CORPORATE LITIGATION AND CEO TURNOVER

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Abstract

This paper examines executive turnover within US publicly listed companies following their encounters with a broad range of lawsuit filings. Litigation can motivate a board of directors to replace the existing CEO, either due to agency incentives to protect the company against legal liabilities or due to legitimacy incentives to restore the company's reputation. Empirical evidence indicates that companies experience a higher CEO turnover following lawsuit filings, particularly in the wake of securities, intellectual property, and antitrust lawsuits. This increase in turnover is also significantly associated with lawsuit merits as proxied by outcomes, but not their economic magnitude. Environmental lawsuits are, however, not significantly associated with subsequent CEO turnover. The results provide new insights that firms, in the decision to initiate CEO turnover in response to litigation, are predominantly driven by agency rather than reputational concerns.

1. Introduction

Following the explosion at the Deepwater Horizon oil rig on 20 April 2010, the notorious Gulf of Mexico oil spill led to over 220 lawsuits being filed by 17 June against BP P.L.C (BP), triggering the company's replacement of its chief executive officer, Tony Hayward, on 27 July 2010. These events surrounding BP's response to environmental litigation raise the following questions: under what circumstances would a public company replace its chief executive officer ('CEO' hereafter) in the wake of legal allegations? What incentives motivate a company to initiate such changes? In light of BP's anecdotal example, this paper investigates the post-litigation executive turnover within sued public corporations.

It has long been recognized that corporate litigation imposes significant impacts upon public corporations. Announcements of litigation filings often trigger significant losses of shareholders' wealth for the sued companies (Wier 1983; Bhagat, Bizjak, and Coles 1998; Bhattacharya, Galpin, and Haslem 2007; Gande and Lewis 2009). This decline in market valuation is attributable to factors such as the inevitable legal costs of defense preparation (Coffee 1986; Romano 1991; Haslem 2005), the risk of significant financial liabilities in the event of losing (Cutler and Summers 1987; Hertzel and Smith 1993), the diversion of employee time and attention from their usual responsibilities (Johnson, Nelson, and Pritchard 2000; Black, Cheffins, and Klausner 2006) and, in the event of socially or politically sensitive allegations (such as in the case of BP's oil spill), the adverse reputation that threatens the company's social legitimacy and future economic success.

Given the significant consequences of litigation, this paper investigates whether public companies respond to litigation filings by seeking internal governance changes in the form of CEO turnover. Executive turnover following corporate litigation has been investigated in a post-litigation context only in relation to securities fraud litigation and other fraud

allegations.[1] Prior research produces evidence that securities fraud committed against shareholders tends to be significantly associated with a subsequent increase in executive turnover within the accused companies (Romano 1991; Beneish 1999; Niehaus and Roth 1999; Karpoff, Lee, and Martin 2008; Krishna-Moorthy 2011; Correia and Klausner 2012).

Extending the investigation beyond existing literature, this paper is the first to examine CEO turnover following a wide range of different types of corporate lawsuit, including environmental violations, antitrust lawsuits, intellectual property infringements, and contractual disputes.[2] To ascertain the results in prior literature, we also examine the CEO turnover consequences of securities fraud. Boards of directors of sued companies may be motivated to initiate post-litigation CEO turnover either to discipline management, or out of concerns for the companies' reputation and future economic performance.

Employing a sample of lawsuits filed against the Standard & Poor's 1,500 companies in the US Federal Courts from 2000 through 2007, we provide evidence supporting the hypothesized increase in CEO turnover following lawsuit filings, after controlling for firm size, performance, financial leverage, board composition, CEO age, tenure, stock ownership, and time-specific variations. The results remain robust after employing the Heckman Selection Model to control for potential selection bias arising from the different likelihood of litigation. Our results indicate that firms are willing to initiate executive turnover in the wake of legal allegations. In particular, CEO turnover is most likely to occur following securities violations, intellectual property lawsuits, and antitrust litigation, indicating that corporate boards are motivated by agency incentives to replace the CEO only following lawsuits that reveal fraud against shareholders, or those that can adversely affect the companies' immediate financial performance. Empirical results indicate that, unlike BP, companies in general do not experience a significant increase in CEO turnover following environmental lawsuits despite the significant reputational incentives to restore the defendant companies'

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social legitimacy. The prioritization of agency concerns over reputational concerns reflects a general indifference on the part of public corporations towards environmental protection, which is at odds with social expectations.

We also investigate the roles of lawsuit-specific characteristics in determining the subsequent CEO turnover. Empirical results show that, whereas the economic magnitudes of the compensation demanded by the plaintiffs are not a significant consideration, the merits of the lawsuits, proxied by their ex post outcomes, are significant in predicting the subsequent increase in CEO turnover. These results imply that when directors impose penalties on managers for exposing companies to litigation, they are more concerned with the ex ante assessment of the merits of the lawsuits, rather than their ex post economic magnitude. By examining the predictive power of both the economic magnitude and legal merits of the litigation, this paper provides significant insights into the decision-making inputs driving the boards' decisions to replace CEOs following litigation.

Overall, this paper produces evidence that boards of directors react to corporate litigation by initiating CEO turnover. Their reactions are mainly driven by agency concerns to ensure that managers can adequately further the interests of shareholders, rather than legitimacy concerns to preserve the company's reputation and social legitimacy. Section 2 develops three hypotheses based on agency and legitimacy incentives for CEO turnover due to a broad range of corporate litigation. Section 3 details the research design and variable definitions. Section 4 presents the empirical results and Section 5 concludes with a discussion of the implications.

2. Agency and Legitimacy Incentives for CEO Turnover due to Corporate Litigation

When a lawsuit is filed against a public company, the defendant company's board may be motivated by two different incentives to replace the CEO. We select five different categories of lawsuits to distinguish between agency and legitimacy incentives in order to provide insights into the motives underlying the boards' post-litigation removal of the CEOs. This paper addresses the gap in the literature by expanding the empirical investigation to a wider variety of non-securities fraud litigation, enabling comparisons of the boards' responses when confronted with legal allegations of different natures.

Under both the agency and legitimacy theories, it is expected that, following litigation filings, sued companies would experience higher than normal CEO turnover. Prior studies have produced evidence of increased CEO turnover following allegations of securities fraud against shareholders (Romano 1991; Niehaus and Roth 1999; Srinivasan 2005; Karpoff, Lee, and Martin 2008; Correia and Klausner 2012). However, no examination has been conducted with respect to CEO turnover following a variety of different types of other litigation filing. It is hypothesized that:

H(1): Companies that have encountered a broad range of litigation filings, on average, experience a higher likelihood of CEO turnover, ceteris paribus.

From an agency perspective, a lawsuit may serve to reveal unknown information regarding the quality of the agent-manager's decision-making, in light of the information asymmetry underlying the principal-agent relationship within a public corporation (Jensen and Meckling 1976; Fama and Jensen 1983). Securities lawsuits, which allege managerial conduct detrimental to shareholders, constitute a direct manifestation of the principal-agent conflict

(Eisenhardt 1989), where the agents prioritize their own interests at the expense of the principals. In addition, antitrust and intellectual property (IP) lawsuits can also reveal underlying agency problems by indicating prior sub-optimal managerial decision-making, which has exposed the companies to legal liabilities. The information regarding the managers' decision-making quality may previously be inaccessible to the principals, but is revealed through the process of legal claims initiated by external parties. This freshly gained knowledge on the part of shareholders places additional pressure upon the board of directors, creating agency incentives to remove the CEO. Therefore, if boards are motivated by agency incentives to replace CEOs, then a higher CEO turnover should be observed following securities, antitrust, and IP lawsuits, leading to hypothesis H(2) below.

H(2): The filing of securities, antitrust, and IP lawsuits, which give rise to significant agency incentives, are most likely to be followed by an increase in CEO turnover within the sued companies, ceteris paribus.

Litigation can also give rise to adverse publicity that threatens a company's social legitimacy, prompting the board to initiate executive turnover in an attempt to salvage its reputation. A corporation operates in society via an implied social contract (Shocker and Sethi 1974; Patten 1991, 1992; Wilmshurst and Frost 2000). Through the democratic process of enacting legislation to reflect societal expectations, the terms of these social contracts are incorporated into law (Preston and Post 1975; Post 1978; Tinker and Neimark 1987). Consequently, if a company is accused of violating the law, the allegations can simultaneously give rise to a breach of the social contract, posing a threat to the company's legitimacy. This threat is particularly potent in cases involving socially and politically sensitive issues (Bhagat, Bizjak, and Coles 1998), such as environmental lawsuits where

much of the cost is externalized. Environmental lawsuits attract public scrutiny and have potentially catastrophic impacts on society. Their adverse reputational effects therefore threaten the social legitimacy of the sued companies, giving rise to significant incentives for the board to replace the CEO (as BP did following the 2010 Gulf of Mexico oil spill), in order to ameliorate the negative reputation by projecting a new image of the company to the general public.[3] Therefore, if boards are motivated by reputational incentives to initiate changes in CEOs, then sued firms are expected to experience increased CEO turnover following environmental lawsuits, leading to hypothesis H(3) below.

H(3): the filing of environmental lawsuits, which give rise to significant reputational incentives, are most likely to be followed by an increase in CEO turnover within the sued companies, ceteris paribus.

3. Litigation Data

3.1. Litigation Data

The litigation data are collected from the Public Access to Court Electronic Records (PACER) database, which holds records of all lawsuits filed in the United States Federal Courts. The data gathering procedures are similar to those adopted in the studies by Haslem (2005) and Bhattacharya, Galpin, Haslem (2007). As identified by Haslem (2005) and Bhattacharya, Galpin, and Haslem (2007), a significant advantage of gathering corporate litigation data from the PACER database, rather than from newspaper sources such as the *Wall Street Journal*, is that PACER provides information on all lawsuits filed in US federal courts. By obtaining lawsuit data directly from court filings, this data collection method avoids media bias. The resultant litigation sample covers a much more comprehensive range of lawsuits, not necessarily those reported in certain media outlets.

In the first stage, we search the PACER database for all lawsuits filed between 1 January 2000 and 31 December 2007, which fall into the categories of environmental, securities, antitrust, intellectual property (trademark and patent), and contractual lawsuits. The sampling period, which ends on 31 December 2007, allows subsequent time during which to observe any ensuing CEO turnover. The initial search yields a total of 214,094 lawsuit filings during the sampling period.

CEO data are collected from the Compustat Executive Compensation ('Execucomp') Database, which provides data for the Standard & Poor's 1,500 companies. Accounting data and information on boards of directors are collected from Compustat and RiskMetrics Directors Databases, respectively. A total number of 1,671 companies are included in the

Execucomp Database, from which 18 companies are excluded due to missing data from either the Compustat or RiskMetrics Databases. The final sample consists of 1,653 companies.

From the initial pool of 214,094 lawsuits, we remove lawsuits that do not involve one of the 1,653 sample public companies as the first-named defendant. The final litigation sample comprises 20,934 lawsuits filed against 1,653 unique companies from 2000 through 2007.

