Independent Directors and Corporate Litigation

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Abstract

In this paper, we examine the effects of board structure on a wide variety of corporate litigation. We use a unique hand-collected dataset of corporate lawsuits and the 2002 NYSE/NASDAQ exchange listing requirements, as an exogenous shock to board independence, to empirically examine the monitoring effectiveness of board independence using a difference-in-differences framework. We find that an increase in board independence is associated with a significant reduction in multiple types of corporate litigation, beyond securities lawsuits. This evidence is consistent with stronger monitoring by independent directors. However, we also find evidence that greater board independence can inhibit a board's ability to monitor internal actions or favor shareholders over other stakeholders. Specifically, mandatory increases in board independence, which reduces a board's knowledge of firm-specific information, makes a firm more susceptible to product liability, and labor litigation. Furthermore, in firms with higher debt levels, increasing board independence, with the intent to increase shareholder representation, is associated with an increase in financially related litigation. The evidence is consistent with the generally greater monitoring provided by independent directors, but it also reveals limitations to their monitoring as well as their reduced concern for other stakeholders. Finally, we find evidence that the appointment of female independent directors is one mechanism through which independent directors reduce litigation.

1. Introduction

Lawsuits are important external governance mechanisms that punish managers for maleficence. However, a lawsuit can be extremely costly for a firm. In addition, it can also reveal deeper problems with a firm's *internal* governance mechanism that failed to prevent the managerial actions that led to the lawsuit. The primary internal governance mechanism in public firms is their board of directors, and particularly the independent directors who are charged with closely monitoring and advising managers (e.g. Fama and Jensen (1983); Hermalin and Weisbach (2003); Adams and Ferreira (2007); Adams, Hermalin and Weisbach (2008)).[1] Thus, it is not surprising that the recent legal woes of General Motors Co. (GM) surrounding their handling of various safety recalls quickly turned the spotlight to their board.[2] Although practitioners recognize the link between independent directors and lawsuits against the firm, there is little direct empirical evidence that independent directors do deter various types of corporate litigation.[3] Most of the literature that does examine directors and lawsuits focuses only on securities based class action suits.[4] However, as the safety recalls of GM indicate, firms face a variety of significant lawsuit threats. In fact, only 4.7% of the 3,944 lawsuits filed against S&P 1500 firms in 2010 pertain to securities law violations. Another reason for the lack of direct evidence is that the endogenous relation between lawsuits and independent directors makes

[1] Specific evidence of stronger monitoring by independent directors includes greater forced CEO turnover sensitivity to performance (Hermalin and Weisbach (1988)), greater CEO incentive alignment with shareholders through equity based pay (Mehran (1995)), better acquisition decisions (Byrd and Hickman (1992)) and engendering higher premiums when acquired (Cotter, Shivdasani, and Zenner (1997)).

[2] Wall Street Journal article, May 15, 2014, "GM Directors Ask Why Cobalt Data Didn't Reach Them"

[3] A notable exception, is Masulis and Mobbs (2016). However, they focus on specific independent director directorships and find that when directors are more concerned with their reputation the firms where they serve are less likely to be the target of a Securities Class Action lawsuit.

[4] A few studies have examined other specific types of litigation and corporate decisions. For example, Bhagat, Bizjak and Coles (1998) examine antitrust, contract, corporate governance, environmental, patent infridgement, product liability, SEC-Type, FTC-Type (exclusive dealing and other anti-competitive violations), Karpoff and Lott (1999) examine the effect of punitive damages on the market's reaction to litigation, and Haslem (2005) examines how the market reacts more negatively to settlements.

determining causality problematic. We address these two gaps in the literature in this study. First, we use a unique hand-collected dataset on various types of corporate litigation, not just those related to securities. Second, we utilize an exogenous regulatory shock to board independence to better determine causality.

Since securities lawsuits represent only a small fraction of litigations a firm could face, it is important to know whether independent directors are associated with deterring other, more likely, and even more costly types of litigation. If independent directors successfully deter securities litigation, but do not reduce other types of costly lawsuits shareholders can still face significant losses (e.g. Bizjak and Coles (1995), Bhagat, Bizjak, and Coles (1998), Bhattacharya, Galpin, and Haslem (2007), and Gande and Lewis (2009)). For example, on September 4, 2014 federal Judge Carl Barbier ruled that BP was grossly negligent in the 2010 Deepwater Horizon disaster and handed down a decision resulting in as much as $18 billion in pollution fines for the Gulf of Mexico oil spill. The oil group's shares dropped nearly 6 percent, representing a loss of $7.9 billion in shareholder wealth after the ruling. After a federal judge approved a settlement in 2015, BP had accumulated roughly $54 billion in related legal and cleanup costs.[5] In addition, the reputation damage and the distractions that litigation can bring to management can be extensive. For example, the 1989 Exxon Valdez oil spill resulted in legal battles lasting twenty years.[6] Other notable examples include the $3.4 billion settlement for the breast implant litigation involving the major implant manufacturers and the $206 billion settlement in the 25 year master tobacco litigation. Thus, various non-securities related lawsuits can be quite costly and time-consuming for firms and their shareholders.[7]

[5] Wall Street Journal articles, September 4, 2014, "BP Is Found Grossly Negligent in DeepWater Horizon Disaster" July 2, 2015, "BP Agrees to Pay $18.7 Billion to Settle Deepwater Horizon Oil Spill Claims."
[6] CBS News, February 2, 2009, "Exxon Valdez Oil Spill: 20 Years Later"
[7] LAWINFO article, "Holding Corporations Accountable: LawInfo's Top 10 Class Action Lawsuits"

To more fully evaluate independent directors' ability to mitigate corporate litigation, it is important to consider all possible types. Our hand collected sample consists of lawsuits filed against the S&P 1500 firms and classified into fourteen categories: labor, intellectual property, pension, commercial, securities, government contracts, environmental, finance and banking, antitrust, product liability, medical liability, corporate governance, general liability, and other lawsuits that do not fall into any of the preceding categories. These multiple lawsuits provide a more complete picture of the corporate litigation experienced by firms and provide deeper insight into more precisely how independent directors affect corporate litigation. For example, we can address whether independent directors are equally capable of deterring litigation whether it arises from within the firm, such as employee or labor related suits, or outside the firm, such as environmental or antitrust suits.

If independent directors are better monitors, we expect their presence to be negatively associated with litigation likelihood. However, it is possible that independent directors may simply select to only join firms that are less prone to litigation, which can also lead to a negative association. Thus, without an exogenous shock to board independence it is difficult to know if monitoring by independent directors can indeed reduce the likelihood of a firm facing a lawsuit. In 2002, in response to a number of major corporate and accounting scandals including those affecting Enron, Tyco International, Adelphia, Peregrine Systems, and WorldCom, Congress, enacted the Sarbanes-Oxley Act (SOX), which imposed stronger monitoring responsibilities upon independent directors. Contemporaneously, the NYSE and the NASDAQ initiated new exchange listing requirements (ELR) mandating that all listed firms have a majority of independent directors on their board. For firms without a majority of independent directors, this independence mandate is an exogenous shock to their board structure. Several prior studies have

utilized this shock to examine the relation between board independence and other governance mechanisms (e.g. Linck, Netter, and Yang (2009); Chhaochharia and Grinstein, (2009); Guthrie, Sokolowsky, and Wan (2012); Guo and Masulis (2015); and Guo, Lach and Mobbs (2014)). We use the exogenous regulatory shock of 2002 in a difference-in-differences analysis to mitigate endogeneity concerns when we study the relation between board independence and fourteen different categories of corporate litigation.

In our primary analysis, we find that relative to the compliant firms (firms with more than 50% of independent directors prior to the shock), the non-compliant firms (firms without a majority of independent directors prior to the shock), are associated with a significant reduction in a variety of corporate litigation in the post-regulation period. These primary results withstand a battery of robustness checks, including restricting the control firms to a sample of size-matched compliant firms, an alternative definition of compliance, the exclusion of the financial crisis years, and controlling for firm fixed effects. Thus, our primary findings indicate that independent directors reduce litigation likelihood for a broad range of suits.

Our primary results are consistent with greater representation by independent directors generally improving internal governance. Nevertheless, one concern with independent directors is that they are less knowledgeable of firm-specific actions than are inside directors. Several studies have found that inside directors can have important monitoring roles, especially when firm specific information is more important (e.g. Fama and Jensen (1983), Coles, Daniels and Naveen (2006) and Masulis and Mobbs (2011)). Thus, mandating greater independent director representation may actually weaken the internal monitoring capabilities of the board in some firms. For example, their lack of firm-specific knowledge can make it more difficult for independent directors to monitor within-firm activities that can give rise to internally born

lawsuits, such as employee related litigation or product liability. Conversely, inside directors are likely more involved with internal issues and thus more capable of mitigating the occurrence of these types of litigations. We exploit the heterogeneity of litigation types in our study to examine this possibility. We find that when firms where firm-specific information is more important are forced to add independent directors to their boards the likelihood of a labor or product liability lawsuit increases significantly. In fact, the recent legal woes of GM are related to their internal processes in quality control and the subsequent handling of the recall and since 2002 their board has been at least 80% independent. Thus, while independent directors have strong incentives to monitor, their lack of firm-specific information can impede their monitoring of internal firm actions and thus, actually contribute to a greater likelihood of certain internally born litigation.

Another concern with greater representation by independent directors is that their greater focus on shareholders will come at the expense of other stakeholders, such as creditors. Beltratti and Stulz (2012) find that banks with more shareholder-friendly boards (including more independent boards) take excessive risk and performed worse during the financial crisis. They argue that the risky behavior of the board benefits shareholders. Bradley and Chen (2015) also document that an exogenous increase in board independence leads to an increase in firm risk-taking behavior and, as the authors note, the increase in risky behavior benefits shareholders at the expense of bondholders. In extreme cases, these stakeholders can resort to litigation to ensure their claims are met. Consistent with this possibility, we find evidence that firms with greater portions of debt in their capital structure are associated with a greater likelihood of facing financially related litigation after being forced to increase board independence.

Lastly, we examine the specific mechanisms by which independent directors can be associated with a lower likelihood of litigation. One means of reducing litigation is by appointing

directors more capable of reducing such suits, due to either their greater monitoring or advisory ability. Prior research finds that female executives are more risk averse (Croson and Gneezy (2009); Bertrand (2011); Faccio, Marchica, and Mura (2015)) and are more conservative (Huang and Kisgen (2013); Levi, Li and Zhang (2013)). Both characteristics can cause their monitoring and advising to focus on reducing the possibility of extreme negative outcomes, which reduces the likelihood of the firm being subject to a lawsuit. Consistent with this reasoning, Adhikari, Agrawal, and Malm (2015) find that female executives are associated with a lower level of litigation. While our focus is on directors and not executives, Adams and Ferreira (2009) find that female directors are active board members and thus their preferences can significantly influence board decision-making and oversight of management. Thus, one mechanism by which greater board independence can be associated with reduced litigation is through the appointment of a greater portion of female independent directors. In a difference-in-differences analysis, we find evidence that prior to the board independence shock non-compliant firms had significantly fewer female directors. We also find evidence of a general trend by all firms around the shock of increasing the percentage of female independent directors. However, non-compliant firms experience a significantly greater increase in representation by female directors compared to compliant control firms. This is consistent with the appointment of female independent directors being one mechanism contributing to the reduced litigation frequency in non-compliant firms.

Our findings make several significant extensions to the research on board monitoring and corporate litigation. First, we utilize an exogenous shock to better identify the causal relation between board independence and litigation. Talley (2009) empirically examines how a firm's structural corporate governance choices predict its later susceptibility to securities class action litigation and finds a qualitatively mixed relation between litigation risk and corporate

governance. In contrast, our study explores an empirical setting where the shift in board monitoring arises from an exogenous regulatory change and thus, permits a cleaner identification of the effects of increases in board monitoring on multiple types of corporate litigation.

