

Do independent directors and chairmen matter? The role of boards of directors in mutual fund governance

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Received 6 October 2006; received in revised form 20 December 2006; accepted 20 December 2006

Available online 23 February 2007

Abstract

Recent scandals involving late trading, market timing, and other trading abuses have prompted the SEC to propose changes in the governance of mutual funds. Among these changes are the requirements for an independent chairman and a board consisting of at least 75% independent directors. Using a large sample of mutual fund families for 2002, we find that neither the probability of a fund scandal nor overall fund performance is related to either chair or board independence. Overall, our results question the usefulness of these recently proposed SEC changes in mutual fund governance.

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JEL classification: G23; G34

Keywords: Mutual funds; Governance; Board of directors; Fund fees; Fund scandals

1. Introduction

Recent fund scandals at dozens of mutual fund families involving charges of late trading, market timing, and other trading abuses have brought tremendous attention to the mutual fund industry. Just as the corporate accounting scandals of the late 20th and early 21st centuries resulted in the Sarbanes–Oxley Act of 2002, the Securities and Exchange Commission (SEC) has proposed changes in mutual fund governance in response to these mutual fund scandals. Specifically, the SEC proposes that at least 75% of a mutual fund's board consist of independent directors and that the board chairman be an independent director. These proposed changes in governance, however, exceed and are more specific than those contained in the Sarbanes–Oxley Act of 2002 because of the SEC's greater authority to regulate mutual funds

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resulting from the Investment Company Act of 1940 and the Investment Advisers Act of 1940. Nevertheless, the U.S. Court of Appeals for the District of Columbia in its recent review of these new requirements faulted the SEC for failing to provide an adequate analysis of the costs and benefits associated with the adoption of these governance changes. Consequently, these requirements remain unimplemented. Our research contributes to this continuing policy debate by providing an empirical analysis of how these two aspects of fund governance are related to the likelihood of scandal involvement, board effectiveness, and fund performance.

We begin our analysis by investigating whether the board characteristics of our sample funds help to explain whether or not they were implicated in the trading scandals of 2003–2004. The mutual fund scandals of 2003–2004 are obvious cases where the securities laws have been violated. Further, they represent important breaches of the funds' fiduciary responsibilities to their shareholders. Our findings indicate that funds in which the independent directors are well compensated and oversee a large number of funds are more likely to be implicated in a scandal, while those with a pricing committee are less likely. We fail to find, however, that either the proportion of independent directors or the presence of an independent chairman is related to the likelihood of a fund scandal.

We then investigate whether board characteristics are related to fund fees, performance, or turnover. Our results provide modest evidence that board size, the number of funds overseen by each independent director, and unexplained independent director compensation are all positively related to fund expense ratios. We find no evidence, however, that funds with a higher percentage of independent directors or independent chairmen charge lower fees. Nor do we observe that board independence is related to either fund turnover or performance.

Previous studies of corporate and fund governance recognize the possibility of endogeneity in the relation between board structure and various measures of firm/fund performance or behavior. We address the issue of potential endogeneity by using an instrumental variable approach. Our choice of instruments is based on previous theoretical and empirical studies in the literature concerning the determinants of boards (Hermalin and Weisbach, 1998; Linck et al., 2005; Raheja, 2005). Our main findings continue to hold even after using this alternative approach.

Overall, our results suggest that board design and director compensation influence the quality of governance provided to a mutual fund, but question the usefulness of the recent SEC proposals requiring mutual fund boards to have independent chairmen and at least 75% independent directors. Contrary to the arguments made in support of these requirements, we find that board and chairman independence are generally insignificant factors in explaining the likelihood of a fund scandal, the level of fund fees, or fund performance. We contend that board size, the number of funds overseen by each independent director, and independent director compensation are significant aspects of fund governance that should receive greater regulatory attention.

We organize the remainder of this study into seven sections. In the following section, we discuss the existing literature on fund governance while Section 3 describes the regulatory environment for mutual funds. Section 4 contains a description of our data and sample. In Section 5, we present our analysis regarding the relation between board structure and the likelihood that a fund has been implicated in the recent trading scandals. Section 6 contains our analysis of the relation between board characteristics and fund fees. In Section 7, we examine the effect of board characteristics on fund performance and turnover. Our analysis concludes with a summary and a brief discussion of our major findings in Section 8.

2. Existing literature

Although the academic literature contains numerous studies of mutual funds, most focus on fund performance rather than governance. There are, however, several published studies and a number of working papers that are relevant for our examination of governance structures in mutual funds. The existence of new working papers on mutual fund governance indicates the growing importance of this area to both the capital markets and policy makers.

Tufano and Sevick (1997) study the board of directors, specifically the independent directors, of mutual funds offered by the 50 largest fund sponsors in 1992. Tufano and Sevick find that funds with smaller boards and a higher percentage of independent directors, and funds whose directors sit on a larger fraction of the fund family's boards tend to negotiate and approve lower fees. They also find that independent directors who receive relatively higher compensation approve higher shareholder fees than those less well compensated.

Del Guercio, Dann and Partch (2003) analyze board structure and director independence in closed-end investment companies in 1996. Using the expense ratio as a measure of board effectiveness, they show that smaller boards and boards with a higher percentage of independent directors are more effective. Additionally, Del Guercio, Dann and Partch find strong evidence of an association between board structure and the fund's willingness to undertake activities favorable to shareholder value such as authorizing a share repurchase or disapproving an affiliated rights offering.

Khorana, Tufano and Wedge (in press) examine mutual fund governance by investigating the influence that a fund's board exerts over the decision to merge with another fund. They find that independent boards are less tolerant of under-performance, but that the impact of an independent board is felt when it is 100% independent, not at the 75% level currently proposed by the SEC. They further report that neither the presence of an independent chair nor the size of the board exhibits any significant influence on the merger decision.

Ding and Wermers (2005) find that boards with a greater number of independent directors are associated with better performance and a higher likelihood of replacing underperforming portfolio managers. They conclude that board structure as measured by its degree of independence is an important determinant of fund governance quality.

Two other studies examine the issue of mutual fund governance from the perspective of director ownership in the mutual funds they oversee. Chen, Goldstein and Jiang (2006) find ownership patterns consistent with the optimal contracting hypothesis in that directors tend to own shares in the funds they oversee when the benefit is expected to be high and other control mechanisms do not exist. Cremers, Driessen, Maenhout and Weinbaum (2005) determine that directors' ownership stakes are positively related to fund performance. They note that this relation holds for independent directors, but is stronger for non-independent directors.

Most closely related to this study is that by Meschke (2005) who examines a sample of 169 fund boards to determine whether their structures are related to fund fees and performance. He finds that lower fees are associated with smaller, professionally diverse boards whose committees meet more often and independent directors with higher ownership and lower compensation. Meschke also finds no evidence that more independent boards are related to either lower fees or better performance. Our study differs from Meschke's through its use of a larger sample which includes both small and large fund families. Further, Meschke does not examine the relation between board structure and the likelihood of scandal.

Qian (2006) focuses on the ability of external market forces to provide mutual fund governance. Specifically, she examines the ability of investor flow sensitivity to serve as a fund

governance mechanism. She finds that funds with greater flow sensitivity to portfolio return are less likely to be involved in trading violations. Consistent with Fama and Jensen (1983), she concludes that an investor's ability to withdraw or add resources to a fund serves as an effective market monitor of fund activity that can complement board oversight. Unlike Qian (2006), we focus on whether a fund's internal governance structure is related to the likelihood of a trading scandal. Additionally, we analyze a more comprehensive sample of fund families than Qian whose analysis is limited to a small number of large fund families.

3. The regulatory and governance environment of mutual funds

Beginning in September 2003, the mutual fund industry suffered from news of a scandal involving charges of late trading, market timing, and other trading abuses. Although the scandal broke in 2003, evidence suggests that these practices were not new. Zitzewitz (2003), for instance, describes late trading in international equity mutual funds occurring as early as 1998 and reports of market timing since 2001. Between mid-2004 and mid-2005, almost all of the charged firms settled with the SEC and the New York State Attorney General's office. By 2005, the value of fines and restitution paid by the industry totaled more than \$3.1 billion (Houge and Wellman, 2005).

In spite of this scandal, the mutual fund industry is perhaps the most regulated of the financial services industries. The Investment Company Act of 1940 and the Investment Advisers Act of 1940 provide the SEC with more authority over the governance of mutual funds than public corporations. This is most obvious with the Investment Company Act's requirements regarding board independence. It requires that at least 40% of a fund's board consist of independent directors. In 2001, the SEC sponsored a change to this requirement, raising the minimum percentage of independent directors to 50%. The current SEC proposal seeks to raise this threshold yet again to 75%.

In addition to specifying parameters for the board's composition, the Investment Company Act establishes the legal foundation on which mutual funds operate and is interpreted as assigning legal responsibility to directors for a number of duties. Among those duties which have no counterpart in corporate regulation are the approval of contracts with the fund sponsor and distributor, evaluation and approval of fees, and determination of the method and timing for calculating a fund's net asset value. The Investment Advisers Act provides further fund regulation by requiring that funds and their investment advisors register with the SEC and conform to its regulations regarding disclosure and investor protection.

Because Congress and the SEC have long considered the board of directors to be the primary mechanism for the effective governance of mutual funds, they have focused their regulatory focus on enhancing board independence. Most recently, the SEC has proposed that at least 75% of a mutual fund's board consist of independent directors and that the board chairman be an independent director. The U.S. Chamber of Commerce, however, has brought suit against the SEC to block implementation of the independent chair requirement, arguing that the benefits of independent chairmen are doubtful, while imposing significant costs on the industry. Indeed, research by Brickley, Coles and Jarrell (1997) on separating the CEO from the board chair for corporations concludes that the costs of separation exceed the benefits for most large firms. In April 2006 the D.C. Court of Appeals vacated the requirement of an independent chairman, finding that the SEC had not provided a robust cost-benefit analysis of this rule change. Currently, the SEC has no published schedule for reconsidering the proposed rule.

Mutual fund governance also differs from that of public corporations due to two features unique to the industry. The first concerns the role played by the board of directors for the fund

advisor. Because of the Investment Advisers Act of 1940, the board of directors for the fund advisor has a fiduciary responsibility, including the monitoring the legality of the portfolio managers' actions. The organizational form of the investment advisor can also play an important role in fund governance. For example, Caffey, Sokobin and Westbrook (2006) observe that the organization of the advisory firm can impact investors by affecting the degree to which manager and investor interests are aligned.

