the prior stock market and the prior accounting performance of their parent companies.

Table 7 Equity Fund Flows by Management Company Performance Controlling for Other Flow Determinants

	Dependent variable: Monthly fund flows (*NMG*)				
CR	0.094**	0.086*	0.086*	0.073*	0.100*
	(0.047)	(0.051)	(0.044)	(0.044)	(0.057)
AI	0.106***				
	(0.035)				
EG		0.002*			
		(0.001)			
SG			0.002*		
			(0.001)		
ROE				0.011*	
				(0.006)	
SCANDAL					−0.004*
					(0.003)
FR	1.257***	1.259***	1.282***	1.282***	1.200***
	(0.091)	(0.094)	(0.091)	(0.091)	(0.106)
FAMFR	−0.133	−0.083	−0.221	−0.223	−0.116
	(0.151)	(0.158)	(0.153)	(0.157)	(0.193)
STAR	0.014***	0.013***	0.012***	0.012***	0.012***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Std.Dev.CR	0.023	0.018	0.016	0.018	0.021
	(0.020)	(0.020)	(0.020)	(0.021)	(0.022)
Std.Dev.FR	−0.109***	−0.101***	−0.095***	−0.093***	−0.100***
	(0.032)	(0.033)	(0.032)	(0.031)	(0.036)
LOG(*TNA*)	−0.001***	−0.001***	0.000	−0.001	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)
LOG(*AGE*)	−0.009***	−0.009***	−0.007***	−0.007***	−0.008***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
TO	−0.001	−0.001	−0.001	−0.001	−0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
EXP	−0.285**	−0.364**	−0.303*	−0.333**	−0.565***
	(0.139)	(0.154)	(0.165)	(0.164)	(0.187)
LOAD	0.088***	0.078***	0.071***	0.069***	0.099***
	(0.025)	(0.027)	(0.026)	(0.025)	(0.031)
Observations	73,355	68,489	72,191	73,087	60,825
R-squared	0.111	0.109	0.102	0.102	0.093

Notes. This table uses OLS regressions to examine the relation between stock performance of management companies and fund flows into diversified U.S. equity funds managed by these companies. The dependent variable is fund-level new money growth (*NMG*) in month *t*. The stock price performance of management companies is measured using the average industry-adjusted returns over the prior 24 months (*CR*). The specifications control for advertising intensity (*AI*), employment growth (*EG*), sales growth (*SG*), return on equity (*ROE*), and for an indicator variable that captures a mutual fund scandal over the previous six months (*SCANDAL*). *FR* and *FAMFR* are the average market-adjusted fund and fund family returns over the prior 24 months. *STAR* is an indicator variable that takes on unity if the fund is rated as a star fund. *Std.Dev.CR* and *Std.Dev.FR* are the time-series standard deviations of *CR* and *FR*, respectively. *TNA* is the total net asset value of a fund. *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. The sample period is from January 1992 to December 2009 for the first four accounting-based measures and is from January 2000 to December 2009 for the specification using the scandal variable. Time fixed effects 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% levels, respectively.

Karpoff et al. (2008) show that the reputation penalties imposed by the market following corporate scandals are significant. The mutual fund sector has experienced a significant scandal early in the 2000s, as discussed by Houge and Wellman (2005), Qian (2011), and Potter and Schwarz (2012). Fund investors might withdraw money from their mutual funds in response to corporate scandals. This could potentially explain why there is a positive relation between fund flows and company performance. The last column of Table 7 indicates that including an indicator variable for funds affected by the mutual fund trading scandal does not affect the coefficient on the prior company performance qualitatively. Thus, our results are not explained by the mutual fund scandals of the early 2000s.[14]

3.7. Fund Names

To investigate the mechanism of the spillover, we separate the funds into different subsamples in Table 8. In the first subsample, we classify mutual funds according to whether the name of the mutual fund management company corresponds to the name of the mutual fund. Many fund investors might not recognize the affiliation between the fund management company and the mutual funds if they do not share the same names. The majority of mutual funds share the same names as the management company. We observe a significant relationship only between company performance and fund flows for funds that share the name of the management company. The second subsample separates funds depending on whether the funds have a low or high name fluency score based on Green and Jame (2013). We find stronger spillover effects for funds with short, easy-to-pronounce names. These results indicate that our findings are more likely driven by reputational or brand spillovers and less likely driven by the rational learning of the investment ability of fund managers.

