Securities fraud and corporate board turnover: New evidence from lawsuit outcomes

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ABSTRACT

We examine the relationship between outcomes of securities fraud class action lawsuits (SFCAs) and corporate board turnover rates. Our results indicate that turnover rates for each type of board member are higher when a firm settles a lawsuit than when a suit is dismissed. Outside director turnover is more sensitive to SFCA outcomes among firms with higher levels of external blockholdings and greater institutional ownership. Inside director and CEO turnover is more sensitive to SFCA outcome among firms with less entrenchment. Both the seriousness of wrongdoing and quality of governance affect board turnover in the aftermath of a lawsuit.

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Introduction

What are the consequences of securities fraud for corporate board members? Most public corporations indemnify board members. Board members rarely pay fines or contribute to settlements out-of-pocket (see Black, Cheffins and Klausner (2006)). Yet effective monitoring of shareholders' interests requires that the board members be disciplined if they are lax in monitoring managers' actions or are implicated in wrongdoing. Despite the attention focused on securities fraud in the wake of high profile scandals at Enron, WorldCom and other large corporations, relatively little research has addressed the consequences of securities fraud for corporate directors.

Recent work on the efficacy of enforcement mechanisms has provided some important new insights on this issue. Karpoff, Lee and Martin (2008) examine management turnover among firms subject to SEC enforcement actions. They find that 93% of individuals identified as closely connected to the alleged wrongdoing in SEC enforcement actions lose their jobs by the conclusion of the SEC investigation of the firm. With respect to actions initiated by private plaintiffs, Ferris, Jandik, Lawless and Makhija (2007) examine firms involved in derivative litigation. They find evidence that turnover rates increase among board members following the filing of a derivative lawsuit. In this paper we provide new evidence on board turnover from another type of private enforcement: Securities Fraud Class Action lawsuits (SFCAs). Jackson (2007) reports that the average annual amount of settlements in SFCAs exceeded the amount of monetary penalties levied by the SEC and Department of Justice combined.

The primary purpose of this paper is to investigate whether the seriousness of the fraud alleged in a securities fraud lawsuit influences corporate board turnover. A substantial percentage of SFCAs are dismissed. We use this largely-overlooked aspect of private enforcement to build testable hypotheses linking the seriousness of allegations to board turnover. We argue that case dismissals contain useful information. Courts perform a screening function, granting a defendant's motion to dismiss if a lawsuit does not meet certain pleading requirements. In lawsuits that involve more serious wrongdoing, plaintiffs should be better able to construct a case that will survive a defendant's motion for dismissal. Similarly, among lawsuits that are not dismissed and are eventually settled, the size of the settlement may also reflect the seriousness of wrongdoing.

If lawsuit outcomes are correlated with the seriousness of the underlying wrongdoing, we expect that lawsuit outcomes would also be correlated with corporate board turnover. However, if case outcomes are unrelated to the merits of the case and are primarily driven by the plaintiff attorneys'

ability to extract rents, we should not expect to detect any systematic relationship with board turnover. We test our competing hypotheses on the seriousness of allegations by estimating the *difference* in board turnover propensity between securities fraud lawsuits that are dismissed and those that are not dismissed. We later extend this strategy of measuring seriousness by estimating the impact of differences in financial settlement amounts.

Our main findings are as follows. First we find that board turnover rates (specifically, the probability that a board member will leave the board within several years) are significantly related to indicators of the seriousness of SFCA allegations. Turnover rates for each type of board member: outside directors, inside directors, and CEOs are higher when a lawsuit is settled than when it is dismissed. These effects are both statistically significant and economically meaningful, ranging from a 4.8% increase for outside directors, 9.0% for inside directors to an 11.8% increase in the probability of departure for CEOs. We see similar (but even larger) effects if we categorize seriousness by the dollar value of financial settlements. There are significant differences in board turnover between large-settlement and small-settlement lawsuit outcomes. These findings are consistent with our hypothesis that lawsuit outcomes contain important information about the seriousness of allegations.

Second, we find evidence of greater sensitivity of turnover rates of outside directors to the outcome of the SFCA among firms with higher levels of shareholdings by outside blockholders and among firms with greater levels of institutional ownership. These findings are consistent with external parties applying disciplinary measures in the aftermath of class action lawsuits with greater merit. We also find that turnover rates of inside directors and CEOs are more sensitive to the outcome of the lawsuit among firms with lower levels of entrenchment as measured by the Gompers, Ishii and Metrick (2003) governance index (G-index). These results indicate that at least some of the increased turnover is due to the application of disciplinary measures due to external and internal monitoring.

Finally, the observed differences in board turnover rates between settled and dismissed lawsuits remain statistically significant even after we control for abnormal stock returns at the end of the class period. The class period is the period of time during which plaintiffs allege that the price of a security was distorted by fraud. The end of the class period is typically the date on which plaintiffs allege that the true state of the firm was revealed to the marketplace. This finding is consistent with lawsuit outcomes producing valuable information about the extent or wrongdoing, leading to board turnover, that is not publicly available at this event date. This is not surprising, as information on wrongdoing is often slow to emerge, sometimes as a consequence of deliberate legal strategy. As expected, abnormal stock returns at the end of the class period are poor predictors of the outcome of a lawsuit.

We complement and extend previous research in several ways. First, our results enhance prior findings that the seriousness of wrongdoing affects corporate board turnover. For example, among firms that restate their financial statements, the disciplinary impact of financial irregularities is significantly larger than that of accounting errors. Hennes, Leone and Miller (2005) report that if financial irregularities are the basis of a restatement, CEO (CFO) turnover is more than six (five) times as likely as if restatements corrected accounting errors. In the same spirit Palmrose, Richardson and Scholz (2004) find large differences between market reactions to fraudulent and non-fraudulent restatements. We extend these findings to SFCAs and provide an alternative to the use of market-reaction based measures to explain turnover. The often-used measure of wrongdoing, abnormal returns at an event date, may capture the market's surprise from a disclosure rather than the magnitude of wrongdoing in a disclosure. Our findings indicate that information from lawsuits' outcomes may contain more reliable information in explaining board turnover in firms that have been sued for alleged wrongdoing.

Second, we provide evidence on the role of institutions and outside blockholders in the application of disciplinary measures to board members. Prior work has generally associated outside block ownership and greater institutional ownership with a reduction in agency costs (Denis, Denis and Sarin (1997), McConnell and Servaes (1990), McConnell and Servaes (1995)). Securities fraud provides a useful setting for the examination of the role of institutions and blockholders in corporate governance, as the issuance of misleading disclosures is generally considered to be harmful to investors. Our findings are consistent with blockholders and institutional investors exerting greater pressure on directors when there are indications of more serious wrongdoing.

Finally, our findings that lawsuit settlements and settlement amounts have a significantly larger impact on board turnover, relative to lawsuits that are dismissed, have important implications for future research on the efficacy of SFCAs. One should not expect changes in the aftermath of frivolous lawsuits, and any research design on the efficacy of lawsuits should control for information from lawsuit outcomes. Research that pools lawsuits that are settled with those that are dismissed will dilute the evidence of the true impact of securities fraud on observed outcomes.

Our research design provides an alternative to the use of matching samples of non-lawsuit control firms. The events that trigger the filing of a SFCA are complex. There are a number of firm-level characteristics that may be associated with the likelihood of a lawsuit. Characteristics such as size, industry classification and relative performance are quantifiable and observable while other important predictors of a lawsuit, such as the strength of internal controls, the information content of disclosure policies or the strength of corporate governance often are not. Data availability usually restricts the construction of matched samples to a subset of these criteria, generally to those most

readily observable.[1] However, failing to control for relevant firm characteristics will lead to biased results if omitted firm characteristics are correlated with board turnover propensities. For instance, firms experiencing a SFCA are more likely to have more volatile returns and to experience large drops in stock prices than other firms. However these characteristics may in turn reflect the threat posed by a *potential* SFCA, rendering the use of these criteria as the basis for a matched sample problematic. Gande and Lewis (2009) provide evidence of information spillovers among firms in the same industry at the time of a SFCA filing. Thus, lawsuits may be partially anticipated.

Our estimation strategy circumvents these issues. All the firms in our analysis exhibit *ex ante* indications of a potential fraud that is strong enough to warrant the filing of a securities fraud lawsuit. Our methodology provides a measure of the differential impact on corporate board turnover of lawsuits that were dismissed versus those that were settled. This is computed for a set of firms having one common characteristic: they all have been sued for alleged fraud via a SFCA. This allows us to test whether the *seriousness* of wrongdoing matters.

The remainder of the paper proceeds as follows. Section I presents an overview of the literature on the connection between securities fraud and corporate board turnover and contains a more detailed discussion of our hypotheses. Section II discusses the construction of our data and our modeling approach. Section III provides our findings on board turnover and case outcomes. In Section IV we consider the role of external monitoring. We test the robustness of our findings in Section V by using alternate measures of the seriousness of wrongdoing. We then consider the implications of our director-level analysis for the firms in our sample in Section VI, which provides evidence on how corporate board structure changes based on resolution of a securities fraud lawsuit. Section VII concludes.

I. SFCAs and Corporate Board Turnover

A. Board Turnover and Securities Fraud

Securities laws are intended to promote the informational integrity of capital markets. In the United States, federal and state securities laws provide investors the opportunity to file a lawsuit in the event that they believe that a firm has issued fraudulent or misleading disclosures. The primary federal antifraud provision is the SEC's Rule 10b-5. Rule 10b-5 prohibits the use of any instrumentality of interstate commerce "to make any untrue statement of a material fact or to omit to state a material fact necessary to make the statements made, in light of the circumstances under

[1] SFCAs are relatively uncommon. About 2% of publicly traded firms are named as a defendant in a SFCA in a given year (National Economic Research Associates (2007)). Palepu (1986) points out the problems associated with creating a matching sample when the two states of interest are present in the population with highly differing frequencies, as they are in this case.

which they were made, not misleading." Courts have interpreted the law to provide investors that bought or sold securities issued by the firm with a private right of action pursuant to Rule 10b-5.

To the extent that fraud represents a divergence in interests between managers and investors, we expect to see a variety of adjustments to strengthen corporate governance structure following a legal action. Two forms of such adjustments may directly affect corporate board turnover. First, the CEO of the firm and other high-ranking officials may be dismissed or pressured to resign. Pressure to relinquish their position on the board may also be applied to outside directors who were lax in monitoring. We examine the relationship between inside and outside director turnover propensity and indicators of the seriousness of the alleged wrongdoing.

Second, if the fraudulent activities were a result of the divergence between interests of managers and investors, we expect that SFCAs may prompt a firm to strengthen its governance structures to reduce agency costs. Such modifications may take the form of the placement of additional outside directors on the board. Accordingly, we examine the relationship between indicators of the strength of allegations in a lawsuit and subsequent changes in corporate governance structure after a lawsuit has been filed.

Romano (1991) was the first to examine the connection between securities litigation and changes in corporate governance structure. Her sample consists of firms named as defendants in some form of shareholder litigation between the late 1960s and 1987. She finds higher turnover rates for managers and directors of firms that are defendants in securities actions as well as firms settling an action. However, as derivative actions and actions arising from control contests are included in her sample, the results cannot be generalized to the case of SFCAs. Strahan (1998) studies firms that settled securities class actions between 1991 and 1996. He finds higher rates of CEO turnover after an action is filed but no change in board structure. He does not examine the mechanisms that led to an increase in turnover. Niehaus and Roth (1999) also document higher rates of CEO turnover in firms experiencing a SFCA. In contrast, Fich and Shivdasani (2007) find no increase in outside director turnover among firms experiencing a SFCA. Agrawal, Jaffe and Karpoff (1999) find little evidence of change in governance structure after a firm is accused of fraud. Agrawal et al. examine a variety of different types of actions, most of which are not securities fraud lawsuits.

