The Impact of Scandals on Mutual Fund Performance, Money Flows, and Fees

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Abstract

We examine the effects of fraud committed by mutual fund managers taking into account the dual responsibilities managers have for their employer firm and investors. We find scandal funds to underperform by 45 basis points while other funds that are affiliated to family linked to scandal to underperform by a larger magnitude of 74 basis points in annualized terms. Fraud is punished by reduced fund inflows to affected funds. Underperformance and money outflows are attributed to timing scandals, higher monetary fines, regulatory actions initiated by SEC, and the involvement of more than one regulatory body. Further tests show that scandal funds are more likely to be engaged in net selling in the aftermath of the scandal possibly to meet redemptions. Finally, we find scandal funds and other funds in the same family to reduce their expenditure on marketing and distribution costs, likely to ameliorate the fallout from scandals by withdrawing affected funds from the limelight.

Keywords: Mutual funds, Regulation, Scandals, Performance, Money flows, Fund fees

JEL Classifications: G23, G28

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1. Introduction

Financial misconduct or fraud has consequences for both the firm and its customers. In other words, the manager of a company alleged to have committed fraud needs to react to the incident mindful of consequences for shareholders, the product market and her own career concerns. In the literature this multifaceted problem is generally not acknowledged. The penalties for financial misconduct have been separately estimated in terms of stock price losses (e.g. Karpoff and Lott 1993); regulatory penalties (e.g. Karpoff, Lee, and Martin 2008); product market reputational damages (e.g. Johnson, Xie, and Yi 2014); and loss of corporate control and managerial reputation (Humphery-Jenner 2012). Similarly, in the mutual fund literature several previous papers have addressed the related question of penalties to mutual fund financial misconduct and fraud, finding performance declines and significant investor redemptions.[1] By pursuing a single line of inquiry at a time, that a corporate manager dealing with fraud serves multiple masters is virtually not acknowledged in the growing literature on financial fraud. In this paper, we examine the performance and flows consequences of alleged financial misconduct, which we refer to as the "external reaction", alongside the internal response of the firm to the fraud (the "internal reaction").

The mutual fund industry is particularly well suited for analyzing how an agent with a "two masters" problem reacts to allegations of fraud.[2] First, the financial press produces volumes of accounts of financial misconduct and fraud by mutual funds and their portfolio managers. In 2012, the Securities and Exchange Commission (SEC) reported 147 such allegations against investment advisers, one short of the previous year's record.[3] Zitzewitz (2006) documents that at the height of the late trading scandal, market timing by favored investors in some mutual funds

[1] See Houge and Wellman (2005), Choi and Kahan (2007), McCabe (2009), and Potter and Schwartz (2012). We use terms such as financial misconduct, fraud and scandal interchangeably since our analysis cover all forms of financial impropriety; albeit, we acknowledge that trite definitional differences and implications of magnitude of intent and culpability vary among such terms.

[2] The biblical analogy of "no man can serve two masters" has been popularised in the discourse about the fiduciary duties owed by investment managers to their employers and investors by John Bogle's (2009) article.

[3] The report is available online at:
https://www.sec.gov/News/PressRelease/Detail/PressRelease/1365171485830#.UvGgb7TDUg1

cost long-term investors around $400 million per year from 1998 to 2003.[4] Thus, one gets an impression that both investors and fund companies should pay a great deal of attention to allegations of fraud by individuals and firms that manage their money.

Second, in the mutual fund setting, both the external and internal reactions are measurable. To estimate external penalties, we follow the standard in the literature to estimate performance and money flows following fraud allegations. We also ask the following questions in order to examine the internal actions of fund companies in response to fraud. How do the firms manage their portfolio holdings in response to predictable money outflows? Do fund managers engage in or resist asset fire sales (Coval and Stafford 2007)? Do fund companies change their fee structures to protect their firms against redemptions in the aftermath of the fraud allegations?

Third, the mutual fund industry allows us to bring to the data two distinct and competing predictions that challenge us to take a more comprehensive approach to investigating penalties to mutual fund fraud. Fund companies' internal responses will likely be conditioned on the consequences of the fraud on investors. Intuitively, while some instances of mutual fund fraud are clearly detrimental to investors, there are others that are ostensibly designed to boost the fund manager's performance, and may benefit investors. In the first case, theory suggests, on the basis of the economics of choice (Becker 1968), that managers may commit fraud if they perceive net benefits from such acts, and that employing such individuals may benefit the firm's owners (Posner 1986; Tibbs, Harrell and Shrieves 2011). In the mutual fund context, it is possible that some types of fraud may benefit the fund. An example is the case of a portfolio manager who engages in profitable insider trading, in which case one would expect to see performance increases. We investigate this motive in the mutual fund literature by separating our

[4] Market timing is the practice of actively buying and selling fund shares to exploit inefficiencies in mutual fund pricing in the hope of making short-term profits. Similarly, late trading refers to the practice of buying or selling mutual fund shares, predominantly in international funds, after the 4:00 p.m. close of trade when the net asset value of a fund is calculated to capitalize on market events that occur after the fund has been priced. Zitzewitz (2006) finds evidence of a strong correlation between mutual fund flows and market movements after 4:00 p.m. in many mutual fund families, suggesting that late trading was widespread.

empirical analysis according to types of fraud. We conjecture that market timing and disclosure related misconduct hurt investors and show up in poor performance, whereas other types of fraud may benefit investors by way of improved returns.

In the second case, borrowing from the economics and corporate finance literatures, fraud may affect the firm's (or fund company's) contracting with its customers (investors) (Klein and Leffler 1981), resulting in a "customer reputational sanction" (Johnson, Xie and Yi 2014). In the mutual fund context, we investigate whether investor punish scandal funds by withdrawing their capital in the aftermath of the scandal. We also test whether fund companies engage in net selling in order to meet redemptions and reduce mutual fund fees in an attempt to re-attract investors.

Our main findings are in line with the view that when studying the implications of fraud on a firm and its product market, we should cover both external and internal reactions. We find scandal funds to underperform by 45 basis points while other funds that are affiliated to family linked to scandal to underperform by a larger magnitude of 74 basis points in annualized terms. On further analysis, we find that mutual funds' post scandal underperformance is aligned with severity of the fraud. Underperformance is greater for timing scandals, financial misconduct that attracts higher monetary fines, regulatory actions initiated by the SEC, and the involvement of two or more regulatory bodies. In relation to the effect of scandals on money flows, we observe investors punish scandal funds in the aftermath of a scandal in the first three and six months horizons. Investors appear to have forgiven affected funds by the third and fourth quarter following the scandal. Similar to our performance analysis, our further tests show that money outflows are positively associated with the severity of the fraud.

What are the characteristics of the internal reaction to mutual fund scandals? We find scandal funds to engage in net selling since the aftermath of the scandal over three, six, nine, and twelve months horizons. As for the other funds that belong to the family of scandal fund, we find that the net selling is not immediate and only takes place in the third and fourth quarters.

We also find evidence that scandal funds and other funds in the family implicated of scandal to significantly reduce expenditure on marketing and distribution costs, which suggests fund families attempt to ameliorate the fallout from scandals by withdrawing affected funds from the limelight. Altogether, our findings vindicate our suspicion that fund managers react to scandals in line with the dilemma of their position as servants to two masters – investors and fund companies.

Some of the patterns we report with regards to performance and money flows are reported in papers such as Houge and Wellman (2005) and Choi and Kahan (2007). However, our study, by pursuing new questions on the internal reaction to scandals, is more comprehensive. Further, almost all the previous studies are based on what has come to be referred to as "the mutual fund scandal" involving late trading in the early 2000s, and virtually all are based on samples of fraud allegations gathered from the press, specifically the *Wall Street Journal*. The improvement on the literature that our paper makes is to target every instance of fraud reported by mutual funds to U.S. regulators. We take advantage of the mandatory disclosures filed by mutual fund companies with the Securities Exchange Commission (SEC) to identify funds that are affected by scandals in the entire U.S. mutual fund industry. Thus, we cover all types of fraud, using a sample free from selection and survivorship biases.

Our paper is related to studies of the impact of a firm's misconduct on subsequent firm performance, which proxies for reputational losses. Karpoff and Lott (1993) find that firm value losses in the wake of a criminal prosecution for fraud extends beyond the penalties imposed by the court ruling as a result of losses to firm reputation. They argue that reputational losses take the form of either reduced sales or higher contracting costs. Furthermore, Alexander (1999) finds that losses to shareholder wealth are most severe when related parties such as customer groups were the ones affected by the fraud. Karpoff, Lee and Martin (2008) study 585 cases of financial fraud pursued by the SEC, and estimate that reputational losses resulting from fraud are in the order of 7.5 times greater than the sum of all legal penalties imposed on the firm. Similarly,

Fich and Shivdasani (2007) use an event study methodology to measure the market reaction to announcements of fraud lawsuits, and find a 5.95 percent drop in two-day abnormal stock returns. The common attribute of these papers is that they trace the effects corporate financial misconduct disclosures to a single, external effect. The paper that is closest to ours in having an internal and external focus is Humphery-Jenner (2012), that investigates the effects of securities class actions (SCAs) on companies and finds that SCAs are associated with subsequent "disciplinary takeovers, CEO turnover and pay-cuts, and harm to CEOs' future job-prospects".

Our mutual fund setting enables us to explore business unit level operational effects in ways that are not possible in a corporate context. As such, the results of this study are of relevance to regulators and investors as they add internal dimensions of the effects of corporate fraud that might not be as salient as the external effects these parties are usually exposed to in the literature.