4. Subsequent Fund Performance

The sensitivity of fund flows to prior management company performance could be justified if the subsequent fund performance is positively predicted by the prior company performance or if the fund flows are sufficient to eliminate fund performance persistence due to decreasing returns to scale as suggested by Berk and Green (2004).[15]

[14] Kisin (2011) and Anton and Polk (2014) use the mutual fund scandals of the early 2000s as a quasi-natural experiment to investigate the role of fund flows.

[15] A related literature has studied the impact of flows on fund returns. Gruber (1996), Edelen (1999), Zheng (1999), Wermers (2003), Coval and Stafford (2007), Chen et al. (2008), Zhang (2008), Frazzini and Lamont (2009), Chen et al. (2010), and Lou (2012) provide evidence that mutual fund flows are correlated with subsequent fund performance.

Table 8 Equity Fund Flows by Management Company Performance and Fund Performance by Fund Names and Name Fluency

	Dependent variable: Monthly fund flows (*NMG*)			
	Fund names		Fund name fluency	
	Family name funds	Different name funds	Low fluency	High fluency
CR	0.090**	0.026	0.050	0.133*
	(0.044)	(0.056)	(0.052)	(0.074)
FR	1.277***	0.958***	1.308***	1.116***
	(0.087)	(0.232)	(0.104)	(0.136)
FAMFR	−0.202	0.249	−0.217	−0.196
	(0.153)	(0.255)	(0.157)	(0.205)
STAR	0.013***	0.007*	0.013***	0.018***
	(0.002)	(0.004)	(0.002)	(0.005)
Std.Dev.CR	0.013	0.071**	0.032	0.000
	(0.019)	(0.032)	(0.020)	(0.024)
Std.Dev.FR	−0.119***	−0.017	−0.153***	−0.113***
	(0.030)	(0.049)	(0.035)	(0.038)
LOG(*TNA*)	−0.001**	0.001	−0.001*	−0.001*
	(0.000)	(0.001)	(0.000)	(0.001)
LOG(*AGE*)	−0.009***	−0.006***	−0.009***	−0.008***
	(0.001)	(0.002)	(0.001)	(0.001)
TO	−0.001**	0.002	−0.001*	−0.002**
	(0.001)	(0.002)	(0.001)	(0.001)
EXP	−0.377**	0.569	−0.269	−0.799***
	(0.155)	(0.370)	(0.184)	(0.242)
LOAD	0.090***	−0.040	0.090***	0.095**
	(0.027)	(0.046)	(0.033)	(0.045)
Observations	73,242	4,819	45,559	12,599
R-squared	0.131	0.138	0.135	0.171

Notes. 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 equity funds are partitioned into subsamples based on whether the fund name includes the name of the management company and based on the fund name fluency following Green and Jame (2013). 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 market-adjusted returns over the prior 24 months (*CR*). *FR* and *FAMFR* are the average market-adjusted fund and fund family returns over the prior 24 months. *STAR* is an indicator variable that takes on unity if the fund is rated as a star fund. *Std.Dev.CR* and *Std.Dev.FR* are the time-series standard deviations of *CR* and *FR*, respectively. *TNA* is the total net asset value of a fund. *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. The sample period is from January 1992 to December 2009. Time fixed effects 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% levels, respectively.

