

Financial Fraud, Director Reputation, and Shareholder Wealth*

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Abstract

We investigate the reputational impact of financial fraud for outside directors based on a sample of firms facing shareholder class action lawsuits. Following a financial fraud lawsuit, outside directors do not face abnormal turnover on the board of the sued firm but experience a significant decline in other board seats held. The decline in other directorships is greater for more severe cases of fraud and when the outside director bears greater responsibility for monitoring fraud. Interlocked firms that share directors with the sued firm exhibit valuation declines at the lawsuit filing. When fraud-affiliated directors depart from boards of interlocked firms, these firms experience a significant increase in valuation.

Key words: Director reputation; Financial fraud; Interlocking directorships; Class action lawsuits

JEL classification: G30; G34; J33; K22; M41

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1. Introduction

The recent wave of corporate financial scandals has raised substantial concerns about the effectiveness of corporate governance in the US. A commonly held view is that financial scandals are symptomatic of, and resulted from, massive deficiencies in corporate governance. This view has prompted widespread reform, ranging from the Sarbanes-Oxley Act, new Securities and Exchange Commission (SEC) regulation, and governance requirements adopted by the NYSE and NASDAQ. Additionally, organizations such as Institutional Shareholder Services, Council for Institutional Investors, The Corporate Library, among many others, have been actively promoting extensive reform agendas aimed at strengthening the quality of corporate governance in public corporations.

Despite the massive financial losses incurred by investors in recent governance failures, relatively little is known about the penalties suffered by outside directors involved in fraud. In this paper, we examine the role of reputation in the market for directorships as an incentive mechanism for monitoring fraudulent behavior. Reputational effects are commonly thought to be an important source of incentives for outside directors to monitor managerial actions, and yet the size and scale of recent financial scandals suggests that such incentives might be insufficient to control fraud. Understanding the underlying causes contributing to fraud is important to assessing whether the slate of governance reforms is likely to result in meaningful improvements in the quality of corporate governance.

We examine three primary questions regarding reputational incentives and fraud. First, we examine whether the reputation of outside directors on boards of firms accused of fraud suffers around the revelation of fraud. Second, we examine whether reputational effects provide incentives to monitor at the margin. Specifically, we test whether more severe cases of fraud are associated with larger reputational penalties for outside directors. Third, we examine how reputational effects get transmitted in the market for directorships by examining why fraud-affiliated directors lose board seats at some firms while retaining board seats at other firms.

We use a sample of firms facing shareholder class action lawsuits alleging violations of rule 10(b)-5 of the 1934 Securities and Exchange Commission (SEC) Act to construct a sample of firms engaged in financial fraud. Following the lawsuit, we find no evidence of abnormal turnover of outside directors on the boards of sued firms. However, there is a dramatic decline in the other directorships held by outside directors of sued firms. On average, outside directors of sued firms experience a reduction of about 50% in the number of other directorships held, and 96% of outside directors that sit on another board lose at least one directorship within the three years following the lawsuit. The reductions in directorships are greater for more serious cases of fraud, as measured by subsequent SEC enforcement actions or settlement amounts following the lawsuit.

We explore two hypotheses to understand why reductions in directorships occur after class action lawsuits. The reputation hypothesis holds that fraud damages the reputation of outside directors, resulting in a loss of directorships. We also examine an endogenous board hypothesis which holds that outside directors specialize in monitoring services and that firms prone to fraud are likely to have directors most capable of monitoring fraud. In addition to these hypotheses, we also consider other explanations such as legal liability concerns that suggest outside directors may cut back on board seats in order to minimize their future legal exposure.

We test these hypotheses by examining the effect of fraud revelation on the directorship-interlocked firms that also employ the outside directors of the sued firms on their boards. We show that interlocked firms experience significantly negative abnormal returns at the time of the lawsuit filing. We also find that relative to a control sample, the presence of an outside director that sits on another board that faced a class-action lawsuit significantly increases the likelihood of a class action lawsuit. Analysis of director departures from interlocked boards shows that sued outside directors are more likely to lose directorships at interlocked firms with stronger corporate governance as measured by their governance index (Gompers, Ishii, and Metrick, 2003). This suggests that the decline in directorships is not driven by a voluntary cutback by outside directors

seeking to reduce their potential future legal exposure. Finally, we examine investor reactions to departures of directors from boards of interlocked firms. We find that that departures of outside directors associated with fraud from boards of director-interlocked firms have a significantly positive valuation impact for these firms. We interpret our results as being consistent with both the reputation and endogenous board hypotheses.

Our findings are relevant to the current debate on the role of directors in financial fraud. For example, the Sarbanes-Oxley Act of 2002 extends the penalties faced by directors of firms that commit fraud under the SEC Act of 1934. Our findings suggest that while outside directors suffered large reputational losses following the revelation of fraud, the lost directorships were concentrated among interlocked firms with strong governance structures. Therefore, reputational penalties alone might be insufficient to provide incentives to control and deter fraud if some outside directors serve largely on boards with weak governance structures, thereby facing a low likelihood of lost directorships. The SEC is also currently considering additional legislation that would make it easier for shareholders to nominate, elect, and/or dismiss directors.¹ Our results suggest that the benefits of such regulation might be more limited than expected since firms with strong governance display a high sensitivity to the reputational capital of their outside directors.

Our paper also contributes to the emerging literature on the factors that affect the probability of financial fraud. Prior research has documented significant differences in board composition and executive compensation for firms engaged in fraud (e.g. Dechow, Sloan and Sweeney (1996), Beasley (1996), Agrawal and Chadha (2005), Burns and Kedia (2005)). While confirming results of prior studies, we show that additional characteristics such as the governance index, the presence of staggered boards, busy boards, and directors previously involved in fraud also significantly affect the probability of fraud.

1. Under the SEC proposed rule, stockholders will be able to place director nominees on the ballot in some cases. The rule would make it easier for stockholders to nominate directors but would be limited to two specific circumstances: if more than 35% of the votes cast withhold support from a board nominee; or if a proposal to let stockholder nominees on the proxy is endorsed by more than 50% of the votes cast (Solomon and Lublin, 2004).

The paper proceeds as follows. Section 2 reviews the relevant literature and presents our research questions. Section 3 describes our data, the sample selection process and presents event study results for firms facing financial fraud lawsuits. Section 4 examines the effect of financial fraud on director reputation.² Section 5 studies the effect of the class action lawsuit on other firms interlocked through shared directors. Section 6 investigates the probability of retaining directorships following the lawsuit and examines investor reactions to departures of outside directors that sat on boards accused of fraud. Section 7 concludes.

2. Financial Fraud and Director Reputation

2.1 Valuation consequences of financial fraud

Financial fraud typically has a substantial adverse valuation effect on companies. In order to interpret this valuation effect, it is helpful to understand the stylized sequence of information released to the market. Often, indications of fraud surface with the release of certain trigger events. Most commonly, a trigger event is a self-initiated press release by a firm alerting investors to the potential for accounting or other financial irregularities. Trigger events are frequently followed by private litigation, such as shareholder class-action lawsuits. Trigger events could also be accompanied by an informal SEC inquiry, which determines whether further SEC action in the form of a formal investigation is warranted. Formal actions by the SEC sometimes result in an Accounting, Auditing, and Enforcement Release (AAER).

Karpoff, Lee, and Martin (2004) provide a comprehensive review of the enforcement process by the SEC and Department of Justice (DOJ) and document significant negative valuation effects at all stages of the enforcement process. They show that announcements of trigger events lead to an average one-day excess return of -25.24%, class-action lawsuits lead to excess returns of -7%, and company announcements of investigation events are associated with excess returns

2. Although a class action filing does not necessarily imply guilt for the defendant, in what follows, we use the term “fraud” to designate those firms facing a lawsuit.

averaging -14.4%. Cumulatively, their estimates indicate an average valuation effect of -41% for accounting and enforcement actions related to financial fraud.

Direct economic penalties appear small in comparison. Karpoff, Lee, and Martin (2004) estimate that only 5.3% of the value loss can be attributed to legal penalties and settlements and awards in class action lawsuits. Misstatements of financial results appear to account for no more than 28.8% of the value loss, implying that the bulk of the value loss arises due to a reputational impact for the firms. Reputational losses can arise if managers devote substantial time to the investigation process at the expense of company business, reduced credibility in contracting with suppliers of capital and customers, and a higher cost of capital (Klein and Leffler (1981), Jarrell and Peltzman (1985), and Karpoff and Lott (1993)).

2.2 Reputational incentives and director reputation

Fama (1980) and Fama and Jensen (1983) note that important incentives for outside directors to monitor comes from reputational effects in the market for directorships. According to this reputation hypothesis, vigilant directors that establish reputations as good monitors should be rewarded with additional board seats, while lax monitors should be disciplined with a reduction in board seats. Yermack (2004) notes that additional incentives to monitor can arise from equity holdings, restricted stock and option awards, and turnover of outside directors.