The rest of this paper is structured as follows. Section 2 describes the steps involved in developing a useable dataset to test our hypotheses. Section 3 presents the methodology used to test our hypotheses. Section 4 reports our empirical findings and section 5 concludes.

2. Data and Descriptive Statistics

2.1 Mutual Fund Scandals Data

To construct our sample of mutual fund scandals, we begin by extracting the complete list of investment advisers from the CRSP Survivor-Bias-Free US Mutual Fund Database under the variable heading *adv_name*. We then search for individual investment advisers by name in the SEC's Investment Adviser Public Disclosure (IAPD) database.[5] This Internet database is available to the public and allows individuals to obtain an adviser's Form ADV, the uniform

[5] The IAPD database online (see http://www.adviserinfo.sec.gov/IAPD/Content/Search/iapd_Search.aspx). To the best of our knowledge, only a handful of previous studies have made use of Form ADV data, notably Brown et al. (2008) and Dimmock and Gerken (2012). Unlike our study, Brown et al. (2008) examine the operational risk characteristics of hedge funds while Dimmock and Gerken (2012) use the Form ADV filings to examine the predictability of fraud by investment managers.

form investment advisers lodge to register with both the Securities and Exchange Commission (SEC) and state regulatory authorities. At registration, and in subsequent annual updates, the investment adviser uses the 35-page document to provide an outline of the investment adviser's business activities, remuneration, affiliations and past legal and regulatory problems. The comprehensive document is designed to inform investors on the potential risks that they face when investing with a particular investment adviser, and consequently it should become an integral part of the investment decision process. Additionally, the filings contain Disclosure Reporting Pages (DRPs) in which fund companies provide complete histories of regulatory and legal violations perpetrated by their employees. These DRPs provide us with all the relevant information about a particular misconduct event, including when charges were made, which regulatory body initiated the action, and details of the nature and outcome (e.g. penalties) of the charges.

We use the CRSP database as our starting point for identifying investment advisers, of which mutual fund families are a large part. As the CRSP database contains non-surviving funds (and their adviser companies) we can collect the names of advisers that are no longer in operation. The IAPD database allows us to obtain the last Form ADV filing made by extinct advisers. Using these two features, we are able to access all mutual fund fraud cases and to retain observations where adviser closures have occurred since the scandal event. Thus, our sample construction method is free of selection and survivorship biases.

After extracting the data, this process leaves us with a total of 1,678 regulatory and legal violations. As investment advisers may potentially be involved in many lines of business, we restrict the data to include observations where the principal products involved are mutual funds, which results in 216 violations. We further require that these regulatory events be finalized, which further reduces the dataset to 196 violations.[6] After imposing these restrictions, we then

[6] As the regulatory events disclosed within Form ADV relate to litigation, the status of the cases are either final, pending or on appeal. If an investment adviser is not found to be guilty of any wrongdoing then it does not have to be disclosed in the DRP.

proceed to determine the individual funds that were involved in the regulatory violation. The narrative that accompanies a particular regulatory action in the investment adviser's DRP is substantially condensed and therefore in many cases the names of individual funds were not disclosed. To overcome this problem, we perform an Internet search using the docket number of the case provided in the DRP to obtain the complete details of the administrative proceeding. In our sample, the SEC was primarily responsible for instigating regulatory actions against mutual funds and they maintain timely and complete information on their regulatory actions. For larger and more severe cases of regulatory wrongdoing, a disgorgement may be imposed upon the investment adviser, whereby a fair fund is created and the disgorgement money is then re-distributed to harmed investors. In these cases, we look at the distribution plan for funds that were involved in a particular regulatory violation.[7] In family wide scandal cases where we could not identify individual funds, we collect all funds managed by the family at the time of the scandal. Importantly, a single scandal may involve multiple funds and therefore the number of scandal funds exceeds the number of scandals.

Next, we individually match the names of the mutual funds involved in a regulatory violation to the CRSP database and collect the public announcement dates of the scandal from *Wall Street Journal* database on Westlaw. We then retain the unique portfolio identifier (crsp_portno) and the unique mutual fund family code (mgmt_cd) and this process yields 659 unique mutual funds. By removing funds with missing portfolio identifier codes, we are left with 600 unique mutual funds that are involved in a scandal between 2002 and 2010 of which 578 of them have public announcement information. Following Dimmock and Gerken (2012), we restrict our sample to include only equity funds in our sample which results in a final sample of 432 funds. We provide a summary of our sample of mutual fund families, funds involved in a scandal, and the composition of fund types in Panel A of Table 1.

[7] Publically available distribution plans related to market timing violations generally summarised the market timing activities within particular funds, such as the number of market timing transactions and the estimated cost of these transactions to other investors.

Finally, to address the issue of multiple regulatory interventions surrounding the same scandal, we retain only the initial regulatory body by the public announcement date. This highlights the first time that news enters the market to confirm that scandal allegations against a fund were credible. In our data, we find it common for multiple regulatory bodies to pursue a single mutual fund adviser for the same violation. This was especially prevalent with the late trading scandals of 2003. Apart from the SEC, other regulatory interventions were undertaken by the New York State Attorney General ("NYAG"), individual state authorities, and in some cases, disgruntled investors in the form of class lawsuits. We provide a breakdown of scandal-types and the regulators that initiated allegations against scandal funds in Panel B of Table 1. The SEC appears to be the dominant regulator, having led allegations against 342 out of the 432 mutual funds in our sample. The NYAG was the second most active regulator within our sample, leading 47 allegations, which were exclusively against timing related scandals.

<< Insert Table 1 here >>

2.2 Mutual Fund Characteristics

From the CRSP database we obtain a range of mutual fund characteristics including total net assets (TNA), returns, inception dates, investment objectives, cash holdings, fund fees (such as expense ratios, management fees, and 12b-1 fees), and turnover ratios. We initially collect all available monthly fund returns and TNA from CRSP and merge on remaining fund characteristics that are reported on a quarterly basis. Because the regulatory violations within our mutual fund scandals data can potentially fall in any month of the year, we fill fund summary observations backwards to the preceding quarter. For example, the months of January and February will assume the fund summary variables as at March of that same year. This implicitly assumes that mutual fund characteristics, such as expense ratios, do not vary considerably

between quarters. We then remove observations that have missing portfolio identifiers (crsp_portno) and mutual fund family identifiers (mgmt_cd).

In the CRSP database, mutual funds are reported at the share class level, such as "A", "B", "C" or "Institutional". Different share classes of the same fund may offer investors differences in front-end loads, rear-end loads and 12b-1 fees.[8] Because we are only able to determine a scandal that occurred at the fund level, as opposed to the share class level, we construct fund-level characteristics as the asset weighted average across the different share classes. Monthly *Fund Size* is calculated as the sum of the TNA of all share classes that have the same portfolio identifier (crsp_portno). An individual share class's weight in a particular portfolio is then calculated as the share class TNA divided by the fund size. Similarly, we calculate weighted average monthly returns, expense ratios, management fees, actual 12-b1 fees, and turnover ratios. Finally, we determine fund age by assuming that the first occurrence of a unique portfolio identifier in the CRSP database is the start date of that fund. *Fund Age* at a particular date is then calculated as the difference in years between any given date and the fund start date.

We then apply two additional criteria to eliminate two known potential biases associated with the CRSP database. First, following Elton, Gruber and Blake (2001), we delete funds that are less than $15 million in size to avoid omission bias. Omission bias arises as a result of small funds having returns provided at either quarterly or annual frequencies as opposed to monthly, which causes an understatement in mutual fund mergers and exits and ultimately produces a bias similar to survivorship bias. Second, we remove observations that occur before the date when the fund was first offered (first_offer_dt) to correct for incubation bias. Mutual fund incubation is a strategy followed by some mutual fund families, where multiple new funds are created with limited capital, while they remain closed to the public throughout an assessment period. Evans

[8] *See* Gaspar, Massa and Matos (2006) and Mahoney (2004) for additional information on mutual fund fees.

(2010) finds that incubated funds are able to significantly outperform non-incubated funds. Finally, we winsorize all variables at the 1st and 99th percentiles to remove the effects of outliers.

We also collect data on mutual fund holdings for our entire sample period from the CRSP database. From 2001 onwards, CRSP provides data on equity mutual fund holdings at quarterly frequencies. The data include the name and identifier of individual securities that a fund owns, the number of units that are held, as well as the market prices of the securities. We aggregate fund holdings at each quarter, which provides us with the total value of invested securities (portfolio value).

In addition to mutual fund characteristics, we also construct a *Herfindahl Index* on a monthly basis to account for the level of competitiveness in the mutual fund industry that may potentially impact on mutual fund returns and flows. To construct this variable, we calculate the size of the mutual fund industry in each month by aggregating the total net assets of all mutual fund families within our mutual fund sample. We then determine the weight of each mutual fund family in the industry by dividing the family size by industry size. These weights are then squared and sorted in the order of largest to smallest. The top 50 largest mutual fund families in the industry are retained and we then sum the squared industry weighting for each of these mutual fund families. More formally, we can represent the *Herfindahl Index* as:

$$Herfindahl\ Index_t = \sum_{i=1}^{50} s_{i,t}^2 \times 100 \quad (1)$$

where $s_{i,t}^2$ represents the squared industry weighting for mutual fund family *i* at a given month, *t*. A higher *Herfindahl Index* indicates that there a fewer and larger mutual fund families dominating the industry.