All of these studies examine cases filed in the period before the enactment of the Private Securities Litigation Reform Act (PSLRA) of 1995. The PSLRA instituted a number of procedural reforms intended to reduce the incidence of frivolous litigation. This included increasing the standards of proof required to file an action and placing control of the litigation in the hands of the plaintiff with the largest stake in the outcome, usually an institutional investor. As a result of changes in the law, one would expect SFCAs with higher merit to be filed. As such, results from studies based on data

from the pre-PSLRA period may not provide an indication of the relationship between fraud and governance today.

In addition to private enforcement, the Securities and Exchange Commission (SEC) is also charged with enforcing the securities laws. Evidence on the impact of SEC enforcement actions is mixed. Benish (1999) reports no change in turnover rates for firms subject to SEC enforcement actions while Dechow, Sloan and Sweeney (1996) present evidence that turnover rates increase. Recent work by Karpoff et al. (2008) shows that most of the individuals that are identified by the SEC as defendants depart from the firm after the disclosure of the event that triggers the SEC investigation and before the conclusion of the SEC's enforcement period. They note that differences in the definition of the period in which turnover is measured may explain the disparate results of the effect of fraud on turnover propensity in the literature. As discussed below, the timing in our study is similar to that of Karpoff et al. (2008): we examine turnover in the period following the annual meeting prior to the filing of a lawsuit, as opposed to the time at which the matter is resolved.

Reputational considerations may also prompt corporate board members, particularly outsiders, to voluntarily depart if their firms are involved in serious wrongdoing. Service on the board of a company targeted by a SFCA may diminish the value of the reputational capital of outside directors as competent monitors of corporate affairs. Fich and Shivdasani (2007) and Helland (2006) examine the effect of involvement in a SFCA on the number of seats on other corporate boards that are held by a director. Fich and Shivdasani find that the number of seats on other boards held falls after an action. Helland also documents a decrease in seats on other boards but only following large settlements. Closely related is Srinivasan (2005) who finds increased turnover and decreased frequency of board service for outside directors following income-decreasing restatements. This evidence is consistent with the notion that outside directors are held accountable for financial accounting failures. However, not all restatements are fraudulent, and not all firms engaging in fraudulent accounting practices subsequently restate their financials. In the analysis below, we control for the nature of the allegations as well as the outcome of the action to determine if the strength of allegations matters for corporate managers and directors.

All of the firms in our sample exhibited *ex ante* indications of fraudulent behavior that were serious enough to prompt the filing of a complaint. By conditioning on lawsuit outcome, we are able to separate firms on the basis of the strength of the evidence of fraudulent behavior that is uncovered in the litigation process. The seriousness of the alleged wrongdoing that triggered a lawsuit is not directly observable. Records produced in discovery and witnesses' testimony remain under seal. However, there are three observable indicators of the seriousness of the alleged wrongdoing that is available as the litigation proceeds through the system. First, if there is stronger evidence of the

alleged wrongdoing, plaintiffs should be better able to construct a case that survives a motion by defendants to have the matter dismissed. The PSLRA specifies two elements that plaintiffs must offer in their complaint.[2] The plaintiffs must cite the specific statements or omissions that are alleged to be misleading and the reasons that plaintiffs allege them to be misleading. Plaintiffs also must provide evidence that those defendants in the SFCA either willfully sought to deceive investors or were reckless. Merely alleging that defendants were negligent is insufficient. In most cases, defendants will file a motion asking the court to dismiss the action. The pleading requirements under the PSLRA place the court in a screening role by requiring, upon a motion to dismiss, that the court examine the adequacy of the allegations put forth by plaintiffs. In recent years, roughly 40% of SFCAs have ended in dismissal (National Economic Research Associates (2007)). We use the outcome of the action to construct our testable hypotheses concerning the strength of allegation of wrongdoing and corporate board turnover.

The size of the financial settlement also provides an indication of the seriousness of the alleged wrongdoing. As lawsuit settlements may be paid in part by the defendant's liability insurer, the insurer's lawyers have a financial incentive to bargain for a lower settlement amount. Larger settlements might be expected to accompany cases in which defendants believe that they have a greater risk of a negative outcome at trial. Two measures of the size of financial settlements are used to supplement our evaluation of lawsuit outcomes.

B. The Disciplinary Role of Institutions and Blockholders

We also examine the relationship between board turnover propensity and the effectiveness of monitoring mechanisms. The corporate governance literature stresses that the distribution of control rights between shareholders, board members and management varies among firms. The distribution of control rights cannot be measured directly. Research has focused on the role of institutional investors and large blockholders in the reduction of agency costs. More recently, a number of researchers have proposed governance indices which measure the degree of managerial entrenchment in the firm. We examine both external equity ownership concentration and governance quality indices as a measure of the balance of power between shareholders, board members and managers of the firm.

Shleifer and Vishny (1986) show that ownership of a sufficiently large block of shares may provide sufficient incentives for a blockholder to expend resources in monitoring management in the context of a takeover. Here we apply their intuition to the case of disciplinary measures applied to directors when there are indications that a firm may have issued fraudulent or misleading financial disclosures. If the presence of blockholders results in better monitoring, we expect that directors'

[2] See 15 U.S.C. 78u-4(b)(1) and 15 U.S.C. 78u-4(b)(2).

turnover propensities will be more closely related to the seriousness of wrongdoing when ownership is more concentrated than when ownership is more diffuse.

Our research design is similar to that of Kang and Shivdasani (1995) and Denis et al. (1997). Both of these studies examine the sensitivity of top management turnover to firm performance as a function of ownership structure. Both sets of authors find that top management turnover propensity is more closely tied to stock price performance when outside blockholders control a larger portion of the shares of the firm. Here we examine the sensitivity of turnover to our measure of the seriousness of the underlying wrongdoing. Our proxy for seriousness is the outcome of the lawsuit. If concentrated equity ownership mitigates agency problems, we expect that turnover will be more sensitive to the outcome of the action among firms with concentrated ownership structures than among firms with diffuse ownership structures. Our measures of external equity ownership concentration are the percentage of shares held by institutional investors and the percentage of shares held in outside blocks of 5% or more.

Our work is also related to research concerning the monitoring role of institutional owners and blockholders at the time of control events. Like these studies, we examine the functioning of systems of corporate governance around a particular type of event: in our case, a SFCA lawsuit. Recent work in this area includes Borokhovich, Brunarski, Harman and Parrino (2006) and Chen, Harford and Li (2007). Both studies find evidence that acquirers are less likely to make value-decreasing acquisitions when institutions or blockholders control a larger portion of the equity of the acquiring firm. These results are consistent with more intense monitoring in firms with more concentrated equity ownership.

More recently, a number of authors have constructed governance indices to measure the level of entrenchment of insiders in the firm. We utilize the governance index or G-index developed by Gompers et al. (2003) as a measure of entrenchment. While the G-index is largely based on provisions related to takeovers, Gompers et al. characterize the index as reflective of 'the balance of power between shareholders and managers.' (p. 109) We expect that board turnover will be more sensitive to lawsuit outcome when the balance of power is tilted toward shareholders.

A number of caveats concerning our analysis are in order. First, we examine the relationship between indicators of the strength of the allegations and board turnover for SFCA lawsuits in general. Our results cannot be applied to any particular firm or lawsuit. It would be necessary to examine the circumstances and evidence to ascertain the reasons for board departures in any particular case. Second, as we point out, turnover events following a SFCA may also arise as a result of board members' concerns for their reputation of satisfying their fiduciary responsibilities. Board members of firms involved in a SFCA may voluntarily leave to avoid the stigma of involvement with

a firm experiencing a SFCA. Some level of turnover may be due to reputational considerations. Our empirical results indicate that outside directors' turnover rates are generally more sensitive to lawsuit outcome when external ownership is more concentrated. These findings on board turnover are consistent with our primary hypothesis that corporate board turnover is affected by disciplinary measures applied to corporate directors.

II. Sample Selection and Methodology

A. Sample and Data Definitions

We examine the consequences of securities fraud for board members of large public companies. Our sample consists of U.S. firms that are either (i) members of the S&P 1500 or (ii) had assets in excess of $500 million (adjusted for inflation to year 2000 dollars) that were named as defendants in a SFCA between January 1, 1996 and December 31, 2003. Because we are interested in the impact of fraud on board members, we eliminate firms that were named as a defendant in a SFCA in the previous three years. The application of this screen minimizes the likelihood that observed turnover would be due to earlier alleged frauds. We limit our analysis to actions filed in 1996 or later to ensure that all actions in the sample are subject to the procedural requirements of the 1995 PSLRA. We obtain data on case characteristics, filing dates and case outcomes from RiskMetrics, a provider of research on securities disputes to institutional investors, from filings appearing on the website of the Stanford Securities Class Action Clearinghouse and from Lexis/Nexis.

We limit our sample of SFCAs to those involving allegations of fraudulent or misleading disclosures while the company is traded in the secondary market.[3] Such actions are typically filed pursuant to the SEC's Rule 10b-5. We classify actions as settled, ongoing or dismissed depending on the status of the action as of January 2009. In our analysis we drop the ten actions that are still ongoing. The qualitative results of our analysis remain unchanged if we include these ongoing actions and group them with actions that have been settled. Table I summarizes the distribution of the actions in our sample by year filed and outcome. Of the 333 actions in our sample, 140 were dismissed and 193 were settled by January 2009. The number of actions in our sample exceeds the number of firms because two firms were involved in actions filed more than three years apart.

We examine turnover events for corporate board members over a four-year period. The timing is based on the dates of annual meetings. We use the index T to designate event time. T=0 is defined as the date of the annual meeting that immediately precedes the filing of the lawsuit, while T=1 is the first annual meeting following the filing of the lawsuit. We focus on annual meeting dates because the annual meeting typically defines the beginning and ending date of the term of a

[3] For instance, we exclude actions which have been filed on behalf of investors who allege they have been treated unfairly or misled by the terms of a merger agreement. We also exclude cases such as IPO litigation in which the underwriter, but not the firm itself, is alleged to have issued misleading disclosures.

board member. A member is considered to be seated on a board if he or she retains a seat on the board or is elected to the board at an annual meeting. Members that do not stand for reelection or resign on or before the date of the annual meeting are considered to have departed from the board.

Approximately three years elapse between T=1 and T=4. We examine turnover over a period of at least three years for two reasons. First, the litigation process in the typical SFCA evolves over a number of years. The filing of the action is only the first step. A SFCA typically involves a lengthy period of fact discovery and the resolution of many procedural motions before an action is finally resolved. As a result, it may take some time before the strength of the allegations and likely outcome of the action become apparent to the litigants and the court.

Second, some firms in our sample have staggered boards. The choice of a four-year analysis period ensures that the term of every director in the sample will expire on at least one occasion between the SFCA filing date and the end of our analysis period. In the event that a sample firm did not file a proxy for T=4, the firm is dropped from the sample. This restriction eliminates firms that either were liquidated or merged prior to the end of the analysis period.[4] A small number of firms went through bankruptcy-related reorganizations between T=0 and T=4. To ensure that our results are not driven by these firms, we redid the analysis with these firms omitted. As their presence in the sample did not have a material effect on our results, we retained these firms in our sample.

We collect board structure data for each annual meeting from T=0 to T=4. We collect board membership, director demographic and ownership data from proxy filings.[5,6] To ensure that board composition data reflects the composition of the board during the time that the alleged wrongdoing occurred, we require that the action be filed no more than a year after the last annual meeting to ensure that governance data collected from the proxy filing for the meeting at T=0 reflects the governance structure of the firm. Otherwise, a firm is dropped from our sample. We define directors as insiders or outsiders based on their affiliation with the firm as of date T=0. Inside directors include all directors that are employed by the firm or are former employees. All other directors are considered to be outsiders.

