

## **Profiling: Does Past Compliance Record Predict Financial Reporting Risk?\***

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### **Abstract**

We construct a firm's prior compliance record by collating the firm's violations related to product safety, anti-trust issues, worker safety, worker civil rights and environmental laws. The resulting dataset covers 22,885 firm years from 1994-2011 and 22% of Compustat universe over the same period. We find a statistical and economically significant association between the firm's prior compliance record and its proclivity to misreport its financial statements. The results are robust to different measures of financial misreporting and to controls for executive compensation, corporate governance, a measure of internal control weakness, as well as the industry's noncompliance record and CEO fixed effects.

**Keywords:** ESG, compliance, product safety, environmental safety, labor safety, financial reporting risk.

**JEL Classification Codes:** G30; G34; G38

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## **Profiling: Does Past Compliance Record Predict Financial Reporting Risk?\***

### **1.0 Introduction**

In a push to catch corporate fraud, the SEC has launched the “Financial Reporting and Audit Task Force” with the principal goal of increased prosecution of violations involving false or misleading financial statement disclosure.<sup>1</sup> The SEC has also set up a “Center for Risk and Quantitative Analytics” that hopes to use mathematical models to detect high risk behavior.<sup>2</sup> Mary Jo White, the outgoing Chairman of the SEC, has stressed that she wants to boost the agency’s focus on catching accounting fraud.<sup>3</sup> These regulatory initiatives suggest that the prediction and detection of corporate misrepresentation remain a challenge. In this paper, we contribute to this effort by examining whether the past compliance behavior of the firm (“profiling”) predicts the likelihood of future financial misrepresentation.

The idea that past behavior is one of the best predictors of future behavior is well accepted. A credit bureau evaluates the applicant’s prior record of paying off debts before assigning a credit score that would drive future borrowing opportunities. While applying for auto insurance, the insurance agent always asks whether we have had an accident in the past three years. The answer to this question determines the insurance premium. The premise underlying user profiling is that past behavior of the user can be aggregated to construct a profile that can be used to predict future behavioral patterns. Statistical tools for fraud detection employed in varying areas such as credit card fraud, money laundering, health care billing,

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<sup>1</sup> See “SEC Lays Out Plan to Fight Accounting Fraud” by Emily Chasan, WSJ July 2, 2013. The article is available at <http://blogs.wsj.com/cfo/2013/07/02/sec-lays-out-plan-to-fight-accounting-fraud/>

<sup>2</sup> See “Meet the SEC’s Brainy New Crime Fighters” by Scott Patterson, Dec 14, 2014 and available at <http://www.wsj.com/articles/meet-the-secs-brainy-new-crime-fighters-1418601581>

<sup>3</sup> See “Deploying the Full Enforcement Arsenal” Mary Jo White, Speech at the Council of Institutional Investors Fall Conference in Chicago, September 26 2013.

among others, are essentially based on comparing the observed data to expected values, which are often based on past behavior of the system being studied (Bolton and Hand 2002). Based on this intuition, we examine whether a firm's past record of violations predicts its proclivity to misreport financial statements in the future.

There are two reasons to consider using the firm's prior record of violations to predict financial misreporting. First, the fraud triangle predicts that three factors are found in most occurrences of financial misreporting: (i) the motive or incentives to misreport; (ii) the opportunity or the ability to execute the misreporting; and (iii) the perpetrator's rationalization and justification of such dishonest behavior. However, an outside investigator can seldom directly observe good proxies for these factors. But the outsider can access a firm's past violations and use it to predict financial misreporting under the plausible assumption that the motive, opportunities and rationalization underlying past violations apply to future misreporting as well.

Second, the three forces driving the fraud triangle are inextricably linked with the firm's corporate culture. Organizations develop norms and beliefs over time which their employees practice. A cultural climate that implicitly sanctions wrong doing can promote illegal behavior. Implicit sanctioning is the unstated norm that attaches more weight to the completion of the task than to the means, ethical or not, by which the task was completed (Yeager 1986; Brief, Buttram, and Dukerich 2001). For instance, Government enquiries blamed short-sighted cost cutting at the expense of safety for two of the biggest mining disasters of recent times, British Petroleum's Deepwater Horizon oil spill and the Massey coal mine accident. Ashforth and Anand (2003) report multiple complex processes by which socialization into a corrupt organizational culture occurs and by which such corrupt cultures are sustained or reinforced. A weak ethical climate is

likely to be positively associated with violations irrespective of whether such violations relate to labor, environmental, financial or other aspects of the firm. Although direct measures of a firm's culture are difficult to observe, a firm's noncompliance with laws across these broad range of issues can be considered as indicative of a culture that "pushes the envelope" with respect to regulatory compliance. If organizational norms stress the need for legal behavior and for "doing the right thing," we expect the firm to diligently comply with laws and regulations across all of its activities. Hence, past infractions across a broad range of activities potentially reflects a culture of noncompliance and should be associated with future financial reporting risk.

To measure a firm's past record of compliance or violations, we hand-collect a comprehensive set of enforcement actions by U. S. federal government agencies from 1994 to 2011 on firms' violations against rules and laws on product-, market-, labor-, and environment-related issues. Violations on product safety come from the enforcement actions by the Food and Drug Administration (FDA). Violations on anti-trust issues are gathered from the enforcement actions by the Department of Justice (DOJ) and the Federal Trade Commission (FTC). Information on violations related to worker safety and worker civil rights is obtained from four different federal government agencies, which include the Mine Safety and Health Administration (MSHA), the Occupational Safety and Health Administration (OSHA), the Office of Federal Contract Compliance Programs (OFCCP), and the Wage and Hour Division (WHD) of the Department of Labor (DOL). Lastly, environmental noncompliance is acquired from the toxic disclosure from the Environmental Protection Agency (EPA). The combined noncompliance data from the above sources comprise 22,885 firm years drawn from 4,621 unique firms during our sample period 1994 to 2011. To our knowledge, this is one of the most comprehensive

datasets on corporate noncompliance assembled, covering 22.2% of all Compustat firm years during the sample period.

To aggregate the multidimensionality of these noncompliance activities, we first rank firms into deciles for each of the above four categories related to product, market, labor and environment. Because we find industry wide patterns of violations or noncompliance in each category, the ranking is based on the total number of violations for each firm within its industry at the two-digit SIC code level. For example, a firm with a rank of ten on product safety is among the top 10% of noncompliant firms with respect to product safety in its industry in that year.

We then aggregate the within-industry ranks across the above-discussed four categories and obtain an annual measure of a firm's noncompliance. To de-emphasize a firm's occasional violations and overweight more persistent norms and practices over time, we average the annual noncompliance measure over the past five years to create an index of a firm's noncompliance record. A higher value of this index indicates a larger number of violations over the past five years, and therefore, a more persistent non-compliance profile.

We find that non-compliant firms tend to be older, larger and more profitable. For example, Caterpillar, Pfizer and Waste Management are among the largest firms in the top quartile by our measure of noncompliance. Caterpillar has been charged with recurrent violations of the Clear Air Act. Pfizer has been labeled a "repeat offender" by the DOJ and has pleaded guilty to illegal marketing of drugs and has faced allegations of bribery of foreign officials. Waste Management has been accused of violating antitrust laws, labor contracts, and environmental regulation. Interestingly, all these firms have also been charged with financial misreporting over our sample period.

We rely on four different measures of financial reporting risk to examine the role of prior violations and noncompliance on financial reporting risk for the 1998 to 2011 period using all Compustat firms with required data. Our first measure captures the likelihood of managing earnings that is revealed subsequently as material financial misstatements and required restatements of accounts. Our second measure investigates a subset of restatements that are likely to be more severe in overstating assets, equity, or earnings. Our third measure identifies financial misreporting revealed to be fraudulent later via an issue of an Accounting and Auditing Enforcement Release (AAER) by the SEC. Our final measure focuses on an alleged violation of disclosure laws or GAAP (Generally Accepted Accounting Principles) later via a securities class action lawsuit.

We find that prior noncompliance is positively and significantly associated with the likelihood of subsequent financial misreporting. This result is robust across all measures of financial reporting risk after a host of firm level controls that have been shown to impact financial misreporting. The results are also economically meaningful. For example, a one standard deviation increase in our measure of firm-level prior noncompliance over its mean is associated with a 12.5% increase in the likelihood of a restatement, a 25% increase in the likelihood of a SEC enforcement, and an 11% increase in the likelihood of a private class action lawsuit. Although adding CEO compensation, governance and internal control weakness variables as controls substantially shrinks the sample, our main results remain qualitatively unchanged. Our results are also robust to a propensity scored matched control sample that accounts for self-selection in the nature of firms or industries more likely to be subject to safety violations.

Graham, Harvey, Rajgopal, and Popadak (2016a) argue that a combination of three factors drives the corporate culture at a firm: (i) the firm's aspirational values; (ii) the norms that translate such values to actual practices in the firm; and (iii) whether leadership (the CEO in particular), incentive and governance systems amplify or weaken the convergence between the firms' values and norms. As norms that translate values to practices can be similar across firms in an industry, especially because most firms in the industry face similar regulations, we examine the incremental contribution of firm-level noncompliance for financial reporting risk on top of industry wide noncompliance. Our empirical evidence suggests that a firm's noncompliance in explaining financial misreporting is incremental to the role of industry noncompliance. As mentioned, CEOs are important actors in the establishment and sustenance of the firm's corporate culture. We examine the role of the CEO in a sub-sample of observations in which a CEO has moved from one firm to another firm and has been in the CEO position for at least a period of three years over our sample period. The evidence supports the significant role of the CEO in the transmission and facilitation of the firm's noncompliance culture. Though CEO fixed effects are important in explaining misreporting, the firm's prior noncompliance, not attributed to the CEO, continues to be statistically significant in explaining financial reporting risk.

We contribute to the extant finance and accounting literatures in two ways. Our paper is perhaps, among the first, to compile a comprehensive database of violations identified by federal government enforcement agencies. The noncompliance measure can potentially be used in future work to examine a whole host of other questions. In our context, we find a strong

statistical and economically significant association between financial misreporting and past federal safety violations committed by the same firm.<sup>4</sup>

It is important to recognize that we do not merely capture idiosyncratic criteria used by the SEC to identify misreporting firms. The SEC is secretive about how it identifies firms suspected of misreporting. However, conversations with a few SEC enforcement officials that were willing to be interviewed anonymously reveal that the SEC, as of now, relies primarily on whistle blower tips and not on a database of federal violations to identify misreporting firms. All of our results are robust to controls for the F-score measure constructed by Dechow et al. (2011) from SEC AAERs. Moreover, we find robust associations between our firm-level non-compliance measure and measures of misreporting other than SEC AAERs such as GAAP class action lawsuits and serious restatements.

Second, recent papers have begun to investigate prior violations, related mostly to the CEO, to explain corporate misconduct (e.g., Biggerstaff, Cicero, and Puckett 2015, Davidson, Dey, and Smith 2015, Cline, Walking and Yore 2015). We show that the firm's, as opposed to the CEO's, past violations in unrelated areas such as product and environmental compliance are also associated with future financial misreporting.

The remainder of the paper is organized as follows. Section 2 reviews extant literature and motivates the main hypothesis of the paper. Section 3 describes the enforcement data used in the paper at length. Section 4 discusses the empirical analyses to test the main hypothesis of the paper. Finally, section 5 concludes.

## **2.0 Hypothesis**

### *2.1 Insufficient work linking firm-level noncompliance with misreporting*

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<sup>4</sup> Christensen et al (2016) consider an interesting variation on this broad theme. They argue that mine safety information, when reproduced in financial statements following a requirement of the Dodd Frank Act, is more likely to be noticed by the stock market.



There exists a vast literature on the motives and opportunities for firms and their managers to misreport financial statements.<sup>5</sup> However, there is little large-sample empirical work on the association between prior violations and financial misreporting. Recent papers have begun to investigate prior violations, related mostly to the CEO, to explain corporate misconduct. Biggerstaff, Cicero, and Puckett (2015) document that 261 firms whose CEOs were suspected of backdating option grants, are more likely to be associated with financial fraud and class action lawsuits. Davidson, Dey, and Smith (2015) find that, of the 109 CEOs investigated, the ones charged with a felony, traffic violation, domestic violence or reckless endangerment, are more likely to be associated with an SEC enforcement action. Similar evidence is also reported by Cline, Walking and Yore (2015). In contrast with this literature's emphasis on the individual decision maker's ethics or morality, there is a dearth of research linking a firm's prior violations with its misreporting. We attempt to address that gap in this paper.

We believe that two related mechanisms connect a firm's prior violations to misreporting: (i) the unobserved forces underlying the fraud triangle related to motive, opportunity and rationalization to violate rules; and (ii) the institutional norms and practices (the culture) prevalent in the firm (Mishina, Dykes, Block, and Pollock, 2010). We elaborate on these mechanisms in greater detail below.

### *2.1 Fraud triangle*

The fraud triangle predicts that three factors are found in every occurrence of financial misreporting: (i) the motive or incentives to misreport; (ii) the opportunity or the ability to

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<sup>5</sup> See DeFond and Jiambalvo, 1991; Dechow, Sloan, and Sweeney, 1995; Beasley, 1996; Klein, 2002; Agrawal and Chadha, 2005; Farber, 2005; Graham, Harvey, and Rajgopal, 2005; Burns and Kedia, 2006; Erickson, Hanlon, and Maydew, 2006; Larcker, Richardson, and Tuna, 2007; Kedia and Rajgopal, 2011; Dechow, Ge, Larson, and Sloan, 2011; Schrand and Zechman, 2012, among others.

execute the misreporting; and (iii) the perpetrator's rationalization and justification of such dishonest behavior. We posit that these three forces also explain violations that constitute the independent variable in our study.

In particular, the compulsion to hit financial targets ("make the numbers"), failing which the divisional or the plant manager's career might be at risk, potentially leads him/her to engage in questionable acts leading to an eventual environmental or labor safety violation. The opportunity to commit such violations is usually facilitated by a corporate culture that implicitly sanctions wrong doing. Implicit sanctioning of wrong doing is the unstated message from the top that more weight is attached to job completion than to the means, ethical or not, by which the task was accomplished (see Yeager 1986; Brief, Buttram, and Dukerich 2001).<sup>6</sup> For instance, Government enquiries concluded that two of the largest mining disasters in recent times, BP Deepwater's Horizon spill and Massey coal mine accident, are partly attributable to short-sighted cost cutting that compromised safety at these oil rigs and mine (see US Department of Labor 2010, National Commission on the BP Deepwater Horizon Spill and Offshore Drilling, 2011). Finally, individuals who commit wrongdoing usually have a mindset that helps them justify their questionable acts. They usually tell themselves that their dubious actions are necessary either to save their jobs, or their fellow employees' jobs or to just keep the company afloat till the firm's fortunes turn around.

However, an outside investigator can seldom directly observe good proxies for these factors. But the outsider can access a firm's past misbehavior and use it to predict financial misreporting under the plausible assumption that the motive, opportunities and rationalization underlying past violations apply to future misreporting as well.

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<sup>6</sup> Unethical organizational climates (Victor and Cullen, 1988) and cultures (Trevino, Butterfield, and McCabe, 1998) can not only encourage but also legitimize corrupt behavior.

## 2.2 Corporate culture

Regulators routinely point to organizational structures and culture as the first-order driver of illegal or unethical acts. For instance, the 1991 U.S. Sentencing Commission's Federal Sentencing Guidelines gave substantial credit to organizations found guilty of illegal behavior if they could demonstrate that they had made good faith efforts to prevent such behavior.<sup>7</sup> Following the 2008 banking crisis, several regulators have called for a change in the culture of banks to prevent future failures and bailouts (e.g., Dudley, 2014).