We then download from the PACER database individual court dockets for these lawsuits. We manually extract litigation-specific information, including the amount of pecuniary compensation demanded by the plaintiff, and the manner of disposition of the lawsuits.

3.2.   *Descriptive Statistics*

Table 1 reports the breakdown of corporate lawsuits by filing year and lawsuit category. Over the eight-year sampling period, though no significant linear trend is observable in the total number of lawsuit filings, the number peaked in 2002, mainly driven by the increased volume of securities and contractual lawsuits, before gradually declining over the following five years. The number of environmental and antitrust lawsuits filed per year does not appear to exhibit any notable trend over 2000-2007. On the other hand, the number of intellectual property lawsuits constantly increases over time, commencing with 393 in 2000 and ending with 590 in 2007. This increase is attributed to the higher number of patents issued in recent years (Choi 2010), and developments in IP enforcement by the US government.

Among the five types of lawsuit in the sample, contractual litigation is the most common, constituting 49.85% of the lawsuit filings. This is consistent with prior literature, which documents that contractual disputes involving corporations constituted the largest single category of federal civil suits in the US (Bhagat, Bizjak, and Coles 1998). Its high frequency can be attributed to the routine commercial nature of contractual litigation, which occurs in

the course of business operations. Contractual litigation is followed by securities and intellectual property lawsuits, which constitute 19.27% and 18.10% of the sample, respectively. Environmental litigation is least frequent, totaling 515 lawsuits, 2.46% of the sample.

[Insert Table 1]

Table 2 reports the lawsuit breakdown by industry, using the two-digit Standard Industrial Classification codes. Companies operating in different industries may face different levels of inherent litigation risk, since certain industries are, by nature, more susceptible to lawsuits than others. For instance, in Panel A, Nondepository Institutions experience the highest average number of litigation filings per firm, followed by security/commodity brokers, and building materials/gardening suppliers. For the two most litigious industries (nondepository institutions and security/commodity brokers), the number of lawsuits filed each year ascends to a common peak in 2002, consistent with the overall temporal trend observed in the total number of lawsuits filed across all industries. Panel B of Table 2 reports the results from the Chi-square test of equality of the median, which tests the null hypothesis that no significant difference exists in the number of lawsuits filed against companies across different industries. As reported in Panel B, the test produces a p-value < 0.0005, which indicates that firms operating in different industries face significantly different susceptibility to being sued. These results are consistent with prior research, which provides evidence of differing litigation risks inherently associated with different industries (Field, Lowry, and Shu 2005). This can potentially introduce selectivity into the observation of post-litigation executive turnover, which we take into account in the regression analysis that follows.

[Insert Table 2]

4. Empirical Results

4.1.   Univariate Analysis

Table 3 reports the firm characteristics of the lawsuit sample versus the control sample. Detailed definitions of all variables are provided in Table A1 of Appendix 1 (Variable Definitions). The lawsuit sample comprises firm-years in which a company experiences one or more lawsuit filings whereas firm-years where companies do not experience any lawsuit filings form the control sample.[4] The average firm size of the lawsuit sample is significantly higher than that of the control sample. Correspondingly, the lawsuit sample has, on average, a greater number of directors on the board than the control sample. Additionally, prior firm performance as measured by ROA is better within the lawsuit sample, but the difference in the median is not statistically significant. The average executive ownership in the lawsuit sample is significantly lower in both mean and median relative to the control sample. This supports the proposition that CEOs whose financial interests are better aligned with shareholders' tend to exercise more care to prevent the companies from litigation risks.

[Insert Table 3]

As reported in Table 4, results from the univariate analysis show that CEO turnover is significantly higher for the lawsuit sample than the control sample during the (0, +3) period. In addition, we extend the period of examination to include the year before the filing of the lawsuit (-1,+3), because the directors may possess preemptive information about impending

lawsuits, which might prompt them to act by replacing the CEO before the actual filing of the lawsuit. The incidence of CEO turnover within the lawsuit sample is 48.4% during the (0, +3) period and 57.8% during the (-1, +3) period, which is significantly higher than the control sample during the same periods by 3.6% and 3.3%, respectively. These results provide preliminary support for hypothesis H(1), by indicating that if firms encounter lawsuit filings, they tend to experience higher CEO turnover during the ensuing period.

[Insert Table 4]

4.2.   Multivariate Analysis

4.2.1. Overall Litigation

We examine the association between corporate litigation and subsequent CEO turnover by estimating the following binary probit regression models:

$$\Delta CEO_{t(0,+3),t(-1,+3)} = \alpha + \beta_1 LAWSUIT_{t=0} + \beta_2 LogTA_{t-1} + \beta_3 ROA_{t-1} + \beta_4 LEV_{t-1} + \beta_5 BSIZE_{t-1}$$
$$+ \beta_6 \%OUTSIDE_{t-1} + \beta_7 CEOAGE_{t=0} + \beta_8 EXECOWN_{t=0} + \beta_9 TENURE_{t=0} + \varepsilon \quad (1)^5$$

The dependent variable $\Delta CEO_{t(0,+3)}$ is assigned a value of one if the person holding the CEO position within the company in year 0 is no longer in the position in year +3, otherwise this variable is assigned the value zero (Agrawal, Jaffe, and Karpoff 1999; Cheng et al. 2010). The alternative dependent variable, $\Delta CEO_{t(-1,+3)}$, captures any preemptive change in corporate governance undertaken in anticipation of imminent lawsuits. The Execucomp and RiskMetrics Databases do not provide information to differentiate forced turnover from

voluntary turnover. Nonetheless, numerous prior studies have utilized CEO age as an independent variable to distinguish retirements from forced termination (Niehaus and Roth 1999; Defond and Hung 2004; Yermack 2004; Srinivasan 2005; Desai, Hogan, and Wilkins 2006; Baum, Bohn, and Chakraborty 2007; Karpoff, Lee, and Martin 2008). In particular, Yermack (2004, 2295) documents that CEO age is a significant determinant of turnover propensity, because 'a large majority of CEOs leave their positions at some point between ages 60 and 69'. Following prior literature, we include CEO age as a control variable in the regressions predicting CEO turnover.

In Equation (1), the test variable $LAWSUIT_{t=0}$ is expressed in two ways. First, a dummy variable is assigned a value of one if the company experienced the filing of one or more lawsuits against it during year 0, and zero otherwise. Second, a continuous variable is employed to measure the number of corporate lawsuits filed against a company during year 0. Prior research documents that, if a company is sued more than once in a given year, the company's reputation would suffer greater damage (Atanasov, Ivanov, and Litvak 2012). The continuous variable $LAWSUIT_{t=0}$ is employed to capture the role of multiple lawsuits filed within the same year. Additionally, the regression employing the continuous variable is rerun over a restricted sample comprising only lawsuit firm-years, in order to test the robustness of the results. This additional analysis allows the examination of the incremental predictive power of each additional lawsuit filed during the year. Results from all three sets of regressions are reported in Table 5.

[Insert Table 5]

As reported in Models (1) and (2) of Table 5, the positive estimated coefficient of the dummy variable $LAWSUIT_{t=0}$ (0.077) is statistically significant at the 5% level in explaining

$\Delta CEO_{t(0,+3)}$. Consistent with hypothesis H(1), the results indicate that companies that experience lawsuit filings are more likely to undergo changes in their CEOs during the (0,+3) period. When year -1 is included in the observation period for CEO turnover, the estimated coefficient of the dummy variable $LAWSUIT_{t=0}$ remains consistently positive (0.064) and statistically significant at the 10% level.

When $LAWSUIT_{t=0}$ represents a continuous variable, the estimated coefficient remains positive, 0.008 in predicting the likelihood of CEO turnover over the (0,+3) period, and 0.007 over the (-1,+3) period, statistically significant at the 1% and 5% levels, respectively. When the regression model is re-run using a sample restricted to only lawsuit firm-years (in Models (5) and (6)), the estimated coefficient of the continuous variable $LAWSUIT_{t=0}$ remains positive and significant at the 5% level. The results provide consistent evidence supporting hypothesis H(1) by demonstrating a significant association between lawsuit filings and an increase in CEO turnover.[6] The magnitudes of the pseudo R^2 from the regression models are consistent with those reported in prior studies such as Niehaus and Roth (1999), Desai, Hogan, and Wilkins (2006), and Agrawal and Cooper (2007).

At the firm-level, we include $LogTA_{t-1}$, the natural logarithm of book value of assets at the end of year -1, as a control for firm size, and return on assets, ROA_{t-1}, which is calculated as the net profit in year -1 over total assets as at the end of year -1, as a control for the firm's accounting performance. The results show that $LogTA_{t-1}$ is positively and significantly associated with CEO turnover at the 10% level (in Models (1) and (2)) and the 5% level (in Models (3) and (4)), consistent with prior literature (Agrawal and Cooper 2007; Burks 2010). In Models (5) and (6), it remains positive but is not statistically significant. Additionally, ROA_{t-1} is significantly negatively associated with CEO turnover at the 1% level in all estimated models. This is consistent with the expectation that CEOs with poorer financial

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performance are more likely to depart from their companies (Warner, Watts, and Wruck 1988; Weisbach 1988; Denis, Denis, and Sarin 1997).

Second, the debt-to-equity ratio of the company at the end of year -1, LEV_{t-1}, is included as a control for financial leverage. LEV_{t-1} demonstrates a consistently negative significant predictive power over CEO turnover (at the 1% level), indicating that CEOs tend to turn over more frequently in firms with relatively lower debt-to-equity ratios. The role of debt-holders within the agency relationship underlying a public corporation cannot be overlooked (Smith and Warner 1979; Berger, Ofek, and Yermack 1997), because their interests may deviate from those of shareholders (Ofek 1993; Klock, Mansi, and Maxwell 2005; Adams and Mansi 2009). The observed significant negative association between financial leverage and CEO turnover indicates that debt-holders appear less willing than shareholders to initiate CEO turnover. This is consistent with prior empirical evidence found by Adams and Mansi (2009) who document that CEO turnover, although beneficial to shareholders, is value-decreasing from a debt-holder perspective.