Second, by greatly expanding the types of litigation analyzed our findings provide a more complete picture of the monitoring ability of independent directors. Most prior literature focuses on securities class action lawsuits. We expand this line of research to include an additional thirteen types of lawsuits and find that greater board monitoring by independent directors can significantly reduce the likelihood of several different types of lawsuits. This reflects a much broader aspect to their monitoring abilities than previously documented. However, we also find evidence that independent directors are not as effective at reducing all types of lawsuits in all firms. Specifically, inside directors can be helpful in mitigating lawsuits that originate within the firm and mandated increases in independent director representation in these firms actually increases the risk of internally born litigation. Also, we find evidence that greater representation by independent directors can lead to other stakeholders, such as creditors, increasing their use of litigation to protect their interests.

Finally, our analysis contributes to our understanding of the costs and benefits of the 2002 corporate governance reform initiatives (see, for example, Romano (2005), Clark (2005), Bainbridge (2006), and Prentice and Spence (2007) for a summary). The evidence we find suggests that the new exchange listing rules and the SOX legislation effectively improved monitoring on corporate boards for many firms as is evidenced by the significantly lower likelihood of numerous types of corporate litigation. Though, the evidence is also supportive of the "one size does not fit all" concern with the regulations.

The remainder of the paper is organized as follows: In Section 2, we review the relevant literature and develop the main testable hypotheses. We follow with a description of the sample, data and methodology in Section 3. Section 4 presents the results of our main empirical tests on the independent directors and corporate litigation. We conduct a series of robustness checks of the main results in Section 5. Section 6 presents a cross-sectional analysis. Section 7 analyzes a mechanism by which independent directors can reduce litigation. Section 8 concludes the paper.

2. Related Literature and Hypothesis

Prior literature finds that boards dominated by independent directors are more effective in executing their monitoring roles (see, for example, Baysinger and Butler (1985), Weisbach (1988), Rosenstein and Wyatt (1990), Byrd and Hickman (1992), Brickley, Coles and Terry (1994), Cotter, Shivdasani and Zenner (1997)). According to Fama (1980) and Fama and Jensen (1983), independent directors have the incentives to monitor more carefully because this provides them with the incentives to develop their reputations as decision control experts. One extension of this literature has highlighted the important role of independent directors in reducing corporate litigation (e.g. Coffee (1991)).

Corporate litigation imposes significant wealth losses upon shareholders. Bizjak and Coles (1995), Bhagat, Bizjak, and Coles (1998), Bhattacharya, Galpin, and Haslem (2007), and Gande and Lewis (2009) find the filing of lawsuits against corporations often lead to significantly negative market reactions.[8] Aharony, Lin, and Yawson (2013) argue that the decrease in market value is, in part, a result of the significant legal costs associated with

[8] Bizjak and Coles (1995) use antitrust lawsuits, Bhagat, Bizjak, and Coles (1998) use antitrust, contract, corporate governance, environmental, patent infridgement, product liability, SEC-Type, FTC-Type (exclusive dealing and other anti-competitive violations), and other lawsuits, Bhattacharya, Galpin, and Haslem (2007) use antitrust, contracts, patent, employee, product liability and Gande and Lewis (2009) use securities lawsuits.

defending the lawsuits. In addition, the defendant firms can potentially be liable for substantial claims awarded to the plaintiffs. Thus the risk of litigation can negatively impact the economic value of the company. Furthermore, being associated with any variety of lawsuits can jeopardize a firm's reputation, which can adversely affect future economic success.

Adverse reputation consequence also affects the firm's directors. Fich and Shivdasani (2007) find that independent directors suffer significant reputation damage if they are associated with a securities class action lawsuit, which, they argue, can strengthen their monitoring incentives ex-ante. Relatedly, Masulis and Mobbs (2016) find that firms whose independent directors have strong reputation incentives are less likely to be the target of a class action lawsuit. Although the analysis in both of these studies is only on securities lawsuits the arguments are not limited to these types of lawsuits and suggest that independent directors can suffer reputation damage from being associated with any type of litigation against the firm where they serve. In addition, Armstrong, Core and Guay (2014) find that independent directors can reduce firm information asymmetry, which further reduces the likelihood of a wide variety of litigation (for example, see Skinner (1994) and Field, Lowry and Shu (2005)).

In practice, litigation can come in many forms, all of which can be very costly, both in terms of economic impact and reputation consequences, for shareholders and directors, respectively. Thus, the incentives of independent directors to closely monitor management can serve to avoid the negative consequences of facing litigation and can reduce the likelihood of a firm being the target of a variety of lawsuits. Our primary hypothesis follows:

Hypothesis 1: An increase in the fraction of independent directors on a corporate board is associated with a general decrease in overall corporate litigation.

Independent directors are valued monitors due to their independence from management. However, because of their independence they possess less firm-specific knowledge. In firms where this information is more critical, independent directors can be weaker at monitoring internal firm operations. Theoretical research on board composition highlights the important role of inside directors in certain firms. For example, Raheja (2005) argues that inside directors are more likely to sit on boards when the firm is larger, more complex, or more technology intensive, since it is more difficult for outsiders to monitor operations in these firms. Thus, from this perspective mandating greater board independence could actually weaken board monitoring and advising ability in firms for which inside information is more important for board decision making and thus increase the likelihood of internally born litigation. In fact, after the safety recall incident General Motors elected a union representative to their board. While not an insider per se, his presence effectively increased the board's awareness of employee perspectives and other internal operations of the firm.[9] This leads to our next hypothesis.

Hypothesis 2: An increase in the fraction of independent directors on a corporate board is associated with an increase in internally originating litigation for firms for which firm-specific knowledge is more important.

While independent directors are valued by shareholders for their independence from management, they are perhaps less valued by other stakeholders because of their duty to shareholders. Specifically, creditors can be concerned if directors increase their focus on shareholders at their expense, especially if the creditors have a greater stake in the firm (Jensen and Meckling (1976)). Beltratti and Stulz (2012) find evidence that banks with more shareholder-friendly boards make decisions more in the interests of shareholders and at the expense of bond holders. Likewise, Bradley and Chen (2015) find that increased board independence leads to corporate policies that encourage risk-taking, which are in the interest of

[9] "Adding a union guy to GM's board", Jena McGregor. Washington Post, April 29, 2014

shareholders but are increasingly costly to bondholders. Therefore, in firms where creditors have a higher stake, an increase in the percentage of independent directors is likely to lead to a greater likelihood of financially related litigation. This is our third hypothesis:

Hypothesis 3: An increase in the fraction of independent directors on a corporate board is associated with an increase in financially related litigation for firms with high levels of debt.

3. Sample Selection, Data Description and Methodology

We hand-collect all lawsuits, state and federal, involving the S&P 1500 firms from the LexisNexis legal database for fiscal years 1996 to 2011.[10] We read each case and note the allegation that was brought against the firm. We then classify each case into one of the lawsuit types according to the allegation and the provision of the law that was violated. Data for our sample are from firm-years that are common in the following databases: Center for Research in Securities Prices (CRSP), Compustat, ExecuComp, and RiskMetrics. Stock and accounting data for our sample are from CRSP and Compustat, respectively. We collect data on management share ownership from ExecuComp. Data on boards of directors are from RiskMetrics.

We classify the lawsuits into fourteen categories according to the type of lawsuit--(1) labor, (2) intellectual property, (3) pension, (4) commercial, (5) securities, (6) government contracts, (7) environmental, (8) finance and banking, (9) antitrust, (10) product liability, (11) medical liability, (12) corporate governance, (13) general liability, and (14) other lawsuits that do not fall into any of the preceding categories. A description of each type of litigation is in the appendix.

Table 1, Panel A, reports the number of corporate litigation filings by lawsuit type from 1996 to 2011. We identify 33,268 lawsuits filings from 1996 to 2011, with an average of 2,376

[10] PACER is another publicly available source of lawsuits but it only contains federal court cases.

per year. Prior to the year 2000, the number of lawsuits each year does not vary considerably. Nevertheless, we observe an increase in post 2000 and post 2004 data. For instance, there were 206 labor lawsuits in 1996, but this rose to 330 in 2001, 750 in 2005 and 933 in 2008.

Panel B of Table 1 reports the fraction of lawsuit types by year. The distribution of lawsuit type is relatively constant across the years. Labor litigation is the most common lawsuit type in all years in our sample. This is followed by commercial litigation (10.7%), intellectual property litigation (10.5%), product liability litigation (8.1%), medical liability litigation (6.6%), pension litigation (6.2%), general liability litigation (6.1%), other litigations (5.5%), antitrust litigation (4.7%), securities litigation (3.9%), environmental litigation (2.6%), finance and banking litigation (2.2%), corporate governance litigation (1.5%), and government contract litigation (0.8%).

Panel C of Table 1 presents a breakdown of corporate litigation across the twelve Fama-French (FF-12) industry groups. We observe a high percentage of labor litigation in the Wholesale, Retail, and Some Services and Manufacturing industry groups. Intellectual property litigation is more prevalent in the Business Equipment and Healthcare, Medical Equipment, and Drugs industry groups. Pension litigation is common in the Manufacturing and Finance industry groups. Commercial litigation is prevalent among the Business Equipment and Wholesale, Retail, and Some Services industry groups. Securities litigation is common in the Business Equipment and Finance industry groups. Government contract litigation is common in the Manufacturing Industry. Environmental litigation is prevalent in Manufacturing, Chemicals and Allied Products, and Oil, Gas, and Coal Extraction and Products industry groups.

Because we focus on the frequency of litigation, the dependent variable is the number of

legal cases for which the firm is mentioned as a defendant in a lawsuit during the year.[11] Our primary measure is *Total Litigation*, which is defined as the sum of all types of lawsuits. In addition to our measure of overall litigation, we examine each of the fourteen different types of lawsuits individually.

The key independent variables include a non-compliant dummy (treatment group), a post-regulations dummy, and an interaction of the non-compliant dummy and the post-regulation dummy. The non-compliant dummy is an indicator taking the value of one for firms not in compliance with the NYSE/NASDAQ listing rule requiring firms to have a majority of independent directors on board prior to the regulation and zero otherwise. Post-regulation is an indicator variable taking the value of one for years following the NYSE/NASDAQ listing regulation and zero otherwise. Our main independent variable of interest is the interaction of these two variables, which captures the differential effect of the treatment on corporate litigation for treatment firms.

Our control variables include other characteristics found in the literature to be associated with corporate litigation (e.g. Hutton, Jiang, and Kumar (2015)). We account for firm size using the natural logarithm of sales. It is well established in the litigation literature that larger firms are subjected to securities litigation (eg. Gande and Lewis (2009), Dechow, Ge, Larson and Sloan (2011) and Hutton, Jiang, and Kumar (2015)). In addition, Hutton, Jiang, and Kumar (2012) document a positive association between firm size and labor, environmental and intellectual property litigation. We control for the operating performance of the firm by including the firm's return on asset, measured as the ratio of net income to total assets (see for example, Crutchley, Jensen, and Marshall (2007), and Dechow, Ge, Larson, and Sloan (2011)). We also include the firm's leverage, measured as the ratio of total book debt to total book assets (see

[11] Atanasov, Ivanov, and Litvak (2012) use a similar proxy for litigation risk.

Dechow, Sloan, and Sweeney (1996); Richardson, Tuna, and Wu (2002); Beneish (1997)). To capture the effect of growth opportunities, we include the firm's market-to-book ratio (see for example Strahan (1998)). Market-to-book ratio is computed as total assets less book equity, less deferred tax, plus the liquidation value of preferred stock, plus the product of the year-end common share price and the year-end number of shares outstanding divided by total assets. In order to account for the stock market performance, we also include the stock return, defined as the firm's return over prior year. Finally, to control for CEO incentives we include the percentage of CEO equity ownership. Detailed descriptions of the variables are in the Appendix.