Graham et al. (2016a) argue that a combination of three factors determines the culture at a firm: (i) the firm's stated values; (ii) norms that translate those values to actual practices; (iii) whether the firm's leadership, incentive systems and governance facilitate or hamper the convergence of the firm's values with its norms. Though many firms have values espoused in a written code, they do not necessarily translate to practice. Mathews (1987) conducts a content analysis of 212 firms' ethical codes but finds little or no association between ethical codes and corporate illegality. Similarly, Guiso, Sapienza, and Zingales (2015) find that values stated in firms' websites are not related to performance.

The norms that translate firm values to practices are often shared by other firms in the industry. This is because all firms in an industry face similar opportunities and constraints leading to the adoption of similar norms. For example, firms in the banking industry, subject to similar regulatory constraints and pressures to report higher performance, have adopted norms, that are collectively being referred to as "culture of risk taking" by regulators. We examine how much of the firm's non-compliance is attributable to industry wide culture and norms of non-compliance.

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<sup>7</sup> The Sarbanes Oxley Act of 2002 focused on internal control systems of the firm, through section 404, as a response to high profile frauds such as Enron and WorldCom.

The leadership of the firm can be an important driver of the firm's culture. In particular, Schein (2010) contends that founders define the firm's culture. After the culture of the firm begins to take shape, founders decide which set of successors are best suited to preserve and transmit the firm's culture to the next generation. The behavior of the firm's leader (e.g., the CEO) facilitates the socialization of other employees and enables them to rationalize their behavior and misconduct.<sup>8</sup> Ashforth and Anand (2003) report how socialization into a corrupt organizational culture occurs. The authors describe the initial cooptation of newcomers, incremental increases in unethical behavior by the newcomer (leading to changes in attitude), and repeated moral compromises that bring about ultimate change in attitude among employees. We examine the role of the CEO in inculcating and facilitating a firm's culture of non-compliance.

The incentive and governance architecture of the firm also tend to interact with the firms' values, norms and leadership to influence the firm's culture. For instance, a culture that rewards outcomes rather than the process of how these outcomes are achieved is likely to be associated with unethical or even illegal behavior.

However, the cultural climate of the firm is difficult to empirically observe, especially for a large sample of firms. Some evidence on the role of culture comes from case studies such as Toffler's (2003) analysis of Arthur Andersen. Toffler (2003) lays much of the blame on Andersen's senior leadership whose implicit message to employees was to do anything to ensure clients continue with the firm, even if it meant padding prices or engaging in other questionable

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<sup>8</sup> Employees find it difficult to rationalize their behavior if they see that senior managers live by the strict ethical standards espoused by the company. These acts of rationalization usually start as small compromises which eventually snowball into large transgressions.

practices.<sup>9</sup> Kedia, Rajgopal, and Zhou (2013, 2014) document a change in the culture at Moody's, one of the major credit rating firms, after its IPO. They argue that increased market pressures, when Moody's went public, caused a change in the culture from one that valued ratings accuracy to one that focused on market share and profitability.

We posit that although culture is difficult to observe directly, its outcomes are not. A weak ethical climate is more likely to be associated with greater occurrence of violations, regardless of whether such violations relate to environmental, product or safety issues or to financial reporting. Organizational norms that establish expectations about legal compliance are likely to drive compliance or lack thereof in all dimensions of a firm's interactions with regulators. This leads to our primary hypothesis:

*H1: A firm's prior record of compliance with environmental, product, worker safety and anti-trust legislation will be positively associated with a likelihood of future financial misreporting.*

### **3.0 Data**

#### *3.1 Measuring prior compliance record*

Our measure of a firm's prior compliance record relies on a comprehensive list of enforcement actions and compliance reports that we hand collect from the websites of several U.S. federal government enforcement agencies. These enforcement actions cover a broad range of compliance activities against U.S. companies including (i) product safety compliance regulated by U.S. Food and Drug Administration (FDA); (ii) fair trade and business practices compliance by U.S. Department of Justice (DOJ); (iii) employer civil rights and employee safety compliance by U.S. Department of Labor (DOL) and Occupational Safety & Health Administration (OSHA); and (iv) environmental safety compliance with regard to release of

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<sup>9</sup> Clinard (1983) also documents that behavior and philosophy of top managers was a determinant of illegal acts. His conclusions were based on interviews of 64 retired managers from Fortune 500 corporations.

toxic chemicals and waste management administered the by Environmental Protection Agency (EPA).<sup>10</sup>

From the websites of these government agencies, we collect details of the enforcement actions and company names to manually map these to company names in the CRSP name history file augmented by the names of each firm's subsidiaries from Exhibit 21 of its 10-K filing from the SEC's Edgar database. Data on subsidiaries is important because several enforcement actions, especially from OSHA and EPA, are filed at the firm's facility level, including plants and factories related to subsidiaries of the parent company. When the sanctioned entity is a subsidiary of a public listed U.S. company, we assign the enforcement action to the parent firm. A brief summary of these four categories follows. Greater detail can be found in Appendix A.

### *3.11 Product related violations*

The extent to which a firm complies with product safety regulations is constructed based on the two types of enforcement actions by the FDA. The first data source is product recalls and market withdrawals by firms. The FDA publishes news releases and notices on product recalls initiated either voluntarily or involuntarily by companies subsequent to the FDA's enforcement activities when the FDA deems that products potentially present a significant or serious risk to the consumers or users of the product.<sup>11</sup> The second source is warning letters issued by the FDA

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<sup>10</sup> Several papers in the law, economics, management, and sociology literatures have empirically evaluated factors that potentially explain regulatory sanctions from some of the above agencies (Lane 1953, Burton 1966, Posner 1970, Palmer 1972, Asch and Seneca 1976, Clinard, Brissette, Petrashek, and Harries, 1979; Simpson 1986, Baucus and Near 1991, and Hill, Kelley, Agle, Hitt, and Hoskisson 1992). These papers mostly use small hand collected samples and examine whether such wrongdoing increases or decreases with environmental scarcity, industry concentration and firm. It is not our intention to add one more determinant of these violations. Instead, we rely on an updated sample of such violations to predict future financial misreporting.

<sup>11</sup> Note that "voluntary" recalls are unlikely to be purely voluntary in nature. The firm reckons that it is cost-effective to voluntarily recall a defective product rather than risk punitive regulatory action and legal claims in case a defective product is allowed to circulate in the marketplace.

during its routine enforcement inspections if a facility was found to violate any applicable regulations within the FDA's purview.

We count the number of product recalls and withdrawals by a firm, and warning letters issued to the firm by the FDA in a year. Some industries such as Food and Kindred Products are more likely to face FDA related enforcement than others. Hence, we construct our measure of product safety noncompliance, within a firm's industry, by ranking all firms in the same two-digit SIC code into deciles based on the total number of FDA related enforcements (including the total number of product recalls, product withdrawals, or warning letters in a year). Firms placed in the top decile with a rank of ten have the most FDA enforcements within their industry, and are classified as the most noncompliant in the industry. This within-industry, annual decile rank captures the intensity of noncompliance activities of a firm relative to other firms in the same industry. It is likely that both a firm in the food industry and one in the business service industry has a rank of ten on this index, but the total number of FDA enforcement actions against the firm in the food industry is likely to be greater than that for a firm in the business services industry.

### *3.12 Anti-trust violations*

Enforcement actions by the DOJ and the FTC are related to violations of federal antitrust laws and complaints and investigations on unfair, deceptive and fraudulent business practices (see Appendix A for further details). We count the number of times a firm has been targeted by FTC and DOJ investigations in a given year. As industries differ in the likelihood of being targeted for antitrust issues, we rank all firms into deciles within its industry at the two-digit SIC level. As before, firms with a rank of ten are in the top decile of enforcement actions within their industry are regarded as the most noncompliant for antitrust issues.

### *3.13 Labor related violations*

We collect data on employee safety related noncompliance as well as employee civil rights related noncompliance from the DOL and OSHA websites. Specifically, we count the total number of violations of labor safety requirements, OSHA standards, and the number of violations related to accidents, injuries, fatalities that occurred in the facilities of the firm. We also count the aggregate number of violations related to minimum hourly wage and overtime pay, as well as the total number of violations against Freedom from Employment Discrimination and other related labor laws. As the likelihood of being targeted for labor violations varies by industry, we rank all firms on the number of labor related enforcement actions within their two digit SIC code. A place in the top decile with a rank of ten implies the most noncompliance with labor laws. See Appendix A for a detailed description of regulation and enforcement actions taken by these government agencies.

### *3.14 Environmental violations*

Lastly, we collect data on firms' compliance with environmental safety. The safety record is based on the annual toxics release inventory program concerning on-site toxic chemical releases and waste management at the facility (plant or factory) level. The program is administered by the EPA and it lists the emissions of specific toxins that need to be reported. However, the EPA is silent about the "safe" threshold for the total amount of chemical emissions at the facility level. Unlike other Federal agencies, the EPA does not clearly identify what constitutes a violation. Therefore, we aggregate the annual facility-level toxic emissions at the firm level and scale it by the total annual sales of the firm to account for the impact of firm size on the quantity of emission. We use this measure to proxy for the intensity of toxic emissions produced by the firm. The intuition is that the greater the emissions, adjusted for the firm's size,



the greater the risk associated with environmentally harmful outcomes. As before, we rank all firms in the two-digit SIC into deciles based on this firm-level measure of toxic emission intensity for the year. A firm placed in the top decile, with a rank of ten, is labeled as the one at the greatest risk of violating regulations related to environmental safety.

### *3.15 Annual measure of prior noncompliance*

To obtain a measure of overall noncompliance, we aggregate the decile-ranks of product, antitrust, labor and environmental noncompliance discussed above. This aggregate measure, referred to as annual noncompliance, equally weights each dimension of noncompliance. The maximum possible value is 40 and occurs when the firm has a rank of ten, or is classified in the top decile, on all the four dimensions. The minimum possible value is zero for firms in our sample that are compliant over all four dimensions in the year. A higher value of the annual noncompliance measure implies higher noncompliance by a firm in that year.

We acknowledge two limitations of this measure. First, the data availability of the enforcement material by federal government agencies varies substantially especially with respect to the beginning of coverage. We choose 1994 as the starting year to best utilize the available information.<sup>12</sup> Second, the measure gives equal weight to the four dimensions of noncompliance that we examine and does not take into account the severity of the nature of the violation in each category. However, given the complexity and possible subjectivity involved in ascertaining how to weight disparate data for each dimension, we end up assigning an equal weight to each dimension as a potentially reasonable compromise.

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<sup>12</sup> We do not have the information on product safety compliance till 2004, though the warning letters from FDA start from 1996. This implies that for the years 1994 and 1995, the maximum value of noncompliance is 30. In our final tests, we examine noncompliance by the firm over a five-year period. Consequently, a maximum value of 30 for 1995 and 1996 is unlikely to have a material effect on the main results.

### 3.2 Descriptive statistics

Table 1 reports the distribution of noncompliant years across industries. Business Services has the most number of noncompliant firm years. Of the 1,877 firms in this industry, 779 firms are tainted, i.e., the firm is noncompliant in at least one year.<sup>13</sup> The noncompliant years account for 39.5% (2,637/6,668) of observations for tainted firms and for 23% (2,637/11,484) of all industry years. Electronic and other Electric Equipment has the second highest number of noncompliant years. In contrast, Social Services, reported at the bottom of Table 1, has a very low incidence of noncompliance. Overall, we find that, of the 12,578 unique firms over the sample period 1994 to 2011, 4,621 firms are tainted, representing 36.7% of all firms in their associated industry. Among the tainted firms, roughly half of their firm-years are noncompliant, which accounts for about 22.2% of all firm-years in Compustat during the same sample period.

Table 2 examines the difference between compliant and noncompliant years of tainted firms (Panel A) and between tainted firms and clean firms (Panel B). Firms are classified as clean if they have no noncompliant year during our sample period. Panel A shows that firms are noncompliant when they are older and larger, although noncompliant years tend to be more profitable, as shown by a higher return on assets, and experience lower growth as captured by the lower market to book ratio than the compliant firm-years.

Panel B of Table 2 shows that clean firms are younger, smaller, less profitable and experience lower growth relative to tainted firms. All firm characteristics examined are significantly different between compliant and noncompliant years of tainted firms, and between tainted and clean firms. We therefore control for these firm characteristics in our analysis.

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<sup>13</sup> The sample includes all firms in Compustat for the years 1994-2011 with required data. This yields a total of 102,984 firm years belonging to 12,578 distinct U.S. publicly listed firms.

### *3.3 Measure of persistent noncompliance*

Thus far, we have measured whether firms are noncompliant in any given year. However, we intend to construct a measure of past noncompliance that captures the motive, opportunities, and rationalization underlying such noncompliant behavior resulting from a collection of beliefs, customs and values of an organization that are likely to persist over a relatively long period of time within the organization. Graham et al (2016b) note that corporate cultures are sticky and relatively hard to change in the short run. We therefore measure a firm's more persistent noncompliance record by averaging the annual noncompliance rank over the past five-year period, rather than rely on just the past one year's noncompliance rank.

To exploit variation in a firm's past noncompliance record, we sort firms into quartiles based on the average annual noncompliant rank over the five-year period. The first (second) quartile comprises of firms with a highest (moderate) level of noncompliance and is referred to as repeat (frequent) offenders. The third group, referred to as sporadic offenders, has a lower level of noncompliance, and finally the fourth group, labeled the clean group, comprises of firms that are fully compliant over the entire sample period.<sup>14</sup> Table 3 lists the 20 largest firms, sorted by annual sales, in each of the four categories.

It is interesting to note that some of the firms listed in Table 3, especially in the repeat offender category, are consistent with known anecdotal evidence. For example, Caterpillar Inc., the largest of the repeat offenders, is notorious for its recurrent violations of the Clean Air Act. In 2011, Caterpillar Inc. was charged by the EPA and the DOJ for shipping noncompliant engines with excessive emissions. Another repeat offender, Waste Management Inc., one of the largest industrial and residential garbage collectors, was charged with the violation of antitrust

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<sup>14</sup> Firms with no violations are classified as clean firms. Among firms that have a positive value of noncompliance culture we sort them into three groups based on index of noncompliance.

laws in 1987. They allegedly colluded with other waste haulers to allocate customers in Florida. In 2007, the company locked out 500 IBT (The International Brotherhood of Teamsters) labor union workers in employment contract disputes on workers' healthcare benefit matters. Waste Management agreed to pay a record settlement with the Commonwealth of Massachusetts for a host of environmental violations at some of their plants in 2011. Alcoa, Inc., another repeat offender, was ranked by the Political Economy Research Institute as 15<sup>th</sup> among corporations emitting airborne pollutants in the United States. In 1998, the EPA issued an order requiring Alcoa to excavate and dispose the contaminated lands due to its improper management of toxic emissions. Pfizer Inc., the world's largest pharmaceutical company by revenue, was explicitly labeled a "repeat offender" by DOJ prosecutors. In 2009, Pfizer pleaded guilty to the illegal marketing of the arthritis drug for uses unapproved by the FDA, which was the fourth such settlement with the DOJ in the past ten years. The company was sanctioned by DOJ again under the Foreign Corrupt Practices Act (FCPA) in 2012 for allegations of bribing officials in foreign countries. As mentioned before, all four firms have also been involved in alleged financial reporting problems at some point in our sample period.

Not surprisingly, repeat offenders with a history of noncompliance are in violation in 81% (untabulated) of the years in the sample period. In contrast, sporadic offenders (clean firms) that do not display persistent noncompliance and are in violation in only 10% (none) (untabulated) of the years.

#### **4.0 Empirical Analysis**

In this section, we discuss the empirical model and present results related to the association between past noncompliance record and the financial reporting risk of the firm.