2.3 Descriptive Statistics of Scandal and Non-Scandal Funds

In Table 2, we provide a correlation matrix for all continuous control variables. The condition index of the matrix is 2.21, which is low enough to show that there is no multicollinearity.

<< Insert Table 2 here >>

We report the summary statistics of our mutual fund data in Table 3. Panel A shows summary statistics for scandal funds only, while Panel B shows summary statistics for all other funds. In Panel C, we perform a difference-in-means test to determine if there are significant differences between funds involved in scandals and their non-scandal counterparts. We compare the means of both groups across all mutual fund characteristics and performance measures. Scandal funds are significantly bigger in size and belong to larger fund families than non-scandal funds. The average size of a scandal fund is $1,938 million and belongs to a family with total net assets of $187,928 million. This is in contrast to an average fund size of $991 million for non-scandal funds that belong to a family with total net assets averaging $85,165 million. Scandal funds also have higher expense ratios. The expenses are made up of higher management fees, 12b-1 fees, and non-12b-1 fees. Scandal funds have higher turnover ratios of 97% in comparison to 84% for non-scandal funds. Interestingly, on average, scandal funds have cash holdings of around 1.2% lower than their non-scandal counterparts possibly to meet redemptions. Finally, consistent with our expectations, we find scandal funds to experience lower level of fund flows and performance. We subject our preliminary findings to more rigorous tests below.

<<Insert Table 3 here>>

3. Methodology

3.1 The Effect of a Scandal on Fund Performance

Previous studies such as Kosowski et al. (2006) and Fama and French (2010) document the importance of addressing the non-normalities in the cross-sectional distribution of alphas and the non-normalities of individual fund alphas distribution. To address such issue, we follow the approach of Hunter et al. (2014) which account for commonalities in mutual fund strategies and the time-series correlation of residual between individual funds. Our primary measure of mutual fund performance is Carhart four-factor model augmented with an additional factor called an "Active Peer Benchmark (APB)" using previous 36 months estimation window.[9] Similar to Hunter et al. (2014), we use the "best fit" primary benchmark as assigned by Cremers and Petajisto (2009) to minimize the agency issue surrounding self-designated benchmark as documented by Sensoy (2009). To examine for the effect of a scandal on mutual fund performance, we propose the following model:

$$\begin{aligned} Alpha_{i,t:t+k} = {} & \alpha_{i,t} + \beta_1 Scandal\ Fund_{i,t} + \beta_2 Scandal\ Family_{i,t} + \beta_3 Log(Fund\ Age)_{i,t} \\ & + \beta_4 Log(Fund\ Size)_{i,t} + \beta_5 Log(Family\ Size)_{i,t} + \beta_6 Expense\ Ratio_{i,t} \\ & + \beta_7 Turnover\ Ratio_{i,t} + \beta_8 Cash_{i,t} + \beta_9 Alpha_{i,t} + \beta_{10} Fund\ Flow_{i,t} \\ & + \beta_{11} Herfindahl\ Index_{i,t} + \varepsilon_{i,t} \end{aligned} \quad (2)$$

where $Alpha_{i,t:t+k}$ is the fund's alpha calculated based on Carhart four-factor model augmented with APB factor over three, six, nine, and twelve months future horizons. The main explanatory variables are *Scandal Fund* which denotes a fund involved in a scandal at time *t* and *Scandal Family* which identifies whether the fund belongs to a family hosting a scandal fund at time *t*.

We control for a range of mutual fund characteristics that are likely to have an impact on future fund performance. *Fund Size* is included to control for the difficulty in successfully investing large pools of funds. Chen et al. (2004) document that the performance of equity funds erodes as fund size increases due to diseconomies of scale. We include *Family Size* as funds that

[9] See Hunter et al. (2014) for more detailed explanations on the augmented models.

belong to larger families should be able to achieve greater economies of scale, such as lower transaction costs, and other benefits associated with market power which in turn should help to augment returns.[10] We take the natural logarithm of fund and family size to account for non-linearity in the relationship. *Turnover Ratio* is included to control for the trading frequency of a particular manager. *Turnover Ratio* measures the percentage of fund assets that are replaced over a certain period, where a higher turnover ratio indicates more aggressive buying and selling. Barber and Odean (2000) find that higher turnover ratios can lead to underperformance due to additional transaction costs. We also control for a fund's *Expense Ratio*, which compensates the fund for operational costs. Carhart (1997) documents that fund expenses are detrimental to performance. *Cash* is included to control for the level of liquidity in the funds to meet investors' redemption. The variable *Alpha* accounts for performance predictability. We include *Fund Flow* variable to account for the difficulty in finding adequate investments for new money. Coval and Stafford (2007) find that fund managers that are faced with large inflows tend to hastily invest the money into securities that they already hold which creates price pressure and can negatively affect performance. Finally, we incorporate the *Herfindahl Index* to account for competition in the mutual fund industry.

3.2 The Effect of a Scandal on Money Flows

We follow Sirri and Tufano (1998) in calculating mutual fund flows as the percentage net growth in fund assets beyond reinvested dividends. We assume that all distributions made to investors are subsequently reinvested with the fund. This measure of fund flows represents the net demand for a mutual fund, where a positive flow indicates that on average investors are entering the fund, while a negative flow indicates that investors are withdrawing funds.

$$Flow_{i,t:t+k} = \frac{TNA_{i,t:t+k} - TNA_{i,t}(1+R_{i,t:t+k})}{TNA_{i,t}} \quad (3)$$

[10] Collins and Mack (1997) estimate that the optimal size for a mutual fund complex is between $20 billion and $40 billion.

To examine the effect of a scandal on money flows, we estimate the following model:

$$Flow_{i,t:t+k} = \alpha_{i,t} + \beta_1 Scandal\ Fund_{i,t} + \beta_2 Scandal\ Family_{i,t} + \beta_3 Log(Fund\ Size)_{i,t} + \beta_4 Log(Fund\ Age)_{i,t} + \beta_5 Log(Fund\ Age) * Alpha_{i,t} + \beta_6 Volatility_{i,t} + \beta_7 Category\ Flow_{i,t} + \beta_8 Expense\ Ratio_{i,t} + \beta_9 Low_{i,t} + \beta_{10} Medium_{i,t} + \beta_{11} High_{i,t} + \varepsilon_{i,t} \quad (4)$$

where $Flow_{i,t:t+k}$ represents the percentage flow of money entering or exiting fund *i* over three, six, nine, and twelve months future horizons. Since flow-performance relationship is non-linear for mutual funds, we follow Sirri and Tufano (1998) by introducing fractional performance ranks. $Low_{i,t}$ is defined as $\min(Rank_t, 0.2)$, $Mid_{i,t}$ is defined as $\min(Rank_t - Low, 0.6$, and $High_{i,t}$ is defined as $\min(Rank_t - Low - Mid, 0.2)$. The main explanatory variables are *Scandal Fund* and *Scandal Family* that are used to denote a fund involved in a scandal fund, or belongs to the family of a scandal fund in respective order.

We control for a range of non-performance related variables that are likely to have an impact on future fund flows and their sensitivity to performance. Following Huang, Wei, and Yan (2007), we include fund size which is measured as the natural logarithm of fund's total net assets, the natural logarithm of fund age and its interaction with performance, total risk of a fund as measured by the standard deviation of returns over the performance estimation period, and expense ratios.

3.3 The Effect of a Scandal on Net Selling Activities

Next, to investigate the effect that a scandal has on the probability of fund engaging in net selling, we estimate the following model:

$$Pr\left(Net\ Selling_{i,t:t+k} = 1\right)$$

$$= \Phi(\beta_1 Scandal\ Fund_{i,t} + \beta_2 Scandal\ Family_{i,t} + \beta_3 Log(Fund\ Age)_{i,t}$$
$$+ \beta_4 Log(Fund\ Size)_{i,t} + \beta_5 Log(Family\ Size)_{i,t} + \beta_6 Expense\ Ratio_{i,t}$$
$$+ \beta_7 Turnover\ Ratio_{i,t} + \beta_8 Cash_{i,t} + \beta_9 Alpha_{i,t} + \beta_9 Fund\ Flow_{i,t}$$
$$+ \beta_{10} Herfindahl\ Index_{i,t} + \varepsilon_{i,t}) \quad (5)$$

where Φ is the cumulative distribution function of the standard normal distribution, and $Net\ Selling_{i,t:t+k}$ is a binary variable equal to one if the portfolio value at k quarters ahead is less than the current portfolio value at time t and zero otherwise. The main explanatory variables are *Scandal Fund* and *Scandal Family* that are used to denote a fund involved in a scandal fund, or belongs to the family of a scandal fund in respective order.

We include standard mutual fund characteristics from our previous regressions as control variables. More importantly, we include the percentage of fund assets that are held as cash (*Cash*) to control for a fund's ability to meet investor redemptions. Higher cash holdings should alleviate the need for a fund to sell securities to meet investor withdrawals. We include a full set of monthly dummy variables to control for time fixed effects that should account for the possibility that net selling was identified as a result of declining market values.