4. Empirical Results

4.1 Summary Statistics

Univariate statistics for the key variables used in this study are shown in Table 2. We report the summary statistics for the full sample firms, as well as the control and treatment sub-samples. Panel A of Table 2 presents the descriptive statistics for the full sample. From Panel A of Table 2, we note that a firm has on average over two lawsuits in a year. The average firm has $7.88 billion in market capitalization, and $7.96 billion in assets. The firms have an average of $7.6 billion in sales. The firms have an average ROA of 5.0%, average book leverage of 21.0%, an average Market-to-Book ratio of 1.61, and average annual stock returns of 14.2%. An average board has over nine directors, with 71.7% independent directors. An average CEO has about 2.1% equity stake in the firm. On average, the top five executives in the management team have a total of about 3.39% equity ownership in the firm.

The Sarbanes-Oxley Act of 2002 (SOX) was signed into law in July 2002, but it was in discussion and publicly monitored for several months prior to becoming law. The discussion of

the new law and the contemporaneous exchange listing requirements started almost immediately following the collapse of Enron, which filed for bankruptcy on December 2, 2001. Thus, much of the development of the new regulatory requirements occurred during fiscal year 2001 for most firms. Thus, we consider fiscal year 2001 as the shock year and we consider a firm to be non-compliant if the firm has fifty percent or less independent board of directors in fiscal year 2000 (before the enactment of SOX). The firm is considered as a compliant firm if that firm has over fifty percent independent directors on the board in the year 2000. It is important to note that the new exchange rule on board independence was not the first listing requirement for NYSE/NASDAQ firms. In December 1999, NYSE/NASDAQ issued their first listing requirement regarding audit independence in response to the SEC calls for improvement in the effectiveness of corporate audit committees. According to that listing requirement, all listed firms are mandated to maintain audit committees with at least three directors. All of these directors must have no economic or family ties to the company that may interfere with the exercise of their independence from management and the company (see NYSE Listed Company Manual 303.01[B][2][a]). This requirement also increased the percentage of independent directors on board. Consequently, from within the group of compliant firms in the year 2000, we take note of the firms that did not have an entirely independent audit committee requirement in 1998 (we refer to these firms as non-compliant 1998 firms). We then add the non-compliant 1998 firms to the non-compliant 2000 firms. Together, these firms constitute our treatment firms. The post-regulation indicator is set to one for 2001 and later years for compliant and non-compliant 2000 firms and zero otherwise. The indicator is also set to one for 1999 and later years for compliant and non-compliant 1998 firms and zero otherwise.

In Panel B of Table 2, we report the descriptive statistics and test results of the difference in means of the treatment and control firms. In addition to the differences in the percentages of independent directors, the table shows several differences between the treatment and control firms. Treatment firms have an average of 59.45% independent directors across the full sample, including the years following SOX. On the other hand, control firms have an average of 75.67% independent directors on board. Based on total assets, treatment firms are significantly smaller than control firms. Compared to the control firms, the treatment firms have a significantly greater ROA, lower leverage, higher market-to-book ratio, smaller board size, higher CEO equity ownership, and greater management equity ownership. We present our multivariate analysis in order to account for multiple factors affecting corporate litigation in the next section.

4.2 Independent Directors and Corporate Litigation

In this section, we examine the relationship between independent directors and corporate litigation using the difference-in-differences (DiD) methodology. The DiD methodology mitigates endogeneity concerns and isolates the change in the level of corporate litigation to the exogenous shock to board independence (the non-compliant firms) by differencing the changes in the level of corporate litigation in the non-compliant firm and the compliant firm. We hypothesize that the increase in the fraction of independent board of directors will result in a reduction of corporate litigation.

We employ the following model to investigate the effect of independent directors on corporate litigation:

$$Corp\ Litigation = a_0 + a_1\,(Non\text{-}Compliant) + a_2\,(Post\ Regulations) + a_3\,(Non\text{-}Compliance{*}Post\ Regulations) + a_4\,(Firm\ Size) + a_5\,(ROA) + a_6\,(Leverage) + a_7\,(Market\text{-}to\text{-}Book) + a_8\,(Stock\ Returns) + a_9\,(CEO\ Equity\ Owner) + \varepsilon \quad (1)$$

The dependent variable *Corp Litigation* is either the total number of litigation events during the year or the number of a specific type of litigation. Control variables are as defined previously. In addition to the firm-level variables, we also control for industry fixed effects, defined based on the Fama-French 48 Industry classifications and standard errors are robust and clustered at the firm level (Petersen (2009)). The coefficient estimate on the interaction variable, a_3, identifies the effect of independent directors on corporate litigation in the DiD framework. Because the average firm facing litigation in a year has over 6 different lawsuits we use a Poisson model for our primary tests.[12] Our hypothesis predicts a negative and significant coefficient on the interaction term (*Non-Compliance*Post Regulations).*

The dependent variable (*Corp Litigation)* in each of the regression specifications is either the number of total litigations or the number of a specific type of litigation the firm experiences during the year. In Model 1 of Table 3, we present regression results of equation (1) where corporate litigation is measured by *Total Litigation*. The results in Model 1 of Table 3 show that the coefficient on the Post-Regulations dummy is positive and statistically significant at the 1% level, which suggests a general increase in corporate litigation in the period following the regulatory shock. However, for our test we are more interested in the coefficient estimate for the interaction term, the DiD estimate. This estimate captures the differential effect of the treatment on corporate litigation for treatment firms. The coefficient estimate on the interaction term is negative and statistically significant at the 1% percent level. This result indicates that relative to the control firms, the increase in board independence in treatment firms led to a decrease in corporate litigation in these firms, which is consistent with Hypothesis 1.

We present results for the individual components of Total Litigation in Models 2 through 15. We report results for *Pension Litigation, Product Liability Litigation, Environmental*

[12] In unreported results we also use pooled OLS regressions and find qualitatively similar results.

Litigation, *General Liability Litigation*, and *Medical Liability Litigation*, in models 2 through 6 respectively. We find a negative and statistically significant coefficient on the interaction variable for all five individual types of litigation. Results for the remaining components: *Securities Litigation*, *Antitrust Litigation*, *Finance & Banking Litigation*, *Intellectual Property Litigation*, *Commercial Litigation*, *Labor Litigation*, *Government Contracts Litigation*, *Corporate Governance Litigation*, and *Other Litigation* are in models 7 through 15, respectively. We find negative and significant coefficient estimate for the interaction term only for labor and other litigation. We find a negative but statistically insignificant coefficient estimate for the other litigation types. The estimates of the various control variables in all our models are generally consistent with prior evidence in the litigation literature (see, for example, Karpoff, Lee, and Martin (2008), Dechow, Ge, Larson and Sloan (2011), and Hutton, Jiang, and Kumar (2012)).

In summary, the results in Table 3 reveal that independent directors can reduce the degree of litigation the firm experiences. However, they do not significantly reduce all types of litigation. Specifically, they deter primarily lawsuits related to the violation of pension, product liability, environmental, general liability, medical liability, labor and other lawsuits.

5. Robustness Checks

We conduct a series of robustness checks of our main results in this section to control for endogeneity, alternative regulatory windows, unobserved omitted variables and alternate model specifications.

5.1 Size Matching

We use a sample of matched firms to examine the corporate litigation of similar firms that differ in board independence prior to the SOX and the ELR. Our matched sample is

constructed by matching on firm size. We identify 371 non-compliant firms in the fiscal year 2000. Our control sample of matched compliant firms is obtained from the remaining firms in fiscal year 2000, by finding the firm that is closest to each sample firm in total assets. As correctly pointed out by Guo, et al., (2012), this approach helps alleviate concerns that the findings are driven by firm size since SOX affected smaller firms to a larger extent.

Table 4 shows the Poisson regression estimates. In Model 1, we find that the treatment firms are associated with a reduction in total litigation. In Models 2 through 15, we find that the interaction variable is significantly negatively associated with pension litigation, product liability, environmental litigation, general liability, and medical liability litigation, finance and banking, labor, commercial and other litigation. Overall, our results continue to show that the treatment firms are associated with a reduction in corporate litigation.

5.2 Different sample period

To mitigate the possibility that the financial crisis of 2008-2009 may be driving our results we omitted post-2006 data from our sample in the above analyses. In addition, we excluded years 2002-2003, the transition years of the new requirements. We rerun our analysis and our results are substantially unchanged. Our results continue to show that the treatment firms are associated with a reduction in corporate litigation. We report estimate of our regressions in Table 5.

5.3 Controlling for firm fixed effects

In order to alleviate the potential concern of unobserved firm characteristics, we also control for firm fixed effects and present the regression estimates in Table 6. It is important to point out that the non-compliant dummy, which does not vary over time, is dropped in the firm-

fixed effects model specifications. Again, the results continue to show that the non-compliant firms are associated with a reduction in total litigation.

6. Do Independent Directors Reduce Litigation of all Types for all Firm?

Thus, far our evidence suggests greater representation by independent directors, on average, reduce the frequency of a variety of lawsuits for firms. However, the very reason they are deemed valuable to many firms, their lack of connections with the firm or its managers and their reputation for representing shareholder interests, may actually contribute to an increase in certain types of litigation in some firms. We further exploit the multitude of lawsuit types in our sample to explore this possibility. Specifically, we examine lawsuits more likely to originate from within the firm and lawsuits more likely to originate from another stakeholder other than shareholders.

6.1 Internally Originating Litigation

In this section, we examine the increase in board independence in firms where firm-specific information is more important to board decision making and litigation originating from within the firm. We extend the difference-in-differences (DiD) methodology to address this question. First, to identify the firms where inside directors likely are more critical to board decision making, we follow the methodology in Masulis and Mobbs (2011). Specifically, we estimate a probit model determining firms with inside director representation on the board, inside-director-firms. The determinants include R&D Intensity, Capital Expenditure Intensity, natural logarithm of year-end sales, leverage, natural logarithm of the number of business segments, natural logarithm of the number of geographical segments, industry competition, the percentage of common shares outstanding held by independent directors at year end, and the

natural logarithm of the number of years the CEO has served on the board. Table 7 Panel A reports the estimates of our probit regression. Our results are similar to Masulis and Mobbs (2011). For example, we find that firms with higher capital expenditure intensity, higher sales, lower leverage, lower industry competition, and longer CEO tenure are more likely to have higher inside director representation on the board. We also find that firms with a lower percentage of independent director share ownership are more likely to have higher inside director representation on the board. One interpretation of this relation between independent director ownership and the presence of inside directors is that in insider-firms outside directors have weaker incentives relative to the insiders since for these firms the incentives of inside directors are more important for shareholders.

From this model we estimate the propensity, or probability, for each firm in our sample of having an inside director on the board. For each year, we identify firms with an above the median propensity score as an inside-director-firm and all other firms as non-inside-director-firms. Having identified the inside-director firms, we next investigate the effect of the exogenous shock to increase board independence on litigation that is likely to originate internally. We consider labor related, pension related and product liability related lawsuits as internally originating lawsuits. We classify the other lawsuits that do not fall within the internally originating lawsuits as externally originating lawsuits.