#### 4.1 Empirical model and data

We employ the following pooled logistic regression model to test our hypothesis that a firm's past noncompliance record is associated with higher financial reporting risk. All regression estimations include industry and year fixed effects. As we use a panel dataset for the regression analyses, the standard errors are clustered at the firm level (Petersen, 2009).

$$\begin{aligned} \text{Prob}(\text{REPORT\_RISK}_{i,t+1} = 1) = & \beta_0 + \beta_1 \log \text{NC\_INDEX}_{i,t} + \beta_2 \log \text{MV}_{i,t} + \beta_3 \text{ROA}_{i,t} \\ & + \beta_4 \text{ABRET}_{i,t} + \beta_5 \text{MTOB}_{i,t} + \beta_6 \text{LEV}_{i,t} + \beta_7 \text{SALE\_GROWTH}_{i,t} + \beta_8 \text{STDRET}_{i,t} \\ & + \beta_9 \log \text{FIRMAGE}_{i,t} + \beta_{10} \text{BIG\_N}_{i,t} + \beta_{11} \text{FINANCING}_{i,t} + \beta_{12} \text{IND\_MTOB}_{i,t} \\ & + \beta_{13} \text{FREE\_CASH}_{i,t} + \beta_{14} \text{F\_SCORE}_{i,t} + \text{Industry Dummies} + \text{Year Dummies} + \varepsilon \quad (1) \end{aligned}$$

In the model, the variable of interest is *NC\_INDEX*, our measure of a firm's noncompliance record over the past five years. We expect the coefficient on *NC\_INDEX* to be positive and significant. As the value of *NC\_INDEX* is highly left skewed with a significant number of observations assuming a value of zero, we use the natural log transformation of one plus this variable in our regression analyses.

Our dependent variable is firms' financial reporting risk. We use four measures to capture different dimensions of such reporting risk. The first measure is an accounting restatement, referred to as *RESTATE*, and is obtained from the Audit Analytics database for the period from 2000 to 2011. This database has been used extensively in the literature (e.g., Johnston, Li, and Luo 2014; Srinivasan, Wahid, and Yu 2015). The indicator variable *RESTATE* takes the value of one for violation years when the firm misstated its reported income as opposed to the year in which the restatement or correction of prior misreporting is announced to the market. To capture potentially more substantive restatements, we also create an additional

indicator variable, referred to as *IN\_RESTATE* that takes the value of one if the restatement was an income decreasing restatement and zero otherwise.<sup>15</sup>

The third measure, *AAER*, is an accounting and auditing enforcement release issued by the SEC from 1971 to 2011 and is obtained from the University of Berkeley's Center for Financial Reporting and Measurement. As 1998 is the first year for which we have a measure of firms' past noncompliance record, we are left with 476 *AAER* violation years during our sample period with required data on CRSP and Compustat. The indicator variable *AAER* takes the value of one for years that are identified as a violation year by the SEC enforcement action, and is coded as zero otherwise.

Our last measure is private class action lawsuits from Stanford Class Action Clearinghouse over the period from 1998 to 2011. The indicator variable, *CLASS*, take the value of one in years for which a firm allegedly violated GAAP or disclosure regulation, and zero otherwise, in line with the existing literature that uses this dataset.<sup>16</sup>

The control variables included are guided by prior studies that have examined cross-sectional variations in financial reporting risks.<sup>17</sup> In particular, we include the natural log of market value (*logMV*) and the natural log of firm age (*logFIRMAGE*) to control for firm size and age. We control for firm performance by including return on assets (*ROA*) and abnormal stock return (*ABRET*). Market to book ratio (*MTOB*) and sales growth (*SALE\_GROWTH*) are added to control for growth and financial leverage (*LEV*), and stock return volatility (*STDRET*) to control

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<sup>15</sup> If there is no information on the magnitude of the restatement, *IN\_RESTATE* is coded as missing. This eliminates many small restatements which usually do not report the amount of the related restatement.

<sup>16</sup> We use all class action lawsuits irrespective of the status. We consider class action lawsuits, regardless the final conclusions concerning the case, represent allegations of financial misrepresentation.

<sup>17</sup> See for example Richardson, Tuna, and Wu (2003), Cheng and Warfield (2005), Burns and Kedia (2006) and Povel, Singh, and Winton (2007) among others.

for firm risk. Finally, we also include an indicator variable for Big N auditor (*BIG\_N*) to capture auditor quality, a dummy variable indicating whether a firm issued debt or equity (*FINANCING*) in the year to capture pressures from external financing, and industry market to book (*IND\_MTOB*) to account for industry-level pressures to misreport financial statements.

Prior work by Dechow, Ge, Larson, and Sloan (2011) finds that *F\_SCORE* and free cash flow (*FREE\_CASH*) influence a firm's reporting choices. However, the inclusion of these variables in our regression analyses significantly reduces our sample size on account of the missing data required to calculate these two variables. Therefore, we report estimation results with and without these two variables. Detailed definitions of all variables used in regression analyses can be found in Appendix B.

Table 4 shows that our sample attrition process leads to a final sample of 57,920 firm year observations over our sample period. The sample is smaller in the regression analyses when accounting restatements are considered because restatement data is available only after 2000. Table 5 provides the descriptive statistics of all the variables used in our estimation. As shown in Panel A of Table 5, the mean (median) value of our index of past noncompliance is 1.27 (0.00). About 8% of the sample is classified as repeat offenders while 5% is classified as sporadic offenders. In addition, 12% of years are associated with a restatement, and 3% are associated with an income increasing restatement. The latter can be understated as the information on the amount restated is often missing in the Audit Analytics dataset. The percentage of firm-years that are sanctioned by the SEC via an enforcement action is the lowest, accounting for only 0.8% of firm years, while 1.35% of the firm years are associated with class action litigation.

Panel B of Table 5 shows that the correlations among the four misreporting measures range from 0.01 to 0.43, suggesting that these four measures capture potentially different dimensions of a firm's financial reporting risk. Not surprisingly, past noncompliance record is positively and significantly correlated with all four measures of financial reporting risks.

#### 4.2 Regression analyses

Panel A of Table 6 presents our baseline results associating firms' past noncompliance with financial reporting risk. The results show a positive and significant coefficient for our measure of past noncompliance record (*logNC\_INDEX*) in all eight regression models.<sup>18</sup> This suggests that financial misreporting is more prevalent when firms have a greater level of past noncompliance. Although the inclusion of *F* score and free cash flow reduces the number of observations, it does not materially impact the results.

The effect of firms' past noncompliance on financial reporting risk is not only statistically significant, but also economically significant. To illustrate, we rely on the full model in column (2) of Panel A in Table 6 and estimate the change in the probability that a firm will restate its financial statements in the next period when a firm's noncompliance record increases by one standard deviation over the sample mean value, holding all the other variables at their mean values. Un-tabulated computations suggest that an increase of one standard deviation (0.75) in the value of *logNC\_INDEX* from its sample mean of 0.40 increases the probability of a restatement from 12% to 13.1%, which represents a 9.2% ( $1.1\%/12\%=9.2\%$ ) increase.<sup>19</sup> The effect of noncompliance record is as big as the marginal effect of stock returns (9.6%) and the

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<sup>18</sup> We also replace the continuous measure of past noncompliance record (*logNC\_INDEX*) with a dummy variable indicating whether or not a firm is associated with any noncompliance in the past five years in the prediction model of financial reporting risk. Our results are robust to this alternative definition of past noncompliance.

<sup>19</sup> We use the extended specification estimated in columns (2), (4), (6) and (8) for economic significance. The economic significance is calculated under the assumption that all other variables are fixed at their mean values.



Big N auditor (8.2%) on the likelihood of a restatement. Using the same approach, an increase of one standard deviation in the firm's noncompliance record from its mean, increases the probability of an income increasing restatement by 12.5%, of an AAER by 25%, and of class action litigation by 11.1%.<sup>20</sup>

The results for the control variables are in line with our expectations. Financial reporting risk is higher when a firm has (i) higher stock returns; (ii) higher leverage; (iii) is younger; and (iv) is more susceptible to accounting fraud risk, as indicated by *F\_SCORE*.

#### *4.2.1 Controlling for CEO compensation*

One could argue that an important aspect of a firm's past noncompliance record is high-powered CEO incentives. If that is the case, controlling for CEO incentives may considerably weaken or eliminate the effect of past noncompliance on financial reporting risk. Prior studies have documented a positive association between CEO equity incentives and the likelihood of a firm's financial misreporting (Burns and Kedia 2006; Erickson, Hanlon and Maydew 2006; Armstrong, Jagolinzer, and Larcker 2010; and Armstrong, Larcker, Ormazabal, and Taylor 2013). Therefore, we include CEO equity compensation incentives in our baseline regression and report the results in Panel B of Table 6. We follow Core and Guay (2002) and measure CEO equity incentives as the change in the value of a CEO's stock and option portfolio to a 1% change in stock price of the firm (*CEO\_DELTA*) using Execucomp data over our sample period from 1998 to 2011 (detailed variable construction can be found in Appendix B). Requiring compensation data reduces the sample substantially by approximately 68%.

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<sup>20</sup> The probability of an income increasing restatement increases by 12.5% from 0.8% to 0.9%. The probability that a firm is subject to an AAER enforcement increases by 25% from 0.44% to 0.55%. Finally, the probability of being subject to class action litigation increases by 11.1% from 0.9% to 1.0%.

In this much smaller dataset, the average value of *CEO\_DELTA* is \$522,360 (See Panel A of Table 5). This implies that on average, CEO compensation increases by \$522,360 for a one percent increase in stock price. As *CEO\_DELTA* is right-skewed, we include its natural log transformation in the regression analyses shown in Panel B of Table 6.

Consistent with our expectations and prior studies, the coefficient on CEO equity incentives is positive and significant. A higher level of CEO equity pay-sensitivity is associated with a higher level of financial reporting risk. More importantly, the coefficient on our measure of past noncompliance record continues to be positive and significant across all four specifications. In sum, controlling for CEO incentives does not qualitatively impact the baseline results that document a positive association between a firm's noncompliance record and its financial reporting risk.

#### *4.2.2 Controlling for governance*

Ashforth, Gioia, Robinson and Trevino (2008) argue that organizations that have noncompliant records are likely to have deficient formal systems designed to prevent unethical and illegal behavior. These include processes for senior executive oversight, codes of conduct, communication and training programs for staff and management, anonymous reporting systems to facilitate whistle blowing, and clear disciplinary measures for misconduct should such behavior come to light. As poor governance might potentially affect both a firm's noncompliance record, as well as a firm's financial reporting risk, it is important to control for firm-level variation in corporate governance. We use four different measures to capture a firm's corporate governance. These are (i) the extent of the dominance of the CEO in the firm; (ii) the composite G-index as in Gompers et al., 2003; (iii) the E-index of board entrenchment (Bebchuk,

Cohen, and Ferrell, 2009); and (iv) a dummy variable indicating whether a firm's internal control is materially weak.

We follow Bebchuk and Peyer (2007) and measure CEO dominance as the share of a CEO's compensation to the pay of the C-suite (*CEO\_SLICE*) using compensation data from ExecuComp. Requiring data on governance variables substantially shrinks the sample. In the smaller data we find that *CEO\_SLICE* is 42% (Panel A Table 5). Controlling for CEO dominance in our estimation does not change the results materially (See Panel C, Table 6).<sup>21</sup> Interestingly, the coefficient on CEO dominance is insignificant.

Next, we measure the firm's governance's structure using the G-index and E-index of board entrenchment. The data on G-index is obtained from the RiskMetrics database for the years 1998-2006 and that for the E-index is obtained from Professor Lucian Bebchuk's website for the years 1998-2008. The average value of the *G\_INDEX* is 8.96, while that of *E\_INDEX* is 2.38 in our sample.<sup>22</sup> Columns 2 and 3, of Panel C in Table 6, report results after the inclusion of the G-index and the E-Index respectively as additional control variables. The results are similar to those reported earlier although the statistical significance on *logNC\_INDEX* is weaker. The coefficients on the governance variables themselves are statistically insignificant.

Finally, we control for the possibility of weak internal control systems in a firm. Kinney (2000) points out that weak internal control systems can facilitate noncompliance with applicable laws and regulations. Poor internal controls have been linked to weak financial reporting quality (Doyle, Ge, and McVay, 2007), greater information uncertainty (Beneish, Billings, and Hodder,

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<sup>21</sup> For Panel C of Table 6, we use class action litigation as the measure of financial reporting risk. The results using other measures of financial reporting risk are qualitatively similar and therefore not tabulated for brevity.

<sup>22</sup> The *G\_INDEX* aggregates twenty-four variables indicating the presence of individual anti-takeover provisions, while the *E\_INDEX* is based on six of these twenty-four provisions. A higher value of both measures indicates greater restrictions. The two measures are constructed every two years and therefore we assume the same value for these variables for the following year.

2008), and a higher cost of capital (Ashbaugh-Skaife, Collins, and Kinney, 2009; Ogneva and Subramanyam, 2007). We use the data reported in section 404 of the Audit Analytics database from 2004 to 2011 to construct the measure of internal control weakness. Specifically, the indicator variable *IC\_WEAK* takes the value of one if a firm has reported internal control weakness in a given year and is set to zero otherwise. The mean value of *IC\_WEAK* is 0.07, indicating that 7% of the sample has reported material internal control problems. Controlling for internal control weakness does not materially impact the results (Column 4, Panel C of Table 6). The coefficient of internal control weakness is itself not significant.

#### *4.2.3 Repeat versus sporadic offenders*

As discussed earlier, we categorize firms in the highest quartile of our measure of past noncompliance as repeat offenders while those in the next two quartiles as frequent and sporadic offenders respectively. Firms in the lowest quartile of noncompliance are the clean firms. As repeat and frequent offenders are likely to have a stronger record of past noncompliance, we expect such firms to exhibit a greater association with financial reporting risk. We estimate the effect of noncompliance on financial reporting risk separately for these groups by including interaction effects.

As seen in Table 7, the coefficients on the interactions of past noncompliance with the indicator variable for repeat and frequent offenders are all positive and significant in all of the eight specifications estimated. In addition, the coefficient on the interaction term between past noncompliance record and the indicator variable for sporadic offenders is positive and significant in six of the eight specifications. More important, the magnitude of the coefficient on past noncompliance record is the largest for repeat offenders and smallest for the sporadic offenders.

Chi-square statistics testing the equality of the coefficients on these three interaction variables show that these differences are significant at the conventional  $p$ -values.

For robustness, we collapse the three interaction terms into three indicator variables (e.g., the interaction of  $\log NC\_INDEX$  and  $SPORADIC$  would be replaced by an indicator variable intended to capture the combined impact of these interacted variables. Inclusion of these newly created indicator variables is more robust but does not exploit within-category differences of the effect of the magnitude of past noncompliance record on future financial reporting risk. In untabulated results, we find that the coefficients on these three indicator variables remain positive and significant, although the statistical significance level is slightly weaker. Overall, the results are consistent with the hypothesis that a noncompliant record is positively associated with financial misreporting risk in future periods.

#### *4.3 Industry norms*

As discussed earlier, a shared regulatory and macro-economic environment for firms in an industry may cause similarities in noncompliance behavior across firms in the same industry. Further, noncompliance within a firm is likely to be enhanced by prevailing industry norms. Sonnenfeld and Lawrence (1978, 149) cite a convicted executive as saying, “our ethics are not out of line with what was being done in this company, and in fact, in the industry for a long time.” In this section, we examine what, if any, of the fraction of the firm noncompliance is related to industry norms about noncompliance.

We compute the average value of past five years’ noncompliance record for all firms in the same two-digit SIC code, excluding the firm itself, to capture the industry’s norms on the

noncompliance.<sup>23</sup> We include this variable along with our measure of firm level noncompliance. As seen in Table 8, the coefficient on industry wide noncompliance is positive and significant at the 1% level. Firms operating in industries characterized by a higher level of past noncompliance are significantly more likely to engage in financial misreporting. Along with the importance of industry level norms, past noncompliance at the firm level also remains positive and significant in all specifications. It is worth noting that the magnitude of the coefficient on past industry noncompliance practice is larger than that at the firm-level. These results suggest that both industry noncompliance norms as well as firm level noncompliance significantly impact financial reporting risks at the firm level. Regulators are likely to be more effective if they focus their efforts not just on firms with a past of regulatory noncompliance but also on industries with a higher incidence of noncompliance.