[4] As a result our sample does not include some of the more prominent firms involved in securities actions. Neither Enron nor WorldCom are part of our sample, as these firms did not file a proxy for T=4. It may be the case that instances in which the defendant firm is delisted in the period following the SFCA represent more severe disclosure violations. If so, the sample in this study would represent less egregious violations, which would tend to bias our analysis against finding any relationship between SFCA involvement and turnover.

[5] We examine proxy filings for each annual meeting date from T=−1 to T=4. For some firms, we are unable to locate board composition for meetings at T=1, T=2 or T=3. We replicate all of the analysis in this paper omitting these firms. The omission of firms with missing proxy data in years T=1 through T=3 does not have a material effect on our results.

[6] For some firms, data was available from the Investor Responsibility Research Center (IRRC) Corporate Directors file. IRRC coverage is limited to firms in the S&P 1500 and IRRC coverage ends if a firm is dropped from the S&P 1500.

We control for director-level demographic and ownership characteristics that may affect turnover propensity. Following Yermack (2004), we construct three indicator variables[7] for the age of the director as of T=0 to control for the effect of age on turnover propensity. We also control for years of service on the board (Tenure) and the percentage of votes controlled by the director (Voting Share). Tenure is the number of years that a director has served on the board. For a director that has just joined the board, we set Tenure to 1 since that is her first year of service.

Table II contains summary statistics on our director-level variables by type of director. Biographical information is available for 3,164 directors seated on the boards of defendant companies as of the annual meeting at T=0. The sample includes 2,364 outside and 800 inside directors. The set of CEOs and non-CEO inside directors in columns 3 and 4 of Table II are subsets of the set of inside directors. The number of CEOs in our sample is smaller than the number of firms as some firms were conducting a search for a new CEO at T=0. In addition, there is one case in which the firm had co-CEOs. In this instance, both individuals are included in our set of CEOs.

Table III contains sample statistics for firm level data. Among the 193 settled SFCAs, the average settlement was approximately $90 million, or 2.91% of the total assets of the defendant firm prior to the filing of the SFCA.[8] The strength of the allegations put forth by plaintiffs may vary with the type of wrongdoing alleged. We examine complaints, news reports and company disclosures to determine the nature of the allegations.[9] SFCAs are classified into those that involve (i) restatements; (ii) technical violations of GAAP accounting and (iii) other allegations. Prior work has documented higher turnover among board members and top management following the issuance of restatements (Srinivasan (2005); Desai, Hogan and Wilkins (2006); Agrawal and Chadha (2005)). The Restatement indicator variable is set to one if the allegations concern a financial restatement. We construct an indicator variable Other GAAP which is set to one if the complaint alleges a technical violation of GAAP.[10] In general terms, in actions involving restatements or misapplication of GAAP, it is more likely that plaintiffs will be able to provide objective evidence that the firm's financial disclosures were incorrect than in actions involving allegedly false forecasts or failure to disclose a material fact. As discussed in greater detail in Section V, in addition to

[7] For ages 61–65, 66–70, 70+; less than 61 years old at T=0 is the excluded class.

[8] In some cases plaintiffs reach a separate settlement with other defendants such as auditors or underwriters. In such cases we add the amount of the settlements with other defendants to the settlement amount with the defendant corporation.

[9] We obtain complaints from the Stanford Securities Class Actions Clearinghouse. Multiple complaints may be filed in a class action. We collect data on allegations from a consolidated complaint if available. If not, we examine each complaint file and consider an allegation to be part of an action if any one complaint mentions a particular type of allegation.

[10] Our definition of the controls for type of allegation were chosen to capture the specificity of the accounting issues laid out in the complaint. Restatements provide *prima facie* evidence that there were problems with a firm's financial statement disclosures and an indication that the information restated was material. In contrast, if the complaint only alleges a GAAP violation, it remains to be shown whether the financial statements were in error and whether the information was material.

private enforcement, a firm may also be subject to an enforcement action by the U.S. Securities and Exchange Commission (SEC) concerning its disclosures. The indicator variable SEC Involvement is set to one if the violation period of an SEC action overlaps with the class period of the SFCA. Actions involving restatements, GAAP violations and SEC involvement are more common among settled SFCAs than among dismissed SFCAs.

Institutional investors and large blockholders are generally viewed as having greater incentives to expend efforts to monitor management and the board than individual shareholders (Shleifer and Vishny (1986)). We define institutional holdings as the percentage of shares held by institutional investors as reported by Compact Disclosure. Blockholdings measure the proportion of shares controlled by outside holders of 5% or more of the outstanding shares. Our measure of outside blockholdings includes all shares that are held in 5% blocks by independent parties. The proportion of shares controlled by institutions is somewhat higher for dismissed actions, and the percentage held by 5% outside blockholders is greater for settled actions. Table III also contains sample averages of the composition of the board of directors. Board size and composition are similar for the settled and dismissed cases in our sample.

The turnover propensities of inside and outside directors may also be influenced by the stock price performance of the firm (Warner, Watts and Wruck (1988), Yermack (2004)). We control for performance using the cumulative abnormal return of the defendant firm's equity net of the CRSP Value Weighted index. We form the cumulative abnormal return over a 24-month period ending on the last month before the SFCA was filed. This measure of firm performance appears in all of our specifications of turnover propensity.[11] Firm performance among firms with settled actions is worse than among the firms with dismissed actions. As discussed in greater detail in Section V, we also examine the short-term abnormal returns at the end of the class period of a SFCA. The class period is the period during which the plaintiffs allege that fraudulent or misleading disclosures by the defendant firm have caused its securities to be mispriced. Typically, the end-of-class-period date is the date on which plaintiffs allege that the true condition of the firm was revealed to the market. The average abnormal returns in the five-day window centered on the end-of-class-period date appear in Table III.[12] The average abnormal return does not significantly differ between the settled and dismissed SFCAs.

[11] We also examine other specifications of firm performance including the specification of the performance window as the 24 month period ending on the month that the lawsuit was filed. The alternative specifications did not have a qualitative effect on our parameter estimates.

[12] We considered shorter and longer windows for abnormal returns around the end-of-class-period date; results of using these alternate measures of market reaction did not yield qualitative differences.

B. Constructing Measures of the Seriousness of Underlying Wrongdoing

We hypothesize that fraud is costly to corporate board members. Actual frauds should be more costly than instances in which indicators of fraud turn out to be weak. As discussed above, court records in SFCAs typically remain sealed and few cases go to trial. Whether a fraud actually occurred is not directly observable to the researcher. Therefore, we infer the strength of the allegations of wrongdoing based on the outcome of the action. We construct two variables which should be correlated with the seriousness of the underlying wrongdoing.

The first variable is the outcome of the lawsuit. All else equal, we expect that if there is stronger evidence of actual wrongdoing that it should be easier for plaintiffs to construct a case that will survive a motion to dismiss. Therefore, we expect that actions that are eventually settled would involve more serious frauds than actions that are dismissed. The second variable is the amount of the settlement in the action. All else equal, where there are stronger indications of wrongdoing, defendants should be less willing to seek to resolve the matter through a trial. This places plaintiffs in a stronger bargaining position. Therefore, when there are stronger indications of wrongdoing, the settlement amount should be larger than when there are weaker indications. We examine two measures of settlement size: the constant-dollar value of the amount of the settlement, and the amount of the settlement relative to the total assets of the defendant firm prior to the date that the action was filed.

A measure of seriousness based on case outcomes has certain advantages over indicators of wrongdoing commonly used in the literature. As discussed in greater detail in Section V, the SEC has a high threshold for evidence before it undertakes an action. This creates certain biases as noted by Dechow et al. (1996): 'because our sample is subject to SEC enforcement actions, it is almost certainly biased towards the inclusion of the more obvious and spectacular cases of earnings management.' (p.2) In contrast, in our sample, we have lawsuits that vary in strength, with weaker lawsuits being dismissed while stronger cases are presumably settled. Another advantage of the use of the outcome of SFCAs as a measure of seriousness of the underlying wrongdoing is that if the lawsuit is not dismissed, it is resolved through a financial settlement, and the amount of the settlement is publicly disclosed. Only in rare instances does the settlement also involve a non-financial component such as a change in governance or disclosure practices. Thus, the size of the settlement may also provide a metric for the seriousness of wrongdoing. In contrast, derivative actions and SEC enforcement actions often involve non-financial as well as financial remedies (see Ferris et al. (2007)). The presence of non-financial remedies in derivative and SEC actions makes it difficult to utilize the outcome to distinguish between cases that were likely to involve more serious violations.

C. Empirical Methodology and Plan of the Empirical Results

We present estimates of the marginal effect of changes in our independent variables on the probability that a director leaves the board. Marginal effects are useful in evaluating the economic as well as the statistical significance of relationships between our measures of the seriousness of underlying wrongdoing and turnover propensity. The use of marginal effects avoids some shortcomings that arise in the analysis of parameter estimates of logit and probit models. Powers (2005) points out that logit or probit models of management turnover are prone to misinterpretation if the model contains interaction terms with one or more variables that also enter the model directly. Marginal effects are a function of both the parameters of the model and the regressors. Powers recommends the use of marginal effects to assess the statistical significance of interaction terms.

For each corporate director in our sample at T=0, we seek to explain whether they remain on the board of directors at T=4 or depart from the board during that four-year period: a binary outcome. To model this outcome, we estimate a binomial probit at the director level:

$$\Pr\left[departure\right] = F\left(\mathbf{X}\beta\right) + \epsilon \tag{1}$$

where $F(\cdot)$ is the cumulative distribution function of the Normal distribution and ϵ is an idiosyncratic error term. The set of explanatory variables in $\mathbf{X}$ includes measures of lawsuit outcome and attributes, director characteristics and a set of firm controls.

Marginal effects from binomial probit models are typically reported based on the mean value of the independent variables. These are the so-called marginal effects at the mean or MEM. An alternative estimation procedure is to first compute the marginal effect at each observation and then determine the average marginal effect (or AME) over the set of observations. Cameron and Trivedi (2005) and Bartus (2005) recommend the use of the AME instead of the MEM. Bartus points out that the MEM may result in nonsensical results if the sample mean is at a location that is unreasonable or if the underlying distribution of the independent variables is skewed. Ownership and corporate governance variables often exhibit a skewed distribution. For instance, three key variables in our analysis—institutional holdings, outside blockholdings and the G-index—all exhibit skewness significant at the 98% level or higher, rejecting the hypothesis of symmetry. Therefore, in all tabulated results, we present the average marginal effects (AMEs) of each of the explanatory variables: that is, the change in each director's predicted probability of departure from the board arising from a one-unit change in the explanatory variable. For an indicator variable Z, the change in predicted probability is computed by comparing the value with Z=0 to the value with Z=1. The change in predicted probability is computed for each director and averaged over observations to produce an estimate of the average marginal effect of the explanatory variable. The precision of

the AME is computed by the delta method, using the `margins` command in Stata version 11. To the best of our knowledge, this is the first paper in the corporate governance literature to report marginal effects using AMEs.

In models presented in Tables VIII and X, the computation of AMEs is more complex as the models contain interactions between the indicator variable *suit settled* and continuous variables such as the level of institutional holdings, outside blockholdings, or the G-index. In those models, the total effect of the *suit settled* variable must be evaluated at a particular level of the continuous variable. Consequently, our measures of the sensitivity of the departure probability to lawsuit outcome are evaluated at selected percentiles of the continuous variables, as presented in Tables IX and XI.

We first present three sets of estimated models, for outside directors, inside directors and CEOs, respectively, in Tables V, VI and VII. These results provide baseline measures of the importance of case characteristics on the probability of director turnover. The robustness of these findings is evaluated in Tables VIII, X and XII, in which we add measures of corporate governance, SEC involvement and abnormal returns at the end-of-class period date to the basic specification. Finally, Table XIII presents findings regarding changes in board structure for two measures of the seriousness of lawsuits.