Third, the vigilance of board monitoring plays a significant role in determining the likelihood of forced CEO dismissal in the case of poor performance (Weisbach 1988; Jensen 1993). Prior researchers document that smaller boards (Yermack 1996) and boards dominated by independent directors (Weisbach 1988; Jensen 1993) are more effective in removing CEOs. Following Agrawal, Jaffe and Karpoff (1999), we include $BSIZE_{t-1}$ (the number of directors on the board at the end of year -1), and $\%OUTSIDE_{t-1}$ (the proportion of independent directors on the board at the end of year -1), as controls for board vigilance.[7] However, $BSIZE_{t-1}$ is not statistically significant in predicting CEO turnover. $\%OUTSIDE_{t-1}$ is positively and significantly (at the 1% level) associated with the likelihood of CEO turnover during the (0,+3) period in Models (3) and (5), consistent with expectation (Weisbach 1988; Jensen 1993; Agrawal, Jaffe, and Karpoff 1999). However, the statistical significance does

not persist in predicting CEO turnover during the (-1,+3) period, or when a restricted sample of only lawsuit firm-years is employed.[8]

Fourth, at the executive-level, consistent with expectation, $CEOAGE_{t=0}$ is significantly positively associated at the 1% level with their likelihood of departure. $EXECOWN_{t=0}$ is included to control for the proportion of total ordinary shares outstanding owned by the CEO in year 0, because past studies show that executive ownership is negatively related to turnover (Denis, Denis, and Sarin 1997; Mikkelson and Partch 1997; Niehaus and Roth 1999). Similarly, $TENURE_{t=0}$ is included to control for the duration over which the CEO has served in the current capacity, as a proxy for the degree of CEO entrenchment within the organization. However, $EXECOWN_{t=0}$ is not statistically significant in predicting subsequent CEO turnover. On the other hand, $TENURE_{t=0}$ is significantly negatively associated at the 1% level with the likelihood of turnover, confirming the expectation that more entrenched CEOs are less likely to be replaced by the boards.

4.2.2. Breakdown by Lawsuit Categories

In order to disaggregate the effect of different types of lawsuit over CEO turnover, in Equation (2) we employ five litigation variables, in lieu of the single $LAWSUIT_{t=0}$ variable measuring the filing of all types of litigation: $ENV_{t=0}$, $SEC_{t=0}$, $ANT_{t=0}$, $IP_{t=0}$, and $CON_{t=0}$ each represents the filing of environmental, securities, antitrust, intellectual property, and contractual lawsuits, respectively, expressed alternatively as dummy and continuous variables.

$$\Delta CEO_{t(0,+3),t(-1,+3)} = \alpha + \beta_1 ENV_{t=0} + \beta_2 SEC_{t=0} + \beta_3 ANT_{t=0} + \beta_4 IP_{t=0} + \beta_5 CON_{t=0} +$$
$$\beta_6 LogTA_{t-1} + \beta_7 ROA_{t-1} + \beta_8 LEV_{t-1} + \beta_9 BSIZE_{t-1} + \beta_{10}\%OUTSIDE_{t-1} + \beta_{11} CEOAGE_{t=0} \quad (2)$$
$$+ \beta_{12} EXECOWN_{t=0} + \beta_{13} TENURE_{t=0} + \varepsilon$$

[Insert Table 6]

As reported in Table 6,[9] among the five lawsuit categories examined, securities lawsuits exhibit the strongest predictive power over subsequent CEO turnover, as evidenced by the estimated coefficients of the dummy variable $SEC_{t=0}$ in Models (1) and (2) (0.236 in predicting $\Delta CEO_{t(0,+3)}$ and 0.182 in predicting $\Delta CEO_{t(-1,+3)}$), and the positive estimated coefficients of the continuous variable $SEC_{t=0}$ in Models (3) to (6), all of which are statistically significant at the 1% level. These results confirm increased executive turnover following securities fraud documented in prior studies such as Niehaus and Roth (1999), Karpoff, Lee and Martin (2008), and Correia and Klausner (2012).

Apart from securities litigation, the empirical results provide ample evidence that other types of lawsuit are also associated with increased CEO turnover. Intellectual property lawsuits ($IP_{t=0}$), when measured by a dummy variable, are significant in predicting increased CEO turnover during both the (0,+3) and (-1,+3) intervals, with estimated coefficients of 0.077 and 0.085 (significant at the 10% and 5% levels), respectively. Similarly, the estimated coefficient of the continuous variable $IP_{t=0}$ remains positive and statistically significant at the 5% level (as reported in Models (3) to (6) of Table 6).[10] In addition, antitrust lawsuits, as represented by the dummy variable $ANT_{t=0}$, are positively associated with subsequent CEO turnover over the (-1,+3) period (with an estimated coefficient of 0.170 significant at the 5% level). However, this significant positive association does not persist when $ANT_{t=0}$ is expressed as a continuous variable.[11] On the other hand, the filing of contractual lawsuits does not appear to have any significant association with the likelihood of CEO turnover. The lack of statistical significance can be attributed to the routine nature of contractual disputes in business operations. Intellectual property and antitrust lawsuits reflect unfavorably upon the

managers' prior decision-making, thus creating agency incentives for boards to discipline the managers by increased turnover.

Contrary to expectation, the filing of environmental lawsuits, as represented by the dummy variable $ENV_{t=0}$, is associated with a decrease in CEO turnover at the 1% significance level. This indicates that, following environmental allegations, far from replacing CEOs in an attempt to preserve the sued companies' reputation, the boards are even less likely to initiate CEO turnover. Environmental litigation can give rise to significant adverse publicity, creating strong reputational incentives for boards to initiate changes that would improve the perceived legitimacy of the sued companies. However, unlike securities lawsuits, environmental lawsuits do not give rise to agency incentives for the board to remove the CEO, because they do not reveal underlying conflicts between the managers and shareholders. Indeed, by engaging in practices detrimental to the environment in pursuit of financial profits, the managers of the accused corporations act in the economic interests of their shareholders. In light of the recent environmental disaster caused by the BP oil spill, this observation is particularly informative. The empirical evidence indicates that reputational incentives are not sufficient to motivate the boards of directors to initiate CEO turnover in the absence of agency incentives. Though boards are willing to initiate CEO turnover following securities lawsuits, where the alleged victims are shareholders, they remain unresponsive to any social pressure from alleged victims in environmental lawsuit filings (usually residents of affected local communities), who are external to the companies and wield no direct contractual powers to penalize the accused companies through repeated contracting (Karpoff, Lott, and Wehrly 2005).

The regression results show that IP and antitrust lawsuits, in addition to securities lawsuits, which reveal agency problems within the sued corporations, are most significantly associated

with a subsequent increase in CEO turnover. The empirical evidence indicates that agency incentives constitute the most potent motivation for boards to initiate changes in CEO.

4.3.   Robustness Check: Heckman Selection Model

The litigation risk faced by public companies may vary substantially across different industries and organizational structures. Accordingly, boards of directors, in making decisions to replace CEOs following litigation, are expected to take into account these inherent differences in exposure to legal risk. In order to control for any potential selection bias that may arise from the different levels of litigation risk faced by the sample firms, we estimate a two-stage Heckman (1979) Selection Model as specified in Equation (3) below.

Stage 1:
$$LAWSUIT_{t=0} = \alpha + \beta_1 SEG_{t-1} + \beta_2 RISKINDQ_{t-1} + \beta_3 LogTA_{t-1} + \beta_4 ROA_{t-1} + \beta_5 LEV_{t-1}$$
$$+ \beta_6 BSIZE_{t-1} + \beta_7 \%OUTSIDE_{t-1} + \beta_8 CEOAGE_{t=0} + \beta_9 EXECOWN_{t=0} + \beta_{10} TENURE_{t=0}$$
$$+ \varepsilon \tag{3}$$

Stage 2:
$$\Delta CEO_{t(0,+3),t(-1,+3)} = \alpha + \beta_1 LAWSUIT_{t=0} + \beta_2 LogTA_{t-1} + \beta_3 ROA_{t-1} + \beta_4 LEV_{t-1} + \beta_5 BSIZE_{t-1}$$
$$+ \beta_6 \%OUTSIDE_{t-1} + \beta_7 CEOAGE_{t=0} + \beta_8 EXECOWN_{t=0} + \beta_9 TENURE_{t=0} + \beta_{10} \text{lambda} + \varepsilon$$

In the first stage regression, we utilize two instrumental variables (IVs) in the estimation of the probability of lawsuit filings against the sample companies. The first IV, SEG_{t-1}, is a measure of the organizational complexity of the company, as proxied by the number of business segments of the company as at the end of year -1 (Cohen and Lou 2012). The segment data are obtained from the Compustat Segment Database. Organizational complexity is included as a predictor of the level of litigation risk faced by the company, because firms with more complex structures, which extend their business into a wider variety of operations

(Cohen and Lou 2012), tend to face an increased risk of being sued. On the other hand, there is no evidence to suggest that more complex companies tend to face a higher level of CEO turnover. Therefore, the organizational complexity of the firm, as measured by SEG_{t-1}, is suitable as an IV. The second IV, $RISKINDQ_{t-1}$, is a measure of the level of litigation risk inherently associated with the industry in which the company operates (Field, Lowry, and Shu 2005). $RISKINDQ_{t-1}$ is a dummy variable that takes a value of one if the two-digit Standard Industry Classification (SIC) code of the company falls into the top quartile of the most litigious industries observed during the sampling period, and zero otherwise. Some industries are inherently more litigious than others, hence industry is a suitable predictor of the litigation risk faced by public companies in controlling for endogeneity (Field, Lowry, and Shu 2005). As reported in Table 7, the results from the first-stage regression indicate that both SEG_{t-1} and $RISKINDQ_{t-1}$ are positive and statistically significant (at the 5% and 1% levels, respectively), in predicting the likelihood of a company's encounter with litigation, providing empirical evidence that they constitute effective IVs.

[Insert Table 7]

The results from the second-stage regression under the Heckman Selection Model are also reported in Table 7. The inverse Mill's ratio (lambda) is positive but statistically insignificant in the (0,+3) and (-1,+3) models, indicating that there is no evidence to suggest selection bias exists in the sample.

Furthermore, in Table 7 $LAWSUIT_{t=0}$ is positive and significant in predicting CEO turnover over both the (0,+3) and (-1,+3) periods at the 1% and 5% levels, respectively. In predicting $\Delta CEO_{t(0,+3)}$ and $\Delta CEO_{t(-1,+3)}$, the estimated coefficients of $LAWSUIT_{t=0}$ are 0.009 and 0.008, respectively, consistent with those from the original probit regressions reported in Section

4.2.1.[12] The results confirm the original probit regressions discussed in Section 4.2, by indicating that there exists a significant association between corporate litigation and a subsequent increase in CEO turnover.[13]

4.4. *Litigation Magnitude and Merit*

Lawsuit filings can differ substantially in economic magnitude and legal merit. We further scrutinize the roles of these lawsuit-specific characteristics in predicting post-litigation executive turnover, using the pecuniary compensation demanded by the plaintiffs as a measure of lawsuit magnitude, and their eventual manner of disposition as a proxy for merit. This analysis offers additional insights into the incentives motivating CEO turnover. The regressions in this section utilize a sub-sample of the dataset, comprising only those firm-years with one or more lawsuit filings.

4.4.1. Litigation Magnitude and CEO Turnover

First, the magnitude of the monetary compensation demanded by the plaintiffs constitutes a direct measure of the scale of the litigation. Litigation with greater economic magnitude implies more significant underlying legal liability, and is more likely to have a higher profile. Consequently, lawsuits with greater demands for legal compensation are expected to be followed by higher CEO turnover.