#### *4.4 Role of the CEO in noncompliance*

As discussed earlier, founders and CEOs are important contributors to either the preservation and/or the change of the firm's culture. A CEO inculcated in the culture of noncompliance is likely to carry these norms to the next firm he leads – facilitating the transmission of these practices. Alternatively, a firm with a culture of noncompliance is more likely to hire CEOs from firms that have noncompliant norms facilitating the continuation of their culture. In this section, we examine the importance of the CEO in the transmission or facilitation of noncompliant culture. This analysis is similar in spirit to prior studies such as Bertrand and Schoar (2003) and Ge, Matsumoto, and Zhang (2011) who find that managers leave

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<sup>23</sup> It is worth noting that our index of a firm's past noncompliance record was specifically constructed after adjusting for industry practices. In other words, we place a firm in the top decile of its industry for that year if the firm has the greatest number of noncompliance activities relative to all other firms in the same industry-year.

imprints of their own “style” when they make investment, financing and reporting decisions on behalf of firms.

To examine the importance of CEO to the transmission and facilitation of noncompliance culture, we track 298 individual CEOs who have worked in multiple firms in Execucomp for at least three years over our sample period. This sample includes 5,769 firm-year observations related to these CEOs. As in Bertrand and Schoar (2003), we include individual CEO fixed effects and re-estimate equation (1) in this subsample. As seen in Table 9, CEO fixed effects are statistically significant in explaining misreporting, as shown by the joint chi-square tests that are statistically significant in six of the eight specifications. The results suggest that CEOs may play a significant role in the transmission or facilitation of norms that are associated with noncompliance. Interestingly, the firm’s past noncompliance record continues to be positive and significant in six of the eight specifications.

#### *4.5 Propensity score matched sample*

As noted in panel B of Table 2, the tainted sample, consisting of firms that are pulled up by various federal agencies identified in our paper, is different from the average Compustat firm along several dimensions. Although we have controlled for these differences in our regression analyses, as an additional precaution, we also rely on a propensity-score matched design to create a counterfactual control group to analyze the effect of past noncompliance on financial reporting

risks.<sup>24</sup> Specifically, we estimate the propensity score based on the likelihood that a firm would be noncompliant using a logit based estimation of the following model:

$$\begin{aligned} \text{Prob}(\log NC\_INDEX_{i,t+1} > 0) = & \beta_0 + \beta_1 \log MV_{i,t} + \beta_2 MTOB_{i,t} + \beta_3 SALE\_GROWTH_{i,t} \\ & + \beta_4 ROA_{i,t} + \beta_5 LEV_{i,t} + \beta_6 ABRET_{i,t} + \beta_7 STDRET_{i,t} + \beta_8 \log FIRMAGE_{i,t} \\ & + \beta_9 BIG\_N_{i,t} + \text{Industry Dummies} + \text{Year Dummies} + \varepsilon \end{aligned}$$

For each firm with a non-zero past noncompliance record (i.e., treatment firms), we match with replacement (i) another firm in the same industry-year that is compliant (i.e., control firms); and (ii) has the closest predicted probability value estimated from the above equation with a maximum difference from the predicted probability of just one percent. Using this measure of caliper distance, we are able to generate a match sample for 9,731 firm-years. Untabulated results reveal no statistical difference between the treatment and control firms in their probability of becoming tainted. Importantly, untabulated univariate analyses show that treatment firms exhibit significantly higher likelihood of misreporting for all measures other than litigation. To control for any remaining covariate-imbalance between our treatment and control firms, we also employ multivariate analyses that include all the covariates used in the propensity score matching estimation model in the first stage. We then re-estimate the relationship between noncompliance culture and a firm's financial reporting risk. Un-tabulated results suggest that

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<sup>24</sup> A few caveats are in order. First, propensity score matching relies on the effects of observable variables in the estimation of the treatment effects. Second, matching typically results in a reduced sample size, which can potentially change the composition of the noncompliance firms and reduce the power of our tests. Therefore, we caution readers against generalizing our propensity score results to the full sample.



our proxy for past noncompliance loads as statistically significant in two of our four measures of financial reporting risk (likelihood of a restatement *RESTATE* and the SEC enforcements *AAER*).

#### *4.6 Correlations with KLD data*

Recent papers use corporate social responsibility indices from KLD (now relabeled as MSCI) and document that such indices are associated with lower insider trading (Gao, Lisic and Zhang 2014), fewer tax-avoidance strategies (Hoi, Wu and Zhang 2013) and lower discretionary accruals (Kim, Park, and Wier, 2012). While KLD rates firms on multiple dimensions including environment, corporate governance, community, human rights, employee relations, diversity, and customers, the distinctive difference between our sample and the KLD rating lies in the coverage of the two samples, and our focus on firms' noncompliance on multiple dimension of corporate social responsibility. More specifically, KLD evaluates S&P 500 firms and extends coverage to the Russell 3000 sample only in 2003. This restriction significantly limits the coverage of their data. Our measure uses data from the prior five years to capture a firm's relative persistent history of noncompliance. If we impose the same requirement of prior five years of data availability on KLD to construct a comparable measure of a firm's past negative corporate social responsibility behavior, the filter would further reduce the size of the usable KLD sample. In fact, we find a significant positive correlation of only 0.06 between our index of noncompliance and the average value of KLD score over the past five years.

### **5.0 Conclusions**

In this paper, we construct a measure of a firm's past noncompliance based on its record of violations in a wide range of activities spanning product safety, antitrust issues, workplace safety, worker civil rights, and environmental safety. The data is hand collected from websites of several federal enforcement agencies including the Food and Drug Administration (FDA), the

Department of Justice (DOJ), Federal Trade Commission (FTC), Mine Safety and Health Administration (MSHA), Occupational Safety and Health Administration (OSHA), Office of Federal Contract Compliance Programs (OFCCP), Wage and Hour Division (WHD), and the Environmental Protection Agency (EPA). To the best of our knowledge, this is one of the most comprehensive datasets on firm's noncompliance history and covers 22.2% of all Compustat firm years during the same sample period.

We find an economically significant relation between a firm's past noncompliance and the likelihood of the firm's financial misreporting. The results are robust to a host of firm characteristics and different measures of financial reporting risk. A noncompliant environment is likely to be correlated with high-powered CEO incentives and lax governance. To ensure that a noncompliant record is more than a firm's compensation and governance systems, we control for these in our estimations. We find that the coefficient on a firm's past noncompliance continues to be significant after controlling for compensation and governance. Moreover, the impact of firm-level noncompliance is not subsumed by industry wide noncompliant practices or by individual CEOs.

The paper contributes to the newly emerging literature on the role of corporate culture in explaining deviant behavior. Future work can hopefully further our understanding of the impact of noncompliance on other corporate activities.

## Appendix A: Summary of Data Sources

Category	Govt. agency	Enforcement agency	Description of the data	Year covered	Link to the files
Product related weak compliances	U.S. Food and Drug Administration (FDA)		News releases and other public notices on product recalls and market withdrawals that firms voluntarily or involuntarily execute as a result of FDA enforcements. These product recalls and market withdrawals are typically triggered when FDA considers the related products may potentially present a significant or serious risk to the consumer or user of the product.	2004-2011	<a href="http://www.fda.gov/Safety/Recalls/Archive/Recalls/default.htm">http://www.fda.gov/Safety/Recalls/Archive/Recalls/default.htm</a>
		Compliance & Enforcement	Warning letters issued by the FDA during enforcement inspections of company facilities. A company will be issued a warning letter if it is found to violate the Federal Food, Drug, and Cosmetic Act, the Tobacco Control Act, and other applicable regulations within FDA enforcement area.	1996-2011	<a href="http://www.fda.gov/ICECI/EnforcementActions/WarningLetters/default.htm">http://www.fda.gov/ICECI/EnforcementActions/WarningLetters/default.htm</a>
Trade related weak compliance	U.S. Department of Justice (DOJ)	Antitrust division	Antitrust violations cases filed and charged by DOJ.	1994-2011	<a href="http://www.justice.gov/atr/cases/index.html#page=page-1">http://www.justice.gov/atr/cases/index.html#page=page-1</a>
	Federal Trade Commission (FTC)	Enforcement Department	Cases and proceedings filed and charged under FTC on violations of federal antitrust laws that prohibit anticompetitive mergers and other business practices that could lead to higher prices, fewer choices, or less innovation. It also includes complaints and investigations conducted by FTC's Bureau of Consumer Protections on unfair, deceptive, and fraudulent business practices.	1994-2011	<a href="http://www.ftc.gov/enforcement/cases-proceedings">http://www.ftc.gov/enforcement/cases-proceedings</a>

Employee safety-related weak compliance	U.S. Department of Labor (DOL)	MSHA	Annual statistics concerning employee safety accidents related to mine operators. The information includes injuries in terms of lost days, the percentage of injuries and illnesses over the total employee hours worked during the year, the amount of penalty for the mine operators as a result of the injuries, and the number of counts of violations of safety regulatory requirement based on Mine safety and health administration (MSHA) violations.	1994-2011	<a href="http://ogesdw.dol.gov/views/data_catalogs.php">http://ogesdw.dol.gov/views/data_catalogs.php</a>
		OSHA	Injuries and illness data from employers of other industry sectors. Occupational Safety and Health Administration (OSHA) enforcement. This also includes citation and penalty assessment resulting from violations of OSHA standards during the annual inspections conducted by OSHA.	1994-2011	<a href="http://ogesdw.dol.gov/views/data_catalogs.php">http://ogesdw.dol.gov/views/data_catalogs.php</a>
Employee civil rights-related weak compliance	U.S. Department of Labor (DOL)	OFCCP	Annual statistical information of closed compliance evaluations and compliant investigations conducted by Office of Federal Contract Compliance Programs (OFCCP) on violations of labor safety within those contractors and subcontractors which have been provided government contracts.	2008-2011	<a href="http://ogesdw.dol.gov/views/data_catalogs.php">http://ogesdw.dol.gov/views/data_catalogs.php</a>
		WHD	Annual statistical information of compliance actions by Wage and Hour Division (WHD) on violations on wages, overpay practices, fair labor standards, Family and Medical Leave Act, special minimum wages standards, Public Contract Act, work visa requirements, and any other job benefit violation.	2007-2011	<a href="http://ogesdw.dol.gov/views/data_catalogs.php">http://ogesdw.dol.gov/views/data_catalogs.php</a>
Environment related weak compliances	Environmental protection agency (EPA)		Mandatory annual Toxics Release Inventory (TRI) reports filed with the EPA concerning on-site toxic chemical releases and other waste management quantities by each facility.	1994-2011	<a href="https://explore.data.gov/catalog/raw?tags=TRI&amp;page=1">https://explore.data.gov/catalog/raw?tags=TRI&amp;page=1</a>

## Detailed illustrations for each of the category of weak compliance

### 1. Product safety related weak compliance

Noncompliance related to products includes enforcement activities by the FDA related to safety of the products of a company. In particular, we aggregate the count of the following two dimensions of product-related noncompliance in a fiscal year. A higher count measure is assumed to imply a higher level of noncompliance.

#### *1.1 Product recalls, market withdrawals, and safety alerts of the U.S. Food and Drug Administration (FDA)*

Beginning from 2004, the FDA's website reports news releases and other public notices on product recalls and market withdrawals that firms voluntarily or involuntarily issue as a result of FDA enforcements. These product recalls and market withdrawals are typically triggered when the FDA believes that the related products may potentially present a significant or serious risk to the consumer or user of the product.

The FDA's regulatory purview includes food and drugs that are consumed in the U.S. In particular, the following is a list of the regulated products: 80 percent of the foods eaten in the United States, human and animal drugs, medical devices, radiation-emitting products, vaccines, blood and biologics products, animal feed, cosmetics products, and tobacco products.

We count the number of product recalls, withdrawals and safety alerts issued by each firm every year. We rank such activity into deciles for every two-digit SIC industry among firms in Compustat for whom we find non-zero enforcement activity in this area.

#### *1.2 Warning letters by U.S. Food and Drug Administration (FDA)*

Since 1996, the FDA's website publishes all the warning letters issued by the agency during the course of enforcement inspections of company facilities by FDA investigators. An establishment or a facility may be issued warning letters by the FDA investigators when it is found to violate the Federal Food, Drug, and Cosmetic Act, the Tobacco Control Act, and other applicable regulations within the FDA's enforcement area. The recipient of the warning letter is expected to respond by explaining its plan for correction of the listed violation in the warning letter and for the prevention of future violations. Failure to respond to the FDA may result in regulatory action.

For example, the FDA issued a warning letter that found a tobacco retailer to be in violation of federal tobacco laws and regulations to sell cigarettes and smokeless tobacco to a minor. To cite another example, the FDA issued a warning letter to a dairy farm arguing that its medicated animals bear potentially harmful drug residues that are likely to enter the food supply.

We count the number of warning letters issued by FDA for each firm-year. As before, we rank such activity into deciles for every two-digit SIC industry among firms in Compustat for whom we find non-zero enforcement activity in this area.

## **2. Trade practices related weak compliance**

This category includes enforcement activities on whether a company conducts fair trade, including enforcements by the DOJ on companies' anti-competition activity and by the FTC on whether a company violates federal consumer protection laws by engaging in deception, fraud and unfair business practices. We aggregate the count of the following two dimensions of trade-related noncompliance in a fiscal year. A higher count measure is assumed to imply a higher level of noncompliance.

### *2.1 Antitrust case by the antitrust division of U.S. Department of Justice*

Since December 1994, the antitrust division of the DOJ publishes potential antitrust violations cases filed and charged by the DOJ under civil or criminal proceedings. These cases include all public court and administrative filings such as complaints, indictments, and final judgments.

These cases involve regional, national, and international conspiracies affecting a full range of different sectors of the economy for antitrust violations that indicate anticompetitive collusions. These collusions include any agreement among competitors to fix prices, rig bids, market division or allocation schemes, and other anticompetitive activity.

We count the number of charges filed by the DOJ for each firm-year, and rank such activity into deciles for every two-digit SIC industry among firms in Compustat for whom we find non-zero enforcement activity in this area.

### *2.2 Federal trade commission (FTC)*

Starting from 1989, the FTC publishes all its cases and proceedings related to the violations of federal antitrust laws that prohibit anticompetitive mergers and other business practices that could lead to higher prices, fewer choices, or lower levels of innovation. It also includes complaints and investigations conducted by the FTC's Bureau of Consumer Protections on unfair, deceptive, and fraudulent business practices.

For example, the FTC filed a complaint alleging that the Heritage Building Group Inc. used deceptive commercial communication related to their mortgage credit products. A civil penalty of \$650,000 was imposed on the defendant for this charge by the court.

We count the number of charges filed by FTC for each firm-year and rank such activity into deciles for every two-digit SIC industry among firms in Compustat for whom we find non-zero enforcement activity in this area.

### **3. Employee safety weak compliance**

#### *3.1 Safety information from Mine safety and health administration (MSHA)*

Since 1994, the MSHA, under the DOL, started publishing reports on all employee safety accidents and the related mine operators uncovered during compliance inspections conducted by the MSHA.

The reports include detailed statistics information in a year concerning (i) employee injuries in terms of lost days; (ii) the percentage of injuries and illness over the total employee hours worked during the year; (iii) the amount of penalty imposed on the mine operators as a result of the injuries; and (iv) the number of counts of violations of safety regulatory requirement based on MSHA investigations.