Employment and pension lawsuits are brought directly by employees. Product liability lawsuits, while brought by an external party, they originated from the internal quality controls, or lack thereof, as is the case with the recent GM safety recall concern. We hypothesize that the lack of firm-specific knowledge of outside directors can reduce their ability to monitor internal

actions that can lead to these lawsuits. We test this hypothesis by using the difference-in-difference-in-differences model in equation (2) below:

$$\textit{Internal Litigation} = a_0 + a_1\,(\textit{Non-Compliant}) + a_2\,(\textit{Post Regulations}) + a_3\,(\textit{Non-Compliance*Post Regulations}) + a_4\,(\textit{Insider Firm}) + a_5\,(\textit{Insider Firm*Non-Compliant}) + a_6\,(\textit{Insider Firm *Post Regulations}) + a_7\,(\textit{Insider Firm*Non-Compliance*Post Regulations}) + a_8\,(\textit{Firm Size}) + a_{10}\,(\textit{ROA}) + a_{11}\,(\textit{Leverage}) + a_{12}\,(\textit{Market-to-Book}) + a_{13}\,(\textit{Stock Returns}) + a_{14}\,(\textit{CEO Equity Owner}) + \varepsilon \quad (2)$$

Internal Litigation is our dependent variable. We define *Internal Litigation* as the number of labor, pension or product liability related legal cases for which a firm is mentioned as a defendant. *Insider Firm* takes the value of one if a firm is an inside-director firm, as described above, and zero otherwise. *Post Regulations* is a dummy variable taking on the value of one after year 2001 and zero otherwise. The other variables are defined in the appendix. Our main independent variable of interest is the triple interaction term, (*Insider Firm*Non-Compliance*Post Regulations)*. A positive coefficient on the triple interaction term will support our hypothesis. We use a Poisson model for the estimation as before. The results are presented in Table 7 Panel B. In model 1 we use Labor as our first measure of internal litigation. The first three coefficient estimates are consistent with our primary findings. Primarily, non-compliant firms face significantly fewer Labor lawsuits after the regulatory shock relative to compliant firms. Thus, in general, adding independent directors reduces this type of litigation for the average firm. However, this benefit may not accrue to all firms. Specifically, when firm-specific information is more important for board monitoring, as with insider-firms, these benefits may not be as strong (H2). The coefficient estimate of the triple interaction term reveals that the incremental effect of non-compliant insider firms due to the regulatory shock is positive and significant. This implies that, while independent directors can help deter employee and labor litigation in the average firm, they are not as helpful in mitigating this type of litigation in firms where inside-firm-specific information is more important for board monitoring. In model 2, we use Pension

litigation as the measure of internally originating litigation, but we find no evidence of a differential incremental effect in insider firms. In model 3, we use product liability and find similar results to those in model 1. These results are consistent with the recent issues faced by GM and their majority independent board. The evidence here suggests that having more insiders on the board to help the board to better understanding firm-specific internal operations may have helped to prevent GM's recent product liability issues. Model 4 uses labor, pension and product liability as the measure of internally originating lawsuits and, as expected, finds stronger results consistent with more independent directors not being as effective at reducing this type of internally originating lawsuits. The dependent variable in Model 5 is External Litigation, defined as the difference between Total Litigation and the components of Internal Litigation. We find that mandatory increases in board independence, does not significantly increase external litigation in insider firms, but we continue to find support for our primary results.

Together with Hypothesis 1, the results from this section suggest that increasing the percentage of independent directors on the board may not be beneficial at deterring all forms of litigation in all firms. Specifically, in firms where firm-specific inside information is important to board monitoring, mandating greater board independence can weaken a board's ability to prevent product liability and labor litigation. In these firms, inside directors can be better informed and thus be better prepared to represent the interest of the employees and to monitoring internal operations more effectively.

6.2 Securities and Finance and Banking Litigation and Highly Levered Firms

In this section, we consider whether the greater focus on shareholder interests by independent directors reduces the focus on other stakeholders in the firm to the degree that it could lead to an increase in litigation from these stakeholders. Specifically, for firms with greater amounts of debt

in their capital structure, their creditors represent a significant stakeholder in the firm. Since the fiduciary duty of the directors is to represent shareholders, creditors with significant stakes in the firm are more likely to use litigation to protect their stake. We examine this possibility by examining the likelihood of financial related litigation conditioning on firms whose leverage is in the top quartile of their industry. As in the previous section, we expand the difference-in-differences framework of our primary analysis to be difference-in-difference-in-differences (DiDiD) as shown in equation (3) below:

$$\textit{Financially Based Litigation} = a_0 + a_1\,(\textit{Non-Compliant}) + a_2\,(\textit{Post Regulations}) + a_3\,(\textit{Non-Compliance*Post Regulations}) + a_4\,(\textit{High Leverage Firm}) + a_5\,(\textit{High Leverage Firm*Non-Compliant}) + a_6\,(\textit{High Leverage Firm *Post Regulations}) + a_7\,(\textit{High Leverage Firm*Non-Compliance*Post Regulations}) + a_8\,(\textit{Firm Size}) + a_{10}\,(\textit{ROA}) + a_{11}\,(\textit{Leverage}) + a_{12}\,(\textit{Market-to-Book}) + a_{13}\,(\textit{Stock Returns}) + a_{14}\,(\textit{CEO Equity Owner}) + \varepsilon \quad (2)$$

The results are reported in Table 8 and the coefficient of interest is the triple interaction term, the DiDiD estimator. The dependent variable is the indicator that equals one if the firm is the target of either a Securities Litigation or Finance and Banking related litigation. We find consistent results with our previous analysis related to our primary finding that following the shock increasing board independence treatment firms experience a significantly lower likelihood of being the target of a financially related litigation. However, here we are interested in the triple interaction term, the DiDiD estimate. We find a positive and significant coefficient estimate for the DiDiD, which is consistent with firms with greater leverage being more likely to experience a financially related lawsuit when forced to add independent directors, relative to control firms. This is consistent with firms for which creditors have a substantial interest experiencing an increase in financially related litigation due to the shift by the board to be more shareholder oriented. One mechanism for the shift in focus is the removal of inside or affiliated directors who better represented the interests of creditors than do the newly added independent directors. In

unreported results we also find similar results, albeit with slightly weaker statistical significance when we examine Securities and Finance and Banking litigation separately.

7. Female Directors

In general, greater monitoring intensity by independent directors is the primary mechanism that can prevent or reduce managerial discretions that can lead to firm actions or outcomes that culminate in legal action against the firm. However, it is possible that other mechanism may also be at play when non-compliant firms are forced to add independent directors to their board. They may add directors with skill sets which are especially helpful in reducing litigation, for example, directors with legal expertise or directors who are innately more conservative. We explore this latter possibility in this section.

There is a large literature that finds female executives and directors are, on average, more conservative than their male counterparts (see for example, Huang and Kisgen (2013), Barua et al. (2010), and Francis et al. (2014)). Relatedly, there is an ongoing focus on increasing representation by women in corporate boards as they are becoming more prominent in the executive ranks and Adams and Ferreira (2009) find female directors can be very influential. Given the sudden increase in the demand for independent directors caused by the new exchange listing requirements, it is possible that many non-compliant firms added female directors to their boards, perhaps even more so than compliant firms. To the degree that adding female directors can reduce the level of risk taking allowed by the board their increased presence can also reduce litigation. Indeed, Adhikari, Agrawal, and Malm (2015) find that greater representation by female executives is associated with a lower likelihood of litigation in general. In Table 9, we examine the percentage of female directors on the board in another difference-in-differences

setting. Specifically, we estimate the following model:

$$\textit{Percentage of Independent Female Directors} = a_0 + a_1\,(\textit{Non-Compliant}) + a_2\,(\textit{Post Regulations}) + a_3\,(\textit{Non-Compliance*Post Regulations}) + \textit{controls} + \varepsilon \quad (3)$$

In Table 9 model 1, we report estimates for just the DiD variables. Interestingly, we find that non-compliant firms have significantly lower representation by female directors before the regulation shock. In addition, the coefficient estimate for the post-regulation indicator is positive and significant. This suggests that the general trend after the shock, among the compliant firm, is to increase female representation on the board. This is consistent with the push for greater gender diversity in the boardroom affecting all firms. However, the coefficient estimate for the DiD term is also positive and significant. This indicates that while compliant firms where increasing representation by female directors, non-compliant firms were also increasing the representation of female directors on their boards at a significantly greater rate. In model 2, we include all of the control variables in equation (3). In model 3, we also incorporate industry fixed effects and we find similar results. Thus, the evidence suggests that one mechanism by which independent directors joining non-compliant firms reduce litigation is by adding more female independent directors relative to compliant firms.

8. Conclusion

This paper examines the impact of independent directors on multiple types of corporate litigation. Although, theoretically directors more independent of the firm's managers should be stronger monitors, empirical research has been inconclusive. Nonetheless, Congress, acting on the presumption that more independent boards make better monitors, enacted strong legislation in 2002 to emphasize the necessity of having more independent boards.

In this paper, we shed new light on this relationship. We examine how corporate governance reform initiatives, specifically the Sarbanes-Oxley Act of 2002 and the NYSE and NASDAQ exchange listing requirements of 2002, affect the likelihood of corporate litigation. We use these regulatory shocks as a source of exogenous variation to board independence to provide convincing statistical evidence on a causal relationship between board independence and corporate litigation.

In particular, we find that firms forced to increase their board to a majority of independent directors after the exogenous regulatory requirement, experience a reduction in total corporate litigation. We also find that firms without a majority of independent directors on the board prior to the regulatory shock (non-compliant firms) experience a significant decrease in lawsuits related to the violation of pension, product liability, environmental, general liability, medical liability, labor, and other types of law suits. These results are robust to a variety of specifications and methods for accounting for endogenous relations.

We also find that increasing independent directors on board may not be beneficial at deterring all forms of litigation in certain firms. Specifically, in firms where firm-specific information is important to board monitoring, mandating greater board independence can weaken a board's ability to prevent product liability and labor litigations. Relatedly, in firms with high leverage, where creditors hold a substantial interest in firm and board decision making, adding independent directors who are more devoted toward shareholder interests, perhaps at the expense of the interests of creditors, can lead to a greater likelihood of financially related litigation occurring. Finally, we find evidence that one mechanism by which adding independent directors can reduce the litigation likelihood of non-compliant firms is through the greater addition of female independent directors.

Overall, the evidence highlights the benefits of monitoring by independent directors on corporate boards and consequently, has important implications for regulators, investors, and other stakeholders. Together the main findings of this paper reveal that, in general, greater board independence equates to stronger corporate governance that can mitigate most types of corporate litigation in most firms. Although, simply mandating greater independence does not appear to be optimal for all firms.

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Appendix: Definition of variables

Variables	Definition
Dependent Variables	
Total Litigation	Total number of legal cases for which a firm is mentioned as a defendant.
Pension	Number of pension and benefits legal cases for which a firm is mentioned as a defendant.
Products Liability Litigation	Number of products liability legal cases for which a firm is mentioned as a defendant.
Environmental Litigation	Number of environmental legal cases for which a firm is mentioned as a defendant.
General Liability Litigation	Number of general liability legal cases for which a firm is mentioned as a defendant.
Medical Liability Litigation	Number of medical liability legal cases for which a firm is mentioned as a defendant.
Intellectual Property Litigation	Number of intellectual property legal cases for which a firm is mentioned as a defendant.
Antitrust Litigation Risk	Number of antitrust legal cases for which a firm is mentioned as a defendant.
Finance & Banking Litigation	Number of finance & banking related legal cases for which a firm is mentioned as a defendant.
Securities Litigation	Number of securities related legal cases for which a firm is mentioned as a defendant.
Commercial Litigation	Number of commercial legal cases for which a firm is mentioned as a defendant.
Labor Litigation	Number of labor legal cases for which a firm is mentioned as a defendant.
Government Contracts Litigation	No. of legal cases related to government contracts for which a firm is mentioned as a defendant.
Other Litigation	No. of legal cases that do not fit other classifications where a firm is mentioned as a defendant.
Firm Characteristics	
Log of market capitalization	Natural logarithm of one plus market capitalization measured in millions of dollars.
Log of total assets	Natural logarithm of one plus book value of total assets measured in millions of dollars.
Log of Sales	Natural logarithm of one plus annual sales measured in millions of dollars.
ROA	Ratio of net income to book value of assets.
Market-to-Book	Ratio of market value of assets to book value of assets.
Leverage	Ratio of long-term debt plus short-term debt to total assets.
Firm Performance	
Stock Returns	Stock returns during the fiscal year in percentage.