Several studies find reputational considerations to be important in the market for outside directorships. Outside directors hold fewer board seats after serving in dividend-reducing firms (Kaplan and Reishus (1990)), in companies that experience financial distress (Gilson (1990)), in firms that are liquidated (Harford (2003)), and in firms that perform poorly (Yermack (2004)). CEOs from firms that have performed well get outside directorships after retirement (Brickley, Coles, and Linck (1999)) and Coles and Hoi (2003) show that directors of companies that reject the restrictive antitakeover provisions of Pennsylvania Senate Bill 1310 are more likely to gain external directorships.

Despite these findings, evidence on reputation hypothesis following financial fraud is mixed. Agrawal, Jaffee, and Karpoff (1999) find that turnover of CEOs and outside directors remains unchanged after financial fraud. Helland (2004) finds that outside directors of firms facing class action lawsuits actually witness an increase in the number of other board seats held following the lawsuit. In a recent paper, Srinivasan (2005) finds that outside directors, particularly those serving on the audit committee, experience substantial turnover on the boards of firms that restate earnings. However, he finds only a small decline in other board seats held by outside directors of firms that restate earnings.

One explanation for the mixed evidence on the reputation hypothesis is that financial fraud is substantially different than other corporate events such as acquisition bids, takeover defenses, and dividend policy that are explicitly voted on by the board. Since management has the ability to control the flow of financial information to the board, fraud may be inherently difficult for outside directors to uncover. This reaction is frequently elicited by outside directors and CEOs of firms alleged of fraud. If fraud is indeed extremely costly to uncover by outside directors, it is possible that events of fraud have few, if any, reputational consequences for outside directors.

An alternative explanation arises from the endogeneity of corporate board structure with respect to the firm's operating environment. Some industries are more likely to experience fraud because of the characteristics of optimal customer, supplier, and employment contracts. For example, sectors where customer contracts have very long durations, thereby enabling income-shifting across years, may be more prone to fraud. In these industries, the need for monitoring is likely to be stronger and therefore, boards of firms are more likely to have outside directors with greater reputations for monitoring and fraud detection. The revelation of fraud in such firms might signal to investors that the firm is in a fraud-prone sector, and not necessarily damage the reputation of outside directors. We term this the endogenous board hypothesis.

In addition to these two hypotheses, there are other explanations for why the decline in directorships may be muted for outside directors following fraud. For example, it is possible that

financial fraud enhances the opportunities of outside directors to serve on other boards. Given the struggle for power between the board and the CEO described by Hermalin and Weisbach (1998), it is possible that some CEOs prefer outside directors with a reputation for lax monitoring if their presence on the board makes it easier for the CEO to perpetrate fraud, to consume perquisites, or to carry out other non-shareholder value-maximizing activities. It is also possible that outside directors that face class action suits are more desirable candidates for other boards because of their experience in responding to such litigation. Helland (2004) suggests that the legal experience and lax oversight hypotheses likely underlie the increase in directorships of outside directors accused of fraud in his sample. Finally, liability or reputational concerns may also prompt outside directors of fraud firms to forego directorships if they become averse to bearing the costs of fraud at another firm whose board they sit on.

2.3. Research questions and experimental design

To explore the incentives for outside directors in monitoring fraud, we conduct several tests. First, we examine the turnover of outside directors on the boards of firms accused of fraud and investigate the changes in their directorships held at other firms. Second, we examine the effects of fraud revelation for the other firms that employ outside directors of fraud-afflicted firms on their boards. We study whether firms suffer a valuation penalty when their directors serve on the boards of firms accused of financial fraud. We also examine whether the presence of an outside director on the board that has previously served on another board accused of fraud increases the likelihood that the firm will be accused of fraud. Third, we analyze the characteristics of firms in which directors accused of fraud lose their board seat and compare them to firms in which directors retain the board seat following the revelation of fraud. Finally, we study valuation effects when directors associated with fraud depart from boards of non-fraud firms.

3. Data

3.1. Shareholder class action lawsuits

We identify firms accused of financial fraud using the incidence of a shareholder class action lawsuit alleging violation of rule 10(b)-5 of the SEC Act of 1934. This rule proscribes, among other things, “the intent to deceive, manipulate, or defraud with misstatements of material fact made in connection to financial condition, solvency and profitability.” We exclude all complaints that are also covered by this rule which allege insider trading, devoting our attention exclusively to those complaints that purport willful misrepresentations of a firm’s financials. The latter type of violation is more likely to occur in firms with weak board oversight while insider trading might be harder for directors to observe and control.

Using class action lawsuits to identify episodes of financial fraud offers certain advantages over other approaches. Two other common approaches are announcement of an earnings restatement and announcement of an SEC Accounting and Auditing Enforcement Release (AAER). While many of the firms eventually restate earnings, not all firms do so prior to the lawsuit filing. Further, as Karpoff, Lee, and Martin (2004) note, identifying financial reporting violations using press releases or an AAER can miss many instances of reporting violations and that many targeted companies get delisted before regulators formally file charges. Class action lawsuits, on the other hand, tend to be filed quickly after the disclosure of reporting violations, on average one day after the trigger event announcement. An additional benefit of using a class-action lawsuit sample is that it provides complementary evidence to other studies, such as Agrawal and Chadha (2005), who study earnings restatements to identify financial fraud. As they discuss, their sample is probably tilted towards the more egregious and high-profile cases of financial fraud since limited resources may prevent the SEC from pursuing all cases.

A drawback to using class action lawsuits to identify financial fraud is that the discovery phase in lawsuits follows the filing of the suit, whereas for federal enforcement actions such as AAERs, the discovery period precedes enforcement. Therefore, our lawsuit sample contains

events where fraud is alleged, but is not yet conclusively established. Because lawsuits occur earlier than federal enforcements, lawsuits are more suitable to study shareholder wealth effects, but come with the cost that some of these lawsuits may be eventually dismissed. For expositional convenience, we refer to lawsuit filings as financial fraud, but readers should note that our sample includes only cases where fraud is alleged to have occurred. Since fraud may not have occurred in some cases, our sample probably biases us against uncovering a significant role for reputational incentives and associated valuation effects.

In an attempt to address this limitation, we examine whether SEC enforcement actions occur within our sample and also collect data on settlement amounts. We consider the presence of an SEC enforcement action or a high subsequent settlement as evidence of the severity of the fraud allegation and test whether changes in directorships are more pronounced for such firms. Cox and Thomas (2004) show that settlement amounts are higher in more severe cases of fraud.

Prior evidence shows that class action lawsuits have material consequences for firms named as defendants. Skinner (1997) finds that from 1988 to 1994, 20% of the cases involved settlements that exceeded 10% of the firm's annual sales. Ferris and Pritchard (2001) also argue that the Private Securities Litigation Reform Act of 1995 made it more difficult to bring financial fraud class action suits because it requires plaintiffs to "stay" discovery while motions to dismiss are pending, thereby depriving plaintiffs of the sources most likely to provide material facts needed to demonstrate fraud. They note that this Act significantly lowered the incidence of frivolous shareholder lawsuits.

3.2. Sample construction

Our sample period is from 1998 to 2002, and observations are drawn from the PriceWaterhouseCooper's class action database and the Stanford University litigation database. The initial sample includes 685 litigation filings for 580 different companies during the five-year period. We use a two-step selection rule to determine our sample. First, because offenses to rule

10(b)-5 also include insider trading, we read the complaints and focus only on those pertaining to financial misrepresentations, but where no insider trading is alleged. Second, we require firms to have stock market, accounting, and compensation data during the year of the lawsuit filing and the preceding year on CRSP, Compustat, and Execucomp, respectively. We also exclude a few cases where the filing date for the lawsuit cannot be identified reliably or the firm is not the primary defendant in the lawsuit. These criteria produce a final sample of 216 observations involving an equal number of different firms.

Table 1 displays summary statistics on the lawsuits in the sample. Panel A shows that a majority of the lawsuits (58%) allege use of improper accounting practices, including revenue, expense, and earnings management, 47% allege that management provided false or misleading statements and/or failed to disclose material information, and 40% allege misleading financial projections including actions to inflate the stock price. These numbers add up to more than 100% since the categories are not mutually exclusive.

The alleged violations typically take place over an extended period of time. On average, the period over which these violations are alleged to have occurred (i.e. the class period) is over 1 year (376 days) with a median of 260 days, as shown in Panel B. Panel B also shows that lawsuits are typically filed about 3 months after the violations are alleged to have occurred. A large fraction of lawsuits result in out of court settlements and such settlements take place about two and half years after the lawsuit is filed. Although not tabulated, the frequency of lawsuits rises from 1998 to 2001 with a drop in 2002. The sample displays some clustering in three industries, Chemicals, Energy, and Business Services, which represent 46% of the events. However, the other observations are distributed relatively evenly across a wide number of industries.