To examine the effect of lawsuit magnitude over subsequent CEO turnover, Equation (1) in Section 4.2.1 is re-estimated employing the new test variable, $DEMAND_{ALL-t=0}$, in lieu of $LAWSUIT_{t=0}$. $DEMAND_{ALL-t=0}$ is calculated as the cumulative sum of all demands for compensation filed against the company during year 0, scaled by the company's total assets

at the beginning of that year, in order to capture the relative magnitude of the lawsuits in the context of firm size. In addition to $DEMAND_{ALL-t=0}$, we employ a series of alternative test variables, $DEMAND_{(ENV/SEC/ANT/IP/CON)-t=0}$, each of which represents the economic magnitude of environmental, securities, antitrust, IP, and contractual lawsuits in turn.

[Insert Table 8]

As reported in Table 8, the economic magnitude of the filed lawsuits, as measured by $DEMAND_{ALL-t=0}$, is not statistically significant in predicting CEO turnover over both the (0,+3) and the (-1,+3) periods.[14] Furthermore, when the economic magnitude of the lawsuits is disaggregated by category, the five test variables $DEMAND_{(ENV/SEC/ANT/IP/CON)-t=0}$ remain insignificant in predicting the likelihood of CEO turnover surrounding litigation.[15] This observation could be due to the fact that it is the nature of the allegations that determines the adverse reputational consequences suffered by the sued companies. Comparatively, the actual amount of compensation sought is rendered insignificant.

4.4.2. Litigation Merit and CEO Turnover

If boards are motivated by agency incentives to initiate CEO removal, the boards should consider the actual merit of the lawsuits and respond only to those that reflect adversely on the CEO's prior decision-making. The eventual outcomes of filed lawsuits constitute a strong indicator of their legal merit. Data on litigation outcomes are collected from the Public Access to Court Electronic Records (PACER) database. Table 9 provides a list of the lawsuit dispositions recorded in the dataset and their respective frequencies. We build upon Baum, Bohn, and Chakraborty's approach (2007), by further differentiating between those lawsuits

which are dismissed, which are settled, which end in court judgments, and those with non-terminating outcomes. The unique dispositions of lawsuits obtained from the PACER court dockets are grouped into four broad categories:

[Insert Table 9]

First, the 'DISMISSAL' category comprises all cases dismissed by the court, with the exception of those recorded as 'dismissed - settled' or 'dismissed - voluntarily', which implies voluntary dismissals due to out-of-court settlements.[16] If a lawsuit filed against a company is dismissed by the court, it would strongly indicate an absence of legal merit in the claim (Baum, Bohn, and Chakraborty 2007). Dismissed lawsuits are therefore least expected to be followed by any increase in CEO turnover. We use DISMISSAL as the base category. Compared with dismissed lawsuits, all other lawsuits are expected to exhibit a more positive influence on subsequent CEO turnover.

Second, settlements indicate that the filed claims are of stronger merit than those that are dismissed (Baum, Bohn, and Chakraborty 2007). The 'SETTLE' category consists of cases that are terminated by agreement reached between the plaintiffs and defendants (whether in court or out of court).[17]

The third category, 'JUDGMENT', consists of lawsuits that received court judgments, except consent judgments and awards of arbitrators, which are deemed to have been settled. Given the significant legal costs (Coffee 1986; Romano 1991; Haslem 2005), which increase exponentially as the case advances towards trial, it is unlikely for the parties to proceed to trial without reaching a settlement unless both parties believe their legal claims to be sufficiently strong to outweigh the additional legal costs and the risk of losing the trial. Therefore, lawsuits that end in court judgments indicate strong legal merit in the plaintiffs'

claims and are most likely to be followed by CEO turnover within the sued corporations. Finally, the fourth category, 'OTHER', consists of all other lawsuits with non-terminating outcomes reported in PACER, such as cases which are 'consolidated' or 'transferred/remanded' to another jurisdiction.

In order to examine the role of lawsuit merit in predicting subsequent CEO turnover, we reemploy Equation (1) from Section 4.2.1 above, replacing the previous key independent variable $LAWSUIT_{t=0}$ with a set of new test variables to measure lawsuit dispositions. The three variables, $SETTLE_{ALL-t=0}$, $JUDGMENT_{ALL-t=0}$, and $OTHER_{ALL-t=0}$, denote the number of lawsuits filed against a defendant company in year 0, which eventually ended in settlement, judgment, or other disposition.[18] In order to disaggregate the merits of different types of lawsuit, five groups of disposition variables are calculated within the stratified sample of environmental, securities, antitrust, intellectual property, and contractual lawsuits, in turn.

[Insert Table 10]

The results from Models (1) and (2) of Table 10 show that among the three test variables, $JUDGMENT_{ALL-t=0}$ is the most significant and positive in predicting CEO turnover following lawsuit filings. The estimated coefficient of $JUDGMENT_{ALL-t=0}$ is 0.036 (significant at the 1% level) and 0.038 (significant at the 5% level) in predicting $\Delta CEO_{t(0,+3)}$ and $\Delta CEO_{t(-1,+3)}$, respectively, indicating that lawsuits which subsequently end in court judgments are most likely to be followed by increased CEO turnover. The results in relation to the control variables remain similar to those discussed in Sections 4.2.1 and 4.4.1.

The results suggest that, in initiating CEO turnover following lawsuit filings, the boards of public companies do take into consideration the legal merit of the filed allegations and are capable of distinguishing meritorious lawsuits from frivolous ones.

When the lawsuit dispositions are disaggregated across different categories as reported in Models (3) to (12) of Table 10, two additional observations of interest emerge from the results. First, in the context of securities litigation, the settlements, judgments, and other terminations of filed lawsuits are all significantly and positively associated with a subsequent increase in CEO turnover. Because of the serious nature of securities violations, the results indicate that, as long as the allegations are not promptly dismissed by the court, any other manner of disposition is likely to be followed by increased CEO turnover. The results demonstrate a strong willingness on the part of corporate boards to respond to securities allegations by replacing existing CEOs.

Second, the settlement of contractual lawsuits ($SETTLE_{CON-t=0}$) is negative and statistically significant (at the 5% level) in predicting CEO turnover during the (0,+3) and (-1,+3) periods. The negative estimated coefficients indicate that if more contractual lawsuits are settled, there is less likelihood for the sued companies' CEOs to experience turnover. Given that contractual lawsuits commonly involve parties that have existing contractual relationships with the sued companies, reaching a settlement of the legal dispute allows preservation of these relationships. These results suggest that settlements are considered more favorable outcomes than other types of legal resolution and hence are associated with a lesser likelihood of CEO turnover.

5. Conclusion

Using a sample of lawsuits filed in US Federal Courts against the Standard & Poor's 1,500 companies from 2000 through 2007, this paper examines the relationship between corporate litigation and executive turnover. Evidence indicates that the filing of corporate lawsuits is generally followed by an increase in CEO turnover in the sued companies. The results are robust after controlling for potential selection bias arising from the different likelihood of litigation faced by different companies.

Lawsuit-specific characteristics play a potent role in determining the likelihood of post-litigation CEO turnover. Consistent with agency theory, which predicts that a board initiates turnover to penalize the CEO for exposing the company to legal liability, the legal merit of filed lawsuits, as reflected by their disposition, is considered before such a penalty is imposed. Lawsuits that proceed to receive court judgments, reflecting strong legal merit compared with those settled or dismissed, are more likely to precede CEO turnover. In contrast, contrary to expectation, the economic magnitude of compensation demanded in the lawsuits is not a significant predictor of post-litigation CEO turnover. Given the general increase in CEO turnover following corporate litigation, these findings shed light on the factors underlying boards' decisions to replace CEOs in the wake of lawsuit filings.

A detailed breakdown of lawsuit categories shows that publicly listed corporations are most willing to replace existing CEOs, following securities violations, intellectual property infringements and, to a lesser extent, antitrust lawsuits. Securities lawsuits manifest principal-agent conflict and give rise to significant agency incentives for the board to replace the CEO. As expected, they exhibit the highest predictive power over a subsequent increase in CEO turnover. The significance of intellectual property and antitrust lawsuits indicates that, even in the absence of reputational concerns (since antitrust and IP lawsuits do not generally attract

adverse publicity), boards of directors, representing the interests of shareholders, are prepared to discipline CEOs for exposing the companies to legal liability.

This paper provides significant evidence concerning the attitude of boards of directors of public corporations in differentiating between lawsuits that imply agency problems adversely affecting shareholders' financial interests, and those that do not. Boards are willing to penalize CEOs when they have allegedly acted in self-interest rather than in the interests of the principals (as manifested in securities lawsuits), or when they have failed to fulfill their stewardship duties to safeguard the companies against legal liability (as manifested in antitrust and IP lawsuits). However, boards of public companies remain, on average, unmoved by environmental lawsuits in which no immediate financial detriment accrues to the shareholders, despite the potentially significant reputational impact of the allegations, which may threaten the legitimacy of the corporate defendants.

This unresponsiveness to environmental litigation demonstrated by public corporations contrasts with their reactions to other types of lawsuit. It arguably reflects a prevailing attitude of indifference amongst public companies towards environmental responsibility, which is perpetuated through the selection and retention of their executive officers. In light of the recent disaster of the Gulf of Mexico oil spill and its substantial and long-lasting impacts on society, such confronting evidence questions whether more stringent environmental legislation is required to ensure that corporations do not violate the terms of their social contract in pursuit of profits.

[1] This literature can be divided into two broad categories: first, studies that examine fraud allegations (Agrawal, Jaffe, and Karpoff 1999; Persons 2006) and second, studies that specifically investigate the impact of securities fraud, including earnings restatements (Srinivasan 2005; Desai, Hogan, and Wilkins 2006; Agrawal and Cooper 2007), shareholders class actions (Strahan 1998; Niehaus and Roth 1999; Correia and Klausner 2012), securities derivative actions (Romano 1991; Ferris et al. 2007; Cheng et al. 2010), and SEC enforcement actions (Beneish 1999; Karpoff, Lee, and Martin 2008; Correia and Klausner 2012).

[2] These lawsuits are chosen on the basis of their diverse impacts upon the defendant companies. Breaches of contract arise frequently in the context of business operations and can potentially affect the existing contractual relationships of the sued companies. Antitrust litigation (Bhagat, Brickley, and Coles 1994) and intellectual property disputes (including patents and trademark infringements) are included, due to their significant economic consequences upon the operation and financial position of the sued corporations. Finally, environmental disputes are capable of inflicting considerable reputational damage on the defendant companies, potentially impeding their future operations.

[3] Corporate responses to environmental litigation are motivated, according to a priori expectation, by reputational incentives, not agency incentives. Though CEOs are not accused of any failure to fulfill their stewardship duties to the shareholders (since environmental damage is carried out in pursuit of financial profits); nevertheless, considerations for the sued companies' social legitimacy may render it desirable to replace the CEOs to preserve the companies' reputation. Consequently, even though environmental liability insurance may protect the sued companies from incurring significant financial losses as a result of the lawsuits (Smith 1983; Abraham 1988), the sued companies will nonetheless suffer reputational damage associated with the allegations (Kassinis and Vafeas 2002). Any protection against environmental lawsuits in the form of liability insurance is only relevant to limiting the agency incentives associated with environmental lawsuits. However, the inevitable reputational damage to the defendant companies, and the consequent legitimacy incentives to initiate CEO turnover, cannot be insured against.