III. Director Turnover and the Seriousness of the Underlying Violation

A. Outside and Insider Director Turnover Propensities

We partition our sample of board members into outside board members and inside board members. Outside and inside board members serve different roles. Outside members serve a monitoring and advisory role. Outsiders bring to the board the benefit of employment, experience and information gathered from outside of the firm. Inside board members, both current and former employees of the firm, are more attuned to developments and information generated from within the firm. Inside board members who are current employees of the firm also have responsibility for the oversight and management of the firm's operations or financial reporting practices and the monitoring of actions of junior-level employees. Overall responsibility for the affairs of the firm is the charge of the CEO who usually holds a seat on the board of directors.

We hypothesize that turnover rates for both outside and inside directors are increasing in the seriousness of the underlying violation. Outside director turnover may be voluntary. An outside director of an firm that is named as a defendant in a SFCA may leave the board in order to preserve the value of her human capital in the market for corporate directors (Fama and Jensen (1983)). Helland (2006) and Fich and Shivdasani (2007) find conflicting evidence concerning the impact of

SFCAs on the value of directors' reputations. Outside directors may also depart from the board of a firm named as a defendant in a SFCA out of concern for the additional burdens associated with the lawsuit and the underlying wrongdoing. If there are clear indications of wrongdoing, the board may form a committee of outside directors to conduct an investigation. Time spent on the supervision of internal investigations or dealing with the demands of litigation places an additional burden on outside directors.

Outside director turnover may also be impacted by discipline applied by external monitors such as large blockholders and institutional investors (Denis et al. (1997)). Both the reputation and disciplinary hypotheses imply that turnover rates should be increasing in measures of severity of the underlying violation.

B. Unconditional Measures of Turnover Rates

Table IV presents annual retention rates of inside and outside directors of firms subject to a SFCA. The retention rate is defined as the proportion of directors that were seated on the board at T=0 that remain on the board of directors as of subsequent annual meeting dates. We report the number of directors remaining and retention rates by the outcome of the action. Panel A contains retention rates for outside directors. Of the 2,364 outside directors in our sample that were seated on the board of sample companies as of the annual meeting prior to the filing of the SFCA, 1,358 remained on the board at the fourth annual meeting following the SFCA filing. As of T=4, the retention rate for outside directors in dismissed SFCAs of 61% is significantly higher than the 55% retention rate when the SFCA is settled. We report the p-value of a two-tailed t-test for differences in retention rates between dismissed and settled actions.

Panel B of Table IV reports retention rates for inside directors. Of the 800 inside directors in our sample, 349 remain on the board at T=4. Retention rates differ substantially by the outcome of the SFCA. Retention rates are 13 percentage points lower for inside directors of firms that settle a SFCA than for inside directors of firms in which the SFCA is dismissed: a statistically significant difference. Retention rates for inside directors who hold the title of CEO are reported in Panel C of Table IV. The difference in unconditional retention rates of CEOs is significantly different at the 1% level. The unconditional CEO retention rate is 16% lower for CEOs of firms with settled SFCAs than for firms in which the SFCA is dismissed.

The results in Table IV indicate that the difference in retention rates for all categories of directors appears first in the period that the action is filed. That is, retention rates between T=0 and T=1 are significantly higher for outside directors, inside directors, and CEOs of firms subject to actions that are dismissed than for firms in which the SFCA is settled. Most SFCAs are not

resolved for several years after the action is filed. Among sample actions, the median time to settle an action is 38 months and the median time to dismissal is 20 months. Fewer than 1% of settlements and 7% of dismissals occur within a year of the date a case is filed. Thus, observed turnover between T=0 and T=1 is not a result of the outcome of the legal process. Rather, elevated turnover rates among outside directors between T=0 and T=1 are consistent with the application of disciplinary measures to directors associated with lax monitoring or with director concerns over reputational damage and concern over the added burden of the litigation. Elevated turnover rates for inside directors and CEOs between T=0 and T=1 are also consistent with the application of disciplinary measures to managers and insiders who are responsible (by omission or commission) for the underlying wrongdoing. Our finding that the difference in turnover rates appears before the outcome of the legal processes become known is consistent with the findings of Karpoff et al. (2008) for public (SEC) enforcement.

C. Turnover Rates and the Seriousness of Wrongdoing: Outside Directors

Following the methodology described in Section II, we estimate the determinants of the likelihood of the departure of outside directors. We use a binomial probit model of director turnover, or $\Pr[departure]$, where the dependent variable is an indicator for the director departing from the board between T=0 and T=4. The model controls for director-level and firm-level characteristics and several case-specific characteristics: in particular, a measure of the outcome of the lawsuit. We report the average marginal effects (AMEs) from our probit model of director turnover.

Table V presents our results for outside directors. For comparison, the first column displays a model in which two characteristics of the lawsuit (Restatement of financials and Other GAAP violations) are included without any measure of SFCA outcome. It is evident that cases involving restatements are associated with a higher probability of departure than those involving other allegations of fraud. Among the director-level characteristics, longer board tenure and membership on the audit committee are both associated with lower turnover probabilities, while the departure probability is increasing in directors' age. If a firm experiences better share price performance, the probability of departure is lower. These effects display their expected signs with the exception of audit committee membership.

Turning to the second column, where lawsuit outcome is added to the specification, we find that settled SFCAs are associated with a 4.8% increase in the departure probability, *cet. par.* Given that the average board has approximately seven outside directors at T=0, this corresponds to an additional 0.35 outside director departures per board for settled actions. This result contrasts with that of Fich and Shivdasani (2007) who report no abnormal outside director turnover among firms experiencing a SFCA. An important difference between these studies is that we condition on the

outcome of the SFCA while Fich and Shivdasani (2007) compare turnover rates for a set of firms subject to SFCAs with baseline turnover rates reported in the literature. Turnover rates are higher among firms with restatements (Srinivasan (2005)). However, the outcome of the lawsuit is also significant. This indicates that while accounting system failures appear to be related to outside director turnover, the factors that give rise to financial reporting problems—whether the reporting failure was a result of fraud—are also important in determining turnover propensities of outside directors.

In columns 3 and 4, we examine the robustness of our findings using two alternative measures of the seriousness of the allegations: (i) an indicator that the financial settlement amount was in the top quartile of settlements by dollar amount and (ii) an indicator that the amount, scaled by the firm's total assets, was in the top quartile of scaled settlements. These indicator variables assign all other cases (lower-value settlements as well as dismissed cases) a value of zero. Both of these settlement-based measures are highly significant. For settlements in the top quartile by dollar value, departure rates are 5.8% higher than in other cases. Departure rates are 12.8% higher when a SFCA is in the top quartile in terms of settlement amount relative to assets. These results support the hypothesis that a SFCA settled for a trivial amount may have no real effect on corporate board turnover.

D. Turnover Rates and the Seriousness of Wrongdoing: Inside Directors

Table VI contains the average marginal effects for the departure probability of inside directors: directors who are current or former employees of the firm. Current and former employees have greater access to information concerning the inner workings of the organization. They may also have had management or oversight responsibility for the areas within the firm where the alleged wrongdoing may have occurred.[13] Column 1 again reports a model in which lawsuit outcome is omitted. We find that the other two lawsuit characteristics have strong positive effects on the probability of departure. When the lawsuit outcome is added to that specification in column 2, we find that turnover rates for inside directors are significantly higher when the action is settled than when the lawsuit is dismissed. The departure probability of an inside director following settled or ongoing actions is 9.0% higher than the departure probability following dismissed actions. As in Table V, we consider two alternate specifications of the severity of the case, defined by indicators of the settlement amount and scaled settlement amount being in the top (4^{th}) quartile of settled cases. Column 3 shows that cases with large settlements involve turnover rates for insider directors that are over 20 percentage points higher than other actions (smaller settlements or dismissed cases).

[13] We do not have a prior expectation on whether lawsuit outcome has a larger effect for insider directors than outside directors. Inside directors have greater access to information and may have direct responsibility for the alleged fraud or supervision. However, inside directors typically have larger ownership interests and more firm-specific human capital than outside directors and therefore have less incentive and ability to sever ties with the firm.

The effect is even larger in column 4, where the scaled settlement amount yields an increase in the probability of departure of 24.1%. This is consistent with the application of greater discipline in instances in which there are stronger indications of severe wrongdoing, as measured by the size of the settlement.

E. Turnover Rates and the Seriousness of Wrongdoing: CEOs

A SFCA may have a different impact on inside directors depending on their role in the firm. CEOs are typically viewed as having primary responsibility for the management of the affairs of the firm and for monitoring the actions of subordinates. We expect that CEO turnover would be particularly sensitive to the outcome of a SFCA. Other inside directors play either a subordinate or advisory role for the CEO and other board members. We partition our set of inside directors into those holding the title of CEO as of the last annual meeting preceding the filing of the SFCA and other inside directors. Note that the number of CEOs is slightly smaller than the number of firms in our sample. In nine cases, firms were engaged in the search for a CEO at the time that the SFCA was filed. As we have for other types of directors, we define a turnover event as an instance in which the CEO at T=0 no longer serves on the board of directors at T=4. Results for the CEOs in our sample are presented in Table VII.

In all models, an increase in the CEO's voting share significantly reduces departure probability, as does strong firm performance. SFCAs involving restatements of financials are associated with much higher probabilities of CEO departure. Column 2 shows that turnover rates for CEOs in settled or ongoing actions are 11.8% higher than for CEOs in settled actions than for dismissed actions. Higher turnover rates are also observed in columns 3 and 4 when the lawsuit results in a large settlement. Departure rates are 25.4% higher in SFCAs involving settlements in the top quartile by dollar value and 27.3% higher when the settlement amount is in the top quartile relative to the total assets of the defendant firm. These results are consistent with the disciplinary hypothesis. Corporate governance systems apply greater discipline in instances where the underlying wrongdoing is more severe. Our results are also consistent with the notion that outcomes of SFCAs are related to the severity of the underlying wrongdoing.

F. Robustness of Turnover Findings to Time Period Studied

A potential critique of our empirical methodology is that our measure of director departure begins with T=0, the annual meeting preceding the filing of the SFCA. This meeting date could be almost one year before the filing date, or it could be one day before the filing date. When the latter condition holds, and our baseline measure of board membership is very close to the date at which the suit is filed, one could argue that some turnover related to the alleged fraud may have already taken place. To evaluate the robustness of our findings, we consider an alternate definition of the

starting date of the turnover period. Rather than defining the base date as T=0, the date of the annual meeting immediately preceding the filing of the action, we define the base date (T=−1) as the previous annual meeting. We then examine turnover propensities between T=−1 and T=4 by fitting the models reported in Tables V, VI and VII to that longer period.[14] The use of the longer observation period starting with T=−1 did not have a qualitative impact on our results. Therefore, we feel confident that defining the baseline measure at T=0 adequately captures lawsuit-related turnover.

IV. External Monitoring and Board Turnover

We examine the impact of the strength of corporate control mechanisms on the turnover propensities of inside and outside directors of firms involved in a SFCA. If securities fraud is the result of insider opportunism and/or lax monitoring by outsiders, then we expect that firms with stronger control systems will be more effective at disciplining errant board members. As discussed in Section I, we examine three measures of the strength of control mechanisms. Institutional ownership and outside blockholder shareholdings are measures of the strength of external monitoring mechanisms. The third measure is the G-index proposed by Gompers et al. (2003) as a measure of the relative power of corporate insiders.