As discussed earlier, class action lawsuits are typically accompanied by a decline in the stock price and this pattern is evident in our sample as well. In untabulated tests, we calculated the cumulative abnormal returns (*CARs*) for the fraud sample starting 100 days before the filing date, using standard event study methodology (Dodd and Warner (1983)) with market model

parameters estimated over the prior one-year interval. The *CARs* are close to zero approximately until 20 trading days, or 1 calendar month, prior to the filing and then become sharply negative, averaging -16% during the -20 to -3 day window relative to the lawsuit filing date. Similar patterns of negative returns prior to class-action filings are documented by Karpoff, Lee, and Martin (2004) and indicate the revelation of significant adverse information, or “trigger events” prior to the lawsuit filing.

We search news articles in the month prior to the lawsuit to identify the trigger events. The most frequent is self disclosure – instances where the firm voluntarily admits some wrongdoing in financial reporting, such as improper recording of expenses or revenues, inconsistent accounting treatment, etc. Self disclosure occurs in 113 cases, or 52% of the sample. Internal investigations, events in which the firm announces a review of its accounting practices and/or accuracy of information disclosed earlier to investors, occur in 62 (29%) cases. Earnings restatements occur in 36 firms (17%) and 22 firms (10%) announce a change in the auditor. Eleven firms in the sample delay SEC filings, 5 acknowledge the review of accounting practices without an admission of wrongdoing, and 2 firms are subject to allegations of financial misrepresentation by whistleblowers. In 15 cases, we identify a miscellaneous category of trigger events that includes events of bribery, shareholder inquiries, federal investigations, and managerial turnover. Our sample therefore represents a broader mix of financial improprieties than is commonly featured in studies that use other events such as earnings restatements or SEC investigations.

To identify lawsuits that represent serious lapses in corporate governance, we collect data on SEC Accounting and Auditing Enforcement Releases (AAERs) for our sample. We find that 45 of our 216 sample firms were subject of an SEC enforcement action and all the alleged violations described in the AAERs matched the allegations in the class action lawsuits. As an additional measure of the severity of misconduct, we collect settlement amounts from PriceWaterhouseCoopers. For each settlement, we read the summary notice of proposed class

action settlement in order to ensure that the settlement corresponds to the class action in our dataset. We note that since settlements and SEC actions often occur after substantial time has lapsed, this process has the potential to miss some serious instances of fraud that have yet to be resolved.

Panel C of Table 1 presents information on the settlement amounts for the 197 firms for which settlement data are available. The average settlement is \$21.67 million and the 25th and 75th quartiles have values of \$3.35 million and \$40.5 million, respectively. As has been documented by Cox and Thomas (2004), SEC actions and high settlement awards tend to be highly correlated. In our sample, 36 firms subjected to an SEC enforcement action are also in the top quartile of settlements.

3.3. Valuation impact of fraud litigation

If class action litigation represents a significant disclosure about financial fraud, we expect to observe a negative market reaction around the filing date. In Panel D of Table 1, we report event-study results for the 216 firms in the sample, dropping 16 cases where other major news is released on the filing date.³ Over the day (-1,0) interval, the excess returns average -5.95%. This estimate is of comparable magnitude to that in Karpoff and Lott (1993), who find 2-day excess returns of -4.56% for a sample between 1978 and 1987, and to Karpoff, Lee, and Martin (2004) who show a market reaction of -7.00% during 1978 to 2002. Thus, the filing of a financial fraud class action suit is associated with a significant negative revaluation of the firm's equity. For comparison, Agrawal and Chadha (2005) document an average two-day excess return of -4.2% for a sample of 159 earnings restatements from 2000 to 2001.

3. Market model parameters are computed from one year of trading data preceding the event window. To control for possible bias on the market model parameters, we re-estimate our *ARs* with simple net-of-market returns in place of market model returns. This generates similar results to those obtained with the market model parameters.

Investor reactions are significantly more negative for more egregious cases of financial fraud. The subsample of class action suits also accompanied by an SEC enforcement action displays an average two-day excess return of -7.2% compared to -5.61% when no SEC enforcement takes place. Similarly, filings that result in high settlement awards (measured as the top quartile of settlements), result in an average excess return of -7.81%, compared to an average -5.29% excess return for other lawsuits.

4. Lawsuits and directors' reputation

We record changes in directorships held by outside directors of sued firms for three years following the lawsuit. Since most firms appoint directors with staggered three year terms, the three year period ensures that a reappointment decision has occurred for each director following the fraud litigation. Due to availability of proxy statements, we are able to track the post-lawsuit directorships for the 113 firms that face class action suits between 1998 and 2000. We track directorship changes by reading proxy statements and bibliographies that appear for each director in the firms' annual report. When necessary, we supplement with records from *The Million Dollar Directory*, and the *Who's Who in Finance and Industry*.

Table 2 shows the frequency of outside directors that remain on the board of the firm facing fraud litigation. Despite the significant valuation loss associated with the lawsuit filing displayed in Table 1, almost all outside directors retain their board positions on the firms involved in the lawsuit. Three years after the lawsuit filing, 83% of outside directors retain their board seat at the sued firm. Yermack (2004) finds a 4.6% unconditional annual frequency of outside director turnover (exclusive of delistings) and Fich and Shivdasani (2005) document a 6.7% annual departure frequency among large firms. Therefore, the sample of fraud firms appears to display no abnormal turnover among outside directors. This finding is consistent with Agrawal, Jafee, and Karpoff (1999) who also find no evidence of abnormal turnover among outside directors in a sample of fraud firms.

Outside directors, however, experience a substantial decline in the number of other board appointments held. The average number of board seats held at other firms (i.e. interlocking firms) declines from 0.95 in the year prior to the lawsuit to 0.85 in year +1 and further to 0.47 by year +3. The reduction in the average number of directorships occurs both because the number of directorships held declines as well as a lower frequency of outside directors that sit on other boards. Table 2 shows that in the year prior to the lawsuit filing, 49.6% of outside directors held at least one other board appointment. This percentage drops to 46% in year 1 and to 29% by year +3 following the lawsuit. Of the subset of outside directors that held at least one other board seat prior to the fraud lawsuit filing, 96% experience a reduction of at least one board appointment. The last three rows of Table 2 display the frequency by which outside directors lose all other board appointments. Of the directors that held at least one other board seat, over 96% lose all other board seats by year +3. For outside directors that held three or more other board seats prior to the lawsuit, almost 49% lose all directorships by year +3. Thus, the data indicate a drastic reduction in the number of other board seats held by outside directors of firms facing financial fraud lawsuits.

The large decline in outside directorships is consistent with several explanations discussed earlier. The reduction in board seats could be a result of damaged reputations of outside directors affiliated with fraud-afflicted firms. Alternatively, it may reflect a voluntary cutback by outside directors on their other board commitments. There are at least two reasons why such a voluntary cutback might occur. First, it may reflect an increased focus by outside directors on the legal issues confronting the fraud firm and an attempt to manage their personal legal exposure. Second, the revelation of fraud might signal that the firm's operational environment requires more intensive monitoring than previously thought, prompting outside directors to reallocate their time to devote more attention to the fraud firm. Therefore, these findings are consistent with both the reputation and endogenous board hypotheses as well as legal liability concerns affecting director behavior.

5. Effects of class action filings on interlocked firms

To understand why outside directors of fraud firms witness a drop in the number of other board seats held, we study the impact of the lawsuit on other firms that also employ these outside directors (henceforth, director-interlocked firms). We first examine whether the revelation of fraud, as indicated by a class action suit, has a valuation impact on director-interlocked firms. Under the reputation hypothesis, fraud revelation is expected to damage director reputation, leading to a decline in the value of director-interlocked firms. Alternatively, it is possible that sued firms and director-interlocked firms possess common attributes such as similar industry, product linkages, strategic alliances, or shared auditors. Under the endogenous board hypothesis, fraud revelation could also have a negative valuation effect for director-interlocked firms because it signals a greater likelihood of fraud at these firms due to the shared characteristics. We then examine if such a fraud contagion effect exists for director-interlocked firms by examining the determinants of the probability of fraud.

5.1 Wealth effects for director-interlocked firms

Our sample of fraud firms contains 1,241 outside directors, 396 of which hold directorships in firms other than the fraud company. These 396 directors hold 1,085 board seats in 1,022 different publicly traded firms for which CRSP data is available. Thus, we have 1,022 director-interlocked firms that are tied to fraud firms through at least one outside director.