4. Data, sample, and descriptive statistics

4.1. Data and sample

There are two primary data sources for this study. The first is the CRSP Survivor-Bias Free Mutual Fund Database (hereafter referred to as the CRSP database). The CRSP database provides information on fund returns, total net assets (TNA), fees, investment objectives, and other fund characteristics. The second data source is the Statement of Additional Information (SAI), known as part B of the registration statement, and filed by the registrant (typically a group of related funds from the same fund family) with the SEC through the Electronic Data Gathering, Analysis and Retrieval (EDGAR) database. The information contained in the SAI supplements the prospectus, thus allowing the mutual fund to expand its presentation of material to potential investors. Among the information contained in a fund's SAI is the fund's financial statements and information about the fund's history, identification of the fund's leadership, board structure, commission structure, tax matters, and yield and return data.

Our initial sample starts with all fund families listed in the CRSP database at the end of 2002. There are a total of 531 fund families. For each fund family, we search and download from the SEC's EDGAR database the last SAI filed in 2002. We use the last SAI filed during 2002 because the fund scandals broke out in 2003 and we want to obtain the latest board data prior to these scandals. In a few cases where key data are missing from the 2002 report, we download the first report in 2003, provided the filing date is earlier than July 1, 2003. We do so to ensure that the reports are not influenced by the revelation of fund scandals which began in September 2003. In total, we are able to obtain SAI for 448 fund families. Overall, the 448 fund families in our sample own 97.3% of all mutual funds in the CRSP database, while managing 97.1% of the industry's total net assets.

For each board, we collect from SAI the following information: board size, proportion of the board comprised of independent directors, whether the board chairman is independent, age of each director, number of funds overseen by each director, whether the director holds directorship outside the fund family, number of years served on the board, compensation for each director, ownership in the funds by each director, and whether the board has an audit, nominating, governance, or pricing committee.

Each director is classified as either an interested director or an independent director according to the specific rules under the Act. In particular, to qualify as an independent director, an individual cannot be an employee of the investment adviser or a member of the immediate family of an employee, be an employee or a 5-percent shareholder of a registered broker-dealer, or have an affiliation with any recent legal counsel to the fund. The fund ownership by each director is reported within one of five dollar ranges: zero, less than \$10,000, between \$10,000 and \$50,000, between \$50,000 and \$100,000, and greater than \$100,000.

Our analysis of fund scandals requires that we identify which fund families have been charged by regulators in the recent market timing and late trading scandals. We obtain this list

of fund families from the “Fund Industry Investigation Update” section of *Morningstar*’s website and the “Fund Scandal Scorecard” section of the *Wall Street Journal*’s website. We henceforth refer to these families as scandal families. Appendix A contains a list of these scandal families.

Many mutual funds have multiple share classes, and the CRSP mutual fund database lists each share class as a separate fund. These share classes represent claims on the same underlying assets, and have the same returns before expenses and loads. They typically differ only in their fee structures and/or in their clienteles. We combine these different classes into a single fund in our analysis. Specifically, we sum the total net asset values of each share class to obtain the aggregate total net asset value for the fund. For fund characteristics such as the expense ratio, we use the TNA-weighted average estimated across all share classes. Our main results are qualitatively similar when we treat each share class as a separate fund or retain only the largest share class. Finally, to ensure that our results are not driven by the smallest funds, we exclude all funds that have a TNA less than \$1 million.

4.2. Governance variables

In this section, we provide a discussion of the governance variables used in our subsequent analysis of fund scandals, fees, and performance. The first two variables that we consider are motivated by the SEC’s recent attempt at reforming mutual fund governance. Specifically, we include a dummy variable to capture the presence of an independent chair and the percentage of the board that consists of independent directors. The remaining variables reflect prior empirical work in the areas of mutual fund and corporate governance.

4.2.1. Independent chairman dummy

The requirement of an independent chairman represents a major effort by the SEC to improve mutual fund governance. Studies of corporate governance such as [Baliga, Moyer and Rao \(1996\)](#), [Uzun, Szewczyk and Varma \(2004\)](#) and [Agrawal and Chadha \(2005\)](#) examine the ability of insider chairs to impact the monitoring effectiveness of boards of directors through their control of the agenda. [Jensen \(1993\)](#) argues that the board chair should be independent so that the board can properly discharge its oversight responsibilities, especially with respect to the CEO. But [Brickley, Coles and Jarrell \(1997\)](#) observe that there are costs associated with an independent chair such as agency costs (since insiders usually have greater financial and reputational capital at risk), disruption of succession plans, and reduced levels of specialized knowledge.

4.2.2. Percent of independent directors

Independent directors are believed to have more incentive to monitor managers (e.g., [Weisbach, 1988](#)). Because independent directors have no employment or ownership affiliation with the investment advisors, the SEC contends that such directors are less likely to be conflicted in representing shareholder interests. [Hermalin and Weisbach \(2003\)](#) note, however, that the corporate governance literature finds no significant relation between the number of independent directors and firm performance. They speculate that endogeneity might explain these findings.

4.2.3. Board size

[Lipton and Lorsch \(1992\)](#) and [Jensen \(1993\)](#) observe that large boards can be less effective than small boards. [Yermack \(1996\)](#) finds an inverse relation between board size and firm value for

a sample of large industrial firms. Tufano and Sevick (1997) and Del Guercio, Dann and Partch (2003) report that fund fees are significantly positively related to board size. Adams and Mehran (2003) find, however, that larger boards are more effective in the banking industry while Raheja (2005) contends that larger boards are more optimal when there are high levels of private benefits available to insiders.

4.2.4. Fund ownership by independent directors

The ability of equity ownership to align managerial interests through the creation of incentives is a well-established proposition in the corporate finance literature first noted by Jensen and Meckling (1976). We use the proportion of independent directors holding zero shares as our empirical measure of fund ownership. Holding zero shares of the funds is highly suggestive of an absence of incentive for fund directors. Any analysis of the relation between independent director ownership and fund performance, however, must be interpreted with care, given the extensive literature describing endogeneity in corporate equity ownership structures. Demsetz (1983) and Demsetz and Lehn (1985), for instance, argue that corporate ownership is the endogenous result of decisions attributable to shareholders and the market trading of the firm's equity. Demsetz and Villalonga (2001) further confirm this view of the corporate ownership structure as endogenous, resulting from the interplay of market forces.

4.2.5. Unexplained independent director compensation

Both Tufano and Sevick (1997) and Khorana, Tufano and Wedge (in press) note the theoretical indeterminacy of director compensation on board effectiveness. Directors who receive high level of compensation might be less willing to jeopardize it by disagreeing with the fund sponsor over issues such as lower fund fees. Alternatively, higher compensation might reflect the director's superior knowledge and greater ability to serve as a board member. Similar to Tufano and Sevick (1997), we estimate this variable as compensation net of any effect by board size, fund family size, or the number of funds overseen.¹

4.2.6. Number of funds overseen by the independent director

The number of funds overseen by an independent director is motivated by the busyness hypothesis of Ferris, Jagannathan and Pritchard (2003). This variable allows us to determine if independent directors with multiple funds to oversee are either too busy to provide effective monitoring or possess superior skills as a director.

4.2.7. Independent director's tenure

Del Guercio, Dann and Partch (2003) note that directors who are long-serving can lose their ability to remain independent of the advisor's influence and consequently become less effective as representatives for the shareholder. Alternatively, the tenure of independent directors might control for their experience.

¹ We calculate the unexplained independent director compensation for each board by regressing the logarithm of the average independent director's compensation against the log of the number of funds overseen by each independent director, the log of the number of independent directors, and the log of total assets for the fund family. We find that independent director compensation is greater when the number of funds overseen by the director is higher and when the fund family size is bigger. We also find that the independent director compensation is positively related to the number of independent directors on the board. Similar to Tufano and Sevick (1997), we interpret the regression residuals as the unexplained independent director compensation.

4.2.8. Board committee structure

We construct separate dummy variables for the presence of a nominating, governance, audit, or pricing committee. The nominating and governance committees are typically restricted to independent directors and reflect the board's efforts at monitoring its own activities. The audit committee represents another dimension of fund governance and reviews the methods of financial reporting, the system of internal controls, and the audit process. The pricing committee monitors and establishes policies concerning the pricing of new shares, suggesting that the presence of such a committee discourages market timing abuses.

4.3. Profile of fund governance

In Table 1 we provide an overview of the fund governance structure for the all-family sample as well as for a sub-sample of families charged by regulators with wrong-doing in the recent mutual fund trading scandal. The unit of analysis in this table is the fund family. For fund families

Table 1
Governance characteristics of 448 mutual fund families

| | All families | | | | Scandal families |
|--|--------------|----------|----------|-----------|------------------|
| | Mean | Median | 25th | 75th | Mean |
| <i>Panel A: Board Structure</i> | | | | | |
| Number of fund families with one board | 398 | – | – | – | 15 |
| Number of fund families with multiple boards | 50 | – | – | – | 13 |
| Board size | 6.34 | 6.00 | 5.00 | 8.00 | 8.55 |
| Percent of board comprised of independent directors | 70% | 71% | 60% | 78% | 77% |
| Number of independent directors | 4.52 | 4.00 | 3.00 | 5.00 | 6.59 |
| Percent of boards with independent chairman | 13% | – | – | – | 10% |
| <i>Panel B: independent directors</i> | | | | | |
| Number of funds overseen by independent director | 18.54 | 6.00 | 2.00 | 20.00 | 62.20 |
| Average age of independent director | 60.57 | 61.64 | 57.00 | 65.11 | 63.41 |
| Independent director tenure | 8.20 | 7.59 | 5.00 | 10.11 | 7.72 |
| Percent independent directors with outside directorship | 42% | 33% | 0.00 | 67% | 47% |
| Compensation per independent director | \$32,650 | \$13,845 | \$5,000 | \$43,562 | \$115,186 |
| Total independent director compensation per board | \$199,554 | \$52,250 | \$16,000 | \$201,250 | \$798,523 |
| Percent independent directors holding more than \$100,000 of fund shares | 31% | 25% | 0% | 60% | 60% |
| Percent independent directors holding zero fund shares | 29% | 17% | 0% | 50% | 16% |
| <i>Panel C: committees</i> | | | | | |
| Percent of boards with audit committee | 98% | – | – | – | 97% |
| Percent of boards with nominating committee | 53% | – | – | – | 60% |
| Percent of boards with governance committee | 13% | – | – | – | 29% |
| Percent of boards with pricing committee | 27% | – | – | – | 17% |

Our sample includes 448 fund families for which we have data on board characteristics. We collect board characteristics variables from the statement of additional information (SAI) filed with the SEC. We use the last report in 2002. These variables are listed and defined in Appendix B. The statistics presented in this table are reported at the family level. For those fund families that have multiple boards, we first compute weighted-average board characteristics across all boards within the family. Scandal families refer to those fund families that have been charged by regulators in the recent fund scandal. The list of scandal families is obtained from both the *Morningstar* and *Wall Street Journal* websites and is provided in Appendix A.

with multiple boards, we first average across all boards within a family weighted by the number of funds overseen by each board.