As before, for each year, we rank each of these four dimensions of mine safety into deciles for every two-digit SIC industry among firms in Compustat for whom we find non-zero enforcement activity in this area. We then aggregated the rank score for all these four dimensions, and re-rank the aggregated rank score into deciles to compute our measure of employee safety-related noncompliance.

#### *3.2 Occupational Safety and Health Administration (OSHA)*

Besides MSHA, starting 1970, OSHA collects data on work-related injuries and illness from employers, and publishes injury and illness incidence rates within each establishment and facility. The data provided by OSHA includes the name of the establishment, the reporting period, the DART (days away restricted and transferred) case rate which involves the number of days away, restricted, and transferred from work, and the days away from work, injury or illness (DAFWII) case rate.

In addition, OSHA also conducts approximately 100,000 inspections annually to identify injuries and fatalities, and publishes detailed information for each inspection with regard to citations and penalty assessment resulting from violations of OSHA standards.

We first decile-rank DART, DAFWII, and the amount of penalty assessed during OSHA inspections within the two-digit SIC code among all firms in the same industry in Compustat. We then aggregate the decile-ranked score for each firm. Next, we decile-rank the aggregated rank score at the two-digit SIC code level as the measure for weak compliance related to OSHA standards.

### **4. Employment civil rights-related weak compliance**

The DOL publishes annual compliance statistics with regard to whether firms comply with OSHA rules in providing safe and healthful working conditions for working men and women. These statistics comprise the two dimensions discussed below. We first decile rank each dimension at the two-digit SIC code. Next, we decile-rank the aggregate total decile rank score over the two dimensions as our measure for the degree of firms' weak compliance on employment civil rights. A higher ranked score suggests a higher level of noncompliance.

#### *4.1 Office of federal contract compliance programs*

The Office of Federal Contract Compliance Programs (OFCCP) enforces the contractual promise of affirmative action and equal employment opportunity required for those who do business with the federal government.

Since 2008, OFCCP, under the DOL, publishes annual statistical reports on violations of the regulatory requirement by federal contractors and sub-contractors on the regulatory requirement after closed compliance evaluations and compliance investigations by the OFCCP. Examples of these violations include, demotion, discrimination related to disability, national origin, race, sex, religion, color, etc.

#### *4.2 Wage and hour compliance action*

From 2007, the Wage and Hour Division (WHD) of the DOL publishes enforcement statistics concerning companies' wage and hour compliances. The statistics include violations committed by companies on overtime pay, fair labor standards, the Family and Medical Leave Act, special minimum wages standards, related to the Public Contract Act, work visa requirements, and any other job benefit violation.

We assign an indicator variable that equals one if a firm has a count of violation reported in the WHD enforcement reports.

### **5. Environment related weak compliance**

Data included in environment related noncompliances are measured by the aggregated amount of toxic emissions by a company. This information is obtained from the Environmental Protection Agency (EPA), which enforces federal laws protecting human health and the environment.

From 1987, the EPA publishes the Toxics Release Inventory (TRI) report that lists the chemicals that are being used, manufactured, treated, transported, or released into the environment at each facility level. This is a mandatory reporting requirement for facilities if the following conditions are met: (i) the facility has ten or more full-time employees; (ii) it manufactures or processes over 25,000 pounds of the approximately 600 designated chemicals or 28 chemical categories specified in the regulations, or uses more than 10,000 pounds of any designated chemical or category; and (iii) it engages in certain manufacturing operations in the industry groups specified in the U.S. Government Standard Industrial Classification Codes (SIC) 20 through 39; or (iv) it is a federal facility which is required to file these reports as per the August, 1995 Executive Order signed by President Clinton.

To aggregate the facility level toxic emission data at the firm level, we first map each facility, based on its parent company name, with the company's name from the CRSP history file, augmented by Exhibit 21 in 10-K filing which includes the list of a firm's subsidiary names for each firm-year.



We then aggregate the total pounds of toxic emissions at the facility-level to the firm-level, scaled by annual sales of the firm, and decile-rank the scaled measure at the two-digit SIC industry level. The decile-ranked score is our measure of weak compliance of EPA regulations.

## Appendix B: Variable Definitions

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### Financial reporting risk measures

<i>RESTATE</i> <sub><i>i,t</i></sub>	An indicator variable that equals one during year <i>t</i> to year <i>t+n</i> if firm <i>i</i> managed earnings during this period of time, and the associated financial statements for this period are subsequently restated as per the Audit Analytics database, zero otherwise.
<i>IN_RESTATE</i> <sub><i>i,t</i></sub>	An indicator variable that equals one during year <i>t</i> to year <i>t+n</i> if firm <i>i</i> managed earnings upwards during this period, and the associated financial statements are subsequently restated, resulting in a lower income after the restatement based on the information provided in Audit Analytics database, zero otherwise. Firm-years without the information to determine the effect of a restatement are set as missing values.
<i>CLASS</i> <sub><i>i,t</i></sub>	An indicator variable that equals one during year <i>t</i> to year <i>t+n</i> if firm <i>i</i> is involved in securities fraud lawsuits during this period of time for violating GAAP or disclosure laws based on Stanford Law School Securities Class Action Database, and zero otherwise.
<i>AAER</i> <sub><i>i,t</i></sub>	An indicator variable that equals one if in year <i>t</i> to year <i>t+n</i> , firm <i>i</i> has materially misreported its financial statements and the firm is subsequently pursued by the SEC via AAER enforcement actions, and zero otherwise.

### Noncompliance measures

<i>ANNUAL_NC</i> <sub><i>i,t</i></sub>	An annual measure of noncompliance for firm <i>i</i> in year <i>t</i> . It is the aggregated decile-rank score for a firm's noncompliance in the four categories of product, antitrust, labor and environment. See appendix A for details.
<i>NC_INDEX</i> <sub><i>i,t</i></sub>	An average measure of the above annual noncompliance <sub><i>i,t</i></sub> over the past five years for firm <i>i</i> in year <i>t</i> . This captures a firm's noncompliance culture.
<i>REPEAT</i> <sub><i>i,t</i></sub>	An indicator variable that equals one if firm <i>i</i> is ranked in the first top quartile for Noncompliance in year <i>t</i> , and zero otherwise.
<i>FREQUENT</i> <sub><i>i,t</i></sub>	An indicator variable that equals one if firm <i>i</i> is ranked in the second top quartile for Noncompliance in year <i>t</i> , and zero otherwise.
<i>SPORADIC</i> <sub><i>i,t</i></sub>	An indicator variable that equals one if firm <i>i</i> is ranked in the third top quartile for Noncompliance in year <i>t</i> , and zero otherwise.

### Other variables

$\log$ <i>CEO_DELTA</i> <sub><i>i,t</i></sub>	<i>CEO_DELTA</i> is the pay-for-performance sensitivity measure for the CEO for firm <i>i</i> in year <i>t</i> . $\log$ <i>CEO_DELTA</i> is the natural log value of the total change in value of the executive's stock, restricted stock, and stock option portfolio in response to a one percent change in the stock price (in \$thousand) using the method described by Core and Guay (2002).
<i>IC_WEAK</i> <sub><i>i,t</i></sub>	An indicator variable that equals one if firm <i>i</i> was identified as having internal control weakness in year <i>t</i> as per the Audit Analytics database, and zero otherwise.
<i>G_INDEX</i> <sub><i>i,t</i></sub>	The governance index based on Gompers, Ishii, and Metrick (2003) for firm <i>i</i> in year <i>t</i> for the 1990-2006 period. The computation of this index is based on data compiled by the IRRC (Investor Responsibility Research Center). It is a composite of the twenty-four variables, adding one point if any of the provisions is present for firm <i>t</i> in year <i>t</i> , where a higher score indicates weaker governance and greater restrictions on shareholder rights or a greater number of anti-takeover measures.

$E\_INDEX_{i,t}$	The entrenchment index based on Bebchuk, Cohen, and Ferrell (2009) for firm $i$ in year $t$ for the 1990-2006 period. The computation of this index is based on six of the twenty-four G-index provisions compiled by the IRRC (Investor Responsibility Research Center), adding one point if any of the provisions is present, where a higher score indicates more restrictions on shareholder rights or a greater number of anti-takeover measures.
$CEO\_PAYSLICE_{i,t}$	The slice of the CEO's total compensation in total top five executives' compensation for firm $i$ in year $t$ after adjusting the number of executives disclosed in proxy statements. If fewer than five executives' compensation is disclosed in a given year for a firm, we assume that the remaining top five undisclosed executives receive the same level of compensation as the lowest-paid executive among those disclosed in the proxy statements. If proxy statements disclose more than five executives in a given year, we retain the compensation for the top five executives.
<b>Firm characteristics variables</b>	
$\log MV_{i,t}$	Natural logarithm of market value of equity $MVE$ ( $CSHO_{i,t} \times PRCC_{F_{i,t}}$ ) measured at the end of fiscal year $t$ for firm $i$ .
$ROA_{i,t}$	Net income before extraordinary items ( $NI_{i,t}$ ), scaled by the total assets ( $AT_{i,t}$ ) at the beginning of year $t$ for firm $i$ for fiscal year $t$ .
$ABRET_{i,t}$	Abnormal buy-and-hold stock return annual stock returns for firm $i$ in fiscal year $t$ , adjusted by value weighted market return for the same year.
$MTOB_{i,t}$	Market value of equity, calculated as ( $CSHO_{i,t} \times PRCC_{F_{i,t}}$ ), divided by book value of equity ( $CEQ_{i,t-1}$ ) for firm $i$ at the end of fiscal year $t$ .
$LEV_{i,t}$	Total book value of debt ( $DLTT_{i,t} + DLC_{i,t}$ ) divided by total assets ( $AT_{i,t}$ ) measured for firm $i$ at the end of fiscal year $t$ .
$SALE\_GROWTH_{i,t}$	Growth of total sales ( $SALE_{i,t}$ ) from year $t-1$ to year $t$ for firm $i$ .
$STDRET_{i,t}$	The standard deviation of daily stock returns for firm $i$ in fiscal year $t$ .
$\log FIRMAGE_{i,t}$	The age of firm $i$ at the end of fiscal year $t$ , measured as the number of years the firm has been listed by the Center for Research in Security Prices (CRSP).
$BIG\_N_{i,t}$	An indicator variable that equals one if firm $i$ for fiscal year $t$ is audited by one of the big four (or five) auditing firms, zero otherwise.
$FINANCING_{i,t}$	An indicator variable that equals one if firm $i$ has either debt financing or equity financing in year $t$ , and zero otherwise.
$IND\_MTOB_{i,t}$	The median value of industry market-to-book ratio for firm $i$ 's two-digit SIC industry in year $t$ .
$FREE\_CASH_{i,t}$	Free cash flow for firm $i$ in year $t$ , defined as $(OIADP_{i,t} + DP_{i,t} + \Delta WC_{i,t} - CAPX_{i,t}) / ACT_{i,t-1}$ . $WC$ is working capital, defined as $\Delta REC_{i,t} + \Delta INVT_{i,t} - \Delta AP_{i,t} - \Delta TXP_{i,t} + \Delta AO_{i,t}$ .
$F\_SCORE_{i,t}$	The output from the predictive model for accounting manipulations reported in Dechow, Ge, Larson, and Sloan (2011).

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## REFERENCES

- Agrawal, A., and S. Chadha. 2005. Corporate governance and accounting scandals. *The Journal of Law and Economics* 48: 371-406.
- Armstrong, C., A. Jagolinzer, and D. Larcker. 2010. Chief Executive Officer equity incentives and accounting irregularities. *Journal of Accounting and Economics* 48(2): 225-271.
- Armstrong, C., D. Larcker, G. Ormazabal, and D. Taylor. 2013. The relation between equity incentives and misreporting: The role of risk-taking incentives. *Journal of Financial Economics* 109 (2): 327 – 350.
- Asch, P., and J. Seneca. 1976. Is collusion profitable? *Review of Economics and Statistics* 58: 1-12.
- Ashforth, B. E., and V. Anand. 2003. The normalization of corruption in organizations. In R. M. Ashforth, B. E., D. A. Gioia, S. L. Robinson, and L. K. Trevino. 2008. Introduction to special topic forum: Reviewing organizational corruption. *The Academy of Management Review* 33(3): 670-684.
- Ashbaugh-Skaife, H., D. Collins, W. Kinney, and R. LaFond. 2009. The Effect of SOX Internal control deficiencies on firm risk and cost of equity capital. *Journal of Accounting Research* 47: 1-43.
- Baucus, M. S, and J. P. Near. 1991. Can illegal corporate behavior be predicted? An event history analysis. *Academy of Management Journal* 34: 9-36.
- Beasley, M. 1996. An empirical analysis of the relation between the board of director composition and financial statement fraud. *The Accounting Review* 71: 443-465.
- Bebchuk, L., M. Cremers, and U. Peyer. 2007. The CEO pay slice. *Journal of Financial Economics* 102(1): 199-221.
- Bebchuk, L., A. Cohen, and A. Ferrell. 2009. What matters in corporate governance? *Review of Financial Studies* 22(2): 783-827.
- Beneish, M.D., M. B. Billings, and L. D. Hodder. 2008. Internal control weaknesses and information uncertainty. *The Accounting Review* 83 (3): 665-704.
- Bertrand, Marianne and Schoar, Antoinette. 2003. Managing With Style: The Effect of Managers on Firm Policies. *Quarterly Journal of Economics* 118 (4): 1169-1208.
- Biggerstaff, L., D. Cicero, and A. Puckett. 2015. Suspect CEOs, unethical culture, and corporate misbehavior. *Journal of Financial Economics* 17(1): 98-121.
- Bolton, R., and D. Hand. 2002. Statistical Fraud Detection: A Review. *Statistical Science*.
- Brief, A. P., R. T. Buttram, and J. M. Dukerich. 2001. Collective corruption in the corporate world: Toward a process model. In M. E. Turner (Ed.), *Groups at work: Theory and research*: 471-499. Mahwah, NJ: Lawrence Erlbaum Associates.
- Burns, N., and S. Kedia. 2006. The impact of performance-based compensation on misreporting. *Journal of Financial Economics* 79: 35-67.
- Burton, J. Jr. 1966. An Economic Analysis of Sherman Act Criminal Cases, in J. Clabault and J. Burton, Jr. (Eds.), *Sherman Act Indictments 1955-1965: A Legal and Economic Analysis*, New York: Federal Legal Publications.
- Cheng, Q., and T. Warfield. 2005. Equity incentives and earnings management. *The Accounting Review* 80: 441-476.
- Christensen, H., E. Floyd, L. Liu and M. Maffet. 2016. The real effects of mandated information on social responsibility in financial reports: Evidence from mine-safety record. Available at SSRN: <https://ssrn.com/abstract=2680296> or <http://dx.doi.org/10.2139/ssrn.2680296>