Investor reactions for the director-interlocked sample are negative and statistically significant as shown in Panel A of Table 3. Over the (-1,0) interval, director-interlocked firms experience an average two-day *CAR* of -0.98%, when a firm is subject to fraud litigation. Investors appear to assess the potential severity of the fraud allegation at the time of lawsuit filing and react more negatively to lawsuits that involve more serious cases of fraud. Panel B shows that announcement excess returns are more negative for lawsuits where a subsequent SEC

enforcement action occurs and Panel C illustrates that excess returns are lower for lawsuits that result in high settlement amounts, defined as those in the top quartile. Both these effects are significant at the 10% level. The negative returns to director-interlocked firms do not, however, appear to represent an industry effect. For each outside director in the fraud sample, we examine whether any of their other directorships are held in firms that reside in the same Fama and French (1997) industry classification. Panel D shows that excess returns do not appear to be significantly different between interlocked firms that are in the same industry as the fraud firm and those that are in different industries.

The negative investor reaction is consistent with several explanations. First, a fraud lawsuit may serve as a negative signal of the outside director's quality and reputation, leading investors to revise downward the valuation of the director-interlocked firms. The fraud litigation may also be a time-consuming endeavor for outside directors, thereby preventing them from devoting sufficient attention on the interlocked boards, eliciting a negative reaction by shareholders of the interlocked firms. A third possibility is that the negative investor reaction reflects investors' concerns regarding the increased probability that the director-interlocked firm is susceptible to financial fraud or fraud litigation. However, the wealth effects do not vary according to whether the interlocked firm is in the same industry as the sued firm, implying that a signalling effect, if present, operates through common characteristics other than industry. Such common characteristics may include the presence of the same auditor, or customer-supplier relations and/or strategic alliances that may be affected as a result of the class action lawsuit.

To examine these explanations further, we estimate multivariate regressions using the abnormal returns (*ARs*) for the director-interlocked firms as the dependent variable.⁴ These models include several variables intended to capture common industry and operating characteristics between fraud and interlocked firms. All models include a vector of industry effects using Fama and French (1997) industry classifications. Balsam, Krishnan, and Yang

4. The sample consists of 891 observations for which all independent variables are available.

(2003) find that auditors tend to specialize according to industries and hence we include a “same auditor” indicator to control for the quality of auditing.⁵ In addition, we add a “strategic alliance” indicator to measure business relationships between the fraud and director-interlocked firms that may be affected by the fraud.

We examine whether market reactions for interlocked firms are more pronounced if the severity of the fraud is high or if directors bear greater responsibility for the fraud, as is suggested by the reputation hypothesis. In model (1) we include an indicator if the fraud is accompanied by an SEC action and in model (2) we include the amount of the settlement as measures of fraud severity. In both models, we include an additional variable if the director served on the audit committee of the sued firm. Since audit committee members are likely to develop reputations in fraud detection, the incidence of fraud is likely to be more damaging to their reputation, and hence the excess returns for their interlocked firms should be lower. We also add an indicator if multiple directors of a sued firm sit on the board of an director-interlocked firm, as is observed in 17 cases within our sample. Finally, we add two variables to measure the status of the sued director on the interlocked board: an indicator if the director is the CEO of the interlocked firm and an indicator if s/he sits on the audit committee of the interlocked firm. Reputational considerations suggest that wealth effects should be more pronounced for such directors. Finally, the models include a series of variables designed to measure the strength of corporate governance as well as controls for director and firm characteristics.

The coefficient estimates in Table 4 indicate that neither the strategic alliance indicator nor the same auditor indicator yield significant coefficients. However, variables that measure fraud severity and director responsibility are highly significant in both models. In model (1), *ARs* are lower if the lawsuit is followed by SEC enforcement actions (-0.013, *p*-value = 0.0001), and in model (2) the settlement amount is also negative and significant (-0.002, *p*-value = 0.0001).

5. Each firm’s auditing company is extracted from proxy statements, and supplemented when necessary with information from *Who Audits America, A Directory of Publicly-Traded Companies & the Accounting Firms Who Audit Them*. Menlo Park, CA: Data Financial Press.

The presence of multiple directors from fraud-afflicted firms is also associated with significantly lower excess returns for director-interlocked firms.

Investor reactions at interlocked firms are more negative if the sued director serves on the interlocked firm's audit committee. Since the audit committee has primary responsibility for ensuring the accuracy of financial reporting, this finding suggests that the reputational impact of a fraud lawsuit is more severe for directors who are closely involved in monitoring the possibility of financial fraud. Similarly, serving on the audit committee on the sued firm indicates a potentially higher degree of oversight failure on the part of an outside director. Consistent with the reputation hypothesis, investor reactions at interlocked firms are more negative if the interlocked director is a member of the sued firm's audit committee.

When the interlocked director is the CEO of the interlocked firm, investor reactions are also significantly more negative. Since incentives of CEOs to engage in fraud are arguably larger, and their role in either perpetuating or preventing fraud more instrumental than other board members, the association with fraud for a CEO appears more damaging to shareholder wealth.

The evidence also suggests that strong governance plays a role in mitigating investors' potential concerns about fraud. The indicator for an independent board and equity holdings by the board exhibit positive and significant coefficients, and the Governance Index displays a negative coefficient, indicating that strong corporate governance at the interlocked firms mitigates the negative stock-price reaction.⁶

In summary, these results indicate that the reputation hypothesis at least partially explains the negative excess returns observed at director-interlocked firms. We find excess returns are lower when the fraud is more severe, when the shared director sits on the audit committee of the sued firm, and when multiple directors of the sued firm sit on the interlocked board. Excess returns are also lower when the director has important responsibility for fraud prevention and

6. An board is considered to be independent if 50% or more of directors are independent. We define directors to be independent if they are not current or former employees of the firm, and do not share any family or material business relation with the firm or its management.

control at the interlocked firm, as proxied by status as CEO or audit committee member. These results obtain after controlling for industry effects and for the presence of strategic alliances or common auditors.

5.2. Probability of financial fraud

Negative excess returns for director-interlocked firms can arise both because they serve as an adverse signal of the board's reputation and because lawsuits may signal a higher likelihood of fraud at the director-interlocked firms. To explore whether such a contagion effect exists, we examine the probability of financial fraud. Specifically, we test whether presence of outside directors that have been previously associated with fraud litigation while serving on another board increases the probability that a firm is sued for fraud. Because corporate governance attributes vary systematically by industry, we construct an industry-matched control sample of firms that are not subject to fraud litigation to conduct this test. The matching sample is identified by controlling for industry, pre-event performance, and firm size. We use total assets in the year prior to the filing to proxy for firm size, industry-adjusted return on assets (ROA) to proxy for firm performance,⁷ and control for industry classification using at least 2-digit SIC codes. To ensure that all matching firms have available accounting, market, and compensation data, the selection criteria for these companies is similar to that described for the firms that experience class actions. We are able to match all firms at the 2-digit SIC code level, 72 firms (33% percent) at the 3-digit level and 31 firms (14% percent) at the 4-digit SIC code level.

Table 5 compares various board and corporate governance attributes across the 216 fraud firms and their corresponding control firms. Boards of fraud firms tend to be larger than control firms by almost one director. Fraud firms also tend to tend to have fewer independent outside

7. We calculate ROA as follows. The numerator is operating income before depreciation (Compustat item 13) plus the decrease in receivables (Compustat item 2), the decrease in inventory (Compustat item 3), the increase in current liabilities (Compustat item 72) and the decrease in other current assets (Compustat item 68). The denominator is the average of beginning- and ending-year book value of total assets (Compustat item 6). This ratio is then adjusted by the median ROA for firms in the same 2-digit SIC.

directors, consistent with Dechow, Sloan, and Sweeney (1996) and Beasley (1996). Following Fich and Shivdasani (2005), we classify boards as busy if 50% or more of the outside directors hold three or more board seats. The board is classified as busy in 18% of fraud firms and 15% of control firms. Fraud firms are more likely to have a combined CEO-Chairman leadership structure than control firms. Following Agrawal and Chadha (2005), we examine the presence of firm-founders and whether a director has financial expertise (i.e. have a CPA, CFA, or experience in corporate financial management). We observe a lower percentage of outside directors with financial expertise in fraud firms. In addition, the Gompers, Ishii, and Metrick (2003) index is significantly higher for fraud firms indicating a weaker governance structure for these firms.

Table 6 presents estimates from a logit model where the dependent variable takes the value of “one” if the firm is a fraud litigation defendant and the value of “zero” if the firm is a matching non-fraud firm. The results indicate significant differences in the strength of corporate governance between fraud and matching firms. A high governance index (indicating weak governance) significantly increases the probability of fraud. In addition, measures of weak board monitoring, such as the lack of an independent board, the presence of a busy board, and the presence of a staggered board, all significantly increase the probability of fraud.