Panel A contains a description of the board structure of both samples of fund families. Three hundred and ninety-eight out of the 448 fund families have just one board for all their funds, while the remaining 50 fund families have multiple boards. The corresponding numbers for the scandal families are 15 and 13. A typical board has 6 directors, with a mean of 70% of the board comprised of independent directors. In comparison, Tufano and Sevick (1997) report that a representative board from the 50 largest fund families in 1992 has 8.7 members, with an average of 71% of the board comprised of independent directors. The typical board is smaller in our all-family sample than that of Tufano and Sevick because our sample contains a large number of small fund families. The mean board size for the scandal funds, however, is comparable to that reported by Tufano and Sevick with a value of 8.55. Finally, we find that 13% of the all-family funds have an independent chairman, while only 10% of the scandal funds report an independent chairman.

In Panel B we more closely examine the characteristics of independent directors. The mean (median) independent director of the all-family sample oversees 18.54 funds. The directors of the scandal funds, however, oversee an average of 62 funds, which is more than three times as many funds. Independent directors for both samples of fund families have an average tenure of 8.20 years and are generally slightly over 60 years of age. On average, 42% (47%) of the all family (scandal) directors hold outside directorships. Compensation for the all-family sample averages \$32,650 per independent director, while total independent director compensation per board is \$199,554. The corresponding compensation for the scandal funds is much higher. The average independent director for these funds receives \$115,186 in compensation, with total independent director compensation exceeding \$798,000. The percentage of independent directors with substantial fund holdings is about the same as that with no investment in the fund. For the scandal funds, the independent directors more frequently hold equity in the funds they oversee. Sixty percent of these directors hold more than \$100,000 in fund shares compared to only 16% who hold zero shares.

We profile board committee structure in Panel C. There is essentially no difference between the samples in the percentage of boards that have auditing and nominating committees. The difference in board structure between the two samples occurs with the governance and pricing committees. The scandal families are more than twice as likely to have a governance committee as the all-family funds. The all-family funds, however, are more likely to have a pricing committee.

4.4. Characteristics of fund sample

In Panel A of Table 2 we present key fund characteristics to further profile our sample. We calculate these measures at the fund level rather than at the family level as in Table 1. The average size for our sample of 6228 funds is \$872.55 million, while funds in the scandal families are larger at \$1119 million. The average fund in the all-family (scandal) sample is 11.54 (12.74) years old, with an expense ratio of 1.11% (1.10%), a 12b-1 fee of 0.20% (0.24%), a total load of 1.65% (1.88%), and a turnover of 109% (103%) per year.

We observe that the boards of mutual funds consist of, on average, 76% independent directors, with even the 25th percentile reporting 68% independent directors. Funds in the scandal sample have a comparable 78% of their directors being independent. These results suggest that most of the mutual fund industry already had a supermajority of independent directors prior to the SEC's proposal of this requirement. Only 19% of funds in the all-fund sample and 11% of funds in the scandal sample, however, have an independent chairman, indicating that such a requirement would involve significant changes to the existing board structures of mutual funds. The mean

Table 2
Summary statistics for fund characteristics

| | All funds | | | | Funds in Scandal Families | | | |
|---------------------------------------|-----------------|-----------------|-----------------|-----------------|---------------------------|----------------|------------------------|----------------------|
| | Mean | Median | 25th percentile | 75th percentile | Mean | | | |
| <i>Panel A: univariate statistics</i> | | | | | | | | |
| Total net assets — \$mil | 872.55 | 154.33 | 46.14 | 534.56 | 1,119.14 | | | |
| Fund age — years | 11.54 | 9.00 | 6.00 | 15.00 | 12.74 | | | |
| Expense ratio — % | 1.11 | 1.02 | 0.68 | 1.48 | 1.10 | | | |
| 12b-1 fee — % | 0.20 | 0.09 | 0.00 | 0.34 | 0.24 | | | |
| Turnover — % | 109 | 62 | 29 | 122 | 103 | | | |
| Front load — % | 1.11 | 0.00 | 0.00 | 2.23 | 1.20 | | | |
| Total load — % | 1.65 | 0.07 | 0.00 | 3.84 | 1.88 | | | |
| Percent independent directors — % | 76 | 76 | 68 | 83 | 78 | | | |
| Percent independent chairman — % | 19 | — | — | — | 11 | | | |
| <i>Panel B: correlations</i> | | | | | | | | |
| | Log family size | Log fund size | Turnover | Total load | Expense ratio | Board size | % Independent director | Independent chairman |
| Log family size | 1.00 | | | | | | | |
| Log fund size | 0.48 (0.01) | 1.00 | | | | | | |
| Turnover | −0.08 (0.01) | −0.09 (0.01) | 1.00 | | | | | |
| Total load | 0.07 (0.01) | −0.04 (0.01) | −0.05 (0.01) | 1.00 | | | | |
| Expense ratio | −0.27 (0.01) | −0.35 (0.01) | 0.16 (0.01) | 0.52 (0.01) | 1.00 | | | |
| Board size | 0.54 (0.01) | 0.27 (0.01) | −0.07 (0.01) | 0.24 (0.01) | −0.02 (0.10) | 1.00 | | |
| % independent director | 0.32 (0.01) | 0.16 (0.01) | −0.00 (0.77) | 0.01 (0.54) | −0.06 (0.52) | 0.11 (0.01) | 1.00 | |
| Independent chairman | 0.11 (0.01) | 0.09 (0.01) | −0.02 (0.15) | −0.03 (0.01) | −0.11 (0.01) | 0.01 (0.49) | 0.24 (0.01) | 1.00 |

Our sample includes 6228 funds in 448 fund families for which we have data on board characteristics. We collect board characteristics variables from the statement of additional information (SAI) filed with the SEC. We use the last report in 2002. Fund and fund family characteristics are obtained from the CRSP Survivor-Bias Free Mutual Fund Database. These variables are listed and defined in Appendix B. Scandal families refer to those fund families that have been charged by regulators in the recent fund scandal. The list of scandal families is obtained from both the *Morningstar* and *Wall Street Journal* websites and is provided in Appendix A. We combine all share classes for each fund. In Panel B, both the fund size and the fund family size are measured by total net assets under management. Numbers in parentheses are *p*-values.

values for the above board structure variables differ from those reported in Table 1 because the average is estimated across individual funds rather than across fund families.

Panel B contains a correlation analysis of the variables presented in Panel A. Several relations are noteworthy. Larger fund families tend to have bigger boards and a higher percentage of independent directors. The incidence of an independent chairman is also positively related to family size. We note that as the percentage of independent directors increases, so too does the frequency of independent chairmen. Expense ratios are inversely related to both fund size and fund family size. One might argue that this reflects the existence of economies of scale with

respect to fund expense ratios. Expense ratios are also positively related to total load. The percentage of independent directors and the presence of independent chairmen are both negatively related to expense ratios. The magnitude of these correlations, however, is only modest. We examine the relation between fund expense ratios and board characteristics more formally in the following section.

In Table 3 we further examine our sample of mutual funds by presenting a listing of their investment objectives and the corresponding dollar value of their assets under management. The CRSP database contains 24 different Investment Company Data, Inc (ICDI) investment objective codes. In 2002, there are only two “Special Funds” and no “Option Income” funds in our sample. Consequently, we remove these two categories and are left with 22 investment objective categories. We observe that taxable money market funds are the most popular, accounting for over 22% of all assets invested in mutual funds. Long-term growth is the next most popular investment objective, accounting for over 13.3% of all mutual fund assets. Growth and income follows third, representing 11.5% of all capital invested in mutual funds. Government securities money market, high quality bonds, and aggressive growth then follow in popularity. Utility funds and precious metals appear to be the least popular, with their combined total representing less than 0.3% of all mutual fund assets.

Table 3
Frequency distribution of ICDI investment objectives of sample funds, 2002

| Investment objective code | Description | Number of Funds | Investment objective TNA (\$billion) | Percent of TNA of All investment objectives (%) |
|---------------------------|---|-----------------|--------------------------------------|---|
| MT | Taxable money market fund | 321 | 1,225 | 22.54 |
| LG | Long-term growth | 890 | 723 | 13.31 |
| GI | Growth and income | 477 | 625 | 11.50 |
| MG | Government securities money market fund | 283 | 422 | 7.77 |
| BQ | High quality bonds | 428 | 352 | 6.48 |
| AG | Aggressive growth | 680 | 312 | 5.74 |
| MF | Tax-free money market fund | 320 | 257 | 4.73 |
| BL | Balanced | 196 | 203 | 3.74 |
| IE | International equities | 558 | 190 | 3.50 |
| IN | Income | 80 | 156 | 2.87 |
| MS | Single-state municipal bond fund | 515 | 153 | 2.82 |
| MQ | High quality municipal bond fund | 217 | 149 | 2.74 |
| GE | Global equity | 148 | 110 | 2.02 |
| SF | Sector funds | 388 | 107 | 1.97 |
| GM | Ginnie Mae funds | 74 | 107 | 1.97 |
| GS | Government securities | 187 | 103 | 1.90 |
| BY | High-yield bonds | 125 | 87 | 1.60 |
| TR | Total return | 154 | 69 | 1.27 |
| GB | Global bonds | 113 | 42 | 0.77 |
| MY | High-yield money market fund | 25 | 25 | 0.46 |
| UT | Utility funds | 29 | 12 | 0.22 |
| PM | Precious metals | 20 | 4 | 0.07 |
| TOTAL | | 6228 | 5434 | 100 |

Our sample includes 6,228 funds in 448 fund families for which we have data on board characteristics. We collect board characteristics variables from the statement of additional information (SAI) filed with the SEC. We use the last report in 2002. Fund and fund family characteristics are obtained from the CRSP Survivor-Bias Free Mutual Fund Database. We combine all share classes for each fund. The CRSP database contains 24 different ICDI investment objective codes. In 2002, there are only two “Special Funds” and no “Option Income” funds in our sample. We remove these two categories and are left with 22 investment objective categories.

5. Board characteristics and the incidence of fund scandals

Recent scandals involving late trading and improper market timing have motivated the SEC to propose two new rules regarding how mutual funds are governed. The SEC believes that these scandals are the result of a breakdown in fund governance, specifically in the board of directors. Hence it is natural to begin our empirical analysis by examining whether the scandals are related to the governance characteristics of funds. In particular, we examine the extent to which the scandals are related to the presence of an independent chair and the percentage of independent directors. If these new requirements are well designed and chair/board independence is critical to effective fund governance, then we should expect a higher incidence of scandal among those funds with insider chairmen and fewer independent directors.