A. External Equity Ownership Concentration

Tables VIII and IX contain estimates of the average marginal effects from our augmented turnover model with two measures of external equity ownership concentration: the percentage of equity held by institutions and the percentage of equity held by outside blockholders. We construct interaction terms between these two measures of ownership concentration and the outcome of the SFCA. We expect that turnover propensity will be more sensitive to the outcome of a SFCA when external equity ownership is more concentrated. Therefore, we expect a positive sign on the outcome interaction term. The models in columns 1 and 2 of Table VIII use the set of outside directors; models in columns 3 and 4 use the set of inside directors and the models in columns 5 and 6 are fit to CEOs. The first model for each category of directors uses institutional holdings as the measure of equity concentration, while the second uses outside blockholder ownership.

Estimates of the average marginal effect of lawsuit outcome on turnover propensity appears in Table IX. The interaction terms involve the combination of a indicator variable for suit outcome and a continuous variable for ownership concentration. As the marginal effect from a change in outcome varies with ownership concentration, we present estimates of the marginal effect of outcome on turnover propensity at different levels of ownership concentration.

[14] These results are omitted for brevity, but are available on request from the authors.

Panel A of Table IX contains estimates of the average marginal effect of lawsuit outcome on outside director turnover when institutional and blockholder ownership levels are at the 10th, 25th, 50th, 75th and 90th percentiles. At the 10th percentile of institutional ownership, 33.8% of shares are held by institutions. The change in the estimated probability of departure of an outside director is −0.055. That is, we estimate that the probability of outside director turnover when the case is settled is 5.5% *lower* when a case is settled than when it is dismissed. The difference at the 10th percentile is not statistically significant. The sensitivity of turnover to outcome increases with the share of equity held by institutions. At the median level of institutional holdings, 64.5% of equity is held by institutions. The probability of outside director turnover is 6.4% higher when an action is settled when it is dismissed. The difference in turnover probability at the 50th percentile is significant at the 1% level. At the 90th percentile of institutional ownership, the probability of outside director turnover when a case is settled is 14.2% higher than when dismissed. The difference in turnover propensity between settled and dismissed cases at high levels of institutional ownership is significant at the 1% level.

Turning to the effects of blockholder ownership in Panel A of Table IX, among firms that do not have an outside blockholder, there is little difference in outside director turnover rates between settled and dismissed cases. However, as with institutional ownership, turnover rates become more sensitive to outcome when outside blockholders control a larger portion of the equity of the firm. When outside blockholder ownership is at the 75th percentile, the 8.7 percentage point difference in estimated turnover rates of outside directors between settled and dismissed cases is significant at the 1% level.

Panels B and C of Table IX contain estimates of the marginal effect of case outcome on turnover propensities of inside directors and CEOs. At low levels of external equity ownership by institutions and blockholders, turnover propensities of inside directors and CEOs are somewhat higher when a case is settled than when it is dismissed. However, with the exception of inside directors and blockholders, the difference is not significant at the 10% level. At higher levels of external equity ownership concentration, the difference in turnover probability is larger and generally significant at the 5% level.

The results in Table IX are consistent with the application of greater pressure by institutions and blockholders for the removal of outside directors when there are stronger indication of an underlying violation. As discussed above, there are two possible mechanisms by which an SFCA could prompt the departure of an outside director: the outside director could be prompted to leave, or the outside director may depart due to concerns over possible harm to her reputation or the additional effort involved by the lawsuit. As we see no reason that greater institutional ownership would result in

increased turnover propensity for the latter motive, we conclude that to some extent, the higher rate of turnover of outside directors in companies where there are indications of more serious wrongdoing may involve external pressure from large shareholders.

B. Governance Index

Tables X and XI contain estimates of average marginal effects on turnover propensity from our turnover model augmented by an interaction term between the G-index and case outcome. Firms with lower values of the G-index have fewer provisions in place to protect the position of insiders. That is, the balance of power tends to be tilted towards shareholders in firms with lower values of the G-index. We expect that turnover of inside directors will be more sensitive to the outcome of the action in cases with a lower value of the G-index than among firms with higher G-index values.

Estimates of the difference in turnover propensity between settled and dismissed actions are presented in Table XI. Panels B and C contain estimates of the average marginal effect at various levels of the G-index. When the G-index is low (less entrenchment) turnover rates for settlements are significantly higher than for lawsuits that are dismissed. For instance, at the 25th percentile, with a G-index of 7, the turnover rate for inside directors of settled actions is 14.1 percentage points higher than when the action is settled. Turnover rates at the 25th percentile of G-index is estimated to be 19.9 percentage points higher for CEOs when actions are settled than when they are dismissed. The differences in turnover propensities at the 75th and 90th percentiles of G-index is not significantly different between settled and dismissed outcomes.

V. Alternate Measures of Seriousness

In this section, we test to determine whether measures based on the outcome of litigation provides additional information concerning the seriousness of the underlying violation beyond the measures commonly utilized in the literature on fraud and corporate governance. Related work has examined the relationship between the presence of an SEC enforcement action and top management and board turnover (Dechow et al. (1996), Benish (1999), Desai, Hogan and Wilkins (2005), Karpoff et al. (2008)). Anecdotal evidence in the first paper suggests that the SEC only initiates an enforcement action if there are strong indications of actual wrongdoing. For our sample of SFCAs, we tabulate the proportion of settled and dismissed actions in which the class period of the SFCA overlaps with the violation period of an SEC action.[15] As shown in Table III, 34% of the settled actions in our sample have class periods that overlap with the violation period of a SEC enforcement action. Among dismissed actions, 18% have class periods that overlap with an SEC enforcement

[15] SEC actions involving accounting irregularities specify a period of time in which the SEC believes that the disclosures of the company were in error. This is referred to as the 'violation period'. The beginning and ending dates of the violation periods of SEC actions were provided by Jonathan Karpoff. We classify a SFCA as having an overlapping SEC enforcement action if at least one day of the class period was included in the SEC violation period.

action. This difference is statistically significant at the 1% level. As the presence of an overlapping SEC enforcement action is correlated with the outcome of the SFCA, it may be the case that our outcome measure is simply a proxy for the presence of an SEC enforcement action. To test whether our measure of lawsuit outcome provides additional information concerning the seriousness of the action, we modify our turnover model by adding an indicator variable for the presence of an overlapping SEC enforcement action.

A second measure of the seriousness of wrongdoing that is used in the literature on financial restatements is the market reaction to the announcement of the restatement. This is similar to the market reaction at the end of the class period in a SFCA. Plaintiffs typically choose a class period that ends on the date that information regarding the true condition of the firm is revealed to the marketplace. This usually coincides with a large drop in the value of the defendant firm's securities. In many cases, this is the date that a firm issues a restatement. Studies of the impact of financial restatements have examined the relationship between fraud and the magnitude of the decline in the share price at the announcement of the restatement. Palmrose et al. (2004) find that restatement announcements that are associated with subsequent litigation are associated with larger announcement-period declines in the share price than restatements that are not the object of subsequent litigation. However, models used by litigants to estimate damages in securities litigation usually are based on the market reaction to the revelation of the true state of the firm (see Crew, Goshtigian, Moore and Sarin (2001)).As potential damages are greater when abnormal returns are more negative, the filing decision may be endogenous and the filing of a lawsuit alone a poor instrument for the underlying cause of the restatement (see Field, Lowry and Shu (2005)). We include the abnormal return at the end of the class period in our turnover model as well as measures of seriousness based on lawsuit outcomes.

Results of our extended models of board turnover appear in Table XII. These models include both an indicator variable for the presence of an overlapping SEC action and the abnormal return, in percentage terms, over a five-day window centered on the end-of-class-period date. The magnitude and statistical significance of the average marginal effects associated with lawsuit outcome in Table XII are not substantially different than those of the turnover models appearing in Tables V, VI and VII. These results indicate that lawsuit outcome adds additional information on the seriousness of the underlying violation in a SFCA, over and above indications of SEC involvement and market reaction. Combined with our results on board turnover, these results provide further evidence that studies that merely condition on the presence of a lawsuit and not suit outcome are likely to produce a biased measure of the effect of a fraud on corporate board turnover.

VI. Change in Board Structure

Prior work on corporate litigation has provided mixed results on whether firms take measures *ex post* to improve corporate governance. Agarwal et al. (1999) find little evidence of a change in governance structures following accusations of fraud. In contrast, Ferris et al. (2007) find that the firms named as defendants in derivative lawsuits increase the proportion of board seats held by outsiders. They also find that firms that settle actions increase the level of board independence relative to firms whose actions are dismissed. Desai et al. (2005) find that firms involved in SEC investigations increase the proportion of outside directors on their board of directors relative to a control sample.

We examine two indicators of movement towards improved governance: board independence and board size. The level of board independence has been associated with the strength of corporate governance (Weisbach (1988); Rosenstein and Wyatt (1990), Byrd and Hickman (1992)). Smaller board size has also been associated with stronger oversight and improved decision making (Yermack (1996)). To the extent that the commission of a fraud represents a failure of the corporate governance mechanism, we expect that in instances where there are stronger indications that a serious fraud has occurred, firms would take greater measures to strengthen corporate governance. This may take the form of increased board independence or a reduction in board size.

We evaluate changes in board structure using two measures of the seriousness of the underlying wrongdoing. In Panel A of Table XIII, we partition the sample by SFCA outcome. In Panel B we partition the sample into cases that resulted in large settlements and all other cases, settled or dismissed. We define a large settlement as a settlement in the top quartile in terms of settlement amount relative to the total assets of the firm (Scaled Settlement in Q4). We measure changes in board composition between T=0 and T=4.[16] In addition to differences within each group of cases, we also test for differences in the amount of the change in board composition between firms with more and less serious wrongdoing.

The results indicate that there is little connection between case outcome and the change in board size in the years following a lawsuit.These findings contrast with those of Ferris et al. (2007) who find a larger decrease in board size among firms in which a derivative action is terminated against management than when it is terminated in favor of management. The average board size in Panel A decreases slightly among firms with both settled and dismissed SFCAs. Panel B indicates that firms that experience more serious frauds, in terms of the scaled settlement amount, increase board

[16] The differences between the two samples are not driven by broader changes in corporate governance practices such as the enactment of Sarbanes–Oxley restrictions. The timing of the initiation of settled suits in our sample is not significantly different from the timing of the initiation of the dismissed suits. The average date of the initiation of the sample lawsuits that are settled or ongoing differs from the average date of initiation of dismissed suits by only 90 days.

size by an inconsequential amount, while other firms decrease board size between T=0 and T=4. The first set of p-values tests for significant changes over time, while the second p-value tests the hypothesis that the change among settled (large scaled settlement) lawsuit firms is the same as the change among dismissed (other) firms. These changes in board size are generally not distinguishable from one another along either the time dimension or across SFCA outcomes.

Turning to board independence, gauged by the percentage of the board comprised of outside directors, we see marked changes. For both settled and dismissed cases, the percentage increases by over five points between T=0 and T=4. The difference is even larger for large-scaled-settlement cases, rising from 69% to almost 78%. These increases over time are statistically significant for all four categories of firms in Panels A and B. The increase for large-scaled-settlement cases is statistically distinguishable (at the 10% level) from that for other firms, representing a stronger movement towards greater board independence among firms in which there are stronger indications of serious wrongdoing. This is consistent with the hypothesis that, following the discovery of fraud, firms undertake measures to improve the functioning of corporate governance mechanisms. Our results on board independence are consistent with the findings of Ferris et al. (2007) and Desai et al. (2005) for derivative actions and SEC enforcement actions.

Finally, we consider the percentage of directors who are new: those seated at T=4 who were not members of the board at T=0. There is a sizable and statistically significant difference between that statistic for settled-SFCA firms (49%) and for dismissed-SFCA firms (40%). The difference is even more striking when we compare, in Panel B, the statistic for large-scaled-settlement firms (60%) and all other firms (43%). This aspect of the change in board composition, reflecting the departure rates of outside and inside directors over the four-year time span modeled above, supports the hypothesis that the outcome of SFCAs has important effects on director turnover. In the most egregious cases of fraud, companies have brought in substantially more 'new blood' over the years following the lawsuit and its costly resolution.