The results also show that the presence of an outside director that serves on a board of another firm facing a financial fraud class action suit significantly raises the probability of a fraud class action suit. This suggests that directors that have been previously associated with allegations of financial fraud are more likely to confront similar allegations on other boards. This finding is consistent with the reputation hypothesis that holds that directors with poor reputations are lax monitors, and tend to allow financial fraud to occur on other boards. It is also consistent with the endogenous board hypothesis that suggests that certain directors specialize in monitoring fraud and sit on boards that are susceptible to fraud. In this case, the coefficient on sued director may simply reflect the pattern that such directors self selected to sit on boards of fraud-prone firms. A third possibility is that directors who have served on boards that have been sued before, might be

recruited to sit on boards of other firms likely to face similar litigation because of their expertise in dealing with lawsuits.

Other results in Table 6 are consistent with existing literature. Consistent with Agrawal and Chadha (2005), the presence of an outside director with financial expertise and the absence of a firm-founder lowers the likelihood of financial fraud. The results on outside directors with financial expertise suggest that Sarbanes-Oxley requirements mandating financial experts on the board are likely to be beneficial for monitoring fraud. Firm size also yields a positive and significant coefficient. As in Jones and Weingram (1996) and in Field, Lowry, and Shu (2005), this last result potentially reflects the fact that larger firms are more likely to be sued because they are perceived to be better able to pay larger damages to successful plaintiffs.⁸ As in Beasley (1996) we estimate a positive and significant coefficient for board size. We also find that option-based CEO compensation increases fraud probability -- similar to results in Burns and Kedia (2005) and arguments in Goldman and Slezak (2005) who present a model in which incentive-based compensation can create incentives to commit financial fraud.

6. Directorship Losses and Valuation Effects for Interlocking Firms

6.1. Probability of retaining directorships

To understand the factors underlying the reduction in directorships following fraud, we examine why outside directors lose some directorships while continuing to remain on other boards. If directorships are lost as a penalty for damaged reputations, we expect the lost directorships to be among well-governed firms. The incentive to preserve the board's reputation will be greater for firms with strong governance, and hence well-governed firms are likely to be more proactive in replacing directors with damaged reputations. A similar prediction arises from the endogenous board hypothesis. If a lawsuit signals that a firm is more fraud-prone than previously thought,

8. Apfel, Parsons, Schwert, and Stewart (2001) provide an example of how damages can be calculated in the case of 10(b)-5 actions.

outside directors specializing in monitoring fraud may choose to spend more time on that board and give up other board seats that require less monitoring. Under this hypothesis, board seats in well governed firms are likely to be foregone.

While both the reputation and endogenous board hypotheses suggest board seats will be retained in firms with weaker governance, the reputation hypothesis makes some additional predictions. Specifically, the reputation hypothesis predicts that directorships are more likely to be lost after severe instances of fraud and also when directors with greater reputation are associated with fraud. Further, it suggests that directors that serve in board positions that bear significantly responsibility for fraud detection are more likely to lose these positions.

Examining the types of board seats that are lost also allows us to distinguish the reputation and endogenous board hypotheses from legal liability considerations that may also explain why directorships are lost. If sued directors voluntarily cut back on directorships to reduce personal or legal costs borne from possible fraud at other firms, we expect that directorships in poorly governed firms are likely to be foregone. Board responsibilities and legal liability are likely to be more significant considerations for directors of poorly governed firms. Our earlier results show that poorly governed firms are more likely to face fraud lawsuits and, therefore, outside directors should forego directorships in weakly governed firms if litigation avoidance is a primary consideration.

We analyze the directorships held by outside directors of the 113 firms that are sued for fraud during the first three years of our sample period (1998-2000). We tally 678 outside directors for these firms, 336 of which hold at least one other board seat in addition to their directorship at the sued company. These 336 directors hold a total of 645 different outside directorships. We analyze 487 of the 645 directorships for which we are able to get complete data on interlocked-firms during the year the class action is filed from Compustat and proxy statements. We construct an indicator that is “1” if an outside directorship is retained and is “0” if it is lost following the class action suit and use this indicator as a dependent variable in a logistic regression of the

probability of retaining an outside directorship. We estimate two models in Table 7. In model (1), we examine whether a directorship is lost anytime within the first two years of the class action suit, and in model (2) we track lost directorships over a three year period following the lawsuit filing.

The first set of explanatory variables relate to lawsuit characteristics. We include indicators for whether the lawsuit is followed by an SEC enforcement action and if the settlement is in the top quartile. We also include the excess returns for the sued firm around the lawsuit filing as an additional proxy for the severity of the fraud allegation.

We examine several director-specific attributes. We include indicator variables that equal one if the director is on the audit committee of the sued firm, is on the audit committee of the interlocked firm, or is the CEO of the interlocked firm. We also include the reputation of the outside director, measured by the number of other board seats held. Other variables include indicators for if the director is a lawyer or is a gray director on the board of the director-interlocked firm, the director's age, and the director's tenure on the board of the interlocked firm.

The models include governance characteristics of the interlocked firm. We use the Gompers, Ishii, and Metrick (2003) Governance Index along with indicator variables for whether the board is independent, whether the board is busy, whether the positions of CEO and Chairman are combined, and an indicator that equals one if the CEO in office at the time of the director's initial appointment to the board is no longer in office. This last variable is intended to capture the possible reluctance of CEOs to remove directors that they originally appointed to the board.

Firm-specific variables include the market-adjusted stock return of the interlocked firm, because prior firm performance can affect whether outside directors are added or dropped from the board (Hermalin and Weisbach (1988)). We include firm size since appointments at large firms provide greater visibility to directors and hence directors might be reluctant to voluntarily forego directorships at large firms. We also include the number of fraud lawsuits filed against the interlocked firm over the previous five year period as an additional control variable.

The results in Table 7 indicate systematic differences between interlocked firms where directors lose outside directorships and those in which they retain directorships. Directors of sued firms are more likely to retain directorships in interlocked firms with a high governance index. Since a high governance index is associated with weaker governance as well as a higher probability of future fraud litigation, this result appears inconsistent with the idea that outside directors voluntarily cut back on outside appointments to lower their future legal liability or to devote time to focus on the current lawsuit.

Measures of the severity of the fraud allegation are also important. Directorships are less likely to be retained if there is an SEC action, if the lawsuit results in a high settlement, or if the market reaction to the initial lawsuit filing is more negative. Thus, directors involved in more serious allegations of fraud experience a greater decline in directorships, a pattern consistent with the reputation hypothesis.

Several director-specific attributes are also important in determining whether board seats are retained. Directors who serve on the audit committee of the interlocked firm are less likely to continue on the interlocked firm's board. It is possible that the class action lawsuit has a more damaging impact to the reputation of audit committee members or that they are more likely to reduce directorships because of time-constraints imposed by the lawsuit. We also find weak evidence that sitting on the audit committee of the sued firm is more likely to result in lost directorships – the coefficient on this variable is significant at the 10% level in model 3. If the outside director is the CEO of the interlocked firm, we find that the board seat is more likely to be retained. We also find that higher equity ownership by directors increases the likelihood of retaining their outside directorship, while directors who sit on more boards are more likely to experience a reduction in board seats.

The probability of retaining a board seat at an interlocked firm declines if the appointing CEO is no longer in office. This result probably reflects the reluctance of CEOs to replace

directors that they originally appointed to the board and suggests that new CEOs are more likely to replace outside directors associated with financial fraud.

Overall, these results suggest that at least part of the reduction in board seats can be attributed to a disciplinary effect in the market for outside directorships. Specifically, the pattern of directorships being retained at firms with a high Governance Index suggests that well-governed firms are more likely to remove sued directors from their boards. This pattern is also consistent with the endogenous board hypothesis where outside directors choose to focus on other boards that may face a greater need for monitoring while forgoing directorships at firms that have strong governance. However, this result is inconsistent with outside directors voluntarily resigning outside directorships due to concerns about legal liability.

Several results suggest that reputational penalties are higher at the margin for outside directors. We find directors are more likely to lose board seats when fraud severity is high, and when their status as an audit committee member confers a greater responsibility for monitoring fraud. In addition, directors that serve on many boards are more likely to lose directorships, a pattern that is also consistent with the reputation hypothesis.

6.2 Investors' reactions to director departures

We conduct an event study around the loss of directorships. If directors associated with financial fraud are replaced on interlocked boards because of damaged reputation, their departure should be welcome news for shareholders of interlocked firms. In these circumstances, a replacement of a fraud-affiliated director can serve as a positive signal of the board's monitoring intensity. However, if fraud-affiliated directors voluntarily forego directorships at interlocked firms, their departure might be bad news for shareholders if the interlocked firm loses access to a valuable director.