We use two samples on which to undertake our empirical analysis of fund scandals. The first is termed the full sample and consists of 448 fund families, including the 28 fund families which are characterized as scandal families.² The second sample is a matched sample constructed on the basis of board chair independence. It consists of those 62 fund families having an independent board chair as well as 62 firms lacking an independent board chair and matched on the basis of total family assets. A total of 124 fund families are included in the matched sample. We also conduct our analyses of fund fees and fund performance using this matched sample approach. The results are quantitatively similar to those using the full sample and hence are not separately reported.

In [Table 4](#) we present the results of a logit analysis relating fund governance characteristics to the likelihood of a fund scandal for each of these samples. In addition to coefficient estimates, we also report the odds ratio associated with each explanatory variable. The odds ratio is useful for assessing the economic significance associated with dummy variables. Since many of our explanatory variables are dummy variables including those capturing the presence of an independent chairman and various board committees, we present the odds ratio instead of the marginal effects which are more appropriate for continuous variables.

We observe that those measures of fund governance which have attracted the most amount of public and regulatory attention fail to exhibit any statistical significance. Specifically, the probability of a fund scandal is not significantly related to the presence of an independent chairman or the percentage of independent directors. These results hold for both samples.

Other governance variables such as the percent of independent directors holding zero fund shares, independent director tenure, and the existence of either a board nominating or governance committee are likewise statistically insignificant across both samples. These results are consistent with previous research by [Gerety and Lehn \(1997\)](#) on the causes of accounting fraud in corporations. Gerety and Lehn find that internal governance structures and the use of accounting based accounting executive compensation are unimportant in affecting the likelihood of committing accounting fraud.

² We choose to conduct this analysis at the fund family level (as opposed to the fund level) for several reasons. First, only 50 of the 448 fund families have multiple boards. The corresponding number for the scandal sample is 10 out of 28. Even for those families with multiple boards, their boards often share the same characteristics such as the percentage of independent chairman and various committees, including the pricing committee. Second, funds in the same family often share common marketing, compliance, and other back office functions, including the same transfer agent. Indeed, one might argue that these parties are more responsible for market timing and late trading than portfolio managers, who are mainly responsible for portfolio management. Finally, the analysis at the family level is also more amenable to the estimation of a logit or probit model. Based on our estimate, the number of implicated funds represents a very small fraction of all U.S. mutual funds (about 1%). This presents an identification problem in empirical analysis using a logit or probit approach.

Table 4
Logit analyses of fund scandals

| | All family sample | | | Matched sample | | |
|---|-------------------|-----------------|------------|----------------|-----------------|------------|
| | Coefficient | <i>p</i> -value | Odds ratio | Coefficient | <i>p</i> -value | Odds ratio |
| Intercept | -9.730 | 0.001 | – | -7.028 | 0.127 | – |
| Log of fund family total net asset | 0.814 | 0.001 | 2.257 | 0.638 | 0.063 | 1.893 |
| Board size | -0.002 | 0.986 | 0.998 | -0.038 | 0.856 | 0.963 |
| Percent of independent directors | 0.700 | 0.800 | 2.014 | 0.165 | 0.968 | 1.180 |
| Independent chairman dummy | -1.166 | 0.142 | 0.312 | -1.168 | 0.211 | 0.311 |
| Percent of independent directors holding zero fund shares | -0.674 | 0.574 | 0.510 | -4.213 | 0.114 | 0.015 |
| Unexplained independent director compensation | 1.546 | 0.011 | 4.691 | 1.299 | 0.188 | 3.665 |
| Log of number of funds overseen by independent director | 0.751 | 0.019 | 2.118 | 1.016 | 0.073 | 2.763 |
| Log of independent director tenure | -0.994 | 0.106 | 0.370 | -1.236 | 0.216 | 0.291 |
| Nominating committee dummy | -0.304 | 0.606 | 0.738 | -1.073 | 0.270 | 0.343 |
| Governance committee dummy | -0.375 | 0.583 | 0.688 | 0.142 | 0.887 | 1.153 |
| Pricing committee dummy | -1.746 | 0.020 | 0.175 | -1.518 | 0.170 | 0.219 |
| <i>N</i> | 448 | | | 124 | | |
| Pseudo <i>R</i> -squared | 0.45 | | | 0.47 | | |

Our sample includes 448 fund families for which we data on board characteristics. We collect board characteristics variables from the statement of additional information (SAI) filed with the SEC. We use the last report in 2002. Fund and fund family characteristics are obtained from the CRSP Survivor-Bias Free Mutual Fund Database. We obtain a list of fund families that have been charged by regulators from both the *Morningstar* and *Wall Street Journal* websites. This list can be found in Appendix A. The matched sample consists of those 62 fund families having an independent board chair as well as 62 firms lacking an independent board chair and matched on the basis of total family assets. The dependent variable is equal to 1 for scandal fund families and 0 otherwise. Coefficients that are statistically significant at the 5% level or higher are in bold. Appendix B provides detailed variable definitions.

We find that several of the governance variables appear to possess explanatory power for the likelihood of a fund scandal in our analysis using the all-family sample. Greater levels of unexplained independent director compensation imply a higher likelihood of a fund scandal, consistent with arguments that high levels of compensation provide an incentive for directors to seek agreement with the fund sponsor. We find that there is a busyness effect, with the number of funds overseen by independent directors positively associated with the likelihood of a scandal. Although Ferris, Jagannathan and Pritchard (2003) fail to find a busyness effect, their sample is restricted to public non-financial firms where the average number of directorships held is less than 2 compared to an average of over 18 fund boards on which our sample directors sit.

The other governance variable that is statistically significant is the dummy variable capturing the presence of a pricing committee. Specifically, the likelihood of a fund scandal is negatively related to the presence of a pricing committee. Based on the odds ratio presented in the table, a fund family that does not have a pricing committee is approximately five times more likely to have been implicated in the recent fund scandal than those with a pricing committee.³ Given that virtually all of the scandal funds have been charged with market timing, it is not surprising that the presence of a pricing committee is inversely related to the likelihood of being implicated in a

³ The odds ratio for the pricing committee dummy is 0.175, indicating that the probability of a fund scandal for a fund family with a pricing committee is 17.5% of that of an otherwise identical fund family without a pricing committee.

trading scandal. This result offers limited evidence consistent with monitoring by mutual fund boards on behalf of fund shareholders.

We also find that larger fund families are more likely to be implicated in a fund scandal. There are several reasons why this might occur. First, larger fund families might be more difficult to monitor due to organizational complexity and diseconomy. Second, larger fund families might be more attractive to market timers and other professional traders because they offer the potential for greater trading profits. Third, federal and state regulators might have a stronger incentive to uncover violations in larger fund companies because large fund families impact a greater number of investors.

Because the number of scandal fund families is relatively small, we also estimate a probit model to gauge the robustness of our results. These findings are contained in Table 5. The results from the probit analysis are qualitatively identical to that of the logit analysis. The percentage of independent directors and the presence of an independent board chairman remain unrelated to the probability of a fund scandal, regardless of the sample used. We continue to find for the all-family sample that the probability of a fund scandal is positively associated with the fund family size, the number of funds overseen by each director, and unexplained independent director compensation, but is negatively related to the presence of a pricing committee. All of these variables remain statistically insignificant for the matched sample.

We conclude from Tables 4 and 5 that those aspects of fund governance which have attracted the current attention of the SEC, specifically board and chair independence, are unrelated to the likelihood that a fund will become entangled in a trading scandal. Such a result casts further doubt on the usefulness of the recently proposed SEC rule changes.

Table 5
Probit analyses of fund scandals

| | All family sample | | Matched sample | |
|---|-------------------|-----------------|----------------|-----------------|
| | Coefficient | <i>p</i> -value | Coefficient | <i>p</i> -value |
| Intercept | -5.180 | 0.001 | -3.635 | 0.140 |
| Log of fund family total net asset | 0.462 | 0.001 | 0.363 | 0.060 |
| Board size | 0.005 | 0.942 | -0.023 | 0.845 |
| Percent of independent directors | 0.037 | 0.980 | -0.124 | 0.956 |
| Independent chairman dummy | -0.709 | 0.104 | -0.720 | 0.163 |
| Percent of independent directors holding zero fund shares | -0.253 | 0.503 | -2.479 | 0.073 |
| Unexplained independent director compensation | 0.869 | 0.008 | 0.729 | 0.183 |
| Log of number of funds overseen by independent director | 0.377 | 0.025 | 0.568 | 0.087 |
| Log of independent director tenure | -0.533 | 0.091 | -0.755 | 0.188 |
| Nominating committee dummy | -0.188 | 0.550 | -0.594 | 0.275 |
| Governance committee dummy | -0.254 | 0.503 | 0.034 | 0.949 |
| Pricing committee dummy | -0.996 | 0.013 | -0.877 | 0.154 |
| <i>N</i> | 448 | | 124 | |
| Pseudo <i>R</i> -squared | 0.45 | | 0.47 | |

Our sample includes 448 fund families for which we data on board characteristics. We collect board characteristics variables from the statement of additional information (SAI) filed with the SEC. We use the last report in 2002. Fund and fund family characteristics are obtained from the CRSP Survivor-Bias Free Mutual Fund Database. We obtain a list of fund families that have been charged by regulators from both the *Morningstar* and *Wall Street Journal* websites. This list can be found in Appendix A. The matched sample consists of those 62 fund families having an independent board chair as well as 62 firms lacking an independent board chair and matched on the basis of total family assets. The dependent variable is equal to 1 for scandal fund families and 0 otherwise. Coefficients that are statistically significant at the 5% level or higher are in bold. Appendix B provides detailed variable definitions.

6. Board characteristics and fund fees

The SEC's proposed rule changes concerning chair and board independence seek to improve board effectiveness. Tufano and Sevick (1997) and Del Guercio, Dann and Partch (2003) argue that the level of fees charged by a fund is an important measure of board effectiveness. Further, fund fees are at the center of the agency conflict between fund management companies and fund shareholders. Higher fees enrich the fund management company, but represent additional costs to the fund shareholders. Consequently, this section focuses its analysis on the relation between board and chair independence and fund fees. This analysis provides additional evidence on the benefits and costs associated with the two SEC proposed rules.