To study whether past management company performance predicts future fund performance, we regress the market-adjusted return of equity funds in month t on the past company and fund performance measures and on additional lagged control variables:

$$FR_{f,t} = \beta_1 CR_{f,t-1} + \beta_2 FR_{f,t-1} + \beta_3 FAMFR_{f,t-1} + \beta_4 STAR_{f,t-1} + \beta_5 Std.Dev.CR_{f,t-1} + \beta_6 Std.Dev.FR_{f,t-1} + \beta_7 \mathrm{LOG}(TNA_{f,t-1}) + \beta_8 \mathrm{LOG}(AGE_{f,t-1}) + \beta_9 TO_{f,t-1} + \beta_{10} EXP_{f,t-1} + \beta_{11} LOAD_{f,t-1} + \beta_t + \epsilon_{f,t}. \quad (3)$$

Table 9 shows that the company return predicts fund returns negatively at horizons exceeding 24 months. For example, a one-standard-deviation increase in the company return over the prior 36 months (1.68%) decreases next month's return on equity funds by 5.7 basis points. Whereas the impact of company performance becomes stronger at longer horizons, the impact of fund performance becomes weaker at

Table 9 Future Equity Fund Performance

	Dependent variable: Next month's market-adjusted fund return				
	12 months	24 months	36 months	48 months	60 months
CR	0.013	−0.019	−0.034***	−0.019*	−0.022*
	(0.012)	(0.012)	(0.013)	(0.011)	(0.013)
FR	0.180***	0.094***	0.048**	0.094***	0.086***
	(0.016)	(0.021)	(0.023)	(0.022)	(0.025)
FAMFR	0.018	−0.066**	−0.046*	−0.036	−0.050*
	(0.028)	(0.029)	(0.027)	(0.028)	(0.029)
STAR	0.001	0.001	0.001	0.001	0.001**
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Std.Dev.CR	0.036***	0.048***	0.047***	0.046***	0.044***
	(0.005)	(0.007)	(0.007)	(0.007)	(0.007)
Std.Dev.FR	−0.035**	−0.031**	−0.030**	−0.029**	−0.031**
	(0.016)	(0.016)	(0.014)	(0.014)	(0.013)
LOG(*TNA*)	−0.001***	−0.001***	−0.001***	−0.001***	−0.001***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
LOG(*AGE*)	0.001***	0.001***	0.001***	0.001***	0.001***
	(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)
EXP	−0.002	−0.018	−0.017	−0.017	−0.015
	(0.030)	(0.035)	(0.037)	(0.037)	(0.037)
LOAD	−0.008	−0.009	−0.008	−0.009	−0.010
	(0.006)	(0.007)	(0.007)	(0.006)	(0.006)
Observations	78,061	78,061	78,061	78,061	78,061
R-squared	0.696	0.694	0.694	0.694	0.694

Notes. 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 is the market-adjusted fund return in month t. The stock price performance of management companies is measured using the average market-adjusted returns over the prior 12, 24, 36, 48, and 60 months (*CR*). *FR* and *FAMFR* are the average market-adjusted fund and fund family returns over the prior 12, 24, 36, 48, and 60 months. *STAR* is an indicator variable that takes on unity if the fund is rated as a star fund. *Std.Dev.CR* and *Std.Dev.FR* are the time-series standard deviations of *CR* and *FR*, respectively. *TNA* is the total net asset value of a fund. *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. The sample period is from January 1992 to December 2009. Time fixed effects 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% levels, respectively.

longer horizons, confirming the short-term persistence in fund returns documented by Bollen and Busse (2004).

The negative predictability of fund returns with long-horizon company returns indicates that the reaction of fund investors to company performance is not justified. Fund investors are not able to generate superior future fund performance by investing in funds managed by companies with superior prior stock price performance. In fact, the flows to funds managed by well-performing management companies might actually be too large, generating poor subsequent performance due to diseconomies of scale in fund management as suggested by Berk and Green (2004).

Overall, 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.

5. 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 of the affiliated mutual funds. Mutual funds managed by poorly performing firms experience unexpectedly low flows of new money even if the mutual funds themselves perform well. Our paper provides evidence that the performance of mutual fund management companies has a significant impact on the fund customers, as measured by mutual fund flows. In contrast to diversified conglomerates, 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. Thus, our paper helps us to better understand the industrial organization of diversified conglomerates.

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