3.4 The Effect of a Scandal on Fund Fees

Finally, to investigate the effect that a scandal has on the probability of a fee change, we estimate the following model:

$$Pr\left(Fee\ Down_{i,t:t+k} = 1\right)$$

$$= \Phi(\beta_1 Scandal\ Fund_{i,t} + \beta_2 Scandal\ Family_{i,t} + \beta_3 Log(Fund\ Age)_{i,t}$$
$$+ \beta_4 Log(Fund\ Size)_{i,t} + \beta_5 Log(Family\ Size)_{i,t} + \beta_6 Turnover\ Ratio_{i,t}$$
$$+ \beta_7 Cash_{i,t} + \beta_8 Alpha_{i,t} + \beta_9 Fund\ Flow_{i,t} + \beta_{10} Herfindahl\ Index_{i,t} + \varepsilon_{i,t}) \quad (6)$$

where Φ is the cumulative distribution function of the standard normal distribution, and $Fee\ Down_{i,t:t+k}$ is a binary variable equal to one if a particular mutual fund fee at k quarters

ahead is less than the fee at time *t* and zero otherwise. The main explanatory variables are *Scandal Fund* and *Scandal Family* that are used to denote a fund involved in a scandal fund, or belongs to the family of a scandal fund in respective order.

In addition, we control for standard mutual fund characteristics that are likely to affect the decision of the fund or family to lower its fees at some future date. We include *Fund Age* to control for the experience of the fund. Ferris and Chance (1987) suggest that mutual funds face a learning curve and therefore older funds with more experience are able to achieve greater operational efficiency. We include *Fund Size* to control for economies of scale in managing a larger pool of funds. Because the majority of fund expenses are fixed costs, funds that have more assets are able to charge proportionately lower fees (Latzko (1999)). Similarly we include *Family Size* as another measure of scale which may also contribute benefits that arise from economies of scale. We take the natural logarithm of fund and family to account for a non-linear relationship. Finally, we include *Alpha* and *Fund Flow* to account for fund performance and money flows. Better performance and larger money inflows should allow the fund to lower its fees due to the incremental fee revenue that is generated.

4. Empirical Results

4.1 The Effect of a Scandal on Fund Performance

In this section, we provide results for multivariate regression models in which we examine the impact of a scandal on a fund's subsequent performance. In Table 4, we report results of our baseline regression that includes all types of scandals that occurred in the period 2002 to 2010. The key explanatory variable of interest is *Scandal Fund* which is used to distinguish scandal funds and *Scandal Family* which is used to denote if the fund belongs to a family hosting a scandal fund. In model (1), while we do not find any evidence of underperformance for scandal funds in the first three months, we find other funds that belong to family of scandal funds to

underperform by an average of 0.21% on risk-adjusted basis. The underperformance of scandal funds is sustained in the first six months following the scandal albeit being statistically significant at 10% level as presented in model (2).

The underperformance of *Scandal Fund* and *Scandal Family* variables is economically significant. By extending our performance analysis to 12 months horizon, we find scandal funds to underperform by 45 basis points while other funds that are affiliated to family linked to scandal to underperform by a larger magnitude of 74 basis points in annualized terms. The Investment Company Institute estimates that the average account sizes for household and institutional investors to be $27,000 and $41 million respectively.[11] Such underperformance would correspond to a $122 ($200) and $184,500 ($303,400) opportunity cost to households and institutional investors investing in scandal fund (family) units respectively. In summary, we find that while scandal funds suffer upon the discovery of regulatory violations, there appears to be negative spillover effects to other funds in the same family in the form of lower performance.

Findings on the control variables are explained as follow. First, we find *Fund Size* to be positive and statistically significant at 1% level. In contrast to Chen et al. (2004), we find the performance of equity funds does not suffer as fund size increases. Such findings suggest that funds are able to successfully investing larger pool of funds which is in support of economies of scale argument. Second, we find *Expense Ratio* and *Turnover Ratio* have a negative impact on fund performance across four regression models. This is consistent with our earlier expectations that higher expenses and turnover activities are detrimental to fund performance (see Carhart (1997) and Barber and Odean (2000)).

<< Insert Table 4 here >>

[11] Available online: http://www.ici.org/pdf/ppr_06_mf_inst_comparison.pdf

4.2 Does the Scandal Type Matter for Fund Performance?

We have shown that scandals result in a deterioration of fund performance in the aftermath of a scandal. In this section, we examine which type of scandal has the largest effect on performance. Following the literature, we categorize each mutual fund scandal in our sample into one of three categories: market timing, disclosure, and "other" scandals. Dummy variables were used to indicate the particular scandal type. This methodology is similar to Choi and Kahn (2007) in which they assess the severity of fund flows based on the scandal type.

The market timing scandal dummy (*Timing Scandal*) denotes only scandals in which the mutual fund was alleged to have allowed market timing in its fund to occur[12]. The disclosure scandals dummy (*Disclosure Scandal*) indicates scandals in which the fund failed to adequately disclose material information to its investors. In many cases, this involves directed brokerage agreements between the fund's adviser and broker-dealer agents that sold mutual fund shares in return for a commission paid out of the fund's assets. The other scandal dummy (*Other Scandal*) includes all remaining cases of regulatory violations. Typically, such cases involve the incorrect charging of management compensation (for example, Numeric Investors, LLC), unfair allocation of "hot" IPO issues to selected individuals (for example, Monetta Financial Services Inc.) or the acceptance of entertainment and travel gifts from affiliated brokerages (for example, Fidelity Management & Research Company).

We display the post scandal performance of mutual funds by scandal type in Table 5. Our variables of interest are the interaction variables between *Scandal Fund* and *Scandal Family* variables and *Timing*, *Disclosure* and *Other Scandal* dummy. As reported in model (1)-(4) in Table 5, we find the underperformance of scandal funds and funds belonging to fund families linked to scandal is largely driven by timing scandal. It is important to note that by restricting the analysis to include only timing scandal, we observe a more severe underperformance in the magnitude of 82 basis points for scandal funds and 131 basis points for funds affiliated to fund families

[12] We also have a single case of late trading, which occurred in conjunction with a market timing case, and therefore we include it in the timing scandal group.

connected to scandal. Such findings are statistically significant at 1% level. The findings are unsurprising considering the severity of timing scandal in comparison to other types of scandal. Our findings are further by Choi and Kahan (2007) who find investors to penalize funds involved in timing and disclosure scandals. We however do not find evidence of underperformance for disclosure and other scandal.

<< Insert Table 5 here >>

4.3 Severity of Mutual Fund Scandals and Fund Performance

4.3.1 Monetary Penalty

Mutual fund scandals typically result in monetary penalties that are intended to reflect the severity of the misconduct. Rationally, we would expect investor responses to be more severe for scandals that were penalized with heavy monetary fines, given the apparent impact and publicity of such a scandal. Using the monetary penalty of the litigation as a proxy for scandal severity, we create two additional variables which are *Large Fine* and *Small Fine*. *Large (Small) Fine* is a binary variable equal to one if the monetary penalty is above (below) the median penalty for all scandals that occurred in any given year. We construct these variables by scandal year as nominal penalties tend to increase in size over time. Therefore, if we were to consider the median penalty across our entire sample, the distribution of large fines would be skewed towards the most recent observations. In Panel A of Table 6, consistent with our earlier expectation, we find scandal funds with higher monetary fines are associated with underperformance of 67 basis points in the year following the initiation of the scandal. Funds belonging to fund families linked to scandal underperform by 101 basis points in the following year. Clearly, the market penalty for mutual fund scandals will act as deterrent for funds to carry any form of financial misconducts. Such findings are not observed for scandal funds that attract lower monetary fines.

4.3.2 Regulatory Bodies

We previously argued that the continued occurrence of mutual fund scandals suggests that federal laws and regulations have not been entirely effective in deterring mutual fund scandals. This view is supported by Agrawal and Chadha (2005) who note that SEC is more likely to pursue the most severe and high profile cases of financial fraud as the SEC is constrained by resources in pursuing all cases. Therefore the level of fraud is likely to be much higher than what the public are aware of. In addition, a recent study by Dyck, Morse and Zingales (2010) finds that the SEC was responsible for detecting only 7% of corporate fraud cases, while other regulatory agencies were responsible for detecting 14% of the fraud cases.[13] They argue that fraud detection relies on a number of non-traditional overseers such as the media, analysts and employees.

In this section, we seek to uncover whether the SEC is effective in disciplining mutual fund scandals. To do this, we classify scandals based on which regulatory body first initiated the scandal allegation against the investment adviser. We define *SEC* as a binary variable equal to one if the enforcement action is first undertaken by the Securities Exchange Commission (SEC) and *Non SEC* as a binary variable equal to one if the enforcement action is first undertaken by any regulator other than the SEC, such as the New York Attorney General (NYAG), Self Regulatory Organizations (SRO), state regulators, or class actions. In Panel B of Table 6, we find that SEC interventions are more effective in disciplining mutual funds, indicated by the negative performance of scandal funds in the order of 116 basis points in the year following the litigation of the scandal. We find similar findings for funds affiliated to fund families connected to scandal with underperformance in the order of 99 basis points. For scandals that were pursued by non-SEC regulatory bodies, we do not observe the performance of scandal funds to be significantly affected in comparison to non-scandal funds.

[13] In their paper, Dyck, Morse and Zingales (2010) attempt to uncover which parties are responsible for uncovering corporate fraud, and they find that non-traditional parties, such as employees and media, are significant to the discovery of fraud.