We track board departures from boards of interlocked firms over a two year period following the filing of the class action lawsuit. To determine which directors remained on the

board and which subsequently departed the board, we review both the annual report and the interlocked firm's proxy statements to establish whether outside director left the board. We search the *Wall Street Journal Index* and *Lexis/Nexis* when we are able to identify a departure, and read newspaper stories and company press releases in order to ascertain the reason for the departure. We set aside all departures for which an announcement date is not available. We also exclude departures related to normal retirements and to board term limits. We discard 6 departures related to death or illness and 2 that are publicized to be forced. Finally, we remove a handful of announcements that are contaminated with other major news on the date of the departure. We are able to identify 144 announcements related to voluntary director departures. We classify exits to be voluntary if a director leaves either to pursue other interests or to take a position elsewhere. Of the 144 announcements, 94 departures, or 65.28% are related to directors of companies sued for fraud.

Panel A of Table 8 presents excess returns (*ARs*) for announcements of departures of outside directors from boards of interlocked firms. For the entire sample, the (-1,0) *ARs* are positive and significant with a mean (median) of 1.46% (1.31%). Dividing the sample of departures between those directors involved in a fraud lawsuit and other directors not involved in fraud allegations reveals significant differences. The average *AR* is positive and significant when the departing directors are related to sued companies, but are not significantly different from zero for announcements of departures of outside directors that are unaffiliated with financial fraud.

In Panel B of Table 8, we estimate two multivariate regression models using the departure announcement returns where we control for the severity of the fraud, changes in board size resulting from the departure, and the identity of the replacing director. We include an indicator if the departing director sits on the board of firm accused of fraud and indicators for whether the departure results in a reduction in board size and for the type of replacement director when that information is available at the departure announcement.

The estimates indicate that the announcement of a departure of an outside director that sits on the board of a fraud litigation firm is positive news for shareholders of interlocked firms. In model (1), the coefficient estimate on the sued firm director variable is positive and suggests that the announcement return is 2.6 percentage points higher for such departures than departures of directors not associated with financial fraud. Thus, the economic magnitude of the valuation effect associated with departures of outside directors is large. Excess returns are higher for more severe cases of fraud, as measured by SEC action or high settlement amounts.

These event study results are consistent with several explanations. First, the departure of a fraud-affiliated director is likely to be welcome news if investors expect a replacement director that will be of higher quality. Second, results on the probability of fraud litigation suggest that interlocked firms are more likely to face fraud lawsuits themselves. Consequently, the departure of a fraud-affiliated director might signal a reduced probability that the interlocked firm will face a similar fraud class action suit. A third possibility is that the departure signals that the board is more vigilant than investors anticipated, leading to a positive stock price reaction. The results do not however, appear to support the view that voluntary cutbacks on board commitments by sued directors tend to deprive the interlocked firms of valuable expertise or monitoring services by these directors.

7. Conclusions

We investigate reputational effects of financial fraud for outside directors of firms accused of fraud using a sample of firms facing class action lawsuits alleging violation of SEC rule 10(b)-5. Despite almost no evidence of abnormal turnover from the board of firms accused of fraud, we find that fraud is followed by a large and significant decline in the number of other board appointments held by outside directors. This decline is consistent with both a reputational penalty being borne by outside directors as well as an endogenous adjustment of monitoring

expertise, where the expertise is reallocated to firms that are revealed to be more fraud-prone than previously expected.

We show that a contagion effect exists for financial fraud through the board of directors. Firms that share directors with other boards accused of fraud are more likely to face fraud allegations themselves. When a firm faces a fraud class action lawsuit, other firms that employ outside directors of the defendant firm also experience a significant decline in valuation. Both these effects increase with the severity of the fraud allegation as measured by subsequent SEC enforcement actions and settlement amounts. The valuation loss for the interlocking firms is magnified if these firms possess weak governance characteristics and if the interlocked directors play a potentially critical role in influencing the likelihood of fraud due to their status as a member of the audit committee of either the fraud or the interlocked firm, or as the CEO of the interlocked firm.

Our findings show that outside directors are more likely to lose other board appointments when the severity of the fraud allegation is high, and when the outside director sits on the audit committee of the interlocked firm. Directorships are also more likely to be lost at firms with strong corporate governance, as measured by the Gompers, Ishii, and Metrick (2003) index. We also find that investors of interlocked firms experience positive announcement returns when a sued director departs the board.

Our results have policy implications relevant to the current debate on optimal reforms to deter financial fraud. For example, Section 305 of the Sarbanes-Oxley Act of 2002, titled “Officer and Director Bars and Penalties,” enables the SEC to prohibit, conditionally or unconditionally, permanently or temporarily, any person who has violated section 10(b)-5 of the 1934 Act from serving as an officer or director of any firm. Our results suggest that this regulation might have less impact than some observers would expect. Our findings are consistent with the view that the reputation of outside directors is damaged after fraud is revealed. Under this interpretation, our results suggest that the external market for director reputation imposed significant indirect

penalties on directors of firms engaged in fraud, effectively barring these directors from board service at other firms. Our results are also potentially consistent with an endogenous readjustment of outside director expertise following the revelation of fraud in which case SEC regulations designed to bar certain directors from firms would constrain the endogenous allocation of director expertise to firms.

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Table 1
Summary of financial fraud class action lawsuits

Summary of class action suit filings for alleged violation of rule 10(b)-5 of the SEC Act of 1934. A firm is included in the sample if it is featured in either the PriceWaterhouse Coopers Litigation database or the Stanford Law School Securities Clearinghouse database for alleged violation of rule 10b (5) involving accounting issues. To be included in the sample a firm must have at least \$100 million in assets in the year preceding the suit and data available in Execucomp, CRSP, and Compustat. Panel A describes the nature of the allegation and Panel B provides information on the timing of the lawsuits. Panel C presents settlement amount information. In Panel D we report market adjusted (equally weighted index) abnormal returns (*ARs*) generated due to class action suit filings. For each of these tests, we report average *ARs* for the (-1,0) and (0,0) intervals, respectively. We report 2-tailed *p*-values below each *AR* estimate. To evaluate the difference in the mean *ARs*, we report a 2-tailed *t*-statistic.

Panel A: Allegations			
Incidence <i>N</i> (% sample)	False/misleading statements including failure to disclose material information.	False/misleading revenue or earning projections including actions to inflate stock price.	Improper accounting practices, including revenue, expense, and/or earnings management.
All	102 (47.22%)	86 (39.82%)	125 (57.87%)
SEC enforcement action	26 (12.04%)	21 (10.28%)	30 (13.88%)

Panel B: Timing			
Number of days	<i>N</i>	Mean	Median
In the class period	216	376	260
Between the end of the class and the lawsuit filing	216	98	77
Between the lawsuit filing and settlement date	197	892	910

Panel C: Settlement Amounts				
	Mean	Median	25th Percentile	75th Percentile
In \$millions	21.67	6.67	3.35	40.5

Panel D: Investor Reactions				
Interval	<i>N</i>	Average AR	<i>t</i> -statistic	<i>Wilcoxon Z</i> statistic
(-1,0)	200	-5.95%	-13.656	-2.547
(0,0)	200	-3.25%	-10.539	-3.021

SEC Enforcement Action?	<i>N</i>	Interval	Average AR	<i>t</i> -statistic	Interval	Average AR	<i>t</i> -statistic
Yes	43	(-1,0)	-7.20% (0.00)	3.61	(0,0)	-4.02% (0.00)	2.05
No	157		-5.61% (0.01)			-3.04% (0.02)	

Settlement in the top Quartile?	<i>N</i>	Interval	Average AR	<i>t</i> -statistic	Interval	Average AR	<i>t</i> -statistic
Yes	50	(-1,0)	-7.81% (0.00)	3.75	(0,0)	-5.23% (0.00)	2.66
No	147		-5.29% (0.01)			-2.48% (0.04)	

Table 2**Directorships held by directors of sued firms**

This table provides information on outside directors of 113 sued firms from 1998-2000 as well as on the directorships they hold during the three years after the lawsuit. Year 0 is the year in which the lawsuit is filed. Panel A provides information of directors of firms subjected to a class action suit. Panel B considers directors of firms that are subjected to an SEC enforcement action in addition to the class action lawsuit.