Berk and Green (2004) develop a rational model of active portfolio management, in which fund fees are endogenous. Furthermore, due to the competitive provision of capital, investors earn zero excess returns from any fund. Hence, one might argue that fund fees do not matter. Berk and Green's model, however, requires assumptions of a frictionless market and complete investor rationality. Neither of these assumptions are likely to hold in practice. For example, Elton, Gruber and Busse (2004) show that expense ratios among 52 S and P 500 index funds, which are basically a "commodity," vary from 6 to 135 basis points. One might expect investor cash flows to go to the funds that charge the lowest fees or offer the highest return. Yet a large amount of new cash flow goes to the poorest-performing funds. Thus, in the presence of frictions and investor irrationality, fund fees might serve as an important measure of board effectiveness.

6.1. Dependent variables

We use three different measures of fund fees. The first is the fund's expense ratio, which includes the management fee, marketing and distribution (12b-1) fees, and other operating expenses such as custodian fees and shareholder service fees, but does not include load charges. Our second measure of fund fees is the fund's expense ratio plus 1/7 of the total load charges, which reflects the assumption that investors hold their shares for an average of seven years. Our final measure is the fund's operating expense ratio, which is defined as the fund's expense ratio less the 12b-1 fee. We exclude the 12b-1 fees since they are used primarily to compensate broker-dealers for selling efforts and reflect a different set of expenses from those associated with the direct management of the fund's assets.⁴

6.2. Control variables

In addition to the governance variables that we discuss in Section 4.2, we include in our regression analysis a number of control variables which might influence the level of fund fees. The following discussion contains a brief description of these control variables.

6.2.1. Fund and fund family size

Similar to previous studies, we include the logarithm of total net assets for both the fund and its sponsoring family. These variables control for possible economies of scale in the mutual fund industry.

⁴ We thank Sean Collins, John Rea, and Brian Reid of the Investment Company Institute for their suggestion to examine the operating expense ratio.

6.2.2. Fund age

This is another control variable used by both Tufano and Sevick (1997) and Del Guercio, Dann and Partch (2003) in their examinations of fund fees. Younger funds might be subsidized by the sponsor, resulting in lower fees. Alternatively, newer funds might experience high start-up costs and require that higher fees be charged.

6.2.3. Index and institutional fund dummy variables

We include separate dummy variables to reflect whether a fund is either an index or an institutional fund. Both should be associated with lower fees. Index funds require comparatively little management and consequently should experience lower operating expenses. Institutional funds require a higher initial minimum investment balance and typically have fewer accounts to service, also resulting in a lower level of operating expenses. We construct these two variables by using data from Morningstar Principia.

6.2.4. Fund performance

It is possible that high fees might be justifiable by superior performance. Thus, it becomes useful to control for performance in our analysis of fund fees. Hence, we include as a regressor the percentile ranking of each fund's total return within each investment objective during 2001.

6.2.5. Investment objective dummy variables

We include a series of dummy variables to capture the investment objectives of the sample funds. Tufano and Sevick (1997) argue that funds investing in different asset classes are likely to have varying operating costs, reflecting in part different research and analysis needs.

6.3. Methods

In our regression analysis of fund fees, we use four different specifications. The first specification is a pooled model, which uses ordinary least square (OLS) regression and treats each fund as a separate and independent observation. This specification is consistent with the fact that the Investment Company Act 1940 treats each fund as a separate legal entity. A drawback of this specification is that since many independent variables (including board structure variables) are common among funds within each fund family, the pooled regression approach likely understates the standard error and overstates the statistical significance for these variables.

Our second specification uses a Fama and Macbeth (1973) approach.⁵ We first estimate an OLS regression for all funds in each investment objective and then report the average regression coefficients across all investment objectives. We then evaluate the statistical significance for the average regression coefficient by using the standard deviation of the regression coefficients as the standard error. Since there are far fewer funds from the same family within each investment objective, the Fama–MacBeth approach mitigates the problem of overstated statistical significance for family level variables.

Our third specification treats each fund family as a single observation, with both the dependent and independent variables measured as TNA-weighted averages of fund-level variables. This approach eliminates the problem of overstated statistical significance associated with the pooled

⁵ We use the terminology of Tufano and Sevick (1997) to describe this specification. The original Fama–MacBeth method estimates a separate cross-sectional regression for each time period and then computes the average regression coefficient across time. In this case, we estimate a separate regression for each investment objective.

Table 6
Fund fees and board characteristics

| | Pool (OLS) | Fama–MacBeth | Family-average (OLS) | Family-average (WLS) |
|---|------------------------|-----------------------|-----------------------|-----------------------|
| <i>Panel A: expense ratio</i> | | | | |
| Intercept | 1.915 (37.51) | 1.919 (4.96) | 2.296 (13.54) | 2.247 (14.99) |
| Board size | 0.019 (7.65) | 0.018 (2.97) | 0.022 (2.28) | 0.020 (2.57) |
| Percent of independent directors | 0.133 (2.64) | −0.154 (0.54) | 0.154 (0.85) | 0.192 (1.27) |
| Independent chairman dummy | 0.011 (0.79) | −0.011 (0.21) | −0.031 (0.55) | −0.043 (0.94) |
| Percent of independent directors holding zero fund shares | −0.004 (0.17) | −0.041 (0.86) | −0.008 (0.14) | −0.046 (0.84) |
| Unexplained independent director compensation | 0.108 (11.14) | 0.074 (2.62) | 0.002 (0.08) | 0.021 (0.89) |
| Log of number of funds overseen by independent director | 0.049 (6.38) | 0.059 (3.75) | −0.014 (0.48) | −0.017 (1.09) |
| Log of independent director tenure | 0.030 (2.61) | 0.035 (0.98) | 0.003 (0.08) | 0.014 (0.43) |
| Nominating committee dummy | − 0.022 (1.98) | −0.028 (1.37) | −0.034 (0.91) | −0.028 (0.90) |
| Governance committee dummy | −0.026 (1.92) | −0.065 (1.51) | −0.029 (0.47) | −0.046 (0.98) |
| Log of fund total net assets | − 0.041 (10.53) | −0.095 (1.46) | − 0.108 (3.57) | − 0.103 (7.48) |
| Log of fund family total net assets | − 0.050 (11.71) | − 0.050 (3.08) | −0.010 (0.37) | − |
| Log of fund age | − 0.034 (3.66) | 0.015 (0.58) | −0.064 (1.66) | − 0.100 (2.76) |
| Lagged Performance Ranking | − 0.211 (11.48) | − 0.182 (2.89) | − 0.314 (3.80) | − 0.306 (3.88) |
| Index fund dummy | − 0.754 (28.08) | − 0.341 (3.71) | − 0.689 (4.20) | − 0.788 (5.38) |
| Institutional fund dummy | − 0.336 (17.90) | −0.440 (1.32) | − 0.271 (2.65) | − 0.260 (2.94) |
| Investment objective dummies | Included | − | Included | Included |
| <i>N</i> (or average <i>N</i>) | 5,926 | 269 | 448 | 448 |
| Adjusted <i>R</i> -squared | 0.57 | 0.49 | 0.62 | 0.65 |
| <i>Panel B: expense ratio plus amortized load</i> | | | | |
| Intercept | 1.881 (25.91) | 1.776 (4.42) | 2.432 (10.76) | 2.282 (10.80) |
| Board size | 0.038 (10.84) | 0.038 (4.59) | 0.043 (3.39) | 0.041 (3.73) |
| Percent of independent directors | 0.031 (0.44) | −0.262 (0.62) | 0.218 (0.90) | 0.302 (1.42) |
| Independent chairman dummy | 0.058 (3.01) | 0.044 (0.82) | −0.046 (0.60) | −0.045 (0.70) |
| Percent of independent directors holding zero fund shares | 0.081 (2.65) | 0.084 (1.69) | 0.040 (0.49) | 0.012 (0.16) |
| Unexplained independent director compensation | 0.161 (11.82) | 0.129 (4.58) | 0.022 (0.66) | 0.036 (1.10) |
| Log of number of funds overseen by independent director | 0.106 (9.75) | 0.101 (3.92) | −0.024 (0.62) | 0.019 (0.87) |
| Log of independent director tenure | 0.106 (6.59) | 0.102 (3.09) | 0.031 (0.63) | 0.029 (0.61) |
| Nominating committee dummy | −0.009 (0.54) | −0.040 (1.12) | −0.027 (0.63) | −0.013 (0.29) |
| Governance committee dummy | −0.007 (0.34) | −0.065 (1.01) | −0.033 (0.33) | −0.042 (0.63) |
| Log of fund total net assets | − 0.041 (7.41) | −0.081 (1.25) | − 0.212 (5.22) | − 0.153 (7.86) |
| Log of fund family total net assets | − 0.066 (10.72) | − 0.067 (2.58) | 0.045 (1.30) | − |
| Log of fund age | −0.011 (0.87) | 0.074 (1.84) | −0.097 (1.90) | −0.085 (1.65) |
| Lagged Performance Ranking | − 0.269 (10.27) | − 0.217 (2.84) | − 0.248 (2.25) | − 0.288 (2.60) |
| Index fund dummy | − 0.926 (24.23) | − 0.433 (3.77) | − 0.732 (3.35) | − 0.862 (4.17) |
| Institutional fund dummy | − 0.583 (21.84) | −0.668 (1.54) | − 0.350 (2.57) | − 0.361 (2.89) |
| Investment objective dummies | Included | − | Included | Included |
| <i>N</i> (or average <i>N</i>) | 5926 | 269 | 448 | 448 |
| Adjusted <i>R</i> -squared | 0.52 | 0.47 | 0.56 | 0.57 |
| <i>Panel C: operating expense ratio</i> | | | | |
| Intercept | 1.734 (43.90) | 1.729 (4.47) | 2.013 (13.10) | 2.058 (16.04) |
| Board size | 0.007 (3.63) | 0.004 (0.74) | 0.002 (0.27) | 0.002 (0.30) |
| Percent of independent directors | 0.174 (4.46) | −0.266 (0.81) | 0.122 (0.74) | 0.051 (0.39) |
| Independent chairman dummy | 0.005 (0.48) | −0.024 (0.36) | −0.010 (0.19) | −0.028 (0.72) |