4.3.3 Number of Regulatory Interventions

We conjecture that the severity of a scandal can be signaled by the number of regulatory bodies that pursue an investment adviser for the wrongdoing. We find this regulatory behavior to be common within our data, with the observation of additional regulators following an initial allegation. This raises the question of whether more regulatory involvement equates to better disciplining of scandal funds. To address this question, we separate scandal events into single versus multiple interventions. *Single Intervention* is a binary variable equal to one if only one regulatory body pursues a scandal and *Multiple Intervention* is a binary variable equal to one if two or more regulatory bodies pursue a scandal. In Panel C of Table 6, we show that multiple interventions results in negative performance of 73 basis points in the following year for scandal funds and 122 basis points for funds belonging to fund families implicated in scandal. This suggests the effectiveness of intervention on mutual fund scandals when there are two or more regulators who undertake enforcement actions.

<<Insert Table 6 here>>

4.6 The Effect of a Scandal on Money Flows

Next, we consider the impact of scandal on the fund flows of affected funds and other funds within the same family. In Table 7, we show our results on the impact of scandals on fund's subsequent flows. The key explanatory variables of interest are *Scandal Fund* and *Scandal Family*. Similar to our regression analysis of future performance, we use fund flows in the subsequent three, six, nine, and twelve months horizons as the dependent variable.

In model (1) and (2) of Table 7, consistent with Choi and Kahan (2007), we observe investors punish scandal funds in the aftermath of a scandal in the first three and six months horizons. The effect of the scandal on fund flows is most pronounced in model (2). Here,

scandal funds had fund flows that were 2.61% lower than non-scandal funds.[14] If we consider an average scandal fund that has $1,993 million in total net assets at the time of the scandal, this effect would correspond to around $52 million worth of fund outflows. By the third and fourth quarter following the scandal, investors appear to have forgiven the fund for the scandal as is evident from the statistically insignificant coefficient estimates. Importantly, from these results we observe that a reduction in fund flows precedes the underperformance previously examined in Table 4. This suggests the possibility that fund performance is partly affected by a fire sale of assets to meet investor withdrawals. We however do not find any evidence of money outflows on funds belonging to fund families linked to scandal.

The findings of our control variables shown in Table 7 are consistent with those demonstrated in previous studies. First, we find evidence of asymmetric flow-performance relationship as evidenced by positive coefficient on *Low*, *Medium*, and *High* performance rank variables (Ippolito (1992); Gruber (1996); Chevalier and Ellison (1997); Sirri and Tufano (1998); and others). Second, consistent with Chevalier and Ellison (1997), we find the level of flows to be lower for older funds. Third, *Expense Ratio* has a negative effect on future fund flows which is consistent with the findings of Barber, Odean and Zheng (2005) that investors are sensitive to funds with high fees.

<< *Insert Table 7 here* >>

Finally, similar to our performance analysis, we re-examine the effect of scandals on future money flows based on scandal types and the severity of mutual fund scandals. Consistent with our conjecture, in unreported results for the sake of brevity, we find money outflows to be associated with timing scandals, and scandals with high monetary fines, regulatory actions initiated by SEC, and the involvement of more than one regulatory body.

[14] Choi and Kahan (2007) find that the scandal funds have the lowest flows relative to non-scandal funds in the third month following the scandal. In this month scandal funds had 2.8% lower fund flows than non-scandal funds. Also, scandals had the greatest impact on fund flows in months 3 to 5 after the scandal, after which the coefficient lowered in magnitude but remained negative and significant.

4.7 Does Selling Accompany the Deterioration of Performance?

So far we have concentrated on the external reaction to financial misconduct disclosures. Next we look at the internal reaction. We conjecture that scandal funds may have to resort to fire selling of fund assets to meet investor redemptions, causing performance to suffer. To partially test this conjecture, we model the probability of a fund engaging in net selling. We define net selling to occur when the future market value of invested securities is less than the current market value of invested securities. A lower market value would result from either a decline in security prices, or when a fund is selling more securities than it is buying. A fund would have to sell securities if redemptions exceed the current cash holdings of the fund.

In Table 8, we use a probit model to estimate the probability that a scandal fund is engaging in net selling. Our variable of interest is *Scandal Fund* and *Scandal Family*. We find scandal funds to engage in net selling since the aftermath of the scandal over three, six, nine, and twelve months horizons with findings statistically significant at 1% level. As for the other funds that belong to the family of scandal fund, we find that the net selling is not immediate and only takes place in the third and fourth quarters. *Cash* is negatively related to net selling as funds with greater cash holdings are able to meet investor redemptions more easily. Our findings are robust to the inclusion of family and time fixed effects.

<<Insert Table 8 here>>

4.8 The Effect of a Scandal on Fund Fees

We next model the internal effect that a scandal has on the probability of a fee change. Previous studies have shown that the level of fees is influential on performance and flows (see Barber, Odean and Zheng (2005) and Carhart (1997)) and therefore a fund and associated family funds may modify their fee structures to rectify the damage of the scandal. Since the level of fees incurs a trade-off, where lower fees increase fund flows yet diminish marginal fee revenue, it is

unclear as to which direction a scandal or family fund may modify its fees. We model a fee downgrade using a binary variable to indicate if a fee at some future point in time after the scandal is lower than the current fee as our dependent variable. We also consider the non-12b-1 fee and 12b-1 fee separately because these fees serve different purposes. The non-12b-1 fee is compensation for the fund's investment expertise while the 12b-1 fee is a cost paid by a fund to market and distributes fund shares through broker dealers.

We report results of these regressions in Table 9. In models (1)-(4), focusing on non-12b-1 fee, we find weak or no evidence to suggest that scandal funds reduce non-12b-1 fee. Instead, we find other funds in the family implicated of scandal to downgrade non-12b-1 fee possibly in their attempt to retain investors in the funds. In model (5)-(8) we investigate the probability of a reduction in 12b-1 fees. We find that the *Scandal Fund* and *Scandal Family* variables have a positive and significant influence on the probability of reductions in 12b-1 fees, and the effects are significant at 1% level across three, six, nine, and twelve months horizons. These results suggest that in response to a fraud allegation, scandal funds and other funds in the family are more likely to reduce marketing expenditure on such funds, possibly to remove them from the lime-light and to ameliorate the family-wide effects of the scandal.

Other results are as follows. *Fund Age* and *Family Size* have a positive relation to a fee downgrades across the regression models. This is consistent with our expectations. Older funds have more operational knowledge to achieve efficiency, while funds of larger families are able to gain economies of scale from being part of larger fund complexes. Moreover, older funds and funds from large families do not have to spend as much on marketing and distribution costs (i.e. 12b-1 fees) because of their higher visibility. Our findings are robust to the inclusion of family and time fixed effects.

<<Insert Table 9 here>>

5. Conclusion

Fund managers face the dilemma of serving "two masters", raising the question of how they behave in the aftermath of the disclosure of fraud. We identify a sample of mutual fund scandals that occur throughout a six-year period between 2002 and 2010. Taken together, our findings vindicate our conjecture that to conduct a comprehensive analysis of the effects of fraud on mutual funds, it is necessary to look at both external and internal responses. In terms of external responses, we find scandal funds to underperform by 45 basis points while other funds that are affiliated to family linked to scandal to underperform by a larger magnitude of 74 basis points in annualized terms. Further tests on fund performance show that the underperformance of *Scandal Fund* and *Scandal Family* units are attributed to timing scandals, higher monetary fines, regulatory actions initiated by SEC, and when two or more regulatory bodies are involved. Next, we examine the impact of a scandal on fund flows to examine whether the scandal acts as a contagion that spreads to other funds within the same family. We find investors punish scandal funds by withdrawing capital in the aftermath of a scandal over the first three and six months horizons. Unlike Choi and Kahan (2007), We do not however find any evidence of money outflows on funds belonging to fund families linked to scandal.

We further examine the internal responses of a scandal fund or its family to rectify the caused damage. We hypothesize that performance may be affected by the fire sales of invested assets to meet investor withdrawals. Our analysis shows that scandal funds were on average more likely to be engaged in net selling. We also model the probability that a scandal fund or one of its affiliated family funds downgrades its fees following the scandal. We find other funds in the family implicated of scandal to be more likely to downgrade their non-12b-1 fee possibly in their efforts to re-attract investors. Interestingly, we also find scandal funds and other funds in the same family to reduce their expenditure on marketing and distribution costs (12b-1 fees).

This suggests that mutual fund families strategically reduce their 12b-1 fees in their efforts to take themselves out of the limelight of the scandal.

We identify several avenues stemming from our paper to potentially be explored in later research. First, subsequent research could focus on the internal responses undertaken by a mutual fund family in response to the scandal. Qian (2011) establishes that the external governance mechanism of investors withdrawing their assets is effective in deterring scandals when fund flow sensitivity is the highest. However, we do not know if manager turnover is related to mutual fund scandals. Second, further efforts can be aimed at determining if managers of scandal funds significantly adjust the riskiness of their portfolio holdings in an effort to return the performance to its prior state. Brown, Harlow and Starks (1996) and Chevalier and Ellison (1997) both document that funds that appear to be mid-year's losers increase the riskiness of the fund in the second half in their efforts to increase performance. Third, focus could be dedicated to discovering if scandals are related to mutual fund exits. Zhao (2005) finds that mutual fund exits, either through liquidation or merging, is negatively related to fund flows and performance. Thus, having established in this paper that scandals result in reduced performance and flows, we would expect that scandal funds are more likely to be closed by the family.

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Table 1: Mutual Fund Scandal Sample Description

In this table we provide a breakdown of the number of investment advisers (fund family) and associated mutual funds that occur within our data selection process. Unique portfolio identifier refers to the CRSP portfolio number (crsp_portno). In Panel B, the classification of fund types is based on CRSP style code (crsp_obj_cd).