	Year relative to lawsuit filing			
	0	1	2	3
Percentage of original outside directors remaining on board of fraud-affiliated firm	-	94.41%	89.12%	83.24%
Average number of other directorships held by outside directors of fraud affiliated firms	0.95	0.85	0.54	0.47
Percentage of outside directors of fraud affiliated firms sitting in other boards	49.56%	46.18%	31.32%	29.12%
Average number of other directorships held by outside directors that hold at least one other board seat in addition to seat on fraud affiliated firm's board	1.92	1.84	1.71	1.62
Percentage of original outside directors that hold at least one other board seat in addition to seat on fraud affiliated firm's board and lose at least one directorship	-	84.21%	89.47%	95.72%
Percentage of outside directors of fraud affiliated firms that lose all other directorships:				
Number of board seats held when fraud lawsuit is filed:				
1	-	83.80%	88.89%	96.30%
2	-	55.56%	63.42%	79.17%
3+	-	31.94%	47.69%	48.61%

Table 3**Abnormal returns for director-interlocked firms around class action suit filings**

Panel A presents market adjusted (equally weighted index) abnormal returns (*ARs*) generated due to class action suit filings for the firms in Table 3. The suits are filed for alleged violation of rule 10(b)-5 of the Securities and Exchange Commission Act of 1934. Plaintiffs accuse companies of purposely misrepresenting the firm financials (i.e. earnings). Panel A reports *ARs* for a sample of firms that share at least one outside director with a sued company, but where the firm is not named in the complaint. To assess the statistical significance of the *ARs* we report Wilcoxon rank *Z* and *t* statistics from 2-tailed tests. In Panel B, we sort the *ARs* into two subsamples by whether the shared director sits in a firm that is the subject of an SEC enforcement action in addition to the class action lawsuit. In Panel C, we split the investor reactions by whether the settlement is in the top quartile. In Panel D, we split reactions by whether the shared director with the sued company is in the same Fama and French (1997) industrial classification as the firm. For each subsample, we report average *ARs* for the (-1,0) and (0,0) intervals, respectively. We report 2-tailed *p*-values below each *AR* estimate. To evaluate the difference in the mean *ARs* in the two subsamples, we report a 2-tailed *t*-statistic.

Panel A

Interval	<i>N</i>	Average AR	<i>t</i> -statistic	Wilcoxon <i>Z</i> statistic
(-1,0)	1,022	-0.98%	-4.873	-3.282
(0,0)	1,022	-0.92%	-6.504	-5.464

Panel B

SEC Enforcement Action?	<i>N</i>	Interval	Average AR	<i>t</i> -statistic	Interval	Average AR	<i>t</i> -statistic
Yes	234	(-1,0)	-1.25%	1.77	(0,0)	-1.20%	1.68
No	788		(0.00)			(0.00)	
			-0.90%			-0.84%	
			(0.01)			(0.02)	

Panel C

Settlement in the top Quartile?	<i>N</i>	Interval	Average AR	<i>t</i> -statistic	Interval	Average AR	<i>t</i> -statistic
Yes	255	(-1,0)	-1.39%	1.98	(0,0)	-1.36%	1.73
No	767		(0.00)			(0.00)	
			-0.84%			-0.77%	
			(0.02)			(0.06)	

Panel D

Interlocked director in the same industry?	<i>N</i>	Interval	Average AR	<i>t</i> -statistic	Interval	Average AR	<i>t</i> -statistic
Yes	95	(-1,0)	-1.03%	1.23	(0,0)	-0.98%	1.44
No	927		(0.00)			(0.00)	
			-0.97%			-0.91%	
			(0.00)			(0.00)	

Table 4
Multivariate analysis of abnormal returns

OLS estimates of cumulative abnormal interval returns on firms that share outside directors with companies subject to class action suits for alleged infringement of rule 10(b)-5 of the SEC Act of 1934. Busy board is a dummy variable that is "1" if at least 50% of outside directors hold 3 or more directorships. Board size is the natural log of the number of directors. All director characteristics are recorded for the director shared with the sued firm. If more than one director is shared then averages are taken. The CEO indicator is "1" if the firm's CEO is a director in the sued firm. The Lawyer and MBA variables are (0,1) indicators. Standard errors are in parenthesis below each estimate. All models control for industry effects coded using the 48 Fama-French (1997) industry groups.

Dependent Variable CAR (-1,0)	(1)		(2)	
	Estimate	p-value	Estimate	p-value
<i>Firm Characteristics</i>				
Strategic alliance with sued firm (0,1)	-0.00171 (0.00396)	0.6652	-0.00018 (0.00382)	0.9632
Same auditor as sued firm (0,1)	-0.00208 (0.00176)	0.2373	-0.00198 (0.00169)	0.2426
SEC Enforcement on sued firm (0,1)	-0.01291 (0.0021)	0.0001		
Settlement amount paid by sued firm			-0.00202 (0.000197)	0.0001
Multiple directors shared with sued firm (0,1)	-0.01034 (0.00299)	0.0006	-0.0091 (0.00288)	0.0016
Number of previous lawsuits (0,1)	0.03837 (0.02981)	0.1985	0.04544 (0.02868)	0.1135
Firm size	-0.00144 (0.00096)	0.1355	-0.00042 (0.000926)	0.6476
Return on Assets	-0.02985 (0.01771)	0.0922	-0.02805 (0.01705)	0.1003
<i>Director Characteristics</i>				
Audit Committee (0,1) in interlocked firm	-0.00462 (0.00246)	0.061	-0.00478 (0.00237)	0.0444
Audit Committee (0,1) in sued firm	-0.00401 (0.00247)	0.1041	-0.00527 (0.00237)	0.0262
CEO (0,1)	-0.00673 (0.00324)	0.0382	-0.00556 (0.00313)	0.0754
Number of Committees	0.00117 (0.00115)	0.3089	0.00173 (0.00111)	0.1184
Ownership (% of common)	0.000696 (0.000339)	0.0403	0.000525 (0.000327)	0.1085
Years as director	-0.00108 (0.0014)	0.4426	-0.0015 (0.00135)	0.2658
Age	0.00369 (0.00633)	0.56	0.00203 (0.0061)	0.7398
Lawyer	-0.00384 (0.00327)	0.241	-0.0028 (0.00315)	0.3746
MBA	0.000122 (0.00307)	0.9682	0.000206 (0.00296)	0.9447
<i>Board Characteristics</i>				
Governance Index	-0.00088 (0.000328)	0.0072	-0.0006 (0.000317)	0.0571
Busy board (0,1)	-0.0059 (0.00174)	0.0007	-0.00505 (0.00168)	0.0027
Independent board	0.00331 (0.00173)	0.0559	0.00239 (0.00167)	0.1525
Board size	-0.0014 (0.00344)	0.6852	-0.00055 (0.00331)	0.8678
Director stock option plan available (0,1)	0.00206 (0.0019)	0.2793	0.00195 (0.00183)	0.2868
<hr/>				
Industry Effects	YES		YES	
F-value	24.11	0.0001	27.08	0.0001
Adjusted R ²	0.6047		0.6333	
N		891		891

Table 5
Univariate comparison of fraud firms and control sample

This table reports sample means for 216 firms subject to a class action lawsuit and its corresponding 216 matching firms. We match firms following Barber and Lyon (1996) by including companies that are not sued with similar pre-event performance and size similar to those of the sued firms. Busy board is “one” if 50 percent of outside directors hold 3 or more total directorships in for-profit firms. The governance Index is the Gompers, Ishii, and Metrick (2003) index. We calculate the market-to-book ratio as the market value of the firm’s equity at the end of the year plus the difference between the book value of the firm’s assets and the book value of the firm’s equity at the end of the year, divided by the book value of the firm’s assets at the end of the year. Size is calculated as the natural logarithm of a firm’s asset (Compustat item 6). Return on assets (ROA) is calculated as operating income before depreciation (Compustat item 13) plus the decrease in receivables (Compustat item 2), the decrease in inventory (Compustat item 3), the increase in current liabilities (Compustat item 72) and the decrease in other current assets (Compustat item 68). This measure is then divided by the average of beginning- and ending-year book value of total assets (Compustat item 6). This ratio is then adjusted by the median ROA for firms in the same 2-digit SIC. All characteristics are calculated for the year preceding the class action suit. For each characteristic, we provide 2-tailed *t*- and *Z*-statistics to test for equality of mean and median values, respectively.