- Clinard, M., J. Brissette, K. Petrashek, and E. Harries. 1979. *Illegal Corporate Behavior*, Washington, DC: National Institute of Law Enforcement and Criminal Justice.
- Clinard, M. 1983. *Corporate Ethics and Crime: The Role of Middle Management*, Beverly Hills, CA: Sage.
- Cline, B., R. Walkling, and A. Yore. 2015. The Agency Costs of Managerial Indiscretions: Sex, Lies and Firm Value. *Working Paper, Drexel University*.
- Core, J., and W. Guay. 2002. Estimating the value of employee stock option portfolios and their sensitivities to price and volatility. *Journal of Accounting and Economics* 40(3): 613-630.
- Davidson, R., A. Dey, and A. Smith. 2015. Executives' "off-the-job" behavior, corporate culture, and financial reporting risk. *Journal of Financial Economics* 117(1): 5-28.
- Dechow, P., W. Ge, C. Larson, and R. Sloan. 2011. Predicting material accounting manipulations. *Contemporary Accounting Research* 28: 17-82.
- Dechow, P., R. Sloan, and A. Sweeney. 1995. Detecting earnings management. *The Accounting Review* 70: 193-225.
- DeFond, M., and J. Jiambalvo. 1991. Incidence and circumstances of accounting errors. *The Accounting Review* 66: 643-655.
- Doyle, J., W. Ge, S. McVay. 2007. Accruals quality and internal control over financing reporting. *The Accounting Review* 82(5): 1141-1170.
- Dudley, W., 2014. Speech on Enhancing Financial Stability by Improving Culture in the Financial Services Industry, October 20. Available at <http://www.newyorkfed.org/newsevents/speeches/2014/dud141020a.html>.
- Erickson, M., M. Hanlon, E. Maydew. 2006. Is there a link between executive equity incentives and accounting fraud? *Journal of Accounting Research* 44: 113-143.
- Farber, D., 2005. Restoring trust after fraud: Does corporate governance matter? *The Accounting Review* 80: 539-561.
- Gao, F., Lisic, L., and Zhang, I. 2014. Commitment to social good and insider trading. *Journal of Accounting and Economics* 57(2-3): 149-175.
- Ge, W., D. Matsumoto, and J. Zhang. 2011. Do CFOs have style? An empirical investigation of the effect of individual CFOs on accounting practices. *Contemporary Accounting Research* 28(4): 1141-1179.
- Gompers, P., J. Ishii, and A. Metrick. 2003. Corporate governance and equity prices. *The Quarterly Journal of Economics* 118(1): 107-156.
- Graham, J., C. R. Harvey, and S. Rajgopal. 2005. The economic implications of corporate financial reporting. *Journal of Accounting and Economics* 40(1-3): 3-73.
- Graham, J., C.R. Harvey, S. Rajgopal and J. Popadak. 2016a. Corporate culture: Evidence from the field. Working paper, Duke University and Columbia University.
- Graham, J., C.R. Harvey, S. Rajgopal and J. Popadak. 2016b. Corporate culture: The interview evidence. Working paper, Duke University and Columbia University.
- Guiso, L., P. Sapienza, and L. Zingales. 2015. The value of corporate culture. *Journal of Financial Economics* 117:60-76.
- Hill, C. W. L., P. C. Kelley, B. R. Agle, M. A. Hitt, and R. E. Hoskisson. 1992. An empirical examination of the causes of corporate wrongdoing in the United States. *Human Relations* 45, 1055-1076.
- Johnston, K., C. Li, S. Luo. 2014. Client-auditor supply chain relationships, audit quality, and audit pricing. *Auditing: A Journal of Practice & Theory* 33(4): 119-166.

- Kedia, S., and S. Rajgopal. 2011. Do the SEC's enforcement preferences affect corporate misconduct? *Journal of Accounting and Economics* 51(3): 259-278.
- Kedia, S., S. Rajgopal, and X. Zhou. 2013. Does it matter who owns Moody's? *Working paper, Rutgers University and Columbia University*.
- Kedia, S., S. Rajgopal, and X. Zhou. 2014. Did going public impair Moody's credit rating? *Journal of Financial Economics* 114(2): 293-315.
- Kim, Y., M. Park., and B. Wier. 2012. Is earnings quality associated with corporate social responsibility? *The Accounting Review* 87(3): 761-796.
- Kinney W. R. Jr. 2000. Research opportunities in internal control quality and quality assurance. *Auditing* 19: 83-90.
- Klein, A. 2002. Audit committee, board of director characteristics and earnings management. *Journal of Accounting and Economics* 33: 375-400.
- Hoi, C., Q. Wu, and H. Zhang. 2013. Is corporate social responsibility (CSR) associated with tax avoidance? Evidence from irresponsible CSR activities. *The Accounting Review* 88(6): 2025-2059.
- Lane, R. 1953. Why businessmen violate the law. *Journal of Criminal Law, Criminology, and Police Science* 44, 151-16.
- Larcker, D., S. Richardson, and I. Tuna. 2007. Corporate governance, accounting outcomes and organizational performance. *The Accounting Review* 82: 963-108.
- Mathews, M. 1987. Codes of Ethics: Organizational Behavior and Misbehavior, in W. Frederick (Ed.), *Research in Corporate Social Performance and Policy*, Greenwich, CT, JAI Press.
- Mishina, Y., B. J. Dykes, E. S. Block, T. G. Pollock. 2010. Why "good" firms do bad things: The effects of high aspirations, high expectations and prominence on the incidence of corporate illegality. *Academy of Management Journal* 53(4): 701-722.
- National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling. 2011. *Deepwater. The Gulf Oil Disaster and the Future of Offshore Drilling*.
- Ogneva, M., K. R. Subramanyam, K. Raghunandan. 2007. Internal control weakness and cost of equity: Evidence from SOX Section 404 disclosures. *The Accounting Review* 82(5): 1255-1297.
- Palmer, J. 1972. Some economic conditions conducive to collusion. *Journal of Economic Inquiry* 6: 29-38.
- Petersen, M. A. 2009. Estimating standard errors in finance panel data sets: Comparing approaches. *Review of Financial Studies* 22: 435-480.
- Posner, R. 1970. A statistical study of antitrust enforcement. *Journal of Law and Economics* 13, 365-420.
- Povel, P., R. Singh, and A. Winton. 2007. Booms, busts, and fraud. *Review of Financial Studies* 20: 1219-1254.
- Richardson, S., I. Tuna, and M. Wu. 2003. Predicting earnings management: The case of earnings restatements. *Working Paper, University of Michigan*.
- Schein, E., 2010, *Organizational Culture and Leadership*, San Francisco, CA: John Wiley & Sons.
- Schrand, C., and S. Zechman. 2012. Executive overconfidence and the slippery slope to financial misreporting. *Journal of Accounting and Economics* 53: 311-329.
- Simpson, S. S. 1986. The decomposition of antitrust: Testing a multi-level, longitudinal model of profit-squeeze. *American Sociological Review* 51: 859-875.

- Sonnenfeld, J., and P. R. Lawrence. 1978. Why do companies succumb to price fixing? *Harvard Business Review* 56(4): 145-157.
- Srinivasan, S., A. S. Wahid, and G. Yu. 2015. Admitting mistakes: Home country effect on the reliability of restatement reporting. *The Accounting Review* 90(3): 1201-1240.
- Toffler, B. L. 2003. Financial accounting, ambition, greed, and the fall of Arthur Andersen. New York: Broadway Books.
- Treviño, L. K., K. D. Butterfield, and D. L. McCabe. 1998. The ethical context in organizations: Influences on employee attitudes and behaviors. *Business Ethics Quarterly* 8:, 447-476.
- United States Department of Labor. 2010. Report of Investigation: Fatal Underground Mine Explosion, Upper Big Branch Mine-South, Performance Coal Company, Montcoal, Raleigh County, West Virginia, ID No. 46-08436.
- Victor, B., and J. B. Cullen. 1988. The organizational bases of ethical work climates. *Administrative Science Quarterly* 33: 101-125.
- Yeager, W. 1986. Analyzing Corporate Offenses, in W. Frederick (Ed.), *Research in Corporate Social Performance and Policy*, Greenwich, CT, JAI Press.

**Table 1: Distribution of Annual Noncompliance by Two-Digit SIC Industries**

This table provides the descriptive statistics of noncompliance by industry over the period 1994 to 2011. The annual noncompliance measure is based on product, antitrust, labor and environmental violations. Column 1 and 2 report the number of firm and firm years respectively in the two digit SIC in Compustat. Tainted firms are firms that have at least one year that is noncompliant. Column 3 reports the number of tainted firm, column 4 the number of years of tainted firm in Compustat and column 5 reports the number of noncompliant years of tainted firms. The table is sorted on the number of noncompliant years and reports only the top and bottom ranked industries. Hence, the row totals reported in the last row cannot be derived from an addition of the numbers reported in the individual columns.

SIC2	Industry name	All Firms in Compustat		Tainted Firms			Percentage NonCompliant	
		# of Firms	# of Firm Years	# of Firms	# of Firm Years	Non Compliant Firm-Years	% of Non compliant Firm-Years (5/4)	% Non compliant Firm-years in Ind. (5/2)
		(1)	(2)	(3)	(4)	(5)	(5/4)	(5/2)
73	Business Services	(1877)	11,484	(779)	6,668	2,637	39.5%	23.0%
36	Electronic & other electric equipment	(963)	7,599	(505)	5,135	2,086	40.6%	27.5%
35	Industrial machinery & equipment	(812)	5,824	(421)	3,918	1,863	47.5%	32.0%
28	Chemical & allied products	(1025)	8,303	(537)	5,250	1,766	33.6%	21.3%
38	Instruments & related products	(852)	6,514	(433)	3,293	1,567	47.6%	24.1%
49	Electric, gas & sanitary services	(380)	3,561	(218)	2,610	1,119	42.9%	31.4%
48	Communications	(482)	2,628	(240)	1,741	892	51.2%	33.9%
13	Oil & gas extraction	(439)	3,184	(148)	2,179	751	34.5%	23.6%
37	Transportation equipment	(242)	1,807	(102)	1,274	645	50.6%	35.7%
20	Food & kindred products	(237)	1,923	(73)	680	568	83.5%	29.5%
34	Fabricated metal products	(193)	1,387	(218)	836	557	66.6%	40.2%
87	Engineering & management services	(364)	2,080	(178)	1,295	529	40.8%	25.4%
33	Primary metal industries	(160)	1,214	(95)	852	495	58.1%	40.8%
50	Wholesale trade – durable goods	(393)	2,395	(80)	868	483	55.6%	20.2%
27	Printing & publishing	(164)	1,179	(113)	729	470	64.5%	39.9%
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62	Security & Commodity Brokers	(199)	1,393	(13)	101	40	39.6%	2.9%
40	Railroad Transportation	(23)	203	(12)	118	37	31.4%	18.2%
70	Hotels & Other Lodging Places	(73)	360	(15)	104	36	34.6%	10.0%
21	Tobacco Products	(13)	100	(4)	49	34	69.4%	34.0%
82	Educational Services	(58)	357	(8)	80	30	37.5%	8.4%
52	Building Materials & Gardening Supplies	(32)	200	(9)	85	23	27.1%	11.5%
46	Pipelines, Except Natural Gas	(19)	124	(3)	19	13	68.4%	10.5%
75	Auto Repair, Services, & Parking	(37)	214	(8)	52	8	15.4%	3.7%
83	Social Services	(28)	217	(7)	65	5	7.7%	2.3%
01	Agricultural Production - Crops	(29)	181	(2)	5	3	60.0%	1.7%
76	Miscellaneous Repair Services	(13)	47	(1)	2	2	100.0%	4.3%
89	Services, Not Elsewhere Classified	(2)	2	(2)	2	2	100.0%	100.0%
Subtotal		(12,578)	102,984	(4,621)	49,954	22,885	45.8%	22.2%



**Table 2: Characteristics of Noncompliant Years and Firms**

Panel A reports the characteristic of noncompliant years relative to compliant years of tainted firms. Tainted firms are those that have at least one noncompliant year in the sample period. Panel B reports the characteristics of tainted firms relative to clean firms, i.e., those that are compliant over the entire sample period. \*\*\*, \*\*, and \* indicate significance at the  $p < 0.01$ ,  $< 0.05$ , and  $< 0.10$  levels, respectively, based on two-tailed t-test statistics. Definitions of the variables can be found in Appendix B.

**Panel A: Noncompliant and Compliant Years of Tainted Firms**

Variables	Noncompliant years (N= 22,885)		Compliant years (N=27,069)		Paired t-test for differences in mean	Paired Wilcoxon test for difference in median
	Mean	Median	Mean	Median		
<i>MV</i> (in millions)	2339.6	430.6	1250.8	159.4	29.30***	42.41***
<i>logMV</i>	5.966	6.068	5.127	5.077	42.06***	42.43***
<i>MTOB</i>	2.697	1.773	3.460	1.959	-20.36***	-15.47***
<i>SALE_GROWTH</i>	0.153	0.078	0.239	0.100	-15.64***	11.32***
<i>ROA</i>	0.034	0.080	-0.066	0.049	33.79***	36.88***
<i>LEV</i>	0.263	0.216	0.242	0.143	7.57***	24.86***
<i>ABRET</i>	0.057	-0.036	0.094	-0.068	-4.51***	-5.15***
<i>STDRET</i>	0.036	0.031	0.046	0.042	-47.01***	-51.72***
<i>FIRMAGE</i> (in years)	19.094	14.500	14.742	10.500	31.79***	36.79***
<i>logFIRMAGE</i>	2.677	2.741	2.386	2.442	36.84***	36.79***
<i>BIG_N</i>	0.834	1.000	0.750	1.000	23.09***	22.97***

**Panel B: Tainted Firms and Clean Firms**

Variables	Tainted firms All Years (N= 49,954)		Clean firms All Years (N= 53,030)		T-test for difference in mean	Wilcoxon test for difference in median
	Mean	Median	Mean	Median		
<i>MV</i> (in millions)	1749.6	250.2	1018.2	85.96	31.42***	63.71***
<i>logMV</i>	5.511	5.526	4.590	4.466	64.63***	63.69***
<i>MTOB</i>	3.106	1.858	2.998	1.615	3.82***	24.88***
<i>SALE_GROWTH</i>	0.199	0.087	0.212	0.077	-3.06**	6.08***
<i>ROA</i>	-0.020	0.065	-0.067	0.029	21.25***	44.19***
<i>LEV</i>	0.252	0.183	0.291	0.188	-18.00***	-14.57***
<i>ABRET</i>	0.077	-0.053	-0.007	-0.103	15.11***	21.42***
<i>STDRET</i>	0.041	0.037	0.047	0.040	-30.38***	-19.64***
<i>FIRMAGE</i> (in years)	16.735	12.250	13.216	9.167	39.44***	41.71***
<i>logFIRMAGE</i>	2.519	2.584	2.276	2.319	43.77***	44.24***
<i>BIG_N</i>	0.789	1.000	0.704	1.000	31.25***	31.10***

**Table 3: Twenty Largest Firms Sorted by Compliance Culture**

This table lists the 20 largest firms by sales that are categorized as repeat, multiple, sporadic offenders, and clean firms. A firm is a repeat offender if it falls in the top quartile of the distribution of the index of compliance culture. Firms in the second and third quartiles are referred to as Frequent offenders and Sporadic offenders respectively. Firms that had no incidence of noncompliance over the sample period are referred to as Clean firms. Index of compliance culture is the average value of annual noncompliance over the past five years.

#	Repeat offenders	Frequent offenders	Sporadic offenders	Clean firms
1	Caterpillar Inc.	NBTY Inc.	O'Reilly Automotive Inc.	Procter & Gamble Co.
2	Eagle Materials Inc.	Paracelsus Healthcare Corp.	Genesee & Wyoming Inc.	Comcast Corp.
3	Waste Management Inc.	Adelphia Communication	Tech Data Corp.	Mondelez International Inc.
4	Alcoa Inc.	Advanced Lighting Tech Inc.	Synopsys Inc.	Coca-Cola Co.
5	Exide Technologies	Wolverine Tube Inc.	Collective Brands Inc.	Dow Chemical
6	Mallinckrodt Inc.	Acterna Corp.	Ann Inc.	Pepsico Inc.
7	Lafarage North America Inc.	Galey & Lord Inc.	Bindley Western Inds.	Wellpoint Inc.
8	Danaher Corp.	Acme Metals Inc.	Innospec Inc.	Du Pont De Nemours
9	Baxter International Inc.	Electric Lightwave .	Granite Broadcasting	AT&T Corp.
10	Premark International Inc.	DSET Corp.	PCM Inc.	AT&T Wireless Services Inc.
11	Packaged Ice Inc.	Lee Enterprises Inc.	Rex American Resources Corp.	Archer-Daniels-Midland Co.
12	Corning Inc.	Cellegy Pharmaceuticals	Building Materials Holding	Aetna Inc.
13	Interpublic Group of Cos.	Katy Industries Inc.	WD-40 Co.	CME Group Inc.
14	Tower Automotive Inc.	Digital Angel Corp.	Goody's Family Clothing Inc.	Intercontinental Exchange
15	Pfizer Inc.	AHL Services Inc.	Radiologix Inc.	Philip Morris International
16	LTV Corp.	U.S. Liquids Inc.	IFR Systems Inc.	Visa Inc.
17	Hillshire Brands Co.	Innovex Inc.	Transport Corp American Inc.	McDonald's Corp.
18	Thermo Fisher Scientific Inc.	U.S. Airways Group Inc.	EZCorp Inc.	Texaco Inc.
19	URS Corp.	Shoney's Inc.	Industrial Distr Group Inc.	Sears Holdings Inc.
20	Mark IV Industries Inc.	Open Market Inc.	Auspex Systems Inc.	Cox Communications Inc.
Average <i>NC_INDEX</i>	20.135	4.70	0.2	0

**Table 4: Sample Attrition**

This table provides information about data attrition for the final sample used in the regression analyses. The starting sample includes all firm-year observations that arise from the intersection of Compustat and the CRSP return file. The number of usable observations falls due to missing information on the variables used in the regression analyses or due to the coverage of the database for the variable of interest.