Table 6 (continued)

| | Pool (OLS) | Fama–MacBeth | Family-average (OLS) | Family-average (WLS) |
|---|-----------------------|----------------------|----------------------|----------------------|
| <i>Panel C: operating expense ratio</i> | | | | |
| Percent of independent directors holding zero fund shares | -0.042 (2.53) | -0.086 (1.72) | -0.004 (0.06) | -0.050 (1.06) |
| Unexplained independent director compensation | 0.056 (7.48) | 0.029 (1.12) | -0.013 (0.58) | 0.012 (0.62) |
| Log of number of funds overseen by independent director | 0.011 (1.89) | 0.025 (1.48) | 0.014 (0.55) | -0.031 (2.38) |
| Log of independent director tenure | -0.022 (2.55) | 0.008 (0.25) | -0.004 (0.12) | 0.000 (0.01) |
| Nominating committee dummy | -0.035 (4.05) | -0.034 (2.44) | -0.052 (1.54) | -0.051 (1.91) |
| Governance committee dummy | -0.029 (2.70) | -0.025 (0.88) | -0.022 (0.40) | -0.030 (0.76) |
| Log of fund total net assets | -0.048 (16.13) | -0.109 (1.93) | -0.040 (1.45) | -0.081 (6.91) |
| Log of fund family total net assets | -0.037 (10.96) | -0.027 (2.35) | -0.058 (2.45) | - |
| Log of fund age | 0.011 (1.50) | 0.072 (4.01) | -0.006 (0.18) | -0.056 (1.79) |
| Lagged Performance Ranking | -0.089 (6.28) | -0.076 (1.63) | -0.174 (2.33) | -0.163 (2.42) |
| Index fund dummy | -0.607 (29.19) | -0.240 (3.66) | -0.594 (3.99) | -0.651 (5.20) |
| Institutional fund dummy | -0.158 (10.90) | -0.614 (1.09) | -0.203 (2.19) | -0.181 (2.39) |
| Investment objective dummies | Included | - | Included | Included |
| <i>N</i> (or average <i>N</i>) | 5926 | 269 | 448 | 448 |
| Adjusted <i>R</i> -squared | 0.61 | 0.48 | 0.62 | 0.67 |

Our sample includes 6228 funds in 448 fund families for which we have data on board characteristics. We collect board characteristics variables from the statement of additional information (SAI) filed with the SEC. We use the last report in 2002. Fund and fund family characteristics are obtained from the CRSP Survivor-Bias Free Mutual Fund Database. We classify index and institutional funds based on data from Morningstar Principia. We combine all share classes for each fund. The dependent variable is the fund expense ratio expressed in percentage terms in Panel A, is fund expense ratio plus amortized load in Panel B, and is operating expense ratio in Panel C. In the Pool (OLS) approach, we estimate the cross-sectional regression at the fund level using OLS. In the Fama–MacBeth approach, we estimate a cross-sectional regression at the fund level for each investment objective. In the Family-Average approach, we estimate a cross-sectional regression at the fund family level. In the Family Average (WLS) approach, we perform a weighted least square where the weight is the total assets under management by each fund family. Numbers in parentheses are *t*-statistics. Coefficients that are statistically significant at the 5% level or higher are in bold. Appendix B provides detailed variable definitions.

approach. A potential cost of implementing this family-average approach is that it suppresses variation across funds within a family. This would most likely affect the coefficients on fund-specific variables such as fund size, but not the coefficients on board characteristic variables.

Our last specification is similar to the above family-average approach except that each observation is weighted by the total assets managed by the corresponding fund family. This weighted family-average approach allows bigger families to have greater influence on the regression coefficients. After all, the bigger fund families are economically more important as they manage more assets and have a greater number of shareholders.

The preceding four specifications represent trade-offs between capturing variability in fund characteristics and avoiding overstated statistical significance. Consequently, when interpreting our results, we emphasize the consistency in estimates across methods rather than the findings attributable to any one approach. Since board characteristics are usually common across all funds within a family, we believe that the Fama–MacBeth and two family-average specifications are preferable to the pooled approach in examining the relation between fund fees and board characteristic variables.

In the following four subsections, we present our results concerning the relation between fund fees and fund governance characteristics. Section 6.4 contains the results for the fund expense ratio. Section 6.5 presents the results for the fund expense ratio plus an amortized load, while

Section 6.6 discusses our findings for the operating expense ratio. In Section 6.7, we explore the robustness of our results by using an instrumental variable approach. In Section 6.8, we re-examine our findings by performance quintiles.

6.4. Empirical results — fund expense ratio

Panel A of Table 6 presents our results regarding the fund expense ratio. We observe that the fund expense ratios are significantly positively related to board size. The coefficient on board size is statistically significant for all four model specifications that we use. The result is also economically significant. An increase of board size by 5 (roughly a two-standard deviation increase) is associated with an increase in the fund expense ratio by 9 basis points when using the pooled or Fama–MacBeth method or by 10–11 basis points when using the family-average approach. Recall from Table 2 that the median expense ratio is 1.02%. Therefore, the above result is economically meaningful. Our finding that funds with smaller boards charge lower fees is consistent with the results reported by Tufano and Sevick (1997) and Del Guercio, Dann and Partch (2003). Further, this finding supports Yermack's (1996) contention that larger boards are less effective in providing corporate monitoring.

We find no evidence that funds with a higher percentage of independent directors charge lower fees. In fact, three of the four coefficients for the percentage of independent directors are *positive*. When the pooled approach is used, the coefficient is positive and statistically significant. When the Fama–MacBeth or family-average approaches are used, whether equally-weighted or family size-weighted, the percentage of independent directors is not significantly related to fund expense ratios. Overall, we fail to find support for the hypothesis that higher percentages of independent directors are associated with lower fees. While both Tufano and Sevick (1997) and Del Guercio, Dann and Partch (2003) document a negative relation between the percentage of the board consisting of independent directors and fund expense ratios, they also find the result to be statistically insignificant when using the family-average approach.

The percentage of independent directors on a board might not inversely influence expense ratios because by 2002, the vast majority of funds already had a supermajority of independent directors. Indeed, our median sample fund had 76% independent directors in 2002 while even the 25th percentile fund reported 68% independent directors as shown in Table 2. Thus, there is relatively little cross-sectional variation in the percentage of independent directors across mutual funds, with supermajorities of independent directors already the industry norm in 2002. Our results suggest that the incremental benefit of requiring at least 75% independent directors is unlikely to be meaningful.

The other regressor in our model related to the new SEC proposals is the dummy variable for an independent chair. Our results indicate that the presence of an independent chairman is not significantly related to fund expense ratios. One of the coefficients on the independent chair dummy is positive while the other three are negative. Furthermore, none of these coefficients are statistically significant. These findings do not support the claim that funds with independent chairmen have more effective boards as measured by lower fees.

Our model of fund expense ratios also contains a number of other governance variables. The coefficients on the percentage of independent directors holding zero fund shares are statistically indistinguishable from zero. The positive coefficient on the number of funds overseen for two of the model specifications provides partial evidence for the overboarding of directors and their consequent inability to provide adequate monitoring. Similarly, our findings for unexplained independent director compensation are partially supportive of the claim that directors who receive

relatively large compensation might be less willing to jeopardize that income stream by contesting the fee proposals of the sponsor. The coefficients for the tenure of the independent directors are positive, but statistically significant in only one of the four regressions. As expected, the coefficients for the dummy variables capturing the presence or absence of either a nominating or governance committee are all negative. However, only one of these coefficients is statistically significant, implying the relative unimportance of these monitoring mechanisms to board effectiveness. We do not include a dummy variable for the presence of an audit committee because nearly all mutual fund boards have established such a committee as shown in [Table 1](#).

We include a number of control variables to address other factors which might influence the level of a mutual fund's expense ratio. Similar to previous studies of fund expense ratios, we find that larger funds or funds in larger families charge significantly lower fees, reflecting the existence of economies of scale in the mutual fund industry. We also find some evidence that younger funds tend to charge higher fees. As hypothesized, we find that both the index and institutional fund dummies are uniformly negatively associated with the expense ratio. The index fund dummy is statistically significant across all model specifications while the institutional dummy is significant for three of the specifications. These results are also economically significant. For example, when using the pooled approach, the expense ratio of an index fund is 75 basis points lower than that of an actively-managed mutual fund, while the expense ratio of an institutional fund is 34 basis points lower than that of a retail mutual fund.

Consistent with the literature on mutual fund performance, we find a negative relation between fund expense ratios and lagged fund performance. This result is statistically significant across all four model specifications. We also find that fund expense ratios are related to investment objectives. For example, we find that aggressive growth, international equity, and sector funds charge significantly higher fees than money market and bond funds. For brevity, however, these results are not reported.

6.5. Empirical results — expense ratio plus amortized load

In Panel B of [Table 6](#) we further examine the relation between the fees a fund charges its shareholders and its governance characteristics through a more comprehensive measure of fees. By incorporating the load fees and assuming that investors hold their fund shares for seven years, we obtain a measure of fund fees that is similar to that used by [Tufano and Sevick \(1997\)](#) and [Sirri and Tufano \(1998\)](#).

The results in Panel B confirm our earlier findings of the relation between fund governance characteristics and expense ratios. Specifically, we find strong evidence that board size is positively related to fund fees. We find no evidence that funds with a higher percentage of independent directors or an independent chairman charge lower fees. In fact, when the pooled approach is used, the independent chairman dummy is significantly positively related to fund fees. When the Fama–MacBeth or family-average approaches are used, the coefficients on the percentage of independent directors or independent chairman dummy become statistically insignificant.

The other governance variables, in general, provide little evidence of a consistently significant relation with fund expenses. Our results, however, weakly suggest that funds whose independent directors oversee a large number of funds, are highly compensated, and have a long board service are associated with higher expense ratios. Overall, supplementing the expense ratio with an amortized load does not significantly change our findings from those based on simply the expense ratio. Our result that the level of fund fees is unrelated to the percentage of independent directors

and the presence of independent chairmen casts doubt on the potential usefulness of the two new SEC rules requiring greater board independence.

6.6. Empirical results — operating expense ratio

In Panel C of Table 6 we investigate the relation between fund governance and the operating expense ratio. The operating expense ratio is defined as the fund's expense ratio minus its 12b-1 fees. The 12b-1 fees are used to satisfy distribution and related expenses, especially to compensate broker-dealers for investment advice and ongoing service to the fund's shareholders. Since these expenses are inherently different from those associated with the management of the fund's assets, it is appropriate to deduct them from the expense ratio when measuring the fund's expenses attributable solely to its operations and asset management activities.

The results from our regression analysis using the operating expense ratio remain similar to our earlier findings regarding the two variables of current policy interest to the SEC. Specifically, the presence of an independent chairman retains its statistically insignificant relation with fund expenses while the percentage of independent directors is either positively or insignificantly associated with the level of fund expenses. Board size continues to be positively related to fund expenses, but its coefficient is statistically significant in only one of the four model specifications. The results for the other governance variables are generally insignificant, with only a weak suggestion that the number of funds overseen by the independent directors has a positive relation with the fund's operating expense ratios.

We conclude from this analysis that adjusting the expense ratio by the amount of the 12b-1 fees does not meaningfully alter our findings relative to those based on either the expense ratio or the expense ratio supplemented with an amortized load. Indeed, our most important finding appears highly robust to alternative measures of fund fees. Regardless of which measure we use, we find no evidence that funds having an independent chairman or a higher percentage of independent directors charge lower fees. These results cast doubt on the usefulness of requiring an independent board chair or a supermajority of independent directors as public policy.