[4] By way of robustness checks, we also conduct the analysis whereby the control sample consists only of firms that have not experienced any lawsuit during the entire sampling period. The univariate results from the robustness analysis are consistent with the results reported in Table 3.

[5] Detailed definitions of all variables are provided in Table A1 of Appendix 1 (Variable Definitions).

[6] The results from the robustness analysis (refer to Footnote 5), whereby the control sample consists only of firms that have not experienced any lawsuit during the entire sampling period, produce consistent results. The

LAWSUIT$_{t=0}$ variable (expressed as both a dummy and a continuous variable) is consistently positive and statistically significant at the 1% level in predicting CEO turnover during both the (0,+3) and (-1,+3) periods.

[7] These control variables, however, are not without limitations. Although smaller (Yermack 1996; Eisenberg, Sundgren, and Wells 1998) and more independent boards (Weisbach 1988; Agrawal, Jaffe, and Karpoff 1999) have been shown to be more effective in providing monitoring, board composition is endogenously determined by firm-specific factors (Hermalin and Weisbach 1988, 1998), such as the private benefits available to insiders balanced against the costs of monitoring (Boone et al. 2007). It is further recognized that other stakeholders, such as debt-holders and institutional investors, may also play a role in indirectly exerting influence over the removal of executive officers (Cheng et al. 2010; Dimopoulos and Wagner 2010). The role of debt-holders is captured by the financial leverage of the company in the regression analysis. However, the analysis is constrained by the unavailability of data concerning institutional ownership during the sampling period. Though institutional investors have no right to directly initiate or oppose a CEO appointment or dismissal (unless by way of a proxy fight in extremely rare circumstances), they may apply pressure on boards of directors through their influence over board composition (Cheng et al. 2010). Consequently, any potential role they might play in determining CEO turnover can be captured by controlling for the characteristics of the board composition.

[8] In order to further examine the role of board vigilance in determining post-litigation CEO turnover, we conduct regression analysis by including the following additional interaction terms in the re-estimation of Equation (1). The variables *LAWSUIT*$_{t=0}$*BSIZE*$_{t-1}$ and *LAWSUIT*$_{t=0}$*%*OUTSIDE*$_{t-1}$ represent the interactions of the litigation variable (*LAWSUIT*$_{t=0}$), with board size (*BSIZE*$_{t-1}$) and board independence (%*OUTSIDE*$_{t-1}$), respectively. If the vigilance of the board (as proxied by size and independence) has significant impacts on the board's tendency to remove the CEO in the wake of litigation, such relationships would be captured by the statistical significance of these interaction variables. However, in unreported regression results, the interaction terms *LAWSUIT*$_{t=0}$*BSIZE*$_{t-1}$ and *LAWSUIT*$_{t=0}$*%*OUTSIDE*$_{t-1}$ do not exhibit statistically significant predictive power at the 5% level.

[9] The estimated coefficients and statistical significance of the control variables in Table 6 do not experience significant changes from those previously discussed when a single lawsuit variable is employed (under Equation (1) in Section 4.2.1).

[10] When the models employing continuous litigation variables are run using a sample restricted to lawsuit firm-years only (as reported in Models (5) and (6)), the regression results remain consistent with those produced by employing the entire dataset (reported in Models (3) and (4)).

[11] The significant and positive predictive power of Securities and IP lawsuits persist during the robustness analysis, where the control sample consists of firms which have not experienced any lawsuit during the entire sampling period. The $SEC_{t=0}$ and $IP_{t=0}$ variables (expressed as both a dummy and a continuous variable) is consistently positive and statistically significant at the 1% level in predictive CEO turnover during both the (0,+3) and (-1,+3) periods. $ANT_{t=0}$ (only when expressed as a dummy variable) is significant and positive at the 5% level in predicting $\Delta CEO_{t(-1,+3)}$, and at the 10% level in predicting $\Delta CEO_{t(0,+3)}$.

[12] Similarly, in the robustness analysis whereby the control sample consists of firms that have not experienced any lawsuits during the entire sampling period, $LAWSUIT_{t=0}$ remains positive and statistically significant in the second-stage regression of the Heckman model, at the 5% level in predicting $\Delta CEO_{t(0,+3)}$, and at the 1% level in predicting $\Delta CEO_{t(-1,+3)}$.

[13] The two-stage Heckman model is also employed to examine the predictive power of individual lawsuit categories, by employing in the second-stage regression the five continuous litigation variables, each denoting the lawsuit filings under an individual category. The results from the two-stage regressions remain consistent with the single stage probit regression discussed in the preceding Section 4.2.2.

[14] It is a priori expected that the economic magnitude of filed lawsuits should have a significant positive predictive power over subsequent CEO turnover. The observed insignificance of $DEMAND_{ALL-t=0}$ is therefore counter-intuitive. By way of robustness check, we further stratify the sample firms by industry, re-running the regression model within each subsample defined by a common two-digit SIC code. Amongst the 12 most common industries with sufficient observations to enable the probit regression analysis, the variable $DEMAND_{ALL-t=0}$ remains statistically insignificant in predicting CEO turnover.

[15] In addition, we include in the regression model interaction terms between the economic magnitudes of the lawsuits and board composition (size and independence), as a means of distinguishing between conscientious boards, which may pay more attention to lawsuit-specific characteristics, and less conscientious boards. However, in the regression results, both interaction terms are statistically insignificant at the 10% level, providing no support for the view that more vigilant boards (as proxied by size and independence) would take into account lawsuit-specific characteristics more than other boards.

[16] Those lawsuits imply out-of-court settlements and are grouped into the SETTLE category.

[17] These include lawsuits that have the following dispositions recorded on the PACER court dockets: 'Dismissed - Settled', 'Dismissed - Voluntarily', 'Judgment - Award of Arbitrator', and 'Judgment - Judgment on Consent', all of which indicate that the plaintiff(s) and the defendant(s) have reached an agreement over the disputes.

[18] The litigation outcome variables capture broad categories of lawsuit outcomes. They do not account for the idiosyncratic terms of each lawsuit's termination, or the degree of the defendant's victory. For instance, the variable that represents disposition by settlement does not capture the actual content of the settlement agreement. This is inevitable for two reasons. First, many litigation settlements are confidential. Their contents are unavailable to parties other than the litigants. Second, even assuming full data availability, there would be considerable difficulties associated with converting the terms of the judgments and settlements, which are qualitative in nature and specific to the facts of each case, into quantitative measures that could be generalized and compared across all lawsuits. Any attempt at this process would inevitably introduce substantial subjectivity into the data, hence compromise its accuracy. For these reasons, individual variations from lawsuit to lawsuit, in terms of their outcomes and the degrees of victory for the defendant companies, are not captured by the study design.

Appendix 1: Variable Definitions

Table A1: Variable Definitions

Dependent Variables	
$\Delta CEO_{t(0,+3)}$	A dummy variable assigned a value of one if a change in the person holding the position of CEO occurs during the interval yr (0,+3), from the year of lawsuit filing to the third year subsequent to the filing, otherwise this variable is zero.
$\Delta CEO_{t(-1,+3)}$	A dummy variable assigned a value of one if a change in the person holding the position of CEO occurs during the interval yr (-1,+3), from the year immediately preceding the lawsuit filing to the third year subsequent to the filing, otherwise this variable is zero.
Key Independent Variables (Litigation)	
$ENV_{t=0}$	Environmental litigation as represented by two alternative measures: first, a dummy variable assigned a value of one if there has been one or more environmental lawsuits filed against the company during year t (defined as year 0), and zero otherwise; second, a continuous variable measuring the number of environmental lawsuits filed against the company during year 0.
$SEC_{t=0}$	Securities litigation as represented by two alternative measures: first, a dummy variable assigned a value of one if there has been one or more securities lawsuits filed against the company during year t (defined as year 0), and zero otherwise; second, a continuous variable measuring the number of securities lawsuits filed against the company during year 0.
$ANT_{t=0}$	Antitrust litigation as represented by two alternative measures: first, a dummy variable assigned a value of one if there has been one or more antitrust lawsuits filed against the company during year t (defined as year 0), and zero otherwise; second, a continuous variable measuring the number of antitrust lawsuits filed against the company during year 0.

$IP_{t=0}$	Intellectual property litigation as represented by two alternative measures: first, a dummy variable assigned a value of one if there has been one or more intellectual property lawsuits filed against the company during year t (defined as year 0), and zero otherwise; second, a continuous variable measuring the number of intellectual property lawsuits filed against the company during year 0.
$CON_{t=0}$	Contractual litigation as represented by two alternative measures: first, a dummy variable assigned a value of one if there has been one or more contractual lawsuits filed against the company during year t (defined as year 0), and zero otherwise; second, a continuous variable measuring the number of contractual lawsuits filed against the company during year 0.

<div align="center">Control Variables</div>

$LogTA_{t-1}$	The natural logarithm of the book value of total assets as at the end of year -1 as a control for firm size.
$LogTA_{t-1}$	The natural logarithm of the book value of total assets as at the end of year -1 as a control for firm size.
ROA_{t-1}	Return on total assets ratio for the company for the year -1, calculated as the net profit in year -1 divided by the total assets of the company as at the end of year -1, as a control for firm performance.
LEV_{t-1}	Debt-to-equity ratio for the company as at the end of year -1 as a control for the financial leverage of the company.
$BSIZE_{t-1}$	The number of directors on the board as at the end of year -1 as a control for board size.
$\%OUTSIDE_{t-1}$	The proportion of independent directors on the board, calculated as the number of independent directors over the total number of directors as at the end of year -1, as a control for board independence.
$CEOAGE_{t=0}$	A continuous variable representing the age of the CEO in year 0.
$EXECOWN_{t=0}$	The percentage of total ordinary shares outstanding owned by the CEO in year 0.
$TENURE_{t=0}$	The number of years during which the CEO has served the company in his or her current capacity as at year 0.

<div align="center">Instrumental Variables</div>

SEG_{t-1}	The number of business segments of the company as at the end of year -1 as reported in the Compustat Segment Database, as a control for organizational complexity.

$RISKINDQ_{t-1}$ A dummy variable with a value of one, if the two-digit Standard Industry Classification (SIC) code of the company is amongst the top quartile of the most litigious industries as observed during the sampling period 2000-2007, and zero otherwise.

Key Independent Variables (Litigation Magnitude)

$DEMAND_{ALL-t=0}$ The cumulative sum of all demands for compensation filed against the public company during year 0 scaled by the total assets of the company at the beginning of that year, as a measure of the economic magnitude of the litigation encountered.