VII. Conclusions

Whether the strength of allegations in securities fraud lawsuits is associated with any observable change in corporate governance has been the subject of considerable controversy. Critics argue that the outcomes of SFCAs are unrelated to the seriousness of the wrongdoing and these lawsuits primarily serve as rent extraction mechanisms for plaintiffs' attorneys. An examination of the role of the strength of allegations of wrongdoing on corporate governance faces serious hurdles. The merit of such a lawsuit is not directly observable, very few lawsuits are resolved through trial, and the court records remain sealed.

This paper provides an innovative approach to examine the impact of fraud on corporate board turnover. We argue that the outcome of a securities fraud lawsuit is an indicator of the seriousness of the alleged wrongdoing. We hypothesize that lawsuits that are settled for monetary damages will be associated with larger changes in corporate governance than lawsuits that are dismissed. We evaluate the change in corporate governance by examining the turnover among members of the board of directors in the period following the filing of a SFCA.

The turnover rates for each type of board member: outsiders, insiders, and CEOs are higher when a lawsuit is settled relative to those that are dismissed. These effects are both statistically significant and economically meaningful, ranging from a 4.8% increase in the turnover rate for outside directors, 9.0% for inside directors to a 11.8% increase in the probability of departure for CEOs. These results support the view that firms act to impose sanctions on those individuals associated with fraudulent activities. Consistent with this view we also find greater sensitivity of turnover rates of outside directors to the outcome of the SFCA among firms with higher levels of external blockholdings, among firms with greater levels of institutional ownership and among firms with less entrenched management teams.

Our findings have important implications for future research in this area. We find that indicators of the *strength* of allegations—both the outcome of the lawsuit and the settlement amount, if settled—are important determinants of corporate board turnover. We also find that market reactions to the revelation of the information about wrongdoing are poor predictors for the outcome of the lawsuit. The importance of lawsuit outcome suggests that studying firms facing SFCAs without controlling for lawsuit outcomes will dilute the true scope of the association between class action lawsuits and corporate board turnover.

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Table I: **Securities Fraud Class Actions**

This table reports the year filed and the outcome of the 333 securities class actions in our sample. Actions are classified as settled or dismissed based on the status of the action as of January 2009.

	Outcome		
Year Filed	Dismissed	Settled	Total
	No.	No.	No.
1996	4	3	7
1997	8	27	35
1998	12	25	37
1999	24	29	53
2000	20	26	46
2001	19	23	42
2002	32	47	79
2003	21	13	34
Total	140	193	333

Table II: **Director-Level Variables**

This table reports sample means of the characteristics of outside directors, inside directors and CEOs of the 333 sample firms. Date T=0 is the date of the last annual meeting prior to the date that the lawsuit was filed. Demographic characteristics, voting strength and audit committee membership status were obtained from the proxy filing for the annual meeting at T=0. Inside directors are directors that are employees or former employees of the firm. All other directors are classified as outside directors. Directors classified as CEOs held that position as of the last meeting before the action was filed. *Departed* is an indicator variable which is set to 1 if a director does not serve on the board through T=4, the fourth annual meeting after the suit is filed, and 0 if the director continues to serve on the board at T=4. Variable *age* is the age of the director as reported in the last proxy prior to the date the action was filed. Variable *board tenure* is the length of a director's board service in years as of the last proxy before the action is filed. Variable *voting share* is the percentage of votes controlled by a director relative to the total number of votes eligible to be cast at the annual meeting.

Variable	Outside Directors	Inside Directors	CEOs	Non-CEO Insiders	
	[1]	[2]	[3]	[4]	N
Observations (N)	2364	800	325	475	3164
Involvement					
Member Audit Committee (0/1)	0.477	0.062	0.015	0.095	3164
Outcome					
Departed (0/1)	0.426	0.564	0.538	0.581	3164
Demographics					
Age (Years)	59.074	53.326	52.403	53.958	3164
Board Tenure (Years)	6.552	9.011	8.895	9.091	3164
Voting Share (%)	0.630	3.093	4.251	2.302	3164

Table III: **Firm-Level Variables**

This table reports sample means of characteristics of the firms that are defendants in a class action lawsuit for violation of SEC Rule 10(b)-5. Actions are classified as settled or dismissed based on the status of the action as of January 2009. Variable *settlement amount* is the dollar amount of settlements in the 193 actions resulting in a settlement. Variable *total assets* is the total assets of the firm at the end of the last fiscal year prior to the filing of the action. Variable *settlement amount as a % of total assets* is *settlement amount* divided by *total assets*. Variable *restatement* is 1 if the action concerns a restatement and 0 otherwise. Variable *other GAAP* is 1 if the action involves a technical violation of GAAP accounting and 0 otherwise. Variable *SEC involvement* is 1 if the class period of the action overlaps with the violation period of a SEC enforcement action. Variables *institutional holdings* and *outside blockholdings* are the percent of common shares held by institutions and 5 percent blockholders unaffiliated with the firm. Variable *Gindex* is the Gompers et al. (2003) index of corporate governance. Variable *board seats* is the total number of directors elected or continuing to serve on the board as of the annual meeting immediately preceding the date the action was filed. Variables *insider seats* and *outsider seats* are the number of inside and outside directors elected or continuing to serve on the board as of the annual meeting preceding the date the action was filed. Variable *two-year firm performance* is the cumulative abnormal return on equity, net of the return on the CRSP value-weighted index, in the two years ending in the month before the action was filed. Variable *abnormal returns ECP [-2,+2]* is the abnormal return, net of the CRSP value-weighted index with dividend reinvestment, in a five-day window centered on the date of the end of the class period. P-values represent a two-tailed test for differences in sample means between dismissed and settled actions.

Variable	Dismissed Actions	Settled Actions	All Actions	P-value: Difference in Sample Means t-test	Mann–Whitney
	[1]	[2]	[3]	[4]	[5]
Number of Actions	140	193	333		
Settlement Amount (million $)		89.536			
Settlement Amount as % of Total Assets		2.906			
Total Assets (billion $)	26.438	14.539	19.542	0.200	0.401
Allegations					
Restatement (0/1)	0.143	0.306	0.237	0.001	0.000
Other GAAP (0/1)	0.393	0.575	0.498	0.001	0.001
SEC Involvement (0/1)	0.179	0.342	0.273	0.001	0.000
Ownership Structure					
Institutional Holdings (%)	64.582	59.717	61.735	0.038	0.016
Outside Blockholdings (%)	12.953	14.601	13.909	0.270	0.192
Gindex	8.922	8.506	8.684	0.156	0.110
Board Structure					
Board Seats	9.643	9.399	9.502	0.485	0.259
Insider Seats	2.457	2.363	2.402	0.526	0.333
Outsider Seats	7.186	7.036	7.099	0.663	0.306
Performance and Market Reaction					
Two-Year Firm Performance	0.141	-0.073	0.017	0.031	0.006
Abnormal Returns ECP [-2,+2]	-0.228	-0.241	-0.235	0.590	0.370

Table IV: **Outside and Inside Director Retention Rates**

Retention rates for outside directors, inside directors and CEOs. Date T=0 is the date of the annual meeting that immediately precedes the filing of the SFCA. Retention rate is defined as the proportion of directors seated on the board of the firm as of the annual meeting immediately preceding the filing of the action that continue to serve on the board at year T. N at T=0 is the number of directors of a given type elected to or continuing to serve on the board at the annual meeting immediately preceding the date the action was filed. N at T=1 through T=4 is the number of those directors that continue to serve on the board. P-values represent a two-sided test for a difference in retention rates between dismissed and settled actions.

Panel A: Outside Directors

	Dismissed Actions		Settled Actions		p-value
Year	Number Directors	Retention Rate	Number Directors	Retention Rate	
0	1006	100.00	1358	100.00	
1	892	88.67	1135	83.58	0.000
2	776	77.14	964	70.99	0.001
3	681	67.69	840	61.86	0.003
4	615	61.13	743	54.71	0.002

Panel B: Inside Directors

	Dismissed Actions		Settled Actions		p-value
Year	Number of Directors	Retention Rate	Number of Directors	Retention Rate	
0	344	100.00	456	100.00	
1	292	84.88	319	69.96	0.000
2	229	66.57	247	54.17	0.000
3	202	58.72	207	45.39	0.000
4	175	50.87	174	38.16	0.000

Panel C: CEOs

	Dismissed Actions		Settled Actions		p-value
Year	Number	Retention Rate	Number	Retention Rate	
0	135	100.00	190	100.00	
1	118	87.41	129	67.89	0.000
2	99	73.33	105	55.26	0.001
3	89	65.93	86	45.26	0.000
4	75	55.56	75	39.47	0.004

Table V: **Outside Director Turnover Probability**

Estimates from a binary probit model of the average marginal effects on turnover probability of 2,364 outside directors between T=0 and T=4. Outside directors include all directors seated on the board as of the last annual meeting preceding the lawsuit who are not employees or former employees. T=0 is the date of the annual meeting that immediately precedes the filing of a lawsuit for alleged violation of SEC Rule 10(b)-5. T=4 is the date of the fourth annual meeting after the suit is filed. The dependent variable, *departed*, is set to 1 if a director does not serve on the board through T=4, and 0 if the director continues to serve on the board at T=4. The *suit settled* variable is set to 1 if a lawsuit is settled and 0 if it is dismissed. The coefficient of the suit settled variable measures the difference in director turnover propensity between settled and dismissed suits. A positive coefficient indicates the marginal impact on director turnover was higher in settled suits relative to suits that were dismissed. The other two measures of suit outcomes, *settlement amount in Q4* and *scaled settlement amount in Q4*, are binary variables equal to 1 if the dollar value of the settlement (or settlement scaled by the assets of the firm) is in the top quartile and 0 otherwise. Model [1] excludes any measure of suit outcome. Estimates of the marginal effects of different measures of suit outcome on turnover appear in models [2] through [4]. All models include a set of year indicators. Cluster-robust standard errors are in parentheses. Superscripts ***, ** and * indicate significance at the 0.10, 0.05 and 0.01 levels.