Characteristic	Fraud Sample	Control Sample	<i>t</i> -statistic	<i>Z</i> -statistic
Board size	13.431	12.602	2.3	0.86
Percentage of outside directors	52.1%	55.3%	1.77	1.59
Percentage of firms with busy board (0,1)	17.69%	14.72%	1.61	2.73
Percentage of firms with a staggered board	53%	41.13%	2.46	2.44
CEO is chairman (0,1)	0.8287	0.7037	3.1	3.06
CEO belongs to the founding family	0.275	0.195	2.23	1.98
Number of board meetings	7.6343	7.5556	0.24	0.84
Percentage of outside directors with financial expertise	23.4%	42.78%	3.02	2.5
CEO salary + bonus (in \$MM)	1.4248	1.5871	1.44	2.3
CEO tenure (in years)	7.7553	7.625	0.22	2.85
Governance index	9.3611	8.537	2.98	2.5
Market-to-Book ratio	1.3427	1.2991	0.84	3.51
Firm size	8.8021	8.6383	1.55	0.76
ROA	18.53%	18.92	0.30	1.35
	<i>N</i> =216	<i>N</i> =216		

Table 6
Logistic regressions of fraud

This table presents coefficient estimates of the determinants of fraud. We analyze the matched sample of fraud firms and non-fraud firms described in Table 5. The dependent variable takes the value of “one” if the firm is a fraud firm (defendant in class action lawsuit) and the value of “zero” otherwise. The key independent variable in our estimations is an indicator that is “one” if any current outside director also sits on the board of a sued firm. Busy board is “one” if 50 percent of outside directors hold 3 or more total directorships in for-profit firms. Standard errors robust to heteroskedasticity are in parentheses below each estimate

Variable	(1)		(2)	
	Estimate	p-value	Estimate	p-value
Constant	-7.3855 (1.6459)	0.0001	-8.999 (2.0103)	0.0001
<i>Governance Characteristics</i>				
Director of sued firm (0,1)	0.5452 (0.1914)	0.0044	0.5327 (0.1916)	0.0054
Governance index	0.1075 (0.0383)	0.005	0.1072 (0.0381)	0.0049
Board size	0.121 (0.0402)	0.0026	0.1243 (0.04)	0.0019
Independent board (0,1)	-0.5998 (0.2278)	0.0085	-0.5806 (0.2269)	0.0105
Staggered board (0,1)	0.5157 (0.2253)	0.0221	0.4977 (0.2247)	0.0267
Busy board (0,1)	0.7419 (0.2713)	0.0062	0.8714 (0.257)	0.0007
Number of meetings	0.0227 (0.0348)	0.5138	0.0274 (0.0346)	0.4288
Director w/accounting expertise (0,1)	-0.4471 (0.2196)	0.0417	-0.4399 (0.2188)	0.0444
CEO tenure	0.0114 (0.0183)	0.5309	0.0116 (0.0184)	0.5298
CEO ownership (% of common)	-0.0464 (0.0331)	0.161	-0.0467 (0.0332)	0.1593
CEO is chairman (0,1)	0.8245 (0.2703)	0.0023	0.7823 (0.2669)	0.0034
CEO from founding family (0,1)	0.4748 (0.23)	0.039	0.4957 (0.2298)	0.031
Salary + bonus	-0.3122 (0.1085)	0.004	-0.1296 (0.149)	0.3844
Black-Scholes value: options granted	0.0582 (0.0251)	0.0205		
Stock Pay: Value of options granted/total pay			2.0117 (1.1089)	0.0697
<i>Firm Characteristics</i>				
Market-to-Book	0.4106 (0.2614)	0.1162	0.4606 (0.2574)	0.0736
Return on assets (ROA)	0.0267 (0.8244)	0.9742	0.117 (0.8182)	0.8863
Firm size (log of sales)	0.3596 (0.1328)	0.0068	0.356 (0.1328)	0.0074
Likelihood Ratio χ^2	95.2046	0.001	93.0611	0.001
	N=432		N=432	

Table 7
Probability of retaining a board seat

This table presents logistic regressions of the probability of retaining a board seat for outside directors of fraud firms. The sample consists of 487 directorships held in non-sued firms by outside directors of sued firms. We check whether a directorship is lost anytime two and three years after the lawsuit is filed. With this information, we construct a dependent variable that is “1” if the director keeps a directorship and is “0” otherwise. Standard errors are reported in parenthesis below each coefficient estimate.

	Estimate	p-value	Estimate	p-value
	2 years after lawsuit is filed		3 years after lawsuit is filed	
Constant	6.4184 (1.6137)	0.0001	6.6095 (1.6103)	0.0001
<i>Firm Characteristics</i>				
Market reaction of sued firm (day 0 AR)	49.2941 (8.0305)	0.0001	47.7153 (8.1056)	0.0001
Market-adjusted stock return ($R_i - R_{mkt}$) _{t-1}	0.0412 (0.0229)	0.0718	0.0283 (0.0225)	0.2093
Governance Index	1.6255 (0.3482)	0.0001	1.4848 (0.3446)	0.0001
Number of previous lawsuits in the past 5 years	-0.3358 (0.3364)	0.3181	-0.3774 (0.3341)	0.2586
Firm size (natural log of sales)	0.1692 (0.0621)	0.0064	0.1401 (0.062)	0.0238
SEC Enforcement Action (0,1)	-0.6827 (0.2677)	0.0108	-0.5931 (0.2658)	0.0257
Settlement in the top quartile (0,1)	-0.0447 (0.0229)	0.0515	-0.0378 (0.0227)	0.0965
<i>Board Characteristics</i>				
Busy board (0,1)	-0.2918 (0.3815)	0.4443	-0.1299 (0.3747)	0.7288
CEO is also Chairman of the board (0,1)	-0.2443 (0.3821)	0.5225	-0.4186 (0.3789)	0.2693
Board is independent (0,1)	-0.3333 (0.6228)	0.5925	-0.233 (0.6224)	0.7081
Appointing CEO no longer in office (0,1)	-0.5627 (0.2662)	0.0346	-0.3783 (0.2627)	0.1499
<i>Director Characteristics</i>				
Director is in the audit committee of sued firm (0,1)	-0.3681 (0.253)	0.1458	-0.4453 (0.252)	0.0772
Director is in the audit committee of interlocked firm (0,1)	-2.4959 (0.3442)	0.0001	-2.4076 (0.3481)	0.0001
Director is gray (0,1)	-0.1336 (0.3764)	0.7227	-0.2983 (0.5494)	0.5871
Director's age (in years)	0.00423 (0.0183)	0.8168	-0.00497 (0.018)	0.7827
Director is a Lawyer (0,1)	-0.3412 (0.2889)	0.2377	-0.1687 (0.2871)	0.5567
Director is the CEO (0,1)	-0.2647 (0.2513)	0.2922	-0.3235 (0.2504)	0.1964
Director's tenure (in years)	-0.0622 (0.0442)	0.1591	-0.0457 (0.0438)	0.2964
Number of directorships when lawsuit is filed	-0.2173 (0.0837)	0.0094	-0.3176 (0.0888)	0.0003
Director's ownership (% of common)	3.5963 (1.3409)	0.0073	3.4806 (1.3486)	0.0099
Likelihood Ratio χ^2	202.0233	0.0001	182.9651	0.0001

Table 8

Investor reactions to voluntary departures of outside directors

Panel A presents day 0 abnormal returns (*ARs*) and day (-1,0) cumulative abnormal returns (*CARs*) associated with announcements of departure of outside directors from the board. Reported below each estimate are *p*-values from two-tailed tests using a *t*-test for means, and a Wilcoxon *Z* signed-rank test for medians. Panel B presents an ordinary least squares (OLS) regression where the dependent variable is the day 0 *AR* in model (1) and the cumulative abnormal return (*CAR*) over the (-1,0) interval in model (2). The key independent variable in both regressions is an indicator for whether the departing director is a director of a sued firm.

Panel A: Event Study					
Is the director related to a sued firm?					
	All departures <i>N</i> =144	YES <i>N</i> =94	NO <i>N</i> =50	<i>t</i> -statistic	<i>Z</i> -statistic
Mean AR					
(0,0)	0.0081 (0.08)	0.0117 (0.01)	0.00133 (0.36)	3.29	
(-1, 0)	0.0146 (0.07)	0.0203 (0.01)	0.004 (0.29)	2.97	
Median AR					
(0,0)	0.0073 (0.05)	0.0094 (0.01)	0.0009 (0.28)		3.76
(-1, 0)	0.0131 (0.03)	0.018 (0.01)	0.0036 (0.19)		3.01
Panel B: OLS					
Dependent variable	(1)		(2)		
	<i>Day (-1,0) CAR</i>				
	Estimate	<i>p</i> -value	Estimate	<i>p</i> -value	
Intercept	0.016	0.0001	0.021	0.0001	
Departing director is related to a sued firm (0,1)	0.026	0.0001	0.028	0.0001	
Number of directorships of departing director	0.028	0.044	0.016	0.02	
Board reduction (0,1)	0.005	0.079	0.003	0.12	
Independent board	0.004	0.444	0.002	0.389	
Tenure of departing director	0.011	0.075	0.017	0.13	
Independent replacement	0.008	0.61	0.003	0.59	
Gray replacement	-0.011	0.112	-0.010	0.081	
Equity ownership of replacement	0.000	0.596	0.000	0.472	
Firm size (natural log of sales)	0.008	0.59	0.011	0.421	
Settlement in the top quartile (0,1)	0.011	0.077			
SEC Enforcement Action (0,1)			0.016	0.022	
<i>R</i> ²	23.05		25.10		
<i>N</i>	144		144		