$DEMAND_{ENV-t=0}$ The cumulative sum of the demands for compensation of all environmental lawsuits filed against the company during year 0, scaled by the total assets of the company at the beginning of that year.

$DEMAND_{SEC-t=0}$ The cumulative sum of the demands for compensation of all securities lawsuits filed against the company during year 0, scaled by the total assets of the company at the beginning of that year.

$DEMAND_{ANT-t=0}$ The cumulative sum of the demands for compensation of all antitrust lawsuits filed against the company during year 0, scaled by the total assets of the company at the beginning of that year.

$DEMAND_{IP-t=0}$ The cumulative sum of the demands for compensation of all intellectual property lawsuits filed against the company during year 0, scaled by the total assets of the company at the beginning of that year.

$DEMAND_{CON-t=0}$ The cumulative sum of the demands for compensation of all contractual lawsuits filed against the company during year 0, scaled by the total assets of the company at the beginning of that year.

Key Independent Variables (Litigation Merit)

$DISMISSAL_{ALL-t=0}$ The number of lawsuits filed against the company in year 0, which eventually end in dismissal (the omitted category in the regression analysis).

$SETTLE_{ALL-t=0}$ The number of lawsuits filed against the company in year 0, which eventually end in settlement.

$JUDGMENT_{ALL-t=0}$ The number of lawsuits filed against the company in year 0, which eventually end in a court judgment.

$OTHER_{ALL-t=0}$ The number of lawsuits filed against the company in year 0, which eventually end in a manner of disposition other than dismissal, settlement, and court judgments.

$SETTLE_{ENV-t=0}$ The number of environmental lawsuits filed against the company in year 0, which eventually end in settlement.

$JUDGMENT_{ENV-t=0}$ — The number of environmental lawsuits filed against the company in year 0, which eventually end in a court judgment.

$OTHER_{ENV-t=0}$ — The number of environmental lawsuits filed against the company in year 0, which eventually end in a manner of disposition other than dismissal, settlement, and court judgments.

$SETTLE_{SEC-t=0}$ — The number of securities lawsuits filed against the company in year 0, which eventually end in settlement.

$JUDGMENT_{SEC-t=0}$ — The number of securities lawsuits filed against the company in year 0, which eventually end in a court judgment.

$OTHER_{SEC-t=0}$ — The number of securities lawsuits filed against the company in year 0, which eventually end in a manner of disposition other than dismissal, settlement, and court judgments.

$SETTLE_{ANT-t=0}$ — The number of antitrust lawsuits filed against the company in year 0, which eventually end in settlement.

$JUDGMENT_{ANT-t=0}$ — The number of antitrust lawsuits filed against the company in year 0, which eventually end in a court judgment.

$OTHER_{ANT-t=0}$ — The number of antitrust lawsuits filed against the company in year 0, which eventually end in a manner of disposition other than dismissal, settlement, and court judgments.

$SETTLE_{IP-t=0}$ — The number of intellectual property lawsuits filed against the company in year 0, which eventually end in settlement.

$JUDGMENT_{IP-t=0}$ — The number of intellectual property lawsuits filed against the company in year 0, which eventually end in a court judgment.

$OTHER_{IP-t=0}$ — The number of intellectual property lawsuits filed against the company in year 0, which eventually end in a manner of disposition other than dismissal, settlement, and court judgments.

$SETTLE_{CON-t=0}$ — The number of contractual lawsuits filed against the company in year 0, which eventually end in settlement.

$JUDGMENT_{CON-t=0}$ — The number of contractual lawsuits filed against the company in year 0, which eventually end in a court judgment.

$OTHER_{CON-t=0}$ — The number of contractual lawsuits filed against the company in year 0, which eventually end in a manner of disposition other than dismissal, settlement, and court judgments.

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Tables

Table 1

Filing of Corporate Litigation by Year and Category

YEAR	TOTAL		ENV		SEC		ANT		IP		CON	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
2000	2229	10.65%	47	2.11%	387	17.36%	262	11.75%	393	17.63%	1140	51.14%
2001	2470	11.80%	58	2.35%	543	21.98%	330	13.36%	392	15.87%	1147	46.44%
2002	3182	15.20%	36	1.13%	968	30.42%	313	9.84%	463	14.55%	1402	44.06%
2003	2734	13.06%	51	1.87%	618	22.60%	265	9.69%	455	16.64%	1345	49.20%
2004	2668	12.74%	41	1.54%	603	22.60%	219	8.21%	502	18.82%	1303	48.84%
2005	2680	12.80%	54	2.01%	332	12.39%	341	12.72%	463	17.28%	1490	55.60%
2006	2510	11.99%	181	7.21%	265	10.56%	207	8.25%	531	21.16%	1326	52.83%
2007	2461	11.76%	47	1.91%	317	12.88%	225	9.14%	590	23.97%	1282	52.09%
Total	**20934**	100.00%	**515**	**2.46%**	**4033**	**19.27%**	**2162**	**10.33%**	**3789**	**18.10%**	**10435**	**49.85%**

SOURCE. PACER.

NOTE. ENV denotes environmental lawsuits (PACER lawsuit code 893). SEC denotes securities lawsuits (PACER lawsuit codes 160 and 850). ANT denotes antitrust lawsuits (PACER lawsuit code 410). IP denotes intellectual property lawsuits, including patent and trademark litigation (PACER lawsuit codes 830 and 840). CON denotes contractual lawsuits (PACER lawsuit codes 140, 150, 190, 195, and 196).

Table 2

Industry Composition

Panel A: Distribution of Lawsuit Numbers

SIC2	Industry Description	Law-suits Per Firm	Total No. of Firms	Litigation Firms^	Non-Litigation Firms^^	Total No. of Lawsuits	2000	2001	2002	2003	2004	2005	2006	2007
61	Nondepository Institutions	57	14	13	1	792	29	43	116	110	93	262	57	82
62	Security & Commodity Brokers	35	32	28	4	1113	55	160	190	184	182	94	99	149
52	Building Materials & Gardening Supplies	34	6	6	0	206	20	9	22	18	28	32	41	36
37	Transportation Equipment	33	36	33	3	1203	114	125	155	216	159	171	120	143
29	Petroleum & Coal Products	31	14	14	0	440	38	37	30	45	49	41	164	36
53	General Merchandise Stores	31	16	16	0	492	47	63	49	70	62	66	65	70
40	Railroad Transportation	30	5	5	0	151	35	17	18	23	17	13	17	11
48	Communications	27	36	30	6	978	113	119	203	84	119	82	173	85
51	Wholesale Trade- Nondurable Goods	25	18	16	2	457	61	47	63	54	85	51	47	49
70	Hotels & Other Lodging Places	22	2	2	0	43	7	3	7	4	6	6	6	4
64	Insurance Agents, Brokers, & Service	21	11	10	1	233	16	8	19	28	65	46	32	19
42	Trucking & Warehousing	20	11	10	1	224	25	23	16	30	26	25	19	60
28	Chemical & Allied Products	18	109	99	10	1980	176	399	390	226	218	222	159	190
57	Furniture & Home Furnishings Stores	17	7	6	1	120	10	14	14	25	14	12	16	15
60	Depository Institutions	16	114	86	28	1788	99	159	212	246	228	301	265	278
72	Personal Services	15	6	5	1	88	7	10	11	11	7	23	16	3
63	Insurance Carriers	15	69	60	9	1010	102	141	117	133	120	151	133	113
26	Paper & Allied Products	14	21	19	2	289	24	25	30	52	68	33	25	32
45	Transportation by Air	13	11	10	1	147	8	7	12	19	19	40	16	26
47	Transportation Services	13	8	7	1	106	16	14	12	10	22	10	14	8
15	General Building Contractors	12	13	11	2	156	5	10	15	12	26	25	29	34
59	Miscellaneous Retail	12	27	23	4	317	30	58	32	40	24	28	49	56
30	Rubber & Miscellaneous Plastics Products	12	11	10	1	127	10	16	14	30	16	11	11	19
54	Food Stores	11	7	6	1	78	10	12	21	9	10	4	4	8

36	Electronic & Other Electric Equipment	11	114	103	11	1253	119	141	198	152	80	203	174	186
35	Industrial Machinery & Equipment	11	90	76	14	977	132	151	113	106	125	124	117	109
	Other	7	845	690	155	6166	921	659	1103	797	800	604	642	640
	Total		**1653**	1394	259	**20934**	2229	2470	3182	2734	2668	2680	2510	2461

NOTE. ^**Litigation Firms**: the S&P 1,500 companies with at least one lawsuit filed against them during the 2000-07 sampling period. ^^**Non-Litigation Firms**: the S&P 1,500 companies with no lawsuits filed against them during the 2000-07 sampling period.

Panel B: Difference in Litigation Frequency across Industries

Number of Industries	65
Number of Lawsuits per Industry (Mean)	322
Number of Lawsuits per Industry (Median)	132
Standard Deviation	452
Chi-Square Test of Equality of Median	13088
(p-value)	(0.000)

Table 3

Descriptive Statistics (Mean and Median) for Lawsuit Versus Control Samples

	Lawsuit^ (Mean)	Control^^ (Mean)	Lawsuit (Median)	Control (Median)	Difference in Mean[1]	(P-value)	Difference in Median[2]	(P-value)
logTA	8.118	6.868	7.991	6.801	1.250**	(0.000)	1.190**	(0.000)
ROA	0.047	0.043	0.045	0.044	0.003*	(0.037)	0.001	(0.559)
LEV	2.823	2.221	1.366	1.098	0.602**	(0.000)	0.268**	(0.000)
BSIZE	10.061	8.992	10.000	9.000	1.070**	(0.000)	1.000**	(0.000)
%OUTSIDE	0.688	0.678	0.714	0.700	0.011**	(0.004)	0.014**	(0.000)
CEOAGE	55.524	55.633	56.000	56.000	-0.110	(0.454)	0.000	(0.684)
EXECOWN	1.955	2.607	0.240	0.429	-0.652**	(0.000)	-0.188**	(0.000)
TENURE	6.588	7.335	4.000	5.000	-0.747**	(0.000)	-1.000**	(0.000)

NOTE. ^Those firm-years in which at least one lawsuit is filed against the company. ^^Those firm-years in which no lawsuit is filed against the company. LogTA equals the natural log of total assets at the end of year -1 reported in Compustat. ROA equals the return on total assets in year -1 reported in Compustat. LEV denotes the debt-to-equity ratio at the end of year -1 reported in Compustat. BSIZE equals the number of directors on the board at the end of year -1 (reported in RiskMetrics). %OUTSIDE equals the proportion of independent directors on the board at the end of year -1 (reported in RiskMetrics). CEOAGE equals the age of the CEO in year 0 reported in Execucomp. EXECOWN denotes the stock ownership of the company's common shares by the CEO in year 0 (reported in Execucomp). TENURE equals the number of years over which the CEO has been serving in his/her current capacity as at year 0 (reported in Execucomp).

[1] ANOVA F-test of the Difference in Mean.

[2] Chi-square Test of the Difference in Median.