Appendix: Definition of the variables

Variables	Definition
Board & Ownership Characteristics	
Board Size	Number of members of the board of directors for each firm.
Independent Directors	Number of director who do not have any economic or family ties with the firm.
Percentage of Independent Directors	Total number of independent directors divided by total number of directors.
CEO Equity Ownership	Percentage of total shares held by the CEO.
Management Equity Ownership	Percentage of total shares held by the top management.
D-i-D Variables	
Non-Compliant	An indicator variable taking the value of one for membership in the treatment group defined by the new NYSE/NASDAQ rule requiring firms to have majority of independent directors on board and zero otherwise.
Post Regulations	An indicator variable taking the value of one if it is year 2001 or after, i.e., after the NYSE/NASDAQ regulations on board independence are implemented, and zero otherwise.

Appendix: Lawsuit Definition

Antitrust laws are designed to prevent the development of monopolies and encourage market competition. Commercial litigation pertains to violations of the law that apply to the rights, relations, and conduct of persons and businesses engaged in commerce, merchandising, trade and sales. Corporate governance litigation includes lawsuits brought against directors of a firm. Lawsuits brought against the suppliers of goods and services to the government constitute government contracts. Labor litigation deals with employee rights, and includes lawsuits related to discrimination based on race, gender, religion, national origin, physical disability, sexual orientation, and age by employers. Environmental litigation pertains to disputes arising from activities which may have detrimental effects on the environment. Environmental laws are intended to protect the environment, conserve water, save endangered species, wildlife, and prevent pollution. Finance and banking lawsuits include violations surrounding financial

products and services. Lawsuits surrounding general liability (i.e. non-product and non-medical liability), including insurance policies and claims, constitute general liability litigation.

Medical liability is the area of health law in which manufacturers, distributors, suppliers, retailers and others who make health products available to the public are held responsible for the injuries these products may cause. Pension and retirement litigation includes lawsuits related to union, worker compensation and retirement benefits disputes. Securities litigation refers to lawsuits filed by investors against an issuer of a security, for fraud in connection with its purchase or sale.

Product liability is the area of law in which manufacturers, distributors, suppliers, retailers and others who make products available to the public are held responsible for the injuries these products may cause. Securities fraud includes outright theft from investors, stock manipulation, misstatements on a public company's financial reports, and lying to corporate auditors. The term incorporates a wide array of other actions, including insider trading, front running and other illegal acts on the trading floor of a stock or commodity exchange

Table 1: Distribution of lawsuit type by year

This table shows the number of lawsuit types by year. The lawsuits in this table are lawsuits filed against publicly-held firms

Panel A: Number of lawsuits by type and year

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Total
Labor	206	248	245	297	256	330	368	457	503	750	911	753	933	1,259	1,298	1,269	10,083
Intellectual Property	79	111	113	72	106	96	117	165	169	238	304	272	343	402	414	483	3,484
Pension & & Benefits	43	39	46	46	39	47	84	100	106	177	217	179	204	254	252	244	2,077
Commercial	118	95	108	108	114	132	140	178	198	240	282	241	317	432	405	441	3,549
Securities	16	23	18	15	25	35	51	81	79	130	113	107	90	191	184	159	1,317
Government Contracts	8	8	9	16	9	9	13	16	12	27	26	14	28	29	40	45	309
Environmental	17	14	15	19	26	44	52	47	39	81	79	75	82	106	83	98	877
Finance & Banking	8	5	12	12	10	11	20	31	32	42	48	39	67	109	149	159	754
Antitrust	41	39	40	38	56	51	69	77	85	102	118	108	124	245	199	184	1,576
Product Liability	120	157	135	162	96	132	174	169	143	217	180	150	198	233	179	246	2,691
Medical Liability	73	48	72	61	83	76	104	95	122	144	185	152	177	242	278	283	2,195
Corporate Governance	23	13	15	17	11	20	24	27	27	49	51	29	25	52	51	57	491
General Liability	43	56	60	78	66	88	105	111	109	139	166	129	155	254	236	253	2,048
Others	60	60	58	82	58	75	122	119	135	121	121	123	142	177	176	188	1,817
Total	855	916	946	1,023	955	1,146	1,443	1,673	1,759	2,457	2,801	2,371	2,885	3,985	3,944	4,109	33,268

Table 1. Panel B: Percentage of lawsuits by type and year

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Labor	24.09	27.07	25.90	29.03	26.81	28.80	25.50	27.32	28.60	30.53	32.52	31.76	32.34	31.59	32.91	30.88
Intellectual Property	9.24	12.12	11.95	7.04	11.10	8.38	8.11	9.86	9.61	9.69	10.85	11.47	11.89	10.09	10.50	11.75
Pension & Benefits	5.03	4.26	4.86	4.50	4.08	4.10	5.82	5.98	6.03	7.20	7.75	7.55	7.07	6.37	6.39	5.94
Commercial	13.80	10.37	11.42	10.56	11.94	11.52	9.70	10.64	11.26	9.77	10.07	10.16	10.99	10.84	10.27	10.73
Securities	1.87	2.51	1.90	1.47	2.62	3.05	3.53	4.84	4.49	5.29	4.03	4.51	3.12	4.79	4.67	3.87
Government Contracts	0.94	0.87	0.95	1.56	0.94	0.79	0.90	0.96	0.68	1.10	0.93	0.59	0.97	0.73	1.01	1.10
Environmental	1.99	1.53	1.59	1.86	2.72	3.84	3.60	2.81	2.22	3.30	2.82	3.16	2.84	2.66	2.10	2.39
Finance & Banking	0.94	0.55	1.27	1.17	1.05	0.96	1.39	1.85	1.82	1.71	1.71	1.64	2.32	2.74	3.78	3.87
Antitrust	4.80	4.26	4.23	3.71	5.86	4.45	4.78	4.60	4.83	4.15	4.21	4.56	4.30	6.15	5.05	4.48
Product Liability	14.04	17.14	14.27	15.84	10.05	11.52	12.06	10.10	8.13	8.83	6.43	6.33	6.86	5.85	4.54	5.99
Medical Liability	8.54	5.24	7.61	5.96	8.69	6.63	7.21	5.68	6.94	5.86	6.60	6.41	6.14	6.07	7.05	6.89
Corporate Governance	2.69	1.42	1.59	1.66	1.15	1.75	1.66	1.61	1.53	1.99	1.82	1.22	0.87	1.30	1.29	1.39
General Liability	5.03	6.11	6.34	7.62	6.91	7.68	7.28	6.63	6.20	5.66	5.93	5.44	5.37	6.37	5.98	6.16
Others	7.02	6.55	6.13	8.02	6.07	6.54	8.45	7.11	7.67	4.92	4.32	5.19	4.92	4.44	4.46	4.58

Table 1. Panel C: Percentage of lawsuits by Industry

Fama French 12 Industry	Labor	Intell. Prop.	Pen& Benefit	Comm-ercial	Secu-rities	Gov. Cont.	Enviro-mental	Fin& Bank	Anti-Trust	Prod. Liab.	Med. Liab.	Corp. Gov.	Gen. Liab.	Other
Consumer NonDurables	5.55	4.59	5.10	4.11	2.58	2.59	8.32	3.32	7.49	3.64	3.74	4.28	3.22	3.14
Consumer Durables	3.46	3.44	2.79	6.93	1.14	5.50	4.56	1.72	5.14	13.82	2.69	5.09	5.76	3.30
Manufacturing	14.39	12.69	14.44	12.93	8.81	33.01	14.37	2.92	9.26	14.42	7.84	11.81	13.09	11.72
Oil, Gas, and Coal Extraction and Products	2.95	0.98	2.36	4.62	2.35	3.24	12.66	1.19	1.97	4.38	1.46	3.87	2.64	7.43
Chemicals and Allied Products	3.55	2.38	3.47	3.66	1.90	3.56	13.68	1.06	2.73	8.06	3.14	2.24	5.03	4.24
Business Equipment -- Computers, Software, and Electronic Equipment	9.18	37.69	12.76	15.36	18.75	17.15	5.70	6.23	26.59	4.01	4.10	8.96	5.18	8.48
Telephone and Television Transmission	2.98	4.39	4.24	2.62	4.18	1.62	1.82	1.72	4.51	1.00	1.14	7.13	2.00	1.82
Utilities	3.16	1.15	4.57	2.85	3.95	2.91	6.27	0.66	2.16	2.97	1.78	4.28	1.95	5.34
Wholesale, Retail, and Some Services (Laundries, Repair Shops)	22.29	10.10	11.22	13.21	6.68	4.21	13.68	7.96	11.48	19.99	17.54	11.00	16.41	19.87
Healthcare, Medical Equipment, and Drugs	6.50	14.58	9.00	10.43	9.34	6.15	3.31	1.33	12.82	20.40	39.50	11.41	4.69	4.90
Finance	10.49	4.08	22.87	13.44	34.02	4.85	5.02	60.61	9.77	2.04	9.20	20.57	29.10	12.77
Other -- Mines, Constr, BldMt, Trans, Hotels, Business Services, Entertainment	15.50	3.93	7.17	9.83	6.30	15.21	10.60	11.27	6.09	5.24	7.88	9.37	10.94	17.01

Table 2: Descriptive statistics for variables

The table reports summary statistics for the sample. The sample consists of S&P 1500 firms that have available data on stock prices, accounting numbers, board characteristics, and lawsuit information over the sample period 1996-2011 with non-missing data. All variables are defined in figure 1.

Panel A: Descriptive Statistics for the full sample

	N	Mean	Std. Dev.	P25	Median	P75
Total Lit	13,260	2.51	8.13	0	0	2
Pension Lit	13,260	0.16	0.67	0	0	0
Product Liability Lit	13,260	0.20	1.55	0	0	0
Environmental Lit	13,260	0.07	0.43	0	0	0
General Liability Lit	13,260	0.15	0.81	0	0	0
Medical Liability Lit	13,260	0.17	0.89	0	0	0
Intellectual Property Lit	13,260	0.26	1.17	0	0	0
Antitrust Lit	13,260	0.12	0.60	0	0	0
Finance and Banking Lit	13,260	0.06	0.65	0	0	0
Securities Lit	13,260	0.10	0.61	0	0	0
Commercial Lit	13,260	0.27	0.97	0	0	0
Labor Lit	13,260	0.76	3.11	0	0	1
Government Contracts Lit	13,260	0.02	0.21	0	0	0
Corporate Governance Lit	13,260	0.04	0.27	0	0	0
Other Lit	13,260	0.14	0.67	0	0	0
Log(Market Cap)	13,252	7.88	1.50	6.78	7.72	8.86
Log(Asset in $millions)	13,260	7.96	1.65	6.73	7.80	9.01
Log(Sales in $millions)	13,260	7.60	1.52	6.53	7.46	8.59
ROA	13,260	0.05	0.12	0.02	0.05	0.09
Leverage	13,260	0.21	0.17	0.06	0.20	0.32
Market-to-Book	13,252	1.61	1.56	0.83	1.21	1.89
Stock Returns (%)	11,909	14.20	52.92	-12.22	9.59	32.74
Percent Independent Director	13,260	71.67	15.74	62.5	75	83.33
Board Size	13,260	9.58	2.73	8	9	11
CEO Equity Ownership (%)	12,720	2.10	5.66	0.10	0.31	1.15
Management Equity Ownership (%)	12,858	3.39	7.91	0.26	0.76	2.42