6.7. Endogeneity

Like many studies of corporate and fund governance including Tufano and Sevick (1997), Del Guercio, Dann and Partch (2003), and Hermalin and Weisbach (2003), we note that board structure might be endogenous. In particular, both fees and board structure might be driven by the same set of underlying variables. The presence of this sort of endogeneity, however, tends to produce statistically significant relations. For example, Tufano and Sevick (1997) argue that if funds that are more likely to seek higher fees also tend to select less effective boards, then one would observe a statistically significant relation between board structure and fees. Such a statistical relation, however, cannot be interpreted as causal. The fact that we fail to find a statistically significant relation between board independence and fund fees suggests that our results are not substantially plagued by this sort of endogeneity.

Nonetheless, we address the issue of potential endogeneity by using an instrumental variable approach. Our choice of instruments is based on previous studies concerning the determinants of board organization. Hermalin and Weisbach (1998), Linck, Netter and Yang (2005) and Raheja (2005) argue that board structure should be related to the firm's complexity, the cost of monitoring and advising, the alignment of insider and outsider incentives, the public and private

Table 7
Fund fees and board characteristics: instrumental variable approach

| | Dependent Variable | | |
|-------------------------------------|----------------------|-----------------------------------|-------------------------|
| | Expense Ratio | Expense Ratio Plus Amortized Load | Operating Expense Ratio |
| Intercept | 2.251 (3.65) | 2.779 (3.10) | 2.019 (3.97) |
| Board size | 0.043 (1.29) | 0.088 (1.79) | 0.013 (0.48) |
| Percent of independent directors | 0.080 (0.08) | -0.505 (0.33) | -0.004 (0.01) |
| Independent chairman dummy | -0.030 (0.13) | -0.318 (0.98) | 0.009 (0.05) |
| Log of fund total net assets | -0.084 (3.69) | -0.189 (5.70) | -0.027 (1.44) |
| Log of fund family total net assets | -0.022 (1.16) | 0.035 (1.27) | -0.054 (3.49) |
| Log of fund age | -0.126 (2.87) | -0.165 (2.58) | -0.054 (1.49) |
| Lagged Performance Ranking | -0.285 (3.75) | -0.269 (2.43) | -0.173 (2.76) |
| Index fund dummy | -0.756 (5.22) | -0.845 (4.02) | -0.603 (5.06) |
| Institutional fund dummy | -0.248 (2.86) | -0.349 (2.77) | -0.167 (2.34) |
| Investment objective dummies | Included | Included | Included |
| <i>N</i> | 448 | 448 | 448 |
| Adjusted R-squared | 0.62 | 0.52 | 0.66 |

Our sample includes 448 fund families for which we have data on board characteristics. We collect board characteristics variables from the statement of additional information (SAI) filed with the SEC. We use the last report in 2002. Fund and fund family characteristics are obtained from the CRSP Survivor-Bias Free Mutual Fund Database. We classify index and institutional funds based on data from Morningstar Principia. We combine all share classes for each fund. We estimate cross-sectional regressions at the fund family level. We use an instrumental variable approach. We set board size, percent of independent directors, and independent chairman dummy as endogenous. We use the following variables as our instruments: fund family age, number of distinct investment objectives for each fund family, turnover, tenure of the portfolio manager, whether the fund management company is public or private, and the fund ownership of both insider and independent directors. Numbers in parentheses are *t*-statistics. Coefficients that are statistically significant at the 5% level or higher are in bold. Appendix B provides detailed variable definitions.

benefits of advising, CEO age and tenure, and information asymmetry. While Linck, Netter, and Yang only examine industrial firms, the arguments of Hermalin and Weisbach and Raheja apply to more general settings.

Based upon the theoretical and empirical findings contained in these earlier studies, we choose the following variables as our instruments: fund family age, number of distinct investment objectives for each fund family (which proxies for complexity), turnover of assets held by the fund, tenure of the portfolio manager, whether the fund management company is public or private, and the fund ownership of both insider and independent directors.⁶ Our qualitative results are not driven by any specific instrument employed in our analysis. Indeed, we find that the empirical results are robust to alternative specifications of the instruments.

Since many of the above instruments are available only at the fund family level, we conduct our instrumental variable analysis by using the family average method previously explained in Section 6.3. Furthermore, since the number of instruments must exceed the number of endogenous variables, we include only the three most important board structure variables in our analysis: independent chair dummy, the percent of independent directors, and board size.

⁶ Private conversations with staff at the Investment Company Institute reveal that many funds sponsored by banks and insurance companies have independent board chairman for exogenous reasons. So the public/private nature of the fund family provides an excellent instrument for our analysis.

Table 7 contains our results. Board size continues to be positively related to fees. When the dependent variable is measured as the expense ratio plus amortized load, the coefficient is statistically significant at the 10% level. The coefficients, however, are statistically insignificant for the other two measures of fund fees. More importantly, we continue to find that neither the percent of independent directors nor the independent chairman dummy variable are significantly related to fund fees, regardless of which measure of fund fees we use. We conclude from Table 7 that the statistically insignificant relation between fund fees and the two measures of current SEC policy interest is not due to endogeneity.

6.8. By performance quintiles

In the above analysis, we find no evidence that funds with a higher percentage of independent directors or the presence of an independent chairman charge lower fees. However,

Table 8
Fund performance and board characteristics

| Dependent variable: investment-objective-adjusted/normalized fund returns | | | | |
|---|----------------------|---------------------|----------------------|----------------------|
| | Pool (OLS) | Fama–MacBeth | Family-average (OLS) | Family-average (WLS) |
| Intercept | –0.156 (1.47) | –0.206 (0.51) | –0.540 (1.50) | –0.315 (0.96) |
| Board size | 0.004 (0.76) | 0.034 (1.29) | 0.042 (2.00) | 0.031 (1.70) |
| Percent of independent directors | –0.138 (1.25) | –0.442 (1.40) | 0.424 (1.04) | 0.104 (0.29) |
| Independent chairman dummy | 0.029 (0.98) | –0.090 (1.16) | –0.199 (1.56) | –0.097 (0.91) |
| Percent of independent directors holding zero fund shares | –0.007 (0.16) | 0.449 (1.17) | 0.071 (0.53) | 0.006 (0.04) |
| Unexplained independent director compensation | –0.062 (2.90) | 0.146 (1.07) | –0.013 (0.24) | –0.041 (–0.77) |
| Log of number of funds overseen by independent director | –0.031 (1.85) | 0.035 (0.84) | –0.093 (1.45) | –0.091 (2.67) |
| Log of independent director tenure | 0.007 (0.29) | 0.208 (1.80) | –0.156 (1.86) | –0.145 (1.84) |
| Nominating committee dummy | 0.020 (0.79) | 0.095 (1.23) | 0.027 (0.31) | 0.036 (0.47) |
| Governance committee dummy | –0.047 (1.55) | 0.020 (0.40) | –0.058 (0.42) | –0.054 (0.49) |
| Log of fund total net assets | 0.029 (3.56) | –0.059 (0.93) | 0.101 (1.52) | 0.093 (3.11) |
| Log of fund family total net assets | 0.017 (1.78) | 0.001 (0.06) | –0.017 (0.29) | – |
| Log of fund age | 0.017 (0.88) | –0.041 (0.48) | 0.083 (1.00) | 0.065 (0.80) |
| Lagged Performance Ranking | 0.467 (39.06) | 0.402 (4.79) | 0.517 (10.93) | 0.533 (10.82) |
| Index fund dummy | –0.059 (1.04) | 0.048 (0.89) | 0.231 (0.63) | 0.153 (0.45) |
| Institutional fund dummy | 0.023 (0.58) | –0.119 (1.53) | –0.101 (0.52) | –0.057 (0.32) |
| <i>N</i> (or average <i>N</i>) | 5926 | 269 | 448 | 448 |
| Adjusted <i>R</i> -squared | 0.23 | 0.46 | 0.31 | 0.33 |

Our sample includes 6228 funds in 448 fund families for which we have data on board characteristics. We collect board characteristics variables from the statement of additional information (SAI) filed with the SEC. We use the last report in 2002. Fund and fund family characteristics are obtained from the CRSP Survivor-Bias Free Mutual Fund Database. We classify index and institutional funds based on data from Morningstar Principia. We combine all share classes for each fund. The dependent variable is annual fund return in 2002 minus the investment objective average return and then divided by the cross-sectional standard deviation of fund returns within the investment objective. In the Pool (OLS) approach, we estimate the cross-sectional regression at the fund level using OLS. In the Fama–MacBeth approach, we estimate a cross-sectional regression at the fund level for each investment objective. In the Family-Average approach, we estimate a cross-sectional regression at the fund family level. In the Family Average (WLS) approach, we perform a weighted least square where the weight is the total assets under management by each fund family. Numbers in parentheses are *t*-statistics. Coefficients that are statistically significant at the 5% level or higher are in bold. Appendix B provides detailed variable definitions.

it might be that board oversight is more valuable for funds with poor performance. We test this hypothesis by assigning all funds into five quintiles based on past-year performance and examining the relation between board characteristic and fund fees separately for each performance quintile.

In un-tabulated results we find that the coefficient for the percentage of independent directors is statistically insignificant within each quintile. We also observe that the coefficients for the independent chairman dummy variable are consistently insignificant. Overall, we obtain little evidence that board independence is more important for poorly performing funds.