Table 4

Univariate Analysis: CEO Turnover

	Lawsuit[^] (Mean)	Control[^^] (Mean)	Lawsuit (Median)	Control (Median)	Difference in Mean[1]	(P-value)	Difference in Median[2]	(P-value)
CEO(0,+3)	0.484	0.448	0.000	0.000	0.036**	(0.001)	0.000**	(0.001)
CEO(-1,+3)	0.578	0.544	1.000	1.000	0.033**	(0.002)	0.000	(1.000)

NOTE. [^]Those firm-years in which at least one lawsuit is filed against the company. [^^]Those firm-years in which no lawsuit is filed against the company. ΔCEO(0,+3) and ΔCEO(-1,+3) equal the value of one if a CEO turnover occurs in a company during the (0,+3) and (-1,+3) periods, respectively, and zero otherwise.

[1] ANOVA F-test of the Difference in Mean.

[2] Chi-square Test of the Difference in Median.

Table 5

CEO Turnover Regression Results (Overall Lawsuit Variable)

	LAWSUIT (dummy)		LAWSUIT (continuous)		LAWSUIT (continuous) Restricted Sample	
Dependent Variable	ΔCEO(0,+3)	ΔCEO(-1,+3)	ΔCEO(0,+3)	ΔCEO(-1,+3)	ΔCEO(0,+3)	ΔCEO(-1,+3)
Model	(1)	(2)	(3)	(4)	(5)	(6)
constant	-2.313**	-1.389**	-2.355**	-1.458**	-2.501**	-1.654**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
LAWSUIT (dummy)	0.077*	0.064+				
	(0.026)	(0.065)				
LAWSUIT (continuous)			0.008**	0.007*	0.009**	0.008*
			(0.005)	(0.019)	(0.003)	(0.014)
logTA	0.026+	0.027+	0.035*	0.037*	0.006	0.014
	(0.068)	(0.062)	(0.014)	(0.011)	(0.777)	(0.493)
ROA	-0.727**	-0.890**	-0.754**	-0.922**	-0.845**	-1.003**
	(0.001)	(0.000)	(0.000)	(0.000)	(0.008)	(0.002)
LEV	-0.018**	-0.023**	-0.022**	-0.027**	-0.019**	-0.027**
	(0.001)	(0.000)	(0.000)	(0.000)	(0.009)	(0.000)
BSIZE	0.004	0.011	-0.003	0.005	0.005	0.011
	(0.621)	(0.126)	(0.715)	(0.528)	(0.653)	(0.265)
%OUTSIDE	0.145	-0.056	0.322**	0.119	0.466**	0.304*
	(0.158)	(0.588)	(0.002)	(0.245)	(0.001)	(0.032)
CEOAGE	0.044**	0.037**	0.045**	0.038**	0.049**	0.041**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
EXECOWN	-0.005	-0.003	-0.005	-0.003	-0.001	0.002
	(0.116)	(0.416)	(0.117)	(0.417)	(0.837)	(0.718)
TENURE	-0.032**	-0.053**	-0.032**	-0.053**	-0.030**	-0.052**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
YEARLY DUMMIES	YES	YES	YES	YES	YES	YES

n	6342	6420	6342	6420	3198	3251
R2	0.064	0.085	0.070	0.089	0.073	0.085
Wald F-Stat	46.13	67.72	50.74	68.64	28.24	36.47
(p-value)	0.000	0.000	0.000	0.000	0.000	0.000

NOTE. ΔCEO(0,+3) and ΔCEO(-1,+3) equal one if a CEO turnover occurs in a company during the (0,+3) and (-1,+3) periods, respectively. LAWSUIT (dummy) equals one if one or more lawsuit(s) is/are filed against the company during year 0. LAWSUIT (continuous) denotes the number of lawsuit(s) filed against the company during year 0. LogTA equals the natural log of total assets at the end of year -1. ROA equals the return on total assets in year -1. LEV denotes the debt-to-equity ratio at the end of year -1. BSIZE equals the number of directors on the board at the end of year -1. %OUTSIDE equals the proportion of independent directors on the board at the end of year -1. CEOAGE equals the age of the CEO in year 0. EXECOWN denotes the stock ownership of the company's common shares by the CEO in year 0. TENURE equals the number of years over which the CEO has been serving in his/her current capacity as at year 0. The sample consists of the Standard & Poor's 1,500 firms, divided into the litigation and control samples on the basis of whether any lawsuit is filed against the firm in year 0. The numbers in parentheses below the coefficient estimates are p-values.

$+ P < 10\%$.

$* P < 5\%$.

$** P < 10\%$.

Table 6

CEO Turnover Regression Results (Lawsuit Categories)

	LAWSUIT (dummy)		LAWSUIT (continuous)		LAWSUIT (continuous) Restricted Sample	
Dependent Variable	ΔCEO(0,+3)	ΔCEO(-1,+3)	ΔCEO(0,+3)	ΔCEO(-1,+3)	ΔCEO(0,+3)	ΔCEO(-1,+3)
Model	(1)	(2)	(3)	(4)	(5)	(6)
constant	-2.416**	-1.509**	-2.376**	-1.483**	-2.572**	-1.725**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
ENV (dummy)	-0.287**	-0.312**				
	(0.004)	(0.001)				
ENV (continuous)			0.006	0.003	0.007	0.004
			(0.593)	(0.782)	(0.556)	(0.756)
SEC (dummy)	0.236**	0.182**				
	(0.000)	(0.005)				
SEC (continuous)			0.045**	0.044**	0.048**	0.046**
			(0.000)	(0.000)	(0.000)	(0.000)
ANT (dummy)	0.103	0.170*				
	(0.181)	(0.030)				
ANT (continuous)			-0.006	-0.003	-0.004	-0.002
			(0.370)	(0.651)	(0.497)	(0.784)
IP (dummy)	0.077+	0.085*				
	(0.068)	(0.044)				
IP (continuous)			0.044*	0.038*	0.046*	0.038*
			(0.010)	(0.027)	(0.011)	(0.034)
CON (dummy)	-0.001	0.007				
	(0.985)	(0.858)				
CON (continuous)			-0.004	-0.006	-0.003	-0.005
			(0.349)	(0.206)	(0.510)	(0.305)
logTA	0.035*	0.034*	0.032*	0.035*	0.003	0.012
	(0.019)	(0.023)	(0.029)	(0.018)	(0.894)	(0.536)
ROA	-0.760**	-0.947**	-0.738**	-0.915**	-0.800*	-0.974**

	(0.000)	(0.000)	(0.001)	(0.000)	(0.012)	(0.003)
LEV	-0.022**	-0.026**	-0.021**	-0.026**	-0.018*	-0.026**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.018)	(0.001)
BSIZE	-0.002	0.005	-0.002	0.005	0.006	0.013
	(0.785)	(0.469)	(0.802)	(0.461)	(0.543)	(0.206)
%OUTSIDE	0.323**	0.116	0.339**	0.132	0.498**	0.327*
	(0.002)	(0.257)	(0.001)	(0.197)	(0.001)	(0.021)
CEOAGE	0.046**	0.039**	0.046**	0.038**	0.050**	0.042**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
EXECOWN	-0.005	-0.003	-0.005	-0.003	-0.001	0.001
	(0.108)	(0.389)	(0.113)	(0.405)	(0.832)	(0.732)
TENURE	-0.032**	-0.054**	-0.032**	-0.054**	-0.031**	-0.053**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
YEARLY DUMMIES	YES	YES	YES	YES	YES	YES
n	6342	6420	6342	6420	3198	3251
R2	0.072	0.092	0.073	0.092	0.080	0.091
Wald F-Stat	36.58	48.92	36.57	48.67	21.00	26.41
(p-value)	0.000	0.000	0.000	0.000	0.000	0.000

NOTE. ENV, SEC, ANT, IP, CON (dummy) equal 1 if any environmental, securities, antitrust, intellectual property, and contractual lawsuits, respectively, are filed against the company during year 0. ENV, SEC, ANT, IP, CON (continuous) denote the number of environmental, securities, antitrust, intellectual property, and contractual lawsuits, respectively, filed against the company during year 0.

$+ P < 10\%$.

$* P < 5\%$.

$** P < 10\%$.

Table 7

CEO Turnover Regression Results (Heckman Selection Model)

Model	LAWSUITt=0 (1)	ΔCEO(0,+3) (2)	ΔCEO(-1,+3) (3)
constant	-1.985**	-3.620**	-2.829**
	(0.000)	(0.000)	(0.004)
LAWSUIT		0.009**	0.008*
		(0.007)	(0.026)
SEG	0.020*		
	(0.023)		
RISKINDQ	0.183**		
	(0.002)		
logTA	0.310**	0.105	0.114
	(0.000)	(0.245)	(0.205)
ROA	0.702**	-0.564	-0.728+
	(0.001)	(0.135)	(0.056)
LEV	-0.017*	-0.020+	-0.025*
	(0.010)	(0.052)	(0.015)
BSIZE	-0.001	0.017	0.027*
	(0.937)	(0.124)	(0.015)
%OUTSIDE	-0.215*	0.448**	0.293+
	(0.028)	(0.003)	(0.052)
CEOAGE	-0.006*	0.044**	0.036**
	(0.021)	(0.000)	(0.000)
EXECOWN	0.005+	0.001	0.003
	(0.091)	(0.838)	(0.474)
TENURE	-0.006*	-0.030**	-0.052**
	(0.034)	(0.000)	(0.000)
LAMBDA		0.592	0.601
		(0.212)	(0.204)

n		3016	3065
R2		0.070	0.083
Wald F-Stat	80.77**	23.08**	33.26**

NOTE. SEG equals the number of business segments of a company at the end of year -1 (reported in the Compustat Segment Database). RISKINDQ is assigned a value of one if the company's two-digit Standard Industry Classification (SIC) code is amongst the top quartile of the most litigious industries as observed during the sampling period 2000-2007, and zero otherwise. Lambda equals the inverse Mill's ratio calculated from the first-stage regression of the Heckman Selection Model.

$+ P < 10\%$.

$* P < 5\%$.

$** P < 10\%$.