	No Outcome Measures	Lawsuit Outcome	Large Settlements Dollar Value	Large Settlements Relative Size
	[1]	[2]	[3]	[4]
Director characteristics:				
Age 61-65 (0/1)	-0.011	-0.012	-0.013	-0.009
	(0.025)	(0.025)	(0.025)	(0.025)
Age 66-70 (0/1)	0.248	0.248	0.248	0.249
	(0.027)***	(0.027)***	(0.027)***	(0.027)***
Age >70 (0/1)	0.408	0.407	0.407	0.408
	(0.038)***	(0.038)***	(0.038)***	(0.038)***
Log(Board Tenure)	-0.028	-0.027	-0.026	-0.026
	(0.013)**	(0.013)**	(0.013)**	(0.013)**
Voting Share (%)	0.003	0.003	0.003	0.003
	(0.003)	(0.003)	(0.003)	(0.003)
Member Audit Committee (0/1)	-0.054	-0.054	-0.055	-0.054
	(0.019)***	(0.019)***	(0.019)***	(0.019)***
Firm characteristics:				
Log(Total Assets)	0.009	0.008	0.006	0.015
	(0.006)	(0.006)	(0.006)	(0.006)**
Firm Performance	-0.023	-0.021	-0.025	-0.024
	(0.013)*	(0.013)	(0.013)*	(0.013)*
Case characteristics:				
Restatement of financials (0/1)	0.065	0.051	0.051	0.052
	(0.025)***	(0.026)**	(0.026)**	(0.025)**
Other GAAP (0/1)	0.013	0.007	0.002	0.009
	(0.023)	(0.024)	(0.024)	(0.023)
Suit Settled (0/1)		0.048		
		(0.021)**		
Settlement amount in Q4 (0/1)			0.058	
			(0.028)**	
Scaled settlement in Q4 (0/1)				0.128
				(0.032)***
Number of Observations	2364	2364	2364	2364
Pseudo-R^2	0.067	0.068	0.068	0.071

Table VI: **Inside Director Turnover Probability**

Estimates from a binary probit model of the average marginal effects on turnover probability of 800 inside directors between T=0 and T=4. Inside directors include all directors seated on the board as of the last annual meeting preceding the lawsuit who are employees or former employees of the firm. T=0 is the date of the annual meeting that immediately precedes the filing of a lawsuit for alleged violation of SEC Rule 10(b)-5. T=4 is the date of the fourth annual meeting after the suit is filed. The dependent variable, *departed*, is set to 1 if a director does not serve on the board through T=4, and 0 if the director continues to serve on the board at T=4. The *suit settled* variable is set to 1 if a lawsuit is settled and 0 if it is dismissed. The coefficient of the suit settled variable measures the difference in director turnover propensity between settled and dismissed suits. A positive coefficient indicates the marginal impact on director turnover was higher in settled suits relative to suits that were dismissed. The other two measures of suit outcomes, *settlement amount in Q4* and *scaled settlement amount in Q4*, are binary variables equal to 1 if the dollar value of the settlement (or settlement scaled by the assets of the firm) is in the top quartile and 0 otherwise. Model [1] excludes any measure of suit outcome. Estimates of the marginal effects of different measures of suit outcome on turnover appear in models [2] through [4]. All models include a set of year indicators. Cluster-robust standard errors are in parentheses. Superscripts ***, ** and * indicate significance at the 0.10, 0.05 and 0.01 levels.

	No Outcome Measures	Lawsuit Outcome	Large Settlements Dollar Value	Large Settlements Relative Size
	[1]	[2]	[3]	[4]
Director characteristics:				
Age 61-65 (0/1)	0.010	0.007	0.022	0.012
	(0.053)	(0.053)	(0.052)	(0.052)
Age 66-70 (0/1)	-0.058	-0.064	-0.059	-0.048
	(0.077)	(0.077)	(0.077)	(0.077)
Age >70 (0/1)	0.152	0.160	0.173	0.171
	(0.099)	(0.100)	(0.097)*	(0.099)*
Log(Board Tenure)	-0.024	-0.022	-0.023	-0.029
	(0.022)	(0.022)	(0.022)	(0.022)
Voting Share (%)	-0.013	-0.014	-0.013	-0.013
	(0.003)***	(0.003)***	(0.003)***	(0.003)***
Firm characteristics:				
Log(Total Assets)	0.009	0.010	-0.002	0.020
	(0.010)	(0.010)	(0.010)	(0.010)**
Firm Performance	-0.048	-0.043	-0.048	-0.048
	(0.020)**	(0.020)**	(0.020)**	(0.020)**
Case characteristics:				
Restatement of financials (0/1)	0.115	0.092	0.076	0.097
	(0.043)***	(0.044)**	(0.044)*	(0.043)**
Other GAAP (0/1)	0.106	0.095	0.068	0.104
	(0.041)***	(0.041)**	(0.042)	(0.041)**
Suit Settled (0/1)		0.090		
		(0.035)**		
Settlement amount in Q4 (0/1)			0.226	
			(0.055)***	
Scaled settlement in Q4 (0/1)				0.241
				(0.053)***
Number of Observations	800	800	800	800
Pseudo-R^2	0.069	0.075	0.085	0.088

Table VII: **CEO Turnover Probability**

Estimates from a binary probit model of the average marginal effects on turnover probability of 325 CEOs between T=0 and T=4. Directors classified as CEOs are individuals with the title of CEO seated on the board as of the last annual meeting preceding the filing of a lawsuit. T=0 is the date of the annual meeting that immediately precedes the filing of a lawsuit for alleged violation of SEC Rule 10(b)-5. T=4 is the date of the fourth annual meeting after the suit is filed. The dependent variable, *departed*, is set to 1 if a director does not serve on the board through T=4, and 0 if the director continues to serve on the board at T=4. The *suit settled* variable is set to 1 if a lawsuit is settled and 0 if it is dismissed. The coefficient of the suit settled variable measures the difference in director turnover propensity between settled and dismissed suits. A positive coefficient indicates the marginal impact on director turnover was higher in settled suits relative to suits that were dismissed. The other two measures of suit outcomes, *settlement amount in Q4* and *scaled settlement amount in Q4*, are binary variables equal to 1 if the dollar value of the settlement (or settlement scaled by the assets of the firm) is in the top quartile and 0 otherwise. Model [1] excludes any measure of suit outcome. Estimates of the marginal effects of different measures of suit outcome on turnover appear in models [2] through [4]. All models include a set of year indicators. Cluster-robust standard errors are in parentheses. Superscripts ***, ** and * indicate significance at the 0.10, 0.05 and 0.01 levels.

	No Outcome Measures	Lawsuit Outcome	Large Settlements Dollar Value	Large Settlements Relative Size
	[1]	[2]	[3]	[4]
Director characteristics:				
Age 61-65 (0/1)	0.066	0.054	0.080	0.073
	(0.090)	(0.090)	(0.088)	(0.088)
Age 66-70 (0/1)	0.116	0.082	0.157	0.143
	(0.224)	(0.224)	(0.220)	(0.225)
Age >70 (0/1)	-0.128	-0.073	-0.043	-0.065
	(0.297)	(0.287)	(0.286)	(0.296)
Log(Board Tenure)	-0.006	-0.001	-0.006	-0.013
	(0.037)	(0.037)	(0.037)	(0.037)
Voting Share (%)	-0.016	-0.016	-0.016	-0.016
	(0.004)***	(0.004)***	(0.004)***	(0.004)***
Firm characteristics:				
Log(Total Assets)	0.004	0.004	-0.010	0.019
	(0.015)	(0.015)	(0.016)	(0.015)
Firm Performance	-0.050	-0.045	-0.051	-0.049
	(0.029)*	(0.030)	(0.029)*	(0.029)*
Case characteristics:				
Restatement of financials (0/1)	0.241	0.209	0.196	0.219
	(0.064)***	(0.066)***	(0.066)***	(0.064)***
Other GAAP (0/1)	0.101	0.087	0.060	0.092
	(0.062)	(0.062)	(0.062)	(0.060)
Suit Settled (0/1)		0.118		
		(0.054)**		
Settlement amount in Q4 (0/1)			0.254	
			(0.080)***	
Scaled settlement in Q4 (0/1)				0.273
				(0.082)***
Number of Observations	325	325	325	325
Pseudo-R^2	0.107	0.117	0.129	0.133

Table VIII: **Director Turnover Probability and Outside Equity Ownership Concentration**

Estimates from a binary probit model of the average marginal effect on turnover probability between T=0 and T=4 of outside directors, inside directors and CEOs as a function of the concentration of external equity ownership and outcome of the lawsuit. The sample consists of directors seated on the board of directors as of the last annual meeting preceding the filing of a lawsuit. T=0 is the date of the annual meeting that immediately precedes the filing of a lawsuit for alleged violation of SEC Rule 10(b)-5. T=4 is the date of the fourth annual meeting after the suit is filed. The dependent variable, *departed*, is set to 1 if a director does not serve on the board through T=4, and 0 if the director continues to serve on the board at T=4. The *suit settled* variable is set to 1 if a lawsuit is settled and 0 if it is dismissed. Models include interaction terms between *suit settled* and measures of external equity ownership concentration, indicated by *Outcome interactions*. Variable *institutional holdings* is the percentage of equity held by institutions. Variable *outside blockholdings* is the percentage of equity in blocks of 5 percent or larger held by institutions with no other business relationships with the firm. Detailed results incorporating the estimated interaction coefficients are presented in Table IX. All models include a set of year indicators. Cluster-robust standard errors are in parentheses. Superscripts ***, ** and * indicate significance at the 0.10, 0.05 and 0.01 levels.

	Outside Directors		Inside Directors		CEOs	
	[1]	[2]	[3]	[4]	[5]	[6]
Director characteristics:						
Age 61-65 (0/1)	-0.009	-0.005	0.017	0.020	-0.001	-0.017
	(0.026)	(0.026)	(0.056)	(0.056)	(0.092)	(0.093)
Age 66-70 (0/1)	0.263	0.268	-0.037	-0.052	0.131	0.111
	(0.029)***	(0.028)***	(0.083)	(0.082)	(0.253)	(0.257)
Age >70 (0/1)	0.402	0.406	0.150	0.179	-0.114	-0.176
	(0.040)***	(0.039)***	(0.109)	(0.103)*	(0.276)	(0.262)
Log(Board Tenure)	-0.016	-0.018	-0.019	-0.018	0.003	0.011
	(0.014)	(0.013)	(0.023)	(0.023)	(0.040)	(0.039)
Voting Share (%)	0.003	0.003	-0.014	-0.014	-0.017	-0.016
	(0.003)	(0.003)	(0.003)***	(0.003)***	(0.005)***	(0.005)***
Firm characteristics:						
Log(Total Assets)	0.001	0.006	0.006	0.006	-0.005	-0.012
	(0.006)	(0.006)	(0.011)	(0.011)	(0.017)	(0.017)
Firm Performance	-0.023	-0.021	-0.052	-0.051	-0.049	-0.063
	(0.014)*	(0.014)	(0.020)**	(0.021)**	(0.030)	(0.031)**
Institutional Holdings	-0.001		-0.002		-0.001	
	(0.001)**		(0.001)*		(0.001)	
Outside Blockholdings		0.001		0.000		-0.003
		(0.001)		(0.001)		(0.002)*
Gindex	0.000	-0.003	0.004	0.004	0.014	0.018
	(0.004)	(0.004)	(0.008)	(0.008)	(0.012)	(0.011)
Case characteristics:						
Restatement of financials (0/1)	0.026	0.033	0.123	0.117	0.208	0.207
	(0.027)	(0.027)	(0.046)***	(0.046)**	(0.067)***	(0.067)***
Other GAAP (0/1)	0.014	0.011	0.084	0.076	0.095	0.074
	(0.025)	(0.025)	(0.043)*	(0.043)*	(0.065)	(0.066)
Suit Settled (0/1)	0.054	0.048	0.098	0.109	0.132	0.148
	(0.022)**	(0.022)**	(0.039)**	(0.038)***	(0.060)**	(0.059)**
Outcome interactions	Included	Included	Included	Included	Included	Included
Number of Observations	2136	2186	704	716	290	296
Pseudo-R^2	0.076	0.073	0.084	0.082	0.117	0.120

Table IX: **Sensitivity of Pr[Departure] to Case Outcome**

Panel A: Outside directors						
	InstHold	dPrdSettled	P-value	Blockhold	dPrdSettled	P-value
p10	33.800	-0.055	0.168	0.000	-0.014	0.651
p25	51.440	0.014	0.580	0.000	-0.014	0.651
p50	64.500	0.064	0.004	10.500	0.036	0.108
p75	77.100	0.111	0.000	21.200	0.087	0.000
p90	85.660	0.142	0.000	30.500	0.131	0.000
Panel B: Inside directors						
	InstHold	dPrdSettled	P-value	Blockhold	dPrdSettled	P-value
p10	29.370	0.042	0.554	0.000	0.102	0.065
p25	49.630	0.076	0.093	0.000	0.102	0.065
p50	64.410	0.102	0.009	9.625	0.107	0.007
p75	77.200	0.124	0.009	21.260	0.114	0.010
p90	85.900	0.138	0.017	30.900	0.120	0.058
Panel C: CEOs						
	InstHold	dPrdSettled	P-value	Blockhold	dPrdSettled	P-value
p10	31.490	0.055	0.622	0.000	0.123	0.148
p25	50.600	0.101	0.161	0.000	0.123	0.148
p50	65.660	0.137	0.024	11.700	0.144	0.018
p75	77.940	0.167	0.022	22.910	0.162	0.018
p90	87.550	0.189	0.037	31.990	0.175	0.058

Estimates from a binary probit model of the sensitivity of turnover probability (*dPrd-Settled*) to lawsuit outcome (*Suit Settled*) for varying levels of institutional holdings (*InstHold*) and outside blockholdings (*Blockhold*). The latter variables are evaluated at their 10, 25, 50, 75 and 90^{th} percentiles in the estimation samples of Table VIII. Panel A, for outside directors, corresponds to models [1] and [2] of Table VIII. Panel B, for inside directors, corresponds to models [3] and [4] of Table VIII. Panel C, for CEOs, corresponds to models [5] and [6] of Table VIII. The P-value tests the null hypothesis that the derivative $\partial Pr[departure]/\partial Settled$ is zero for a firm with that level of institutional holdings (blockholdings).