Description	Number of observations deleted	Number of usable observations left
Intersection of Compustat annual files and CRSP stock return from 1994-2011		102,984
<i>delete</i>		
(a) Firm-years prior to 1998 due to the cumulative noncompliance score over the past five years	(29,965)	73,019
(b) Missing financial data in the regression	(15,099)	57,920
(c) Firm-years due to data availability in examining firms' mis-reporting		
Class actions starting from 1998		57,920 <sup>+</sup>
Restatement starting from 2000	(10,218)	47,702 <sup>++</sup>
(d) Firm-years due to data availability in examining the mechanisms for high level corporate noncompliance culture		
Firm years due to coverage of Execucomp, used in columns (1) and (7) of Table 10	(31,743)	15,959
IC weakness starting from 2004 used in columns (2) of Table 10.	(21,967)	25,735
Gompers governance index from 1998-2006 used in columns (4) of Table 10.	(33,304)	14,398
Bebchuk's entrenchment index from 1998-2006 used in columns (5) of Table 10.	(34,650)	13,052

<sup>+</sup> 57,920 observations are used in results reported in column (5), (7) of Tables 7, 8 and 9; however, the number of observations reduce to 52,256 due to missing values for *FREE\_CASH* and *F\_SCORE* in columns (6) and (8) of Tables 7,8 and 9.

<sup>++</sup>47,702 observations are used in results reported in column (1) of Tables 7, 8 and 9. This reduces to 42,833 due to missing information on the effect of a restatement on net income for *IN\_RESTATE*, and further to 37,580 due to missing values for *FREE\_CASH* and *F\_SCORE* in column (4) of Table 7,8, and 9.

**Table 5: Sample Characteristics**

This table provides the descriptive statistics (panel A) and the correlations (panel B) for the variables used in subsequent estimation. The sample includes all firm-years in Compustat from 1998-2011 with required data. The number of observations that cover restatement and income increasing restatements is smaller because the coverage in Audit Analytics database starts only from 2000 onwards. In addition, because of missing information to identify whether a restatement results in reducing net income for the restated firm-year, the number of observations used in examining income increasing restatements is smaller than the restatement sample. Inclusion of the *FREE\_CASH* and *F\_SCORE* in the regression model also results in a smaller sample. Definitions of the variables can be found in Appendix B.

**Panel A- Descriptive Statistics**

Variables	N	Mean	Median	STD	Q1	Q3
<i>NC_INDEX</i>	57,920	1.27	0.00	3.19	0.00	0.50
<i>logNC_INDEX</i>	57,920	0.40	0.00	0.75	0.00	0.41
<i>REPEAT</i>	57,920	0.08	0.00	0.27	0.00	0.00
<i>FREQUENT</i>	57,920	0.07	0.00	0.26	0.00	0.00
<i>SPORADIC</i>	57,920	0.05	0.00	0.23	0.00	0.00
<i>RESTATE</i>	47,702	0.12	0.00	0.33	0.00	0.00
<i>INC_RESTATE</i>	41,849	0.03	0.00	0.17	0.00	0.00
<i>AAER</i>	57,920	0.008	0.00	0.09	0.00	0.00
<i>CLASS</i>	57,920	0.0135	0.00	0.12	0.00	0.00
<i>LogIND_NCINDEX</i>	57,920	0.66	0.67	0.46	0.25	0.96
<i>MV (million\$)</i>	57,920	1,753.98	259.63	4,207.93	57.26	1,127.06
<i>logMV</i>	57,920	5.61	5.56	2.12	4.06	7.03
<i>ROA</i>	57,920	-0.03	0.02	0.24	-0.03	0.07
<i>ABRET</i>	57,920	0.06	-0.00	0.56	-0.30	0.30
<i>MTOB</i>	57,920	2.96	1.80	4.05	1.10	3.14
<i>LEV</i>	57,920	0.21	0.16	0.20	0.02	0.33
<i>SALE_GROWTH</i>	57,920	0.19	0.08	0.59	-0.03	0.24
<i>STDRET</i>	57,920	0.04	0.04	0.02	0.02	0.05
<i>FIRM_AGE (in years)</i>	57,920	17.96	13.00	15.97	7.00	24.00
<i>logFIRMAGE</i>	57,920	2.63	2.64	0.80	2.08	3.22
<i>BIG_N</i>	57,920	0.78	1.00	0.42	1.00	1.00
<i>FINANCING</i>	57,920	0.88	1.00	0.33	1.00	1.00
<i>FREE_CASH</i>	54,456	0.10	0.11	0.65	-0.12	0.33
<i>F_SCORE</i>	54,900	1.13	1.01	0.82	0.68	1.42
<i>IND_MTOB</i>	57,920	3.29	3.20	1.40	2.19	4.05
<i>CEO_DELTA (in thousand \$)</i>	15,959	522.36	74.86	5046.14	17.62	302.2
<i>CEO_PAYSlice</i>	15,959	0.42	0.41	0.25	0.32	0.50
<i>G_INDEX</i>	14,398	8.96	9.00	2.64	7.00	11.00
<i>E_INDEX</i>	13,052	2.38	2.00	1.31	1.00	3.00
<i>IC_WEAK</i>	25,953	0.07	0.00	0.26	0.00	0.00

**Panel B: Correlations (max N = 57,920)**

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
<i>RESTATE</i>	1.00																
<i>IN_RESTATE</i>	0.43 ( <i>&lt;0.01</i> )	1.00															
<i>AAER</i>	0.02 ( <i>&lt;0.01</i> )	0.10 ( <i>&lt;0.01</i> )	1.00														
<i>CLASS</i>	0.01 ( <i>0.14</i> )	0.07 ( <i>&lt;0.01</i> )	0.14 ( <i>&lt;0.01</i> )	1.00													
<i>logNC_INDEX</i>	0.04 ( <i>&lt;0.01</i> )	0.02 ( <i>&lt;0.01</i> )	0.03 ( <i>&lt;0.01</i> )	0.02 ( <i>&lt;0.01</i> )	1.00												
<i>logMV</i>	0.02 ( <i>&lt;0.01</i> )	-0.00 ( <i>0.40</i> )	0.06 ( <i>&lt;0.01</i> )	0.09 ( <i>&lt;0.01</i> )	0.23 ( <i>&lt;0.01</i> )	1.00											
<i>ROA</i>	0.01 ( <i>0.01</i> )	0.01 ( <i>0.05</i> )	0.01 ( <i>&lt;0.01</i> )	0.01 ( <i>0.01</i> )	0.12 ( <i>&lt;0.01</i> )	0.31 ( <i>&lt;0.01</i> )	1.00										
<i>ABRET</i>	0.04 ( <i>&lt;0.01</i> )	0.01 ( <i>0.06</i> )	0.02 ( <i>&lt;0.01</i> )	0.04 ( <i>&lt;0.01</i> )	0.04 ( <i>&lt;0.01</i> )	0.23 ( <i>&lt;0.01</i> )	0.22 ( <i>&lt;0.01</i> )	1.00									
<i>MTOB</i>	0.01 ( <i>0.02</i> )	-0.00 ( <i>0.84</i> )	0.02 ( <i>&lt;0.01</i> )	0.05 ( <i>&lt;0.01</i> )	0.00 ( <i>0.31</i> )	0.18 ( <i>&lt;0.01</i> )	-0.18 ( <i>&lt;0.01</i> )	0.21 ( <i>&lt;0.01</i> )	1.00								
<i>LEV</i>	0.02 ( <i>&lt;0.01</i> )	0.01 ( <i>&lt;0.01</i> )	0.01 ( <i>0.01</i> )	0.00 ( <i>0.38</i> )	0.06 ( <i>&lt;0.01</i> )	0.07 ( <i>&lt;0.01</i> )	0.05 ( <i>&lt;0.01</i> )	-0.04 ( <i>&lt;0.01</i> )	0.03 ( <i>&lt;0.01</i> )	1.00							
<i>SALE_GROWTH</i>	-0.02 ( <i>&lt;0.01</i> )	0.02 ( <i>&lt;0.01</i> )	0.02 ( <i>&lt;0.01</i> )	0.04 ( <i>&lt;0.01</i> )	-0.04 ( <i>&lt;0.01</i> )	0.04 ( <i>&lt;0.01</i> )	-0.11 ( <i>&lt;0.01</i> )	0.04 ( <i>&lt;0.01</i> )	0.14 ( <i>&lt;0.01</i> )	-0.00 ( <i>0.23</i> )	1.00						
<i>STDRET</i>	-0.01 ( <i>0.05</i> )	0.01 ( <i>0.03</i> )	-0.01 ( <i>0.16</i> )	-0.00 ( <i>0.45</i> )	-0.17 ( <i>&lt;0.01</i> )	-0.55 ( <i>&lt;0.01</i> )	-0.45 ( <i>&lt;0.01</i> )	-0.10 ( <i>&lt;0.01</i> )	0.08 ( <i>&lt;0.01</i> )	-0.14 ( <i>&lt;0.01</i> )	0.12 ( <i>&lt;0.01</i> )	1.00					
<i>logFIRMAGE</i>	0.01 ( <i>0.01</i> )	-0.01 ( <i>0.01</i> )	-0.01 ( <i>0.03</i> )	-0.02 ( <i>&lt;0.01</i> )	0.23 ( <i>&lt;0.01</i> )	0.30 ( <i>&lt;0.01</i> )	0.24 ( <i>&lt;0.01</i> )	0.07 ( <i>&lt;0.01</i> )	-0.07 ( <i>&lt;0.01</i> )	0.07 ( <i>&lt;0.01</i> )	-0.21 ( <i>&lt;0.01</i> )	-0.39 ( <i>&lt;0.01</i> )	1.00				
<i>BIG_N</i>	0.04 ( <i>&lt;0.01</i> )	0.01 ( <i>0.28</i> )	0.03 ( <i>&lt;0.01</i> )	0.04 ( <i>&lt;0.01</i> )	0.14 ( <i>&lt;0.01</i> )	0.41 ( <i>&lt;0.01</i> )	0.07 ( <i>&lt;0.01</i> )	0.04 ( <i>&lt;0.01</i> )	0.04 ( <i>&lt;0.01</i> )	0.08 ( <i>&lt;0.01</i> )	0.02 ( <i>&lt;0.01</i> )	-0.17 ( <i>&lt;0.01</i> )	0.03 ( <i>&lt;0.01</i> )	1.00			
<i>FINANCING</i>	0.01 ( <i>0.09</i> )	0.01 ( <i>0.01</i> )	0.01 ( <i>&lt;0.01</i> )	0.02 ( <i>&lt;0.01</i> )	0.02 ( <i>&lt;0.01</i> )	0.16 ( <i>&lt;0.01</i> )	-0.02 ( <i>&lt;0.01</i> )	0.03 ( <i>&lt;0.01</i> )	0.06 ( <i>&lt;0.01</i> )	0.07 ( <i>&lt;0.01</i> )	0.07 ( <i>&lt;0.01</i> )	-0.04 ( <i>&lt;0.01</i> )	-0.04 ( <i>&lt;0.01</i> )	0.10 ( <i>&lt;0.01</i> )	1.00		
<i>FREE_CASH</i>	0.01 ( <i>0.07</i> )	-0.00 ( <i>0.39</i> )	0.01 ( <i>0.02</i> )	0.01 ( <i>0.02</i> )	0.10 ( <i>&lt;0.01</i> )	0.25 ( <i>&lt;0.01</i> )	0.47 ( <i>&lt;0.01</i> )	0.14 ( <i>&lt;0.01</i> )	-0.04 ( <i>&lt;0.01</i> )	0.11 ( <i>&lt;0.01</i> )	-0.05 ( <i>&lt;0.01</i> )	-0.29 ( <i>&lt;0.01</i> )	0.15 ( <i>&lt;0.01</i> )	0.09 ( <i>&lt;0.01</i> )	-0.02 ( <i>&lt;0.01</i> )	1.00	
<i>F_SCORE</i>	-0.01 ( <i>0.11</i> )	0.02 ( <i>&lt;0.01</i> )	0.04 ( <i>&lt;0.01</i> )	0.05 ( <i>&lt;0.01</i> )	-0.02 ( <i>&lt;0.01</i> )	0.12 ( <i>&lt;0.01</i> )	0.04 ( <i>&lt;0.01</i> )	0.03 ( <i>&lt;0.01</i> )	-0.02 ( <i>&lt;0.01</i> )	0.09 ( <i>&lt;0.01</i> )	0.36 ( <i>&lt;0.01</i> )	-0.06 ( <i>&lt;0.01</i> )	-0.11 ( <i>&lt;0.01</i> )	0.02 ( <i>&lt;0.01</i> )	0.25 ( <i>&lt;0.01</i> )	0.16 ( <i>&lt;0.01</i> )	1.00
<i>MKT_MTOB</i>	0.01 ( <i>0.13</i> )	0.01 ( <i>0.01</i> )	0.01 ( <i>0.03</i> )	0.03 ( <i>&lt;0.01</i> )	0.04 ( <i>&lt;0.01</i> )	0.04 ( <i>&lt;0.01</i> )	-0.15 ( <i>&lt;0.01</i> )	0.13 ( <i>&lt;0.01</i> )	0.29 ( <i>&lt;0.01</i> )	-0.09 ( <i>&lt;0.01</i> )	0.12 ( <i>&lt;0.01</i> )	0.19 ( <i>&lt;0.01</i> )	-0.14 ( <i>&lt;0.01</i> )	0.08 ( <i>&lt;0.01</i> )	0.06 ( <i>&lt;0.01</i> )	-0.06 ( <i>&lt;0.01</i> )	-0.00 ( <i>0.85</i> )

**Table 6: Financial Reporting Risk and Noncompliance Culture**

This table reports estimation of model of financial reporting risk. The sample includes all firm-year observations from 1998-2011 with required data. The number of observations varies across different models due to differences in the starting year of the availability of the dependent variables as described in Table 4. \*\*\*, \*\*, and \* indicate significance at the  $p < 0.01$ ,  $< 0.05$ , and  $< 0.10$  levels, respectively, based on two-tailed z-test statistics clustered at the firm level. Definitions of the variables are in Appendix B.