Table 8

Litigation Magnitude and CEO Turnover

	Overall Lawsuits		Environmental		Securities		Antitrust		Intellectual Property		Contractual	
Dependent Variable	ΔCEO(0,+3)	ΔCEO(-1,+3)	ΔCEO(0,+3)	ΔCEO(-1,+3)	ΔCEO(0,+3)	ΔCEO(-1,+3)	ΔCEO(0,+3)	ΔCEO(-1,+3)	ΔCEO(0,+3)	ΔCEO(-1,+3)	ΔCEO(0,+3)	ΔCEO(-1,+3)
Model	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
constant	-3.070**	-2.186**	-2.268+	-1.117	-2.663**	-2.504**	-4.175**	-3.065*	-3.775**	-2.763**	-3.173**	-2.108**
	(0.000)	(0.000)	(0.085)	(0.387)	(0.001)	(0.003)	(0.001)	(0.012)	(0.000)	(0.000)	(0.000)	(0.000)
DEMAND$_{ALL}$	-0.008	0.003										
	(0.396)	(0.334)										
DEMAND$_{ENV-CON}$			-0.288	-0.558	-0.005	0.004	0.598	2.444	0.049	0.155	-0.014	-0.011
			(0.609)	(0.327)	(0.830)	(0.516)	(0.622)	(0.420)	(0.454)	(0.505)	(0.249)	(0.292)
logTA	0.025	0.030	-0.050	-0.040	0.087	0.103+	-0.022	0.014	0.018	0.003	0.014	0.018
	(0.246)	(0.166)	(0.580)	(0.655)	(0.141)	(0.094)	(0.794)	(0.868)	(0.657)	(0.931)	(0.564)	(0.466)
ROA	-0.952*	-1.227**	-0.095	-1.016	-2.295**	-2.292**	-0.698	-1.337	-1.621**	-1.805**	-0.430	-0.869+
	(0.011)	(0.002)	(0.966)	(0.647)	(0.005)	(0.010)	(0.610)	(0.371)	(0.008)	(0.004)	(0.367)	(0.075)
LEV	-0.022*	-0.026**	0.028	-0.003	-0.066**	-0.077**	0.017	-0.005	-0.009	-0.005	-0.017+	-0.023*
	(0.011)	(0.002)	(0.482)	(0.948)	(0.001)	(0.000)	(0.556)	(0.867)	(0.595)	(0.764)	(0.072)	(0.012)
BSIZE	0.006	0.014	-0.037	0.002	0.017	0.006	-0.046	-0.001	0.027	0.054*	0.000	0.004
	(0.609)	(0.221)	(0.493)	(0.966)	(0.543)	(0.850)	(0.286)	(0.983)	(0.213)	(0.012)	(0.975)	(0.760)

%OUTSIDE	0.381*	0.222	0.647	-0.096	-0.238	-0.098	0.039	-0.327	0.639*	0.027	0.472*	0.347+
	(0.022)	(0.179)	(0.358)	(0.887)	(0.626)	(0.847)	(0.952)	(0.618)	(0.033)	(0.926)	(0.016)	(0.075)
CEOAGE	0.054**	0.045**	0.049*	0.037+	0.052**	0.053**	0.100**	0.079**	0.060**	0.053**	0.058**	0.047**
	(0.000)	(0.000)	(0.021)	(0.076)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
EXECOWN	-0.000	0.003	-0.107	-0.120	0.006	0.016	0.008	-0.002	0.000	0.010	0.000	0.003
	(0.937)	(0.607)	(0.208)	(0.161)	(0.619)	(0.226)	(0.790)	(0.963)	(0.973)	(0.376)	(0.952)	(0.689)
TENURE	-0.034**	-0.055**	0.000	-0.058+	-0.060**	-0.084**	-0.082**	-0.122**	-0.026**	-0.051**	-0.036**	-0.059**
	(0.000)	(0.000)	(0.993)	(0.072)	(0.000)	(0.000)	(0.001)	(0.000)	(0.002)	(0.000)	(0.000)	(0.000)
YEARLY DUMMIES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
n	2297	2314	183	186	300	302	182	183	737	738	1725	1738
R2	0.072	0.081	0.072	0.062	0.126	0.155	0.189	0.210	0.098	0.102	0.075	0.082
Wald F-Stat	20.35	22.50	1.06	0.95	3.91	4.59	3.47	3.36	8.63	8.94	15.77	17.71
(p-value)	0.000	0.000	0.392	0.481	0.000	0.000	0.001	0.001	0.000	0.000	0.000	0.000

NOTE. DEMAND$_{ALL}$ equals the sum of all demands for pecuniary compensation filed against the company during year 0 scaled by firm size (total assets) at the beginning of year 0.

DEMAND$_{ENV}$, DEMAND$_{SEC}$, DEMAND$_{ANT}$, DEMAND$_{IP}$, AND DEMAND$_{CON}$ equal the sum of demands for pecuniary compensation filed during year 0 in environmental, securities, antitrust, intellectual property, and contractual lawsuits, respectively, scaled by firm size (total assets) at the beginning of year 0.

$+ P < 10\%$.

$* P < 5\%$.

$** P < 10\%$.

Table 9

Lawsuit Dispositions

Disposition	Number of Cases	% of Sample
Consolidated	10	0.05
Dismissed - Lack of Jurisdiction	132	0.63
Dismissed - Other	2361	11.28
Dismissed - Settled	5570	26.61
Dismissed - Voluntarily	2576	12.31
Dismissed - Want of Prosecution	141	0.67
Judgment - Award of Arbitrator	20	0.10
Judgment - Court Trial	101	0.48
Judgment - Directed Verdict	16	0.08
Judgment - Judgment on Consent	396	1.89
Judgment - Judgment on Default	97	0.46
Judgment - Jury Verdict	194	0.93
Judgment - Motion Before Trial	1846	8.82
Judgment - Non-Jury Trial	3	0.01
Judgment - Other	909	4.34
Pending/Undetermined	2942	14.05
Statistical/Administrative Closing	1087	5.19
Transfer/Remand (MDL Transfer, Remanded to U.S. Agency, Another District, or Another State or Federal Court)	2533	12.10
Total	20934	100

Table 10

Litigation Merit and CEO Turnover

	Overall Lawsuits		Environmental		Securities		Antitrust		Intellectual Property		Contractual	
Dependent Variable	ΔCEO(0,+3)	ΔCEO(-1,+3)	ΔCEO(0,+3)	ΔCEO(-1,+3)	ΔCEO(0,+3)	ΔCEO(-1,+3)	ΔCEO(0,+3)	ΔCEO(-1,+3)	ΔCEO(0,+3)	ΔCEO(-1,+3)	ΔCEO(0,+3)	ΔCEO(-1,+3)
Model	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
constant	-2.537**	-1.691**	-2.068	-1.129	-2.507**	-2.104**	-1.984*	-0.640	-2.620**	-1.702**	-2.729**	-1.703**
	(0.000)	(0.000)	(0.115)	(0.382)	(0.000)	(0.002)	(0.021)	(0.448)	(0.000)	(0.000)	(0.000)	(0.000)
SETTLE	-0.005	-0.004	0.162	0.212+	0.063*	0.063*	-0.000	0.022	0.048	0.031	-0.032*	-0.033*
	(0.617)	(0.683)	(0.232)	(0.094)	(0.028)	(0.038)	(0.998)	(0.495)	(0.205)	(0.412)	(0.034)	(0.031)
JUDGMENT	0.036**	0.038*	-0.188	-0.282	0.051*	0.083**	0.058	0.008	0.041	-0.009	0.013	0.012
	(0.010)	(0.013)	(0.478)	(0.272)	(0.021)	(0.003)	(0.143)	(0.825)	(0.597)	(0.903)	(0.585)	(0.626)
OTHER	0.017+	0.013	0.085	0.019	0.073**	0.048+	-0.015	-0.015	-0.015	-0.019	0.058*	0.053*
	(0.065)	(0.171)	(0.757)	(0.571)	(0.009)	(0.070)	(0.341)	(0.314)	(0.825)	(0.774)	(0.026)	(0.043)
logTA	0.009	0.017	-0.101	-0.090	0.044	0.056	-0.033	0.021	0.009	0.004	0.024	0.027
	(0.634)	(0.405)	(0.297)	(0.339)	(0.348)	(0.245)	(0.581)	(0.729)	(0.761)	(0.885)	(0.291)	(0.233)
ROA	-0.846**	-1.003**	-1.201	-2.528	-1.811*	-2.483**	0.715	0.255	-1.364**	-1.357**	-0.311	-0.598
	(0.008)	(0.002)	(0.600)	(0.265)	(0.011)	(0.001)	(0.496)	(0.808)	(0.005)	(0.006)	(0.435)	(0.139)
LEV	-0.020**	-0.028**	0.041	0.009	-0.054**	-0.074**	0.012	-0.005	-0.009	-0.011	-0.013	-0.020*
	(0.006)	(0.000)	(0.319)	(0.814)	(0.000)	(0.000)	(0.585)	(0.821)	(0.515)	(0.420)	(0.105)	(0.012)

BSIZE	0.005	0.011	-0.021	0.021	0.013	0.023	-0.014	0.000	0.021	0.036*	0.001	0.003
	(0.645)	(0.264)	(0.693)	(0.687)	(0.590)	(0.375)	(0.669)	(0.989)	(0.201)	(0.030)	(0.939)	(0.810)
%OUTSIDE	0.481**	0.321*	0.484	-0.264	0.323	0.251	-0.006	-0.484	0.506*	0.029	0.535**	0.416*
	(0.001)	(0.024)	(0.488)	(0.692)	(0.401)	(0.532)	(0.990)	(0.333)	(0.026)	(0.899)	(0.001)	(0.013)
CEOAGE	0.049**	0.041**	0.049*	0.041+	0.051**	0.049**	0.056**	0.035**	0.049**	0.044**	0.051**	0.041**
	(0.000)	(0.000)	(0.019)	(0.054)	(0.000)	(0.000)	(0.000)	(0.005)	(0.000)	(0.000)	(0.000)	(0.000)
EXECOWN	0.001	0.005	-0.110	-0.125	0.009	0.017	-0.008	0.007	0.002	0.008	0.003	0.004
	(0.786)	(0.315)	(0.190)	(0.152)	(0.418)	(0.140)	(0.706)	(0.740)	(0.849)	(0.389)	(0.643)	(0.501)
TENURE	-0.031**	-0.053**	0.007	-0.050	-0.053**	-0.078**	-0.033*	-0.076**	-0.022**	-0.045**	-0.036**	-0.061**
	(0.000)	(0.000)	(0.826)	(0.125)	(0.000)	(0.000)	(0.039)	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)
YEARLY DUMMIES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
n	3196	3249	187	190	489	495	322	326	1296	1317	2354	2390
R2	0.074	0.087	0.095	0.085	0.155	0.186	0.094	0.092	0.090	0.096	0.076	0.090
Wald F-Stat	23.33	30.11	1.10	1.19	6.45	7.90	2.86	3.35	11.17	14.39	17.57	22.70
(p-value)	0.000	0.000	0.362	0.296	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000

NOTE. In Models (1) and (2), SETTLE denotes the number of lawsuits filed against the company in year 0, which eventually end in settlement. JUDGMENT denotes the number of lawsuits filed against the company in year 0, which eventually end in a court judgment. OTHER denotes the number of lawsuits filed against the company in year 0, which eventually end in a manner of disposition other than dismissal, settlement, and court judgments. In Models (3) to (12), SETTLE, JUDGMENT, and OTHER denote the respective numbers of lawsuits which ended in settlement, court judgments, and other manners of disposition, within each category of environmental, securities, antitrust, intellectual property, and contractual lawsuits, in turn.

+ $P < 10\%$.

* $P < 5\%$.

** $P < 10\%$.