Table X: **Director Turnover Probability and Governance Interactions**

Estimates from a binary probit model of the average marginal effect on turnover probability between T=0 and T=4 of outside directors, inside directors and CEOs as a function of the concentration of external equity ownership and outcome of the lawsuit. The sample consists of directors seated on the board of directors as of the last annual meeting preceding the filing of a lawsuit. T=0 is the date of the annual meeting that immediately precedes the filing of a lawsuit for alleged violation of SEC Rule 10(b)-5. T=4 is the date of the fourth annual meeting after the suit is filed. The dependent variable, *departed*, is set to 1 if a director does not serve on the board through T=4, and 0 if the director continues to serve on the board at T=4. The *suit settled* variable is set to 1 if a lawsuit is settled and 0 if it is dismissed. Models include interaction terms between *suit settled* and measures of corporate governance, indicated by *Outcome interactions*. Variable *Gindex* is the Gompers–Ishii–Metrick index of corporate governance. Variable *Proportion of outside directors* is the percentage of the board consisting of outside directors at T=0. Detailed results incorporating the estimated interaction coefficients are presented in Table XI. All models include a set of year indicators. Cluster-robust standard errors are in parentheses. Superscripts ***, ** and * indicate significance at the 0.10, 0.05 and 0.01 levels.

	Outside Directors	Inside Directors	CEOs
	[1]	[2]	[3]
Director characteristics:			
Age 61-65 (0/1)	-0.009	0.019	-0.028
	(0.026)	(0.056)	(0.091)
Age 66-70 (0/1)	0.264	-0.046	0.094
	(0.029)***	(0.083)	(0.255)
Age >70 (0/1)	0.402	0.161	-0.232
	(0.040)***	(0.109)	(0.255)
Log(Board Tenure)	-0.018	-0.019	0.005
	(0.013)	(0.023)	(0.040)
Voting Share (%)	0.002	-0.015	-0.016
	(0.003)	(0.003)***	(0.005)***
Firm characteristics:			
Log(Total Assets)	0.006	0.009	-0.008
	(0.006)	(0.011)	(0.017)
Firm Performance	-0.014	-0.044	-0.054
	(0.014)	(0.021)**	(0.030)*
Institutional Holdings	-0.002	-0.002	-0.000
	(0.001)***	(0.001)*	(0.002)
Outside Blockholdings	0.002	0.001	-0.003
	(0.001)**	(0.002)	(0.002)
Gindex	0.001	0.005	0.015
	(0.004)	(0.008)	(0.011)
Case characteristics:			
Restatement of financials (0/1)	0.016	0.122	0.222
	(0.028)	(0.046)***	(0.065)***
Other GAAP (0/1)	0.012	0.080	0.088
	(0.025)	(0.043)*	(0.066)
Suit Settled (0/1)	0.057	0.097	0.136
	(0.022)***	(0.038)**	(0.060)**
Outcome interactions	Included	Included	Included
Number of Observations	2136	704	290
Pseudo-R^2	0.073	0.088	0.125

Table XI: **Sensitivity of Pr[Departure] to Case Outcome**

Panel A: Outside directors			
	G-index	dPrdSettled	P-value
p10	6.000	0.060	0.081
p25	7.000	0.059	0.038
p50	9.000	0.057	0.009
p75	11.000	0.056	0.039
p90	12.000	0.055	0.091
Panel B: Inside directors			
	G-index	dPrdSettled	P-value
p10	6.000	0.168	0.003
p25	7.000	0.141	0.002
p50	8.000	0.114	0.004
p75	10.000	0.061	0.156
p90	12.000	0.008	0.895
Panel C: CEOs			
	G-index	dPrdSettled	P-value
p10	6.000	0.232	0.009
p25	7.000	0.199	0.008
p50	8.000	0.165	0.011
p75	10.000	0.096	0.140
p90	12.000	0.027	0.766

Estimates from a binary probit model of the sensitivity of turnover probability (*dPrd-Settled*) to lawsuit outcome (*Suit Settled*) for varying levels of G-index. Gindex is evaluated at its 10, 25, 50, 75 and 90^{th} percentiles in the estimation samples of Table X. Panel A, for outside directors, corresponds to model [1] of Table X. Panel B, for inside directors, corresponds to model [2] of Table X. Panel C, for CEOs, corresponds to model [3] of Table X. The P-value tests the null hypothesis that the derivative $\partial Pr[departure]/\partial Settled$ is zero for a firm with that level of G-index).

Table XII: **Director Turnover Probability with Additional Indicators of Seriousness of Wrongdoing**

Estimates from a binary probit model of the average marginal effect on turnover probability between T=0 and T=4 of outside directors, inside directors and CEOs. The sample consists of directors seated on the board of directors as of the last annual meeting preceding the filing of a lawsuit. T=0 is the date of the annual meeting that immediately precedes the filing of a lawsuit for alleged violation of SEC Rule 10(b)-5. T=4 is the date of the fourth annual meeting after the suit is filed. The dependent variable, *departed*, is set to 1 if a director does not serve on the board through T=4, and 0 if the director continues to serve on the board at T=4. The *suit settled* variable is set to 1 if a lawsuit is settled and 0 if it is dismissed. Variable *overlapping SEC action* is set to 1 if the violation period of an SEC enforcement action overlaps with the class period of a private lawsuit and 0 otherwise. Variable *abnormal return at the end of the class period [-2,+2]* is the abnormal return, net of the CRSP value-weighted index with dividend reinvestment, of the common stock of the defendant firm in a five-day window centered on the date of the end of the class period. All models include a set of year indicators. Cluster-robust standard errors are in parentheses. Superscripts ***, ** and * indicate significance at the 0.10, 0.05 and 0.01 levels.

	Outside Directors		Inside Directors		CEOs	
	[1]	[2]	[3]	[4]	[5]	[6]
Director characteristics:						
Age 61-65 (0/1)	-0.007	-0.004	0.004	0.011	-0.014	0.009
	(0.027)	(0.027)	(0.057)	(0.056)	(0.094)	(0.092)
Age 66-70 (0/1)	0.273	0.272	-0.021	-0.018	0.107	0.160
	(0.029)***	(0.029)***	(0.084)	(0.083)	(0.258)	(0.262)
Age >70 (0/1)	0.412	0.412	0.155	0.165	-0.169	-0.162
	(0.041)***	(0.040)***	(0.110)	(0.109)	(0.268)	(0.283)
Log(Board Tenure)	-0.017	-0.016	-0.017	-0.021	0.003	-0.007
	(0.014)	(0.014)	(0.023)	(0.023)	(0.040)	(0.040)
Voting Share (%)	0.002	0.002	-0.014	-0.014	-0.017	-0.017
	(0.003)	(0.003)	(0.003)***	(0.003)***	(0.005)***	(0.005)***
Firm characteristics:						
Log(Total Assets)	0.011	0.019	0.001	0.020	-0.009	0.010
	(0.006)*	(0.007)***	(0.013)	(0.011)*	(0.018)	(0.017)
Firm Performance	-0.015	-0.016	-0.051	-0.053	-0.056	-0.057
	(0.014)	(0.014)	(0.021)**	(0.020)***	(0.030)*	(0.030)*
Institutional Holdings	-0.002	-0.002	-0.002	-0.002	-0.000	-0.001
	(0.001)***	(0.001)***	(0.001)*	(0.001)**	(0.002)	(0.002)
Outside Blockholdings	0.002	0.002	0.001	0.001	-0.003	-0.004
	(0.001)**	(0.001)**	(0.002)	(0.002)	(0.002)	(0.002)
G-index	-0.001	-0.001	0.003	-0.000	0.013	0.011
	(0.004)	(0.004)	(0.008)	(0.008)	(0.012)	(0.012)
Case characteristics:						
Restatement of financials (0/1)	0.019	0.024	0.123	0.151	0.212	0.243
	(0.029)	(0.028)	(0.050)**	(0.049)***	(0.073)***	(0.070)***
Other GAAP (0/1)	0.007	0.008	0.084	0.094	0.087	0.090
	(0.025)	(0.025)	(0.044)*	(0.044)**	(0.068)	(0.067)
Overlapping SEC action (0/1)	0.023	0.013	-0.003	-0.036	0.010	-0.016
	(0.025)	(0.025)	(0.046)	(0.046)	(0.068)	(0.067)
Ab.Ret. End Cls Per [-2,+2]	-0.118	-0.132	0.103	0.071	-0.014	-0.037
	(0.053)**	(0.052)**	(0.092)	(0.088)	(0.139)	(0.136)
Suit Settled (0/1)	0.040		0.098		0.123	
	(0.022)*		(0.038)**		(0.059)**	
Scaled settlement in Q4 (0/1)		0.120		0.283		0.298
		(0.034)***		(0.058)***		(0.085)***
Number of Observations	2105	2105	688	688	284	284
Pseudo-R^2	0.078	0.081	0.089	0.107	0.117	0.137

Table XIII: **Change in Board Structure**

Mean values of board structure variables as of T=0, the annual meeting preceding the filing of the lawsuit, and T=4, the fourth annual meeting following the filing of the lawsuit. Panel A partitions the sample of SFCAs into those that are settled and those that are dismissed. Panel B partitions the sample of SFCAs into those settled actions for which the ratio of settlement amount to total assets is in the top quartile and all other actions. The change in number of directors and percentage of outside directors is the difference in the mean value of these two board structure variables between T=0 and T=4. P-value is the significance of a two sided t-test for difference in the mean values of board structure variables between T=0 and T=4. *P-value of equal change* is the significance of a test for differences in the difference between T=0 and T=4 between the two sample partitions in Panels A and B.

	T=0	T=4	Change	P-value: Change=0	P-value: Equal change
	[1]	[2]	[3]	[4]	[5]
Panel A					
Number of Directors					
Settled	9.399	9.130	-0.269	0.094	0.917
Dismissed	9.643	9.400	-0.243	0.218	
Percentage of Outside Directors					
Settled	72.859	78.416	5.557	0.000	0.735
Dismissed	73.927	79.056	5.129	0.000	
Percentage of New Directors					
Settled		48.908	9.460	0.000	
Dismissed		39.449			
Panel B					
Number of Directors					
Scaled Settlement in Q4	8.020	8.102	0.082	0.773	0.201
Other	9.757	9.440	-0.317	0.021	
Percentage of Outside Directors					
Scaled Settlement in Q4	69.353	78.010	8.657	0.000	0.054
Other	73.990	78.802	4.811	0.000	
Percentage of New Directors					
Scaled Settlement in Q4		59.160	16.683	0.000	
Other		42.476			