Panel A	Number
Regulatory Actions	
Individual regulatory actions related to mutual funds	216
Requirement that the regulatory decision to be final	196
Affected Mutual Funds	
Number of mutual fund families involved in a scandal	53
Number of mutual funds involved in a scandal	659
Number of mutual funds involved in a scandal with missing unique portfolio identifiers	59
Number of mutual funds involved in a scandal with complete unique portfolio identifiers	600
Number of mutual funds involved in a scandal with public announcement information	578
Composition	
Equity Funds	432
Fixed Income	50
Balanced Funds	75
Index Funds	18
Other Funds	3

Panel B	Scandal Types			
	Timing	Disclosure	Other	Total
Regulators				
SEC	71	123	148	342
NYAG	47	0	0	47
Civil	11	0	3	14
SRO	1	0	2	3
State	19	0	7	26
Total	149	123	160	432

Table 2: Correlation Matrix for Continuous Control Variables

This table displays the correlation between continuous independent variables. *Log(Age)* is the natural logarithm of the fund's age in years, where age is calculated as the difference between the data date and the date that the fund first appeared in the CRSP mutual fund database. *Log(Fund Size)* is the natural logarithm of the fund's total net assets in millions of dollars. *Log(Family Size)* is the natural logarithm of the combined total net assets of all funds managed by a fund family in millions of dollars. *Expense Ratio* is the percentage of fund assets charged by the fund on an annual basis to compensate for operating costs, and includes the management fee and 12b-1 fees. *Turnover Ratio* measures the percentage of fund assets that are renewed, and is calculated as the minimum of sales and purchases divided by the average yearly fund size. *Cash* is the percentage of fund assets that are held as cash. *Herfindahl Index* is a measure of industry concentration. *OAF* is the objective adjusted flow and is calculated as the monthly percentage fund flow net of the median percentage flow of all funds following the same strategy. *OAR* is the objective adjusted return, and is calculated as the monthly return net of the median return of all funds following the same strategy.

	Log (Age)	Log (Fund Size)	Log (Family Size)	Expense Ratio	Turnover Ratio	Cash	Herfindahl Index	OAF	OAR
Log (Age)	1.000								
Log (Fund Size)	0.406	1.000							
Log (Family Size)	0.115	0.472	1.000						
Expense Ratio	0.045	-0.290	-0.341	1.000					
Turnover Ratio	-0.062	-0.190	-0.096	0.300	1.000				
Cash	-0.099	-0.087	-0.108	0.150	0.204	1.000			
Herfindahl Index	-0.016	0.017	-0.174	0.164	0.011	-0.019	1.000		
OAF	-0.241	-0.064	-0.001	-0.034	0.057	0.070	-0.013	1.000	
OAR	0.000	0.009	0.007	-0.008	-0.002	-0.008	0.004	0.053	1.000

Table 3: Descriptive Statistics for Mutual Funds

This table displays summary statistics for monthly observations of U.S. mutual funds. Panel A reports statistics for scandal funds, while Panel B reports statistics for non-scandal funds. In Panel C, a difference in means test is performed between scandal funds and non-scandal funds. *Fund Size* is the total net assets of the fund in millions of dollars. *Family Size* is the combined total net assets of all funds within a particular mutual fund family in millions of dollars. *Fund Age* is the age of the fund in years calculated as the difference between a particular date and the date that the fund first appeared in the CRSP mutual fund database. *Expense Ratio* is the percentage of fund assets charged by the fund on an annual basis to compensate for operating costs, and includes the management fee and 12b-1 fees. *Management Fee* is the cost for the manager's expertise, and is presented as a percentage of fund assets. *Actual 12b-1* is the cost paid by the fund for marketing and distribution, and is presented as a percentage of fund assets. *Turnover Ratio* measures the percentage of fund assets that are renewed, and is calculated as the minimum of sales and purchases divided by the average yearly fund size. *Cash* is the percentage of fund assets held as cash. *OAF* is the objective adjusted flow and is calculated as the monthly percentage fund flow net of the median percentage flow of all funds following the same strategy. *OAR* is the objective adjusted return, and is calculated as the monthly return net of the median return of all funds following the same strategy. CAPM, 3-Factor and 4-Factor alphas are the intercept coefficients retained from performing 36-month rolling regressions on the CAPM, three-factor and four-factor risk adjusted models respectively. *, ** and *** indicate significance at the 10%, 5% and 1% levels, respectively.

Panel A: Scandal Funds					
	Mean	Median	Std Dev	Minimum	Max
Fund Size ($m)	1,993.18	881.30	2,836.88	16.50	14,582.60
Family Size ($m)	187,927.60	80,970.40	220,520.70	47.70	513,366.10
Fund Age (years)	13.359	11.417	7.348	1.083	28.167
Expense Ratio (%)	1.335	1.338	0.489	0.090	2.930
Management Fee (%)	0.669	0.676	0.280	-1.040	1.450
12b-1 Fee (%)	0.377	0.408	0.197	0.000	0.891
Non-12b-1 Fee (%)	1.123	1.067	0.359	0.000	2.680
Turnover Ratio (%)	97.216	79.987	79.422	3.000	540.000
Volatility (%)	4.609	4.614	1.586	1.478	11.091
Cash (%)	2.717	1.730	3.945	-13.580	40.610
Fund Flow (%)	-0.022	-0.415	4.675	-20.705	57.123
Net Return (%)	0.338	-0.324	3.535	-15.575	12.495
4-Factor Alpha (APB) (%)	-0.181	-0.118	0.359	-1.058	0.894
Panel B: Non Scandal Funds					
	Mean	Median	Std Dev	Minimum	Max
Fund Size ($m)	991.46	218.10	2,486.64	15.00	68,808.40
Family Size ($m)	85,165.06	18,457.40	176,174.20	15.00	1,054,667.00
Fund Age (years)	10.543	9.000	7.473	0.000	32.917
Expense Ratio (%)	1.165	1.160	0.522	0.001	2.930
Management Fee (%)	0.644	0.711	0.492	-7.103	1.450
12b-1 Fee (%)	0.254	0.248	0.212	0.000	1.000
Non-12b-1 Fee (%)	1.066	1.077	0.418	-0.141	2.900
Turnover Ratio (%)	83.862	56.000	105.048	0.024	822.000
Volatility (%)	4.811	4.699	1.926	0.000	20.471
Cash (%)	3.939	1.549	9.789	-24.710	67.100
Fund Flow (%)	1.316	0.058	8.511	-20.705	57.123
Net Return (%)	0.561	1.051	5.454	-15.576	13.374
4-Factor Alpha (APB) (%)	-0.079	-0.069	0.305	-1.058	0.894

Table 3 - *Continued*

Panel C: Difference in Means Test				
	Scandal	Non-Scandal		
	Mean	Mean	Difference	
Fund Size ($m)	1,993.18	991.46	1,001.72	***
Family Size ($m)	187,927.60	85,165.06	102,762.54	***
Fund Age (years)	13.359	10.543	2.816	***
Expense Ratio (%)	1.335	1.165	0.170	***
Management Fee (%)	0.669	0.644	0.024	
12b-1 Fee (%)	0.377	0.254	0.123	***
Non-12b-1 Fee (%)	1.123	1.066	0.056	**
Turnover Ratio (%)	97.216	83.862	13.355	***
Volatility (%)	4.609	4.811	-0.202	**
Cash (%)	2.717	3.939	-1.223	***
Fund Flow (%)	-0.022	1.316	-1.338	***
Net Return (%)	0.338	0.561	-0.223	
4-Factor Alpha (APB) (%)	-0.181	-0.079	-0.101	***

Table 4: The Effect of a Scandal on Future Performance

This table shows OLS regression results of the effect of a scandal on future risk-adjusted performance on sample of equity funds. The dependent variable is the cumulative four-factor alpha (C4FA) between the initiation date of a scandal and consecutive months ahead. *Scandal Fund* is a binary variable equal to one if a fund was involved in a scandal at time *t* and zero otherwise. *Scandal Family* is a binary variable equal to one if the fund belongs to a family of a scandal fund at time *t* and zero otherwise. *Log(Fund Age)* is the natural logarithm of the fund's age in years. *Log(Fund Size)* is the natural logarithm of the fund's total net assets in millions of dollars. *Log(Family Size)* is the natural logarithm of the combined total net assets of all funds managed by a fund family in millions of dollars. *Expense Ratio* is the percentage of fund assets charged by the fund on an annual basis to compensate for operating costs, and includes the management fee and 12b-1 fees. *Turnover Ratio* measures the number of times that fund assets are renewed, and is calculated as the minimum of sales and purchases divided by the average yearly fund size. *Cash* is the percentage of fund assets held as cash. *4-Factor Alpha* is intercept coefficients retained from performing 36-month rolling regressions on the four-factor risk adjusted models. *OAF* is the objective adjusted flow and is calculated as the monthly fund flow net of the median percentage flow of all funds following the same strategy. *Herfindahl Index* is a measure of industry concentration. Family and time fixed effects are included in each regression and standard errors are clustered at fund level and reported in parentheses. *, ** and *** indicate significance at the 10%, 5% and 1% levels, respectively.