Table 2. Panel B: Comparing compliant firms and non-complaint firms

	Compliant Firms		Non-Compliant Firm		Difference in Mean
	N	Mean	N	Mean	t-Stat
Total Lit	9,994	2.41	3,266	2.81	-1.97**
Pension Lit	9,994	0.17	3,266	0.11	4.72***
Product Liability Lit	9,994	0.18	3,266	0.29	-2.55***
Environmental Lit	9,994	0.06	3,266	0.08	-2.33**
General Liability Lit	9,994	0.14	3,266	0.2	-3.20***
Medical Liability Lit	9,994	0.17	3,266	0.16	0.43
Intellectual Property Lit	9,994	0.24	3,266	0.32	-2.91***
Antitrust Lit	9,994	0.11	3,266	0.13	-1.50
Finance and Banking Lit	9,994	0.06	3,266	0.04	3.20***
Securities Lit	9,994	0.1	3,266	0.09	1.65
Commercial Lit	9,994	0.26	3,266	0.3	-1.49
Labor Lit	9,994	0.73	3,266	0.86	-1.63
Government Contracts	9,994	0.02	3,266	0.02	1.3
Corporate Governance	9,994	0.04	3,266	0.04	-1.28
Others	9,994	0.13	3,266	0.17	-2.79***
Log(Market Cap)	9,986	7.86	3,266	7.95	-2.83***
Log(Asset in $billions)	9,994	8	3,266	7.84	5.08***
Log(Sales in $billions)	9,994	7.58	3,266	7.64	-2.02**
ROA	9,994	0.05	3,266	0.06	-3.35***
Leverage	9,994	0.22	3,266	0.19	8.33***
Market-to-Book	9,986	1.54	3,266	1.79	-6.49***
Stock Returns(%)	9,041	13.57	2,868	16.16	-2.28**
Percent Independent Director	9,994	75.67	3,266	59.45	47.27***
Board Size	9,994	9.68	3,266	9.25	8.05***
CEO Equity Ownership (%)	9,626	1.49	3,094	4.01	-15.80***
Management Equity Ownership (%)	9,719	2.47	3,139	6.25	-17.83***

Table 3: Independent Directors and Corporate Litigation

The table shows estimates of the Poisson regression of the effect of the SOX regulations of board independence on corporate litigation. The sample consists of all publicly traded firms over the period 1996-2011 with non-missing data on stock prices, accounting information, board characteristics, and lawsuits. All other variables are defined in the Appendix. The dependent variable in all the regression specifications is Corporate Litigation, measured by *Total, Pension, Product Liability, Environmental, General Liability, Medical Liability,* Securities, *Antitrust, Finance & Banking, Intellectual Property, Commercial, Labor, Govern Contracts, and Other Litigation.* All models include fixed effects defined based on Fama-French 48 Industry classifications and standard errors are clustered by firm. The t-statistics are shown beneath the coefficients in parentheses. Statistical significance at the 1%, 5%, and 10% levels, respectively, is indicated by ***, **, *.

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Dependent Variable	Total Litigation	Pension &Benefits Litigation	Product Liability Litigation	Environmental Litigation	General Liability Litigation	Medical Liability Litigation
Non-Compliant	0.592***	0.408*	1.427***	1.666***	0.785***	0.666***
	(3.62)	(1.72)	(5.13)	(5.09)	(3.20)	(2.81)
Post Regulations	0.459***	0.621***	0.142	1.106***	0.340***	0.352***
	(7.24)	(5.26)	(1.25)	(4.81)	(2.83)	(2.91)
Non-Compliant x Post Regulations	**-0.535*** **	**-0.668*** **	**-1.117*** **	**-1.253*** **	**-0.583** **	**-0.599** **
	(-3.08)	**(-2.59)**	**(-3.42)**	**(-3.55)**	**(-2.14)**	**(-2.25)**
Log(Sales)	0.829***	0.891***	1.005***	0.789***	0.867***	0.793***
	(48.51)	(34.73)	(24.42)	(19.83)	(26.03)	(22.69)
ROA	-0.313**	-0.266	-0.298	-0.350	-0.525***	-0.210
	(-2.45)	(-1.46)	(-0.58)	(-0.98)	(-2.96)	(-0.62)
Leverage	0.552***	-0.036	0.869***	1.016***	-0.354	1.190***
	(3.58)	(-0.12)	(2.62)	(2.78)	(-1.23)	(2.86)
Market-to-Book	0.015	-0.125***	0.030	-0.077	-0.102*	0.016
	(1.08)	(-2.73)	(0.99)	(-0.97)	(-1.79)	(0.55)
Stock Returns	0.029	0.058	0.119**	-0.017	0.066	0.037
	(0.82)	(0.99)	(2.12)	(-0.13)	(0.99)	(0.50)
CEO Equity Ownership	-0.210	-2.150*	-0.428	3.171**	-1.486	-1.677
	(-0.55)	(-1.69)	(-0.41)	(2.47)	(-1.42)	(-1.52)
Constant	-5.603***	-7.683***	-9.732***	-7.856***	-9.173***	-8.374***
	(-26.54)	(-20.50)	(-20.29)	(-10.16)	(-14.10)	(-17.29)
Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
N	11,319	11,319	11,319	11,319	11,319	11,319
Pseudo R-sqr	0.479	0.325	0.486	0.313	0.345	0.369

Table 3: Effects of SOX regulations on board independence on Litigation Measures (continued)

	Model 7	Model 8	Model 9	Model 10	Model 11	Model 12	Model 13	Model 14	Model 15
Dependent Variable:	Securities Litigation	Antitrust Litigation	Finance & Banking Litigation	Intellectual Property Litigation	Labor Litigation	Commercial Litigation	Government Contracts Litigation	Corporate Governance Litigation	Other Litigation
Non-Compliant	0.336	0.123	0.191	0.326*	0.363**	0.317*	0.059	0.411	0.783***
	(1.14)	(0.39)	(0.48)	(1.70)	(2.38)	(1.92)	(0.12)	(1.39)	(3.59)
Post Regulations	0.985***	0.440***	1.028***	0.362***	0.575***	0.263***	0.404*	0.108	0.285**
	(5.54)	(2.78)	(4.19)	(3.27)	(7.19)	(3.06)	(1.71)	(0.55)	(2.49)
Non-Compliant x Post Regulations	**-0.316**	**-0.122**	**-0.658**	**-0.201**	**-0.362****	**-0.249**	**-0.396**	**-0.241**	**-0.665*****
	(-1.00)	**(-0.36)**	**(-1.47)**	**(-0.97)**	**(-2.13)**	**(-1.42)**	**(-0.72)**	**(-0.73)**	**(-2.81)**
Log(Sales)	0.677***	0.887***	0.764***	0.800***	0.827***	0.793***	0.841***	0.809***	0.799***
	(17.00)	(28.67)	(13.62)	(30.25)	(30.03)	(42.94)	(12.36)	(18.09)	(27.72)
ROA	-0.620***	-0.236	-0.017	-0.215	0.138	-0.223	0.105	-0.649***	-0.192
	(-4.14)	(-0.81)	(-0.03)	(-1.18)	(0.48)	(-0.93)	(0.15)	(-2.58)	(-0.82)
Leverage	0.765**	-0.681*	1.948***	-1.092***	0.776***	0.770***	-0.761	1.531***	1.017***
	(2.54)	(-1.81)	(5.90)	(-3.61)	(2.99)	(4.06)	(-0.96)	(4.07)	(4.27)
Market-to-Book	-0.138**	0.053***	-0.083	0.040***	-0.020	-0.006	-0.224*	0.031	0.036**
	(-2.46)	(4.26)	(-0.93)	(3.26)	(-0.70)	(-0.23)	(-1.90)	(1.13)	(2.56)
Stock Returns	0.107**	0.090***	-0.163	-0.056	0.011	0.043	-0.050	0.028	-0.018
	(2.32)	(3.16)	(-0.56)	(-0.54)	(0.21)	(0.98)	(-0.28)	(0.26)	(-0.22)
CEO Equity Ownership	-0.322	1.034*	-0.680	-0.013	-0.919	0.393	0.912	0.844	1.482**
	(-0.37)	(1.94)	(-0.46)	(-0.02)	(-1.42)	(0.84)	(0.74)	(0.81)	(1.99)
Constant	-8.317***	-8.814***	-27.411	-6.744***	-7.271***	-8.382***	-8.749***	-25.367***	-8.600***
	(-10.23)	(-18.83)	(-0.40)	(-12.95)	(-24.60)	(-15.57)	(-9.94)	(-3.38)	(-12.41)
Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	11,319	11,319	11,319	11,319	11,319	11,319	11,319	11,319	11,319
Pseudo R-sqr	0.242	0.304	0.376	0.352	0.415	0.312	0.255	0.225	0.291

Table 4: Matched Control Firms

The table reports the effect of the SOX regulations of board independence on corporate litigation using the non-compliant firms and their propensity-score matched compliant firms for the period: 1996-2011. All other variables are defined in the Appendix. The dependent variable in all the Poisson regression specifications is Corporate Litigation, measured by *Total Litigation, Pension, Product Liability, Environmental, General Liabilit, Medical Liability, Intellectual Property Litigation, Antitrust Litigation, Finance &Banking, Securities, Commercial, Labor, Government Contracts, and Other Litigation.* All models include fixed effects defined based on Fama-French 48 Industry classifications and standard errors are clustered by firm. The t-statistics are shown beneath the coefficients in parentheses. Statistical significance at the 1%, 5%, and 10% levels, respectively, is indicated by ***, **, *.

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
	Total Litigation	Pension Litigation	Product Liability Litigation	Environmental Litigation	General Liability Litigation	Medical Liability Litigation
Non-Compliant	0.711***	0.507**	1.442***	1.772***	0.799***	0.878***
	(4.38)	(2.12)	(5.20)	(5.44)	(3.22)	(3.64)
Post Regulations	0.425***	0.644***	0.173	1.073***	0.334***	0.364***
	(6.38)	(5.30)	(1.37)	(4.53)	(2.64)	(2.58)
Non-Compliant x Post Regulations	**-0.561*** **	**-0.656** **	**-1.103*** **	**-1.241*** **	**-0.517* **	**-0.653** **
	(-3.28)	**(-2.52)**	**(-3.46)**	**(-3.52)**	**(-1.88)**	**(-2.37)**
Log(Sales)	0.865***	0.862***	0.996***	0.771***	0.882***	0.855***
	(47.62)	(27.94)	(21.11)	(15.82)	(22.22)	(20.43)
ROA	-0.606*	-0.069	-0.723	-1.746***	-1.431***	-0.751
	(-1.80)	(-0.13)	(-0.78)	(-2.70)	(-2.61)	(-0.93)
Leverage	0.471***	0.264	0.806**	0.389	-0.090	0.306
	(2.60)	(0.77)	(2.00)	(0.88)	(-0.27)	(0.52)
Log(Market-to-Book)	0.006	-0.137***	0.040	-0.063	-0.030	0.012
	(0.25)	(-2.69)	(0.80)	(-0.71)	(-0.51)	(0.27)
Stock Returns	0.051	0.090	0.209	0.001	0.117	0.145
	(0.82)	(0.90)	(1.37)	(0.01)	(1.05)	(1.32)
CEO Equity Ownership	-0.192	-2.467	0.510	0.059	-1.362	-3.007*
	(-0.41)	(-1.57)	(0.43)	(0.04)	(-1.09)	(-1.67)
Constant	-7.197***	-10.095***	-10.822***	-9.554***	-9.918***	-9.603***
	(-32.17)	(-23.99)	(-19.48)	(-14.50)	(-22.29)	(-19.46)
Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
N	7,321	7,321	7,321	7,321	7,321	7,321
Pseudo R-sqr	0.519	0.322	0.491	0.321	0.341	0.427

Table 4: Effects of SOX regulations on board independence on Litigation Measures (continued)