7. Fund performance, turnover, and board characteristics

7.1. Fund performance and board structure

To further evaluate the effectiveness of the proposed SEC rule changes, we examine the association between fund performance and board characteristics, especially board and chair

Table 9
Fund turnover and board characteristics

| | All | Past-year performance quintiles | | |
|---|-----------------------|---------------------------------|----------------------|----------------------|
| | | 1 (worst) | 3 | 5 (best) |
| Intercept | 0.014 (0.09) | 0.304 (0.86) | -0.299 (0.72) | -2.136 (3.84) |
| Board size | 0.018 (2.55) | 0.017 (1.06) | 0.028 (1.76) | 0.003 (0.19) |
| Percent of independent directors | 0.106 (0.73) | 0.495 (1.22) | 0.412 (1.29) | 0.204 (0.69) |
| Independent chairman dummy | 0.022 (0.55) | 0.125 (1.26) | -0.086 (0.96) | 0.099 (1.19) |
| Percent of independent directors holding zero fund shares | 0.153 (2.52) | 0.334 (2.14) | 0.270 (1.94) | -0.040 (0.32) |
| Unexplained independent director compensation | 0.112 (4.19) | 0.031 (0.43) | 0.078 (1.26) | 0.051 (0.96) |
| Log of number of funds overseen by independent director | 0.056 (2.65) | 0.118 (2.28) | 0.038 (0.71) | 0.060 (1.48) |
| Log of independent director tenure | -0.071 (2.24) | -0.078 (1.00) | -0.025 (0.35) | 0.111 (1.65) |
| Nominating committee dummy | 0.015 (0.47) | -0.011 (0.14) | -0.016 (0.22) | 0.100 (1.49) |
| Governance committee dummy | -0.027 (0.72) | -0.094 (1.01) | 0.066 (0.77) | -0.074 (0.90) |
| Log of fund total net assets | -0.070 (6.16) | -0.012 (0.41) | -0.050 (1.98) | -0.081 (3.44) |
| Log of fund family total net assets | 0.016 (1.37) | -0.083 (2.76) | -0.004 (0.15) | 0.038 (1.57) |
| Log of fund age | 0.022 (0.84) | 0.029 (0.46) | -0.080 (1.31) | -0.014 (0.25) |
| Lagged Performance Ranking | -0.486 (9.40) | 0.009 (0.01) | -0.075 (0.14) | 1.287 (2.48) |
| Index fund dummy | -1.399 (19.76) | -1.613 (4.11) | -1.208 (8.34) | -1.217 (7.03) |
| Institutional fund dummy | 0.130 (2.61) | 0.101 (0.70) | 0.094 (0.85) | 0.199 (2.10) |
| Investment objective dummies | Included | Included | Included | Included |
| N | 5946 | 900 | 1229 | 1335 |
| Adjusted R-squared | 0.29 | 0.29 | 0.24 | 0.26 |

Our sample includes 6228 funds in 448 fund families for which we have data on board characteristics. We collect board characteristics variables from the statement of additional information (SAI) filed with the SEC. We use the last report in 2002. Fund and fund family characteristics are obtained from the CRSP Survivor-Bias Free Mutual Fund Database. We classify index and institutional funds based on data from Morningstar Principia. We combine all share classes for each fund. The dependent variable is the log of fund turnover. We estimate a cross-sectional regression at the fund level using OLS. Numbers in parentheses are *t*-statistics. Coefficients that are statistically significant at the 5% level or higher are in bold. Appendix B provides detailed variable definitions.

independence. We estimate our measure of fund performance using an investment objective-adjusted measure that is similar, but not identical to [Khorana and Servaes \(2004\)](#) and [Meschke \(2005\)](#). Specifically, our dependent variable is fund return less the investment objective's average return divided by the cross-sectional standard deviation of a fund's return within an investment objective. We perform our analysis at both the fund and fund family levels using approaches similar to those of our analysis of fund fees. Our explanatory variables remain the same as those used in the analysis of fund fees.

[Table 8](#) presents our findings. For each of the four approaches, we observe that both the independent chairman dummy variable and the percent of independent directors are consistently insignificant. We conclude on the basis of the evidence presented in [Table 8](#) that board independence is not significantly related to fund performance.

We caution that the above results should be interpreted with care for two reasons. First, boards of directors only have an indirect impact on fund performance. Indeed, it is the portfolio managers who are primarily responsible for fund management ([Tufano and Sevick, 1997](#)). Second, fund performance is very noisy and reliable inferences can only be made with a long time-series of data. Our analysis above uses only one year of data and hence should not be over-generalized.

7.2. Fund turnover and board structure

[Carhart \(1997\)](#) presents evidence that the fund turnover rate is related to fund performance. In this section, we present an analysis of the relation between fund turnover rate and board characteristics. In addition to all funds, we also examine this relation separately for each fund performance quintile.

[Table 9](#) presents the results. For brevity we do not report the results for performance quintiles 2 and 4. We find that funds with larger boards tend to have higher turnover rates. We find no evidence that either the percentage of independent directors or independent chairman dummy is related to fund turnover. The results are generally robust across all fund performance quintiles.

8. Conclusions

In response to the recent mutual fund scandals, the SEC has proposed changes in the way mutual funds are governed. Under the authority provided to the SEC by the Investment Company Act of 1940 and the Investment Advisers Act of 1940, the SEC has proposed that mutual fund boards be chaired by an independent director and consist of at least 75% independent directors. Yet, implementation of these new requirements has been delayed by court action due to the SEC's incomplete cost-benefit analysis of these changes. This study contributes to that policy debate by examining the relation between the proposed governance changes and the likelihood of scandal involvement, fund performance, and board effectiveness.

We begin our empirical analysis by examining whether the characteristics of a fund's board are related to scandal involvement. Unexplained independent director compensation, the number of funds overseen, and the existence of a pricing committee appear useful in determining which funds are likely to be implicated in a scandal. In particular, a fund family lacking a pricing committee is five times more likely to be implicated in a scandal compared to those with a pricing committee. This result provides modest evidence consistent with

monitoring by mutual fund boards on behalf of fund shareholders. We find, however, that those variables which are emphasized in the SEC's proposed rules changes – chair and board independence – are unrelated to the probability of a fund scandal. That is, a higher percentage of independent directors and the presence of an independent chairman do not reduce the likelihood of a fund scandal.

We then investigate the relation between board characteristics and fund fees, a proxy for effective governance. Our analysis provides modest evidence that board size, the number of funds overseen, and unexplained independent director compensation are all positively related to fund expense ratios. Again, we find no evidence that those measures of fund governance of most interest to the SEC's current reform efforts are associated with lower fees. Specifically, we observe no evidence that funds with a higher percentage of independent directors or independent chairmen charge lower fees. We also find no evidence that board or chair independence is significantly related to fund performance or fund turnover. Our main results are robust to an instrumental variable approach, which controls for potential endogeneity between board structure and fund performance.

Overall, our results suggest that board design and director compensation influence the quality of governance provided to a mutual fund. They question, however, the usefulness of recent SEC proposals for mutual funds to have independent chairmen accompanied by a board that is at least 75% independent. Contrary to the arguments made in support of these proposed changes, we find that board and chairman independence are generally insignificant factors in explaining the level of fund fees or the likelihood of a fund scandal. Indeed, this result is consistent with the argument of Pichhadze (2006) that in response to a crisis, regulators often adopt new rules regardless of their cost effectiveness. We further contend that other variables such as the number of funds overseen by each director, board size, and independent director compensation are significant aspects of fund governance that should receive greater regulatory attention.

Indeed, the SEC has already directed limited attention on some of these issues, but additional review might be justified. The SEC now requires a self-evaluation of board effectiveness that addresses the issue of whether the board's directors have assumed responsibility for overseeing too many funds. This requirement, however, fails to identify the specific criteria on which to base the evaluation and does not require the evaluation to be in writing. Because smaller fund boards are associated with lower fees charged to shareholders, an analysis of fund board size might suggest a board design that would offer cost savings to the mutual fund company while providing value to the fund shareholders. Finally, fuller consideration of the issues associated with independent director compensation would be consistent in spirit with recent SEC rule changes requiring greater disclosure of the compensation structure of a fund's portfolio managers.

Acknowledgements

We are grateful for the helpful comments from Paul Brockman, Sean Collins, John Howe, Cyndi McDonald, Sandra Mortal, Harold Mulherin (the editor), John Rea, Brian Reid, Erik Sirri, Doug Witte, an anonymous referee, and seminar participants at the University of Kansas, the University of Missouri-Columbia, and the Boundaries of SEC Regulation conference sponsored by Claremont McKenna College and the *Journal of Corporate Finance*. We also benefited from a conversation with Richard Roll. We thank W.D. Allen, Matteo Arena, and Emre Unlu for excellent research assistance.

Appendix A. List of scandal fund families

We compile the following list of scandal fund families from the “Fund Industry Investigation Update” section of the *Morningstar*’s website, and the “Fund Scandal Scorecard” section of the *Wall Street Journal*’s website.

Alger
 Alliance
 Bank One (One Group)
 Bear Stearns
 Charles Schwab
 Citigroup/SmithBarney
 Columbia (Fleet Boston)
 Evergreen
 Excelsior
 Federated
 Franklin
 Fremont
 Heartland
 Invesco
 Janus
 Loomis Sayles
 MFS
 Merrill Lynch
 Morgan Stanley
 Nations
 PBHG
 PIMCO
 Prudential
 Putnam
 RS Investments
 Scudder
 Seligman
 Strong

Appendix B. Variable definitions

The following is a list of variables used in this study and their associated definitions.

| | |
|---|--|
| Percent of independent directors | The number of independent directors divided by the total number of directors assigned to a board. |
| Independent chairman dummy | Dummy variable indicating the presence of an independent board chairman; assumes a value of one if the board has an independent chairman and zero otherwise. |
| Board size | The total number of directors assigned to a board. |
| Percent of independent directors holding zero fund shares | The percentage of all independent directors that hold zero shares of the funds they oversee. |
| Number of funds overseen by independent director | The average number of funds overseen by each independent director of a board. |
| Unexplained independent director compensation | The residual from a regression of log independent director compensation against the log of the number of funds overseen by an independent director, the log of the number of independent directors, and the log of the fund family size. |
| Independent director tenure | The average number of years each independent director has served on a board. |

Appendix B (continued)

| | |
|------------------------------|---|
| Nominating committee dummy | Dummy variable indicating the presence of a nominating committee on a board; assumes a value of one if the board has a nominating committee and zero otherwise. |
| Governance committee dummy | Dummy variable indicating the presence of a governance committee on a board; assumes a value of one if the board has a governance committee and zero otherwise. |
| Pricing committee dummy | Dummy variable indicating the presence of a pricing committee on a board; assumes a value of one if the board has a pricing committee and zero otherwise. |
| Fund size | The total net assets under management by a fund. |
| Family size | The total net assets under management by all funds within a fund family. |
| Expense ratio | The total annual fund operating expenses, including management fees and 12b-1 fees. |
| 12-b1 fee | A sales and distribution charge. |
| Front load | A sales charge imposed on purchases. |
| Total load | The total sales charges imposed on purchases and redemptions. |
| Turnover | The minimum of purchases and sales divided by the total net assets under management. |
| Fund age | The age of a fund in calendar years. |
| Performance ranking | The percentile ranking of fund returns within the same ICDI investment objective. |
| Index fund dummy | Dummy variable indicating an index fund; assumes a value of one if the fund is an index fund and zero otherwise. |
| Institutional fund dummy | Dummy variable indicating an institutional fund; assumes a value of one if the fund is an institutional fund and zero otherwise. |
| Investment objective dummies | Dummy variables indicating a given investment objective; assumes a value of one if the fund belongs to a particular investment objective and zero otherwise. |

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