Future Returns (t+k1:t+k2)	3 Months	6 Months	9 Months	12 Months
Variables	(1)	(2)	(3)	(4)
Scandal Fund	-0.100	-0.211*	-0.348**	-0.447**
	(0.063)	(0.116)	(0.164)	(0.206)
Scandal Family	-0.207***	-0.389***	-0.560***	-0.735***
	(0.066)	(0.131)	(0.191)	(0.245)
Log (Fund Age)	-0.104***	-0.194***	-0.269***	-0.325***
	(0.018)	(0.038)	(0.058)	(0.079)
Log (Fund Size)	0.072***	0.127***	0.164***	0.184***
	(0.008)	(0.017)	(0.027)	(0.037)
Log (Family Size)	0.017	0.017	0.002	-0.032
	(0.019)	(0.038)	(0.057)	(0.077)
Expense Ratio	-0.141***	-0.274***	-0.392***	-0.493***
	(0.030)	(0.062)	(0.095)	(0.130)
Turnover Ratio	-0.131***	-0.260***	-0.387***	-0.511***
	(0.014)	(0.029)	(0.045)	(0.061)
Cash	0.005***	0.010***	0.014***	0.018***
	(0.001)	(0.003)	(0.004)	(0.006)
Fund Alpha	0.055***	0.107***	0.154***	0.208***
	(0.002)	(0.004)	(0.006)	(0.008)
Fund Flow	1.892***	3.598***	5.296***	6.695***
	(0.086)	(0.173)	(0.262)	(0.347)
Herfindahl Index	0.269***	0.460**	0.660	1.011
	(0.088)	(0.226)	(0.430)	(0.643)
Constant	-1.367***	-2.068**	-2.355	-4.060
	(0.462)	(1.052)	(1.895)	(3.161)
Family Fixed Effects	Yes	Yes	Yes	Yes
Time Fixed Effects	Yes	Yes	Yes	Yes
Observations	155,806	142,714	130,445	118,713
Adjusted R2	0.258	0.262	0.268	0.275

Table 5: The Effect of a Scandal on Future Performance by Scandal Types

This table shows OLS regression results of the effect of a scandal on future fund performance by scandal types. The dependent variable is the cumulative objective adjusted return (*COAR*) between the initiation date of a scandal and consecutive months ahead. *Timing Scandal* is a binary variable equal to one if a fund was involved in a market timing scandal. *Disclosure Scandal* is a binary variable equal to 1 if a fund was involved in a disclosure related scandal. *Other Scandal* is a binary variable equal to 1 if a fund was involved in a scandal that was not market timing or disclosure. *Log(Fund Age)* is the natural logarithm of the fund's age in years. *Log(Fund Size)* is the natural logarithm of the fund's total net assets in millions of dollars. *Log(Family Size)* is the natural logarithm of the combined total net assets of all funds managed by a fund family in millions of dollars. *Expense Ratio* is the percentage of fund assets charged by the fund on an annual basis to compensate for operating costs, and includes the management fee and 12b-1 fees. *Turnover Ratio* measures the number of times that fund assets are renewed, and is calculated as the minimum of sales and purchases divided by the average yearly fund size. *Cash* is the percentage of fund assets held as cash. *OAR* is the objective adjusted return, and is calculated as the monthly return net of the median return of all funds following the same strategy. *OAF* is the objective adjusted flow and is calculated as the monthly percentage fund flow net of the median percentage flow of all funds following the same strategy. *Herfindahl Index* is a measure of industry concentration. Family and time fixed effects are included in each regression and standard errors are clustered at fund level and reported in parentheses. *, ** and *** indicate significance at the 10%, 5% and 1% levels, respectively.

Future Returns (t+k1:t+k2)	3 Months	6 Months	9 Months	12 Months	3 Months	6 Months	9 Months	12 Months	3 Months	6 Months	9 Months	12 Months
Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Scandal Fund * Timing	-0.317***	-0.555***	-0.732**	-0.823**								
	(0.110)	(0.211)	(0.305)	(0.387)								
Scandal Family * Timing	-0.342***	-0.692***	-1.004***	-1.309***								
	(0.070)	(0.139)	(0.200)	(0.251)								
Scandal Fund * Disclosure					-0.123	-0.160	-0.082	-0.076				
					(0.109)	(0.194)	(0.257)	(0.321)				
Scandal Family * Disclosure					-0.053	-0.037	-0.067	-0.130				
					(0.076)	(0.145)	(0.217)	(0.290)				
Scandal Fund * Other									0.149**	0.111	-0.161	-0.366*
									(0.059)	(0.112)	(0.165)	(0.221)
Scandal Family * Other									0.364	0.820	1.399	1.837
									(0.346)	(0.685)	(1.041)	(1.320)
Control Variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Family Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	155,806	142,714	130,445	118,713	155,806	142,714	130,445	118,713	155,806	142,714	130,445	118,713
Adjusted R2	0.258	0.263	0.268	0.275	0.258	0.262	0.268	0.275	0.258	0.262	0.268	0.275

Table 6: Severity of Mutual Fund Scandals on Future Performance

This table shows OLS regression results of the effect of the severity of the scandal on future fund performance. The dependent variable is the cumulative objective adjusted return (*COAR*) between the initiation date of a scandal and consecutive months ahead. All explanatory variables are as described in Table 4. *Scandal Fund* is a binary variable equal to one if a fund was involved in a scandal at time *t* and zero otherwise. *Large Fine* is a binary variable equal to one if the monetary fine of the scandal is greater than the median monetary fine in that particular year. *Small Fine* is a binary variable equal to one if the monetary fine of the scandal is lower than the median monetary fine in that particular year. *SEC* is a binary variable equal to one if the Securities Exchange Commission (SEC) undertakes the enforcement action. *Non SEC* is a binary variable equal to one if the New York Attorney General (NYAG), Civil, Self Regulatory Organization (SRO), or State Government, rather than the SEC, undertake the enforcement actions. *Single Intervention* is a binary variable equal to one if the scandal is associated with one regulatory body. *Multiple Intervention* is a binary variable equal to one if the scandal is associated with more than two regulatory bodies. Family and time fixed effects are included in each regression and standard errors are clustered at fund level and reported in parentheses. *, ** and *** indicate significance at the 10%, 5% and 1% levels, respectively.

Future Returns (t+k1:t+k2)	3 Months	6 Months	9 Months	12 Months	3 Months	6 Months	9 Months	12 Months
Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Panel A: Monetary Penalty		Large Fine				Small Fine		
Scandal Fund * Large/Small Fine	-0.145**	-0.327***	-0.521***	-0.671***	0.006	0.061	0.067	0.089
	(0.066)	(0.124)	(0.177)	(0.225)	(0.107)	(0.191)	(0.264)	(0.330)
Scandal Family * Large/Small Fine	-0.258***	-0.518***	-0.758***	-1.010***	0.088	0.313	0.545	0.713
	(0.056)	(0.112)	(0.164)	(0.209)	(0.162)	(0.319)	(0.469)	(0.597)
Panel B: Regulatory Bodies		SEC				Non-SEC		
Scandal Fund * SEC/Non-SEC	-0.043	-0.114	-0.185	-0.239	-0.294*	-0.535*	-0.914**	-1.164**
	(0.065)	(0.120)	(0.167)	(0.209)	(0.150)	(0.285)	(0.415)	(0.529)
Scandal Family * SEC/Non-SEC	-0.120	-0.191	-0.267	-0.356	-0.262***	-0.525***	-0.756***	-0.992***
	(0.078)	(0.153)	(0.224)	(0.284)	(0.095)	(0.189)	(0.278)	(0.358)
Panel C: No. of Interventions		Single				Multiple		
Scandal Fund * Single/Multiple	-0.050	-0.028	0.018	0.029	-0.132*	-0.327**	-0.571***	-0.734***
	(0.092)	(0.166)	(0.225)	(0.286)	(0.071)	(0.134)	(0.192)	(0.243)
Scandal Family * Single/Multiple	-0.074	-0.095	-0.112	-0.144	-0.311***	-0.631***	-0.919***	-1.215***
	(0.084)	(0.168)	(0.249)	(0.322)	(0.084)	(0.166)	(0.239)	(0.299)
Control Variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Family Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Table 7: The Effect of a Scandal on Future Money Flows

This table shows OLS regression results of the effect of a scandal on future money flows. The dependent variable is objective adjusted flow (*OAF*) at *j* months ahead. Model 1 through 12 represent the number of months ahead in consecutive order. *Scandal Fund* is a binary variable equal to one if a fund was involved in a scandal at time *t* and zero otherwise. *Scandal Family* is a binary variable equal to one if the fund belongs to a family of a scandal fund at time *t* and zero otherwise. *Log(Fund Age)* is the natural logarithm of the fund's age in years. Log(Fund Size) is the natural logarithm of the fund's total net assets in millions of dollars. *Log(Family Size)* is the natural logarithm of the combined total net assets of all funds managed by a fund family in millions of dollars. *Expense Ratio* is the percentage of fund assets charged by the fund on an annual basis to compensate for operating costs, and includes the management fee and 12b-1 fees. *Turnover Ratio* measures the number of times that fund assets are renewed, and is calculated as the minimum of sales and purchases divided by the average yearly fund size. *Cash* is the percentage of fund assets held as cash. *OAR* is the objective adjusted return and is calculated as the monthly fund return net of the median percentage return of all funds following the same strategy. *Herfindahl Index* is a measure of industry concentration. Family and time fixed effects are included in each regression and standard errors are clustered at fund level and reported in parentheses. *, ** and *** indicate significance at the 10%, 5% and 1% levels, respectively.