	Model 7	Model 8	Model 9	Model 10	Model 11	Model12	Model 13	Model 14	Model 15
	Securities Litigation	Antitrust Litigation	Fin&Bank Litigation	Intellectual Property Litigation	Labor Litigation	Commercial Litigation	Government Contracts Litigation	Corporate Governance Litigation	Other Litigation
Non-Compliant	0.614**	0.316	0.649*	0.436**	0.465***	0.377**	-0.470	0.590*	0.843***
	(1.96)	(1.05)	(1.71)	(2.29)	(3.20)	(2.15)	(-0.74)	(1.90)	(3.73)
Post Regulations	1.080***	0.611***	1.029***	0.259**	0.483***	0.245***	0.302	0.140	0.310**
	(5.83)	(3.39)	(3.89)	(2.18)	(6.25)	(2.74)	(1.25)	(0.68)	(2.55)
Non-Compliant x Post Regulations	**-0.535**	**-0.248**	**-0.969****	**-0.244**	**-0.318****	**-0.314***	**0.119**	**-0.427**	**-0.765*****
	(-1.63)	**(-0.74)**	**(-2.33)**	**(-1.15)**	**(-2.02)**	**(-1.71)**	**(0.18)**	**(-1.26)**	**(-3.16)**
Log(Sales)	0.723***	0.865***	0.777***	0.850***	0.887***	0.804***	0.890***	0.859***	0.823***
	(16.43)	(23.79)	(13.63)	(28.10)	(40.93)	(33.70)	(9.65)	(14.67)	(23.26)
ROA	-2.022***	-0.152	0.083	0.358	-0.257	-0.163	0.889	-1.752	-0.807
	(-3.98)	(-0.13)	(0.08)	(0.50)	(-0.67)	(-0.19)	(0.57)	(-1.31)	(-1.53)
Leverage	0.967***	0.132	1.998***	-0.728**	0.374	0.793***	-0.804	1.133**	0.814***
	(2.69)	(0.28)	(5.22)	(-2.03)	(1.62)	(3.13)	(-0.80)	(2.33)	(2.69)
Market-to-Book	-0.182**	0.119**	-0.095	0.051	-0.038	-0.049	-0.355**	-0.005	0.059*
	(-2.37)	(2.28)	(-0.75)	(1.61)	(-1.15)	(-1.17)	(-1.99)	(-0.08)	(1.67)
Stock Returns	0.238*	0.000	-0.217	-0.214	0.055	0.103	-0.009	0.064	-0.054
	(1.81)	(0.00)	(-0.72)	(-1.53)	(0.89)	(1.21)	(-0.04)	(0.44)	(-0.49)
CEO Equity Ownership	0.426	0.871	-3.894*	0.280	-0.480	0.273	0.626	0.736	1.396
	(0.38)	(1.06)	(-1.75)	(0.37)	(-0.64)	(0.42)	(0.37)	(0.43)	(1.19)
Constant	-10.930***	-10.273***	-11.234***	-9.574***	-8.217***	-9.166***	-27.438***	-13.273***	-10.490***
	(-14.68)	(-26.47)	(-16.37)	(-26.03)	(-28.64)	(-30.41)	(-90.33)	(-11.45)	(-20.91)
Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	7,321	7,321	7,321	7,321	7,321	7,321	7,321	7,321	7,321
Pseudo R-sqr	0.299	0.315	0.429	0.375	0.468	0.333	0.288	0.242	0.427

Table 5: Robustness Check: Different Sample Period

The table shows estimates for different sample period: 1996-2006 with years 2002-2003 excluded in order to exclude the transition years and potential effect of the financial crisis. We report the effect of the SOX regulations of board independence on corporate litigation. All other variables are defined in the Appendix. The dependent variable in all the Poisson regression specifications is Corporate Litigation, measured by *Total Litigation, Pension, Product Liability, Environmental, General Liabilit, Medical Liability, Intellectual Property Litigation, Antitrust Litigation, Finance &Banking, Securities, Commercial, Labor, Government Contracts, and Other Litigation.* All models include fixed effects defined based on Fama-French 48 Industry classifications and standard errors are clustered by firm. The t-statistics are shown beneath the coefficients in parentheses. Statistical significance at the 1%, 5%, and 10% levels, respectively, is indicated by ***, **, *.

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
	Total Litigation	Pension Litigation	Product Liability Litigation	Environmental Litigation	General Liability Litigation	Medical Liability Litigation
Non-Compliant	0.578***	0.423*	1.324***	1.587***	0.807***	0.530**
	(3.92)	(1.77)	(5.38)	(5.07)	(3.66)	(2.52)
Post Regulations	0.349***	0.565***	0.206	1.143***	0.260**	0.190
	(5.16)	(4.24)	(1.60)	(4.63)	(2.03)	(1.28)
Non-Compliant x Post Regulations	**-0.507*** **	**-0.569***	**-1.161*** **	**-1.350*** **	**-0.633*** **	**-0.614*** **
	(-2.91)	**(-1.96)**	**(-3.21)**	**(-3.46)**	**(-2.26)**	**(-2.17)**
Log(Sales)	0.919***	0.933***	1.154***	0.856***	0.961***	0.973***
	(34.12)	(20.43)	(17.75)	(13.16)	(16.22)	(19.74)
ROA	-0.307*	-0.240	-0.246	1.720	-0.327	-0.558***
	(-1.79)	(-1.14)	(-0.38)	(0.81)	(-1.30)	(-2.87)
Leverage	0.203	0.114	0.636	0.700	-0.532	0.064
	(0.91)	(0.22)	(1.35)	(1.16)	(-1.03)	(0.12)
Log(Market-to-Book)	0.021	-0.128*	0.042	-0.035	-0.093	0.045**
	(1.47)	(-1.94)	(1.43)	(-0.32)	(-1.37)	(2.38)
Stock Returns	0.037	0.073	0.144***	-0.076	0.073	-0.044
	(0.95)	(1.51)	(2.82)	(-0.28)	(0.88)	(-0.30)
CEO Equity Ownership	-0.007	-2.099	-0.100	2.130*	0.590	-1.971
	(-0.01)	(-1.06)	(-0.09)	(1.77)	(0.48)	(-1.23)
Constant	-6.200***	-8.160***	-28.770	-28.015	-25.529**	-26.895
	(-22.06)	(-12.86)	(-0.27)	(-0.39)	(-2.46)	(-0.01)
Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
N	4,755	4,755	4,755	4,755	4,755	4,755
Pseudo R-sqr	0.524	0.331	0.564	0.366	0.386	0.399

Table 5: Effects of SOX regulations on board independence on Litigation Measures (continued)

	Model 7	Model 8	Model 9	Model 10	Model 11	Model 12	Model 13	Model 14	Model 15
	Securities Litigation	Antitrust Litgation	Fin&Bank Litigation	Intellectual Property Litigation	Labor Litigation	Commercial Litigation	Government Contracts Litigation	Corporate Governance Litigation	Other Litigation
Non-Compliant	0.265	0.066	0.016	0.400**	0.381***	0.221	0.054	0.426	0.747***
	(0.91)	(0.21)	(0.04)	(2.19)	(2.68)	(1.36)	(0.10)	(1.43)	(3.76)
Post Regulations	1.058***	0.238	0.670**	0.155	0.405***	0.165*	0.160	0.255	0.256**
	(5.49)	(1.38)	(2.49)	(1.25)	(5.05)	(1.85)	(0.53)	(1.05)	(2.06)
Non-Compliant x Post Regulations	**-0.290**	**-0.133**	**-0.146**	**-0.279**	**-0.265**	**-0.264**	**0.108**	**-0.176**	**-0.796*** **
	(-0.83)	**(-0.38)**	**(-0.30)**	**(-1.22)**	**(-1.50)**	**(-1.42)**	**(0.17)**	**(-0.46)**	**(-3.27)**
Log(Sales)	0.718***	0.927***	0.683***	0.852***	0.938***	0.836***	0.957***	0.768***	0.893***
	(11.30)	(15.84)	(8.78)	(21.47)	(27.42)	(27.86)	(7.99)	(11.98)	(19.37)
ROA	-0.390**	-0.272	4.553	-0.200	-0.307	-0.104	-0.055	0.473	1.474
	(-2.42)	(-0.89)	(1.06)	(-0.90)	(-1.59)	(-0.42)	(-0.10)	(0.32)	(1.19)
Leverage	1.276***	-1.093	2.962***	-1.457***	0.031	0.617**	-0.957	1.751***	0.818**
	(3.15)	(-1.64)	(4.16)	(-3.19)	(0.11)	(2.09)	(-0.75)	(3.05)	(2.09)
Market-to-Book	-0.135*	0.051***	-0.055	0.036***	-0.015	0.018	-0.336*	0.018	-0.004
	(-1.71)	(3.90)	(-0.40)	(2.71)	(-0.40)	(1.02)	(-1.70)	(0.60)	(-0.10)
Stock Returns	0.075	0.092***	0.064	-0.014	0.004	-0.014	-0.136	0.039	0.026
	(1.40)	(2.88)	(0.33)	(-0.12)	(0.06)	(-0.21)	(-0.42)	(0.36)	(0.34)
CEO Equity Ownership	0.240	1.097	1.168	-1.333	0.299	0.454	3.703**	-0.087	1.563*
	(0.18)	(1.52)	(0.77)	(-1.62)	(0.40)	(0.67)	(2.13)	(-0.05)	(1.79)
Constant	-25.694	-8.423***	-26.966	-5.650***	-8.032***	-21.801***	-26.734	-25.383*	-22.371***
	(-0.01)	(-13.39)	(-0.01)	(-14.05)	(-16.09)	(-21.50)	(-0.01)	(-1.95)	(-53.49)
Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	4,755	4,755	4,755	4,755	4,755	4,755	4,755	4,755	4,755
Pseudo R-sqr	0.272	0.328	0.302	0.349	0.46	0.341	0.309	0.233	0.343

Table 6: Robustness Check: Firm Fixed Effects

The table shows estimates with firm fixed effects instead of industry fixed effects. We report the effect of the SOX regulations of board independence on corporate litigation. All other variables are defined in the Appendix. The dependent variable in all the Poisson regression specifications is Corporate Litigation, measured by *Total Litigation*, *Pension*, *Product Liability*, *Environmental*, *General Liabilit*, *Medical Liability*, *Intellectual Property Litigation*, *Antitrust Litigation*, *Finance &Banking*, *Securities*, *Commercial*, *Labor*, *Government Contracts*, *and Other Litigation.* All models include fixed effects defined based on Fama-French 48 Industry classifications and standard errors are clustered by firm. The t-statistics are shown beneath the coefficients in parentheses. Statistical significance at the 1%, 5%, and 10% levels, respectively, is indicated by ***, **, *.

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Dependent Variable:	Total Litigation	Pension Litigation	Product Liability Litigation	Environmental Litigation	General Liability Litigation	Medical Liability Litigation
Post Regulations	0.710*	0.114***	0.221**	0.001	0.037	0.072*
	(1.91)	(3.36)	(2.40)	(0.02)	(1.01)	(1.70)
Non-Compliant x Post Regulations	**-0.632***	**-0.108*****	**-0.235**	**-0.046****	**-0.013**	**-0.091**
	(-1.78)	**(-2.76)**	**(-1.15)**	**(-2.15)**	**(-0.31)**	**(-1.57)**
Log(Sales)	0.427**	0.006	0.032	-0.000	-0.018	0.105**
	(2.14)	(0.26)	(0.84)	(-0.00)	(-0.78)	(2.19)
ROA	-0.029	0.051	-0.022	0.003	0.014	-0.048
	(-0.09)	(0.87)	(-0.54)	(0.20)	(0.64)	(-1.43)
Leverage	0.072	-0.063	-0.054	-0.080*	-0.032	0.091
	(0.09)	(-0.93)	(-0.36)	(-1.80)	(-0.53)	(0.40)
Market-to-Book	-0.232**	-0.015*	-0.013	0.002	0.007	-0.017
	(-2.07)	(-1.73)	(-1.19)	(0.78)	(1.34)	(-1.02)
Stock Returns	-0.011	-0.002	0.029*	-0.001	-0.007	0.006
	(-0.18)	(-0.19)	(1.65)	(-0.26)	(-0.77)	(0.66)
CEO Equity Ownership	0.240	0.095	-0.107	0.320	-0.088	0.007
	(0.18)	(1.12)	(-0.42)	(1.37)	(-0.75)	(0.06)
Constant	-2.184	-0.024	-0.090	-0.004	0.092	-0.612*
	(-1.50)	(-0.15)	(-0.34)	(-0.04)	(0.62)	(-1.68)
Year & Firm Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
N	11,399	11,399	11,399	11,399	11,399	11,399
Adj./Pseudo R-sqr	0.075	0.028	0.004	0.010	0.014	0.015

Table 6: Effects of SOX regulations on board independence on Litigation Measures (continued)

	Model 7	Model 8	Model 9	Model 10	Model 11	Model 12	Model 13	Model 14	Model 15
	Securities Litigation	Antitrust Litigation	Fin&Bank Litigation	Intellectual Property Litigation	Labor Litigation	Commercial Litigation	Government Contracts Litigation	Corporate Governance Litigation	Other Litigation
Post Regulations	0.044	-0.037	0.069**	0.004	0.116	0.011	0.012*	0.007	0.039
	(1.20)	(-1.00)	(2.15)	(0.06)	(0.75)	(0.16)	(1.66)	(0.41)	(0.89)
Non-Compliant x Post Regulations	**-0.061**	**-0.008**	**-0.047***	**0.020**	**0.081**	**-0.061**	**-0.008**	**-0.008**	**-0.046**
	(-1.49)	**(-0.27)**	**(-1.65)**	**(0.24)**	**(0.32)**	**(-1.28)**	**(-1.02)**	**(-0.46)**	**(-1.25)**
Log(Sales)	0.019	0.037*	-0.010	0.137***	0.082	0.045	-0.001	-0.005	-0.004
	(0.87)	(1.68)	(-0.61)	(3.48)	(1.28)	(1.64)	(-0.15)	(-0.46)	(-0.15)
ROA	0.034	-0.025	-0.003	-0.020	0.039	0.006	-0.005	-0.027	-0.028
	(0.40)	(-0.66)	(-0.26)	(-0.39)	(0.41)	(0.12)	(-0.65)	(-1.30)	(-1.61)
Leverage	0.046	0.030	-0.052	0.132	0.158	-0.063	-0.019	0.065	-0.087
	(0.57)	(0.47)	(-0.78)	(1.04)	(0.63)	(-0.65)	(-0.95)	(1.28)	(-1.39)
Market-to-Book	-0.016**	-0.019**	0.000	-0.086**	-0.042	-0.026**	-0.001	-0.006	0.001
	(-2.00)	(-2.01)	(0.05)	(-2.23)	(-1.53)	(-2.03)	(-0.67)	(-1.08)	(0.32)
Stock Returns	-0.012	0.013	-0.014*	0.005	-0.016	-0.004	-0.001	-0.001	-0.005
	(-1.24)	(1.00)	(-1.69)	(0.32)	(-0.66)	(-0.42)	(-0.66)	(-0.38)	(-0.91)
CEO Equity Ownership	-0.145	0.069	0.006	-0.617	0.459	0.071	0.037	0.055	0.080
	(-1.02)	(0.32)	(0.11)	(-1.03)	(0.72)	(0.46)	(0.72)	(0.75)	(0.54)
Constant	-0.149	-0.227	0.035	-0.758***	-0.492	-0.151	0.008	0.070	0.117
	(-0.89)	(-1.43)	(0.35)	(-2.59)	(-0.99)	(-0.77)	(0.26)	(0.99)	(0.70)
Year & Firm Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	11,399	11,399	11,399	11,399	11,399	11,399	11,399	11,399	11,399
Adj./Pseudo R-sqr	0.014	0.018	0.009	0.035	0.056	0.027	0.003	0.005	0.006

Table 7: Independent Directors and Corporate Litigation for Inside Director Firms

The table shows estimates of the Poisson regression of the effect of the SOX regulations of board independence on corporate litigation for insider firms. The sample consists of all publicly traded firms over the period 1996-2011 with non-missing data on stock prices, accounting information, board characteristics, and lawsuits. All other variables are defined in the Appendix. Panel A reports the estimates of the determinants of inside executives representation on corporate boards for firms in the 1996 to 2011 sample period. The dependent variable equals one if the firm has at least one non-CEO inside director on board and zero otherwise. The model includes year and industry fixed effects defined based on Fama-French 48 Industry classifications. The Z-statistics are shown beneath the coefficients in parentheses. Panel B reports results from Poisson regressions. The dependent variable in the regression specifications in the first four models is Internal Litigation. Models1 through 4 are regressions where *Internal Litigation* is measured by *Labor Litigation, Pension Litigation, Product Liability, and (Product Liability & Pension and Labor)*, respectively. The dependent variable in Model 5 is External Litigation. All models include fixed effects defined based on Fama-French 48 Industry classifications and standard errors are clustered by firm. The t-statistics are shown beneath the coefficients in parentheses. Statistical significance at the 1%, 5%, and 10% levels, respectively, is indicated by ***, **, *.

Panel A: Determinants of Firms with Inside Directors

	Presence of Inside Directors
R&D/Assets	-0.111
	(-0.30)
Capital Expenditure/Sales	0.002*
	(1.90)
Log(Sales)	0.026**
	(2.50)
Leverage	-0.004***
	(-4.60)
Ln (# Business Segments)	-0.040
	(-1.12)
Ln (# Geographic Segments)	0.003
	(0.10)
Ln(CEO Tenure)	0.252***
	(15.57)
Industry Competition	0.419**
	(1.95)
Independent Director Share Ownership	-0.002***
	(-3.82)
Industry Fixed Effects	Yes
N	10,618
Pseudo R-sqr	0.0958

Table 7: (continued)

Panel B: Poisson regression models	Model 1	Model 2	Model 3	Model 4	Model 5
	Labor	Pension	Product Liability	Internal Litigation	External Litigation
Non-Compliant	0.732***	0.821*	1.820***	1.012***	0.877***
	(3.26)	(1.83)	(5.67)	(3.97)	(3.15)
Post Regulations	0.658***	0.783***	0.426**	0.625***	0.559***
	(5.45)	(3.42)	(2.13)	(5.42)	(5.12)
Non-Compliant x Post Regulations	**-0.762*** **	**-1.049** **	**-1.318*** **	**-0.976*** **	**-0.683** **
	(-3.11)	**(-2.24)**	**(-3.52)**	**(-3.58)**	**(-2.38)**
Insider Firms	-0.066	-0.075	0.336	0.017	-0.043
	(-0.37)	(-0.25)	(1.40)	(0.10)	(-0.28)
Insider Firms x Non-Compliant	-0.789**	-0.482	-1.496***	-0.930***	-0.442
	(-2.55)	(-0.85)	(-3.43)	(-2.87)	(-1.34)
Insider Firms x Post Regulations	-0.024	-0.092	-0.361	-0.108	-0.009
	(-0.13)	(-0.30)	(-1.38)	(-0.63)	(-0.06)
Insider Firms x Post Regulations x Non-Compliant	**0.821** **	**0.440**	**1.157** **	**0.890** **	**0.242**
	(2.46)	**(0.74)**	**(2.35)**	**(2.57)**	**(0.71)**
Log(Sales)	0.820***	0.885***	0.983***	0.854***	0.794***
	(29.08)	(34.06)	(26.00)	(35.84)	(50.15)
ROA	0.264	-0.244	-0.369	-0.000	-0.344***
	(0.85)	(-1.30)	(-0.88)	(-0.00)	(-2.63)
Leverage	0.744***	-0.152	0.772**	0.623***	0.329**
	(2.85)	(-0.50)	(2.30)	(2.83)	(2.07)
Market-to-Book	-0.022	-0.125***	0.056**	-0.014	0.031***
	(-0.73)	(-2.62)	(2.48)	(-0.50)	(2.69)
Stock Returns	-0.013	0.050	0.021	-0.003	0.008
	(-0.23)	(0.79)	(0.22)	(-0.05)	(0.18)
CEO Equity Ownership	-0.512	-1.450	0.699	-0.508	0.522
	(-0.76)	(-1.18)	(0.96)	(-0.86)	(1.36)
Constant	-7.247***	-7.710***	-9.833***	-6.748***	-5.940***
	(-23.48)	(-18.19)	(-19.47)	(-23.85)	(-22.02)
Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes
N	10,443	10,443	10,443	10,443	10,443
Pseudo R-sqr	0.4139	0.3254	0.4731	0.4499	0.4146

Table 8: Independent Directors and Corporate Litigation for High Levered Firms

The table shows estimates of the effect of the SOX regulations of board independence on corporate litigation for highly levered firms. Highly levered firms are defined as firms in the top quartile of the industry-year. The sample consists of all S&P 1500 firms over the period 1996-2011 with non-missing data on stock prices, accounting information, board characteristics, and lawsuits. The dependent variable in the regression specifications is Securities & FiBanking Dummy. The model includes industry fixed effects defined based on Fama-French 48 Industry classifications. The Z-statistics are shown beneath the coefficients in parentheses. Statistical significance at the 1%, 5%, and 10% levels, respectively, is indicated by ***, **, *.

	Securities & FiBanking Lit Dummy
Non-Compliant	0.934**
	(2.35)
Post Regulations	0.767***
	(2.62)
Non-Compliant x Post Regulations	**-0.807***
	(-1.92)
HighLeverage Firms	0.184
	(0.51)
HighLeverage Firms x Non-Compliant	-1.465**
	(-2.31)
HighLeverage Firms x Post Regulations	-0.218
	(-0.60)
HighLeverage Firms x Post Regulations x Non-Compliant	**1.515****
	(2.30)
Log(Sales)	0.598***
	(20.61)
ROA	-0.853**
	(-2.07)
Leverage	0.556
	(1.51)
Market-to-Book	-0.105**
	(-2.29)
Stock Returns	0.068
	(1.27)
CEO Equity Ownership	0.538
	(0.83)
Constant	-7.722***
	(-9.26)
Industry Fixed Effects	Yes
N	10,362
Pseudo R-sqr	0.1431

Table 9: Percentage of Female Directors on Board

The table shows estimates of regression analysis of the percentage of female directors on board. The dependent variable is the percentage of female directors defined as the percentage of female directors excluding the CEO. The sample consists of all S&P 1500 firms over the period 1996-2010 with non-missing data on stock prices, accounting information, board characteristics, and lawsuits. Model 3 includes industry fixed effects defined based on Fama-French 48 Industry classifications. The t-statistics are shown beneath the coefficients in parentheses. Statistical significance at the 1%, 5%, and 10% levels, respectively, is indicated by ***, **, *.

	Model 1	Model 2	Model 3
Non-Compliant	-0.036***	-0.028***	-0.026***
	(-5.00)	(-4.30)	(-3.94)
Post Regulations	0.011***	0.016***	0.014***
	(2.86)	(3.79)	(3.28)
Non-Compliant x Post Regulations	**0.027*** **	**0.015** **	**0.013** **
	(4.39)	**(2.46)**	**(2.23)**
Return Volatility		-4.256**	-0.869
		(-2.50)	(-0.60)
Stock Returns		-0.007***	-0.002
		(-2.80)	(-0.86)
ROA		0.00002	-0.00002
		(0.19)	(-0.24)
Log(Sales)		0.022***	0.021***
		(14.67)	(13.85)
Market-to-Book		0.003**	0.000
		(2.17)	(0.16)
Leverage		0.010	-0.004
		(0.53)	(-0.18)
Ln(# Business Segments)		-0.001	0.002
		(-0.22)	(0.58)
Constant	0.094***	-0.077***	-0.072
	(20.85)	(-5.82)	(-1.50)
Industry Fixed Effects	No	No	Yes
N	7,466	7,413	7,373
R-sqr	0.014	0.155	0.259