Future Flow (t+k1:t+k2)	3 Months	6 Months	9 Months	12 Months
Variables	(1)	(2)	(3)	(4)
Scandal Fund	-1.904***	-2.606**	-1.826	-1.784
	(0.702)	(1.201)	(1.670)	(1.989)
Scandal Family	-0.231	-1.412	-1.989	-3.430
	(0.783)	(1.331)	(1.949)	(2.615)
Log (Fund Size)	-0.639***	-2.200***	-4.624***	-8.073***
	(0.060)	(0.158)	(0.302)	(0.509)
Log (Fund Age)	-2.752***	-5.029***	-6.963***	-8.560***
	(0.125)	(0.309)	(0.556)	(0.883)
Log (Fund Age) * Performance	0.231***	0.411***	0.609***	0.794***
	(0.011)	(0.021)	(0.031)	(0.044)
Volatility	-0.212***	-0.423***	-0.674***	-0.849**
	(0.058)	(0.139)	(0.245)	(0.373)
Category Flow	0.042***	0.059***	0.090***	0.138***
	(0.005)	(0.009)	(0.015)	(0.022)
Expense Ratio	-1.257***	-2.625***	-4.153***	-5.702***
	(0.210)	(0.516)	(0.938)	(1.494)
Low	11.106***	20.493***	24.169***	25.642***
	(1.232)	(2.769)	(4.757)	(7.353)
Medium	5.375***	10.430***	16.035***	22.652***
	(0.285)	(0.662)	(1.145)	(1.755)
High	23.835***	52.729***	83.140***	111.217***
	(1.596)	(3.777)	(6.591)	(9.932)
Constant	89.117***	166.312***	80.558***	116.123***
	(5.722)	(13.424)	(5.273)	(8.379)
Family Fixed Effects	Yes	Yes	Yes	Yes
Time Fixed Effects	Yes	Yes	Yes	Yes
Observations	295,948	270,226	245,526	221,767
Adjusted R2	0.120	0.155	0.170	0.179

Table 8: The Effect of a Scandal on the Probability of Net Selling

This table shows results of the effect of a scandal on the probability of net selling. The dependent variable is *Net Selling* which is an indicator variable equal to 1 if the portfolio value of a fund's invested securities in the following quarter is less than the current portfolio value. *Scandal Fund* is a binary variable equal to one if a fund was involved in a scandal at time *t* and zero otherwise. *Scandal Family* is a binary variable equal to one if the fund belongs to a family of a scandal fund at time *t* and zero otherwise. *Log(Fund Age)* is the natural logarithm of the fund's age in years. *Log(Fund Size)* is the natural logarithm of the fund's total net assets. *Log(Family Size)* is the natural logarithm of the combined total net assets of all funds that share the same family identifier. *Expense Ratio* is the percentage of fund assets charged by the fund on an annual basis, and includes a management fee and 12b-1 fees. *Turnover Ratio* measures the percentage of fund assets that are renewed, and is calculated as the minimum of sales and purchases divided by the average yearly fund size. *Cash* is the percentage of fund assets that are held as cash. *OAR* is the objective adjusted return, and is calculated as the monthly return net of the median return of all funds following the same strategy. *OAF* is the percentage fund flow net of the median percentage flow of all funds following the same strategy. *Herfindahl Index* is a measure of industry concentration. Family and time fixed effects are included in each regression and standard errors are clustered at fund level and reported in parentheses. *, ** and *** indicate significance at the 10%, 5% and 1% levels, respectively.

Net Selling (0,t)	3 Months	6 Months	9 Months	12 Months
Variables	(1)	(2)	(3)	(4)
Scandal Fund	0.270***	0.534***	0.475***	0.404***
	(0.072)	(0.074)	(0.073)	(0.074)
Scandal Family	0.066	0.135	0.313***	0.330***
	(0.085)	(0.083)	(0.085)	(0.085)
Log (Fund Age)	0.104***	0.143***	0.129***	0.136***
	(0.005)	(0.005)	(0.005)	(0.005)
Log (Fund Size)	-0.023***	-0.012***	-0.011***	0.000
	(0.002)	(0.002)	(0.002)	(0.002)
Log (Family Size)	0.005***	0.014***	0.008***	0.009***
	(0.001)	(0.001)	(0.001)	(0.002)
Expense Ratio	0.072***	0.083***	0.064***	0.069***
	(0.006)	(0.006)	(0.006)	(0.007)
Turnover Ratio	0.041***	0.048***	0.056***	0.060***
	(0.003)	(0.003)	(0.003)	(0.004)
Cash	-0.004***	-0.005***	-0.007***	-0.007***
	(0.000)	(0.000)	(0.000)	(0.000)
Fund Alpha	-0.033***	-0.038***	-0.035***	-0.027***
	(0.001)	(0.001)	(0.001)	(0.001)
Fund Flow	-1.462***	-1.611***	-1.597***	-1.474***
	(0.043)	(0.046)	(0.048)	(0.050)
Herfindahl Index	0.102***	0.057***	0.069***	0.068***
	(0.001)	(0.001)	(0.002)	(0.002)
Constant	-0.782***	-0.834***	-0.721***	-0.897***
	(0.020)	(0.021)	(0.022)	(0.023)
Family Fixed Effects	Yes	Yes	Yes	Yes
Time Fixed Effects	Yes	Yes	Yes	Yes
Observations	246,019	226,768	207,586	189,267
Pseudo R2	0.0272	0.0198	0.0215	0.0196

Table 9: The Effect of a Scandal on the Probability of a Fee Downgrade

This table shows probit regression results of the effect of a scandal on the probability of a fee downgrade. All models were estimated using maximum likelihood estimation. The dependent variable is a binary variable equal to 1 if the expense ratio at 6 and 12 months after the scandal is less than the current expense ratio in respective order. In model (3) and (4), the dependent variable is a binary variable equal to 1 if the management fee at 6 and 12 months after the scandal is less than the current management fee in respective order. In model (5) and (6), the dependent variable is a binary variable equal to 1 if the 12b-1 fee at 6 and 12 months after the scandal is less than the current 12b-1 fee in respective order. *Scandal Fund* is a binary variable that is equal to one if a fund was involved in a scandal at time *t* and zero otherwise. *Scandal Family* is a binary variable equal to one if the fund belongs to a family of a scandal fund at time *t* and zero otherwise. *Log(Fund Age)* is the natural logarithm of the fund's age in years. *Log(Fund Size)* is the natural logarithm of the fund's total net assets. *Log(Family Size)* is the natural logarithm of the combined total net assets of all funds that share the same family identifier. *Turnover Ratio* measures the percentage of fund assets that are renewed, and is calculated as the minimum of sales and purchases divided by the average yearly fund size. *Cash* is the percentage of fund assets held as cash. *OAR* is the objective adjusted return, and is calculated as the monthly return net of the median return of all funds following the same strategy. *OAF* is the percentage fund flow net of the median percentage flow of all funds following the same strategy. *Herfindahl Index* is a measure of industry concentration. Family and time fixed effects are included in each regression and standard errors are clustered at fund level and reported in parentheses. *, ** and *** indicate significance at the 10%, 5% and 1% levels, respectively.

Fee Downgrade (0,t)	3 Months	6 Months	9 Months	12 Months	3 Months	6 Months	9 Months	12 Months
Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
		Non-12b-1 Fee Downgrade				12b-1 Fee Downgrade		
Scandal Fund	0.109*	0.083	0.065	0.071	0.126**	0.139**	0.115*	0.106*
	(0.064)	(0.064)	(0.064)	(0.064)	(0.064)	(0.064)	(0.064)	(0.064)
Scandal Family	0.225***	0.263***	0.301***	0.321***	0.200***	0.140**	0.274***	0.286***
	(0.069)	(0.069)	(0.069)	(0.069)	(0.069)	(0.069)	(0.069)	(0.069)
Log (Fund Age)	0.138***	0.094***	0.062***	0.034***	0.229***	0.241***	0.246***	0.249***
	(0.004)	(0.004)	(0.004)	(0.005)	(0.004)	(0.004)	(0.004)	(0.004)
Log (Fund Size)	0.033***	0.042***	0.048***	0.050***	-0.030***	-0.042***	-0.049***	-0.055***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Log (Family Size)	0.051***	0.038***	0.027***	0.017***	0.067***	0.065***	0.062***	0.060***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Turnover Ratio	0.088***	0.079***	0.069***	0.059***	0.093***	0.096***	0.103***	0.110***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)	(0.003)
Cash	-0.001**	0.001	0.001***	0.002***	0.000	0.001***	0.002***	0.002***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Fund Alpha	-0.008***	-0.011***	-0.006***	0.004***	0.000	0.001	-0.001	-0.003***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)

Fund Flow	0.272***	0.509***	0.696***	0.859***	-0.223***	-0.283***	-0.281***	-0.253***
	(0.034)	(0.034)	(0.034)	(0.035)	(0.033)	(0.033)	(0.033)	(0.033)
Herfindahl Index	0.044***	0.086***	0.131***	0.176***	-0.010***	-0.024***	-0.037***	-0.048***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Constant	-1.928***	-2.010***	-2.136***	-2.297***	-1.301***	-1.091***	-0.902***	-0.732***
	(0.017)	(0.017)	(0.017)	(0.018)	(0.016)	(0.016)	(0.016)	(0.016)
Family Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	318,654	318,654	318,654	318,654	318,654	318,654	318,654	318,654
Pseudo R2	0.0188	0.0231	0.0357	0.0565	0.0206	0.0220	0.0238	0.0260