**Panel A: Baseline Regressions**

Independent variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	<i>RESTATE</i>		<i>IN_RESTATE</i>		<i>AAER</i>		<i>CLASS</i>	
Constant ( $\beta_0$ )	-2.227*** (-14.927)	-2.367*** (-15.047)	-3.427*** (-12.964)	-3.538*** (-12.796)	-7.926** (-11.728)	-8.496*** (-12.878)	-7.394*** (-24.458)	-7.288*** (-22.660)
logNC_INDEX ( $\beta_1$ )	<b>0.126***</b> <b>(5.114)</b>	<b>0.133***</b> <b>(5.314)</b>	<b>0.162***</b> <b>(3.500)</b>	<b>0.167***</b> <b>(3.587)</b>	<b>0.288**</b> <b>(2.491)</b>	<b>0.248**</b> <b>(2.178)</b>	<b>0.144***</b> <b>(3.243)</b>	<b>0.164***</b> <b>(3.610)</b>
logMV ( $\beta_2$ )	-0.012 (-1.024)	-0.008 (-0.677)	-0.029 (-1.328)	-0.030 (-1.333)	0.400*** (8.094)	0.390*** (7.609)	0.430** (19.862)	0.418*** (18.219)
ROA ( $\beta_3$ )	0.031 (0.420)	0.065 (0.790)	0.355** (2.064)	0.575*** (2.875)	0.235 (0.607)	0.469 (1.073)	0.186 (0.965)	0.393* (1.773)
ABRET ( $\beta_4$ )	0.188*** (7.225)	0.168*** (6.218)	0.114** (2.012)	0.121** (2.093)	0.035 (0.464)	0.025 (0.307)	0.264*** (4.500)	0.279*** (4.712)
MTOB ( $\beta_5$ )	0.004 (1.017)	0.004 (0.909)	-0.007 (-0.676)	-0.006 (-0.589)	-0.018 (-1.178)	-0.019 (-1.156)	0.011* (1.767)	0.019*** (2.860)
LEV ( $\beta_6$ )	0.197** (2.201)	0.170* (1.776)	0.415** (2.330)	0.464** (2.487)	0.660* (1.814)	0.891** (2.226)	0.399** (2.044)	0.182 (0.878)
SALE_GROWTH ( $\beta_7$ )	-0.107*** (-3.651)	-0.108*** (-3.174)	0.135*** (2.855)	0.071 (1.224)	0.120* (1.750)	-0.110 (-1.171)	0.226*** (4.948)	0.127** (2.300)
STDRET ( $\beta_8$ )	1.063 (0.934)	2.526** (2.104)	3.460 (1.627)	3.254 (1.442)	15.613*** (3.287)	17.430*** (3.452)	15.893*** (6.703)	16.525*** (6.559)
logFIRMAGE ( $\beta_9$ )	-0.023 (-0.902)	-0.010 (-0.363)	-0.065 (-1.376)	-0.060 (-1.221)	-0.424*** (-3.588)	-0.371*** (-3.057)	-0.379*** (-7.291)	-0.388*** (-7.027)
BIG_N ( $\beta_{10}$ )	0.214*** (4.663)	0.199*** (4.121)	-0.007 (-0.089)	0.016 (0.182)	0.166 (0.514)	0.320 (0.920)	0.275* (1.859)	0.304* (1.959)
FINANCING ( $\beta_{11}$ )	0.039 (0.814)	0.057 (1.067)	0.242** (2.273)	0.193* (1.705)	0.260 (1.001)	0.441* (1.661)	0.154 (1.116)	0.056 (0.381)
IND_MTOB ( $\beta_{12}$ )	0.011 (0.592)	0.022 (1.162)	-0.016 (-0.407)	-0.005 (-0.118)	0.057 (1.276)	0.051 (1.099)	0.023 (0.740)	0.004 (0.137)
FREE_CASH ( $\beta_{13}$ )		0.001 (0.051)		-0.175*** (-3.002)		-0.123 (-1.130)		-0.106 (-1.602)
F_SCORE ( $\beta_{14}$ )		-0.021 (-0.766)		0.116** (3.629)		0.187*** (5.356)		0.109*** (4.374)
Industry, Year dummies	Yes, Yes	Yes, Yes	Yes, Yes	Yes, Yes	Yes, Yes	Yes, Yes	Yes, Yes	Yes, Yes
Firm-level clustered	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Pseudo-R square	0.011	0.011	0.016	0.017	0.115	0.112	0.103	0.104
Sample period	2000-2011	2000-2011	2000-2011	2000-2011	1998-2011	1998-2011	1998-2011	1998-2011
Number of observations with Y=1	5,769	5,164	1,180	1,074	476	428	784	713

**Panel B: Controlling for CEO Incentive Compensation**

This panel controls for CEO incentive compensation.  $\log CEO\_DELTA$  is the natural log of the CEO's pay for performance sensitivity. The table reports the estimation with the extended controls, that is includes  $FREE\_CASH$  and  $F\_SCORE$ . The sample includes all firm-year observations from 1998-2011 with required data. \*\*\*, \*\*, and \* indicate significance at the  $p < 0.01$ ,  $< 0.05$ , and  $< 0.10$  levels, respectively, based on two-tailed z-test statistics clustered at the firm level. Definitions of the variables are in Appendix B.

<i>Independent variables</i>	(1)	(2)	(3)	(4)
	<i>RESTATE</i>	<i>INC_RESTATE</i>	<i>AAER</i>	<i>CLASS</i>
<i>Constant</i> ( $\beta_0$ )	-3.109*** (-9.606)	-4.658*** (-6.522)	-9.824*** (-6.623)	-7.626*** (-10.580)
$\log NC\_INDEX$ ( $\beta_1$ )	0.191*** (6.883)	0.154** (2.392)	0.266* (1.706)	0.230*** (4.062)
$\log MV$ ( $\beta_2$ )	0.009 (0.389)	-0.101** (-2.305)	0.391*** (4.323)	0.325*** (7.449)
<i>ROA</i> ( $\beta_3$ )	-0.180 (-0.800)	-0.028 (-0.061)	-0.298 (-0.581)	0.731 (1.046)
<i>ABRET</i> ( $\beta_4$ )	-0.009 (-0.163)	-0.043 (-0.354)	-0.208 (-1.525)	0.156 (1.362)
<i>MTOB</i> ( $\beta_5$ )	0.007 (0.972)	-0.026 (-1.164)	0.008 (0.396)	0.018* (1.794)
<i>LEV</i> ( $\beta_6$ )	0.316* (1.778)	0.966*** (2.939)	1.008 (1.548)	0.230 (0.598)
<i>SALE_GROWTH</i> ( $\beta_7$ )	0.003 (0.029)	0.458*** (3.089)	-0.258 (-0.995)	0.519*** (3.460)
<i>STDRET</i> ( $\beta_8$ )	10.535*** (3.851)	10.617* (1.895)	32.181*** (3.239)	25.178*** (4.711)
$\log FIRMAGE$ ( $\beta_9$ )	0.045 (1.054)	-0.048 (-0.581)	-0.231 (-1.286)	-0.178** (-1.999)
<i>BIG_N</i> ( $\beta_{10}$ )	0.040 (0.340)	0.493* (1.933)	-0.225 (-0.312)	0.099 (0.323)
<i>FINANCING</i> ( $\beta_{11}$ )	-0.213 (-1.501)	0.274 (0.815)	-0.201 (-0.249)	-0.156 (-0.406)
<i>IND_MTOB</i> ( $\beta_{12}$ )	0.008 (0.294)	0.028 (0.391)	0.126* (1.784)	0.119** (2.058)
<i>FREE_CASH</i> ( $\beta_{14}$ )	0.019 (0.327)	-0.272** (-2.314)	-0.229* (-1.747)	0.018 (0.113)
<i>F_SCORE</i> ( $\beta_{15}$ )	-0.009 (-0.149)	-0.005 (-0.042)	0.403*** (4.331)	0.085 (0.909)
$\log CEO\_DELTA$ ( $\beta_{13}$ )	0.062*** (4.524)	0.070** (2.426)	0.126** (2.311)	0.003 (0.111)
Industry and Year dummies	Yes, Yes	Yes, Yes	Yes, Yes	Yes, Yes
Firm-level clustered	Yes	Yes	Yes	Yes
Pseudo-R square	0.011	0.017	0.104	0.112
Sample period	2000-2011	2000-2011	1998-2011	1998-2011
Number of observations with Y=1	1,804	382	209	341
Observations	14,280	14,280	16,616	16,616

**Panel C: Controlling for Governance and Internal Control Weakness**

This table reports results after controlling for governance variables. The dependent variable is financial reporting risk as captured by class action litigation. The sample includes all firm-year observations from 1998-2011 from Compustat with required data. The number of observations varies across different models due to differences in the starting year of the availability of the dependent variables as described in Table 5. \*\*\*, \*\*, and \* indicate significance at the  $p < 0.01$ ,  $< 0.05$ , and  $< 0.10$  levels, respectively, based on two-tailed z-test statistics clustered at the firm level. Definitions of the variables are in Appendix B.

<i>Independent variables</i>	(1)	(2)	(3)	(4)
	<i>CLASS</i>	<i>CLASS</i>	<i>CLASS</i>	<i>CLASS</i>
<i>Constant</i> ( $\beta_0$ )	-6.525*** (-8.203)	-6.081*** (-6.217)	-6.107*** (-5.778)	-6.718*** (-6.882)
<i>logNC_INDEX</i> ( $\beta_1$ )	0.176*** (2.648)	0.097* (1.806)	0.039 (1.591)	0.389*** (3.124)
<i>logMV</i> ( $\beta_2$ )	0.626 (0.804)	-0.263 (-0.245)	0.704 (0.798)	0.704 (0.999)
<i>ROA</i> ( $\beta_3$ )	0.401*** (3.091)	0.425*** (4.150)	0.348*** (2.862)	0.541** (2.052)
<i>ABRET</i> ( $\beta_4$ )	0.033*** (3.202)	0.030 (1.414)	0.027 (1.315)	0.059** (2.510)
<i>MTOB</i> ( $\beta_5$ )	-0.440 (-0.973)	-0.065 (-0.121)	0.258 (0.409)	-1.421*** (-3.636)
<i>LEV</i> ( $\beta_6$ )	0.673*** (4.643)	0.708*** (3.519)	0.841*** (3.863)	0.326 (0.780)
<i>SALE_GROWTH</i> ( $\beta_7$ )	10.567* (1.680)	15.530** (2.398)	13.160* (1.726)	20.509*** (3.695)
<i>STDRET</i> ( $\beta_8$ )	-0.173* (-1.649)	-0.223* (-1.688)	-0.199* (-1.695)	-0.295* (-1.786)
<i>logFIRMAGE</i> ( $\beta_9$ )	-0.048 (-0.151)	0.036 (0.094)	-0.293 (-0.928)	0.050 (0.199)
<i>BIG_N</i> ( $\beta_{10}$ )	0.036 (0.093)	-0.126 (-0.228)	-0.311 (-0.877)	-0.499 (-0.551)
<i>FINANCING</i> ( $\beta_{11}$ )	0.275*** (4.091)	0.157* (1.928)	0.241*** (2.970)	0.258** (2.351)
<i>IND_MTOB</i> ( $\beta_{12}$ )	0.626 (0.804)	-0.263 (-0.245)	0.704 (0.798)	0.704 (0.999)
<i>logCEO_DELTA</i> ( $\beta_{13}$ )	0.103*** (3.450)	0.105*** (4.293)	0.106*** (3.455)	0.085 (1.255)
<i>FREE_CASH</i> ( $\beta_{14}$ )	0.127 (0.857)	0.178 (0.802)	0.042 (0.247)	0.085 (0.420)
<i>F_SCORE</i> ( $\beta_{15}$ )	0.029 (0.260)	-0.066 (-0.538)	0.106 (0.653)	0.192** (2.034)
<i>CEO_SLICE</i> ( $\beta_{16}$ )	-0.032 (-0.232)			
<i>G_INDEX</i> ( $\beta_{17}$ )		0.027 (0.969)		
<i>E_INDEX</i> ( $\beta_{18}$ )			0.061 (1.145)	
<i>IC_WEAK</i> ( $\beta_{19}$ )				0.270 (1.225)
Industry, Year dummies	Yes, Yes	Yes, Yes	Yes, Yes	Yes, Yes
Firm-level clustered	Yes	Yes	Yes	Yes
Pseudo-R square	0.099	0.071	0.077	0.103
Sample period	2000-2011	2000-2007	2000-2009	2004-2011
Number of observations with Y=1	1,801	1,235	1,111	860
Observations	14,251	7,977	7,244	9,085



**Table 7: Future Financial Reporting Risks and Degree of Noncompliance**

The sample includes all firm-year observations from 1998-2011 with required data. \*\*\*, \*\*, and \* indicate significance at the  $p < 0.01$ ,  $< 0.05$ , and  $< 0.10$  levels, respectively, based on two-tailed z-test statistics clustered at the firm level. Definitions of the variables are in Appendix B.

Independent variables	RESTATE		IN_RESTATE		AAER		CLASS	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Constant ( $\beta_0$ )	-2.227*** (-14.863)	-2.370*** (-14.984)	-3.400*** (-12.758)	-3.521*** (-12.624)	-7.866*** (-11.702)	-8.418*** (-12.854)	-7.429*** (-24.381)	-7.316*** (-22.540)
REPEAT $\times$ logNC_INDEX ( $\beta_1$ )	0.364*** (4.889)	0.380*** (5.019)	0.561*** (4.130)	0.575*** (4.176)	0.681** (2.043)	0.658* (1.927)	0.597*** (3.756)	0.592*** (3.574)
FREQUENT $\times$ logNC_INDEX ( $\beta_2$ )	0.128*** (3.311)	0.138*** (3.508)	0.160** (2.129)	0.176** (2.323)	0.344*** (3.045)	0.302*** (2.723)	0.219*** (2.723)	0.248*** (3.040)
SPORADIC $\times$ logNC_INDEX ( $\beta_3$ )	0.104*** (3.842)	0.109*** (3.913)	0.136** (2.495)	0.137** (2.496)	-0.029 (-0.163)	-0.025 (-0.138)	0.116** (2.349)	0.136*** (2.709)
logMV ( $\beta_4$ )	-0.011 (-1.003)	-0.008 (-0.645)	-0.029 (-1.345)	-0.030 (-1.337)	0.400*** (8.104)	0.388*** (7.598)	0.430*** (19.816)	0.418*** (18.149)
ROA ( $\beta_5$ )	0.023 (0.306)	0.050 (0.614)	0.342** (1.997)	0.562*** (2.824)	0.242 (0.624)	0.484 (1.101)	0.163 (0.849)	0.369* (1.679)
ABRET ( $\beta_6$ )	0.188*** (7.222)	0.168*** (6.214)	0.115** (2.034)	0.122** (2.105)	0.036 (0.476)	0.024 (0.292)	0.262*** (4.451)	0.277*** (4.664)
MTOB ( $\beta_7$ )	0.005 (1.047)	0.004 (0.928)	-0.006 (-0.638)	-0.006 (-0.552)	-0.017 (-1.103)	-0.018 (-1.062)	0.011* (1.750)	0.018*** (2.839)
LEV ( $\beta_8$ )	0.203** (2.258)	0.175* (1.828)	0.427** (2.385)	0.478** (2.548)	0.640* (1.751)	0.855** (2.115)	0.409** (2.091)	0.192 (0.924)
SALE_GROWTH ( $\beta_9$ )	-0.106*** (-3.633)	-0.106*** (-3.111)	0.137*** (2.877)	0.073 (1.261)	0.118* (1.711)	-0.115 (-1.213)	0.228*** (4.973)	0.130** (2.339)
STDRET ( $\beta_{10}$ )	0.947 (0.832)	2.340* (1.938)	3.315 (1.558)	3.111 (1.376)	15.378*** (3.231)	17.110*** (3.410)	15.938*** (6.709)	16.529*** (6.539)
logFIRMAGE ( $\beta_{11}$ )	-0.024 (-0.945)	-0.010 (-0.387)	-0.068 (-1.440)	-0.064 (-1.281)	-0.429*** (-3.641)	-0.379*** (-3.125)	-0.380*** (-7.276)	-0.389*** (-7.013)
BIG_N ( $\beta_{12}$ )	0.209*** (4.541)	0.192*** (3.969)	-0.014 (-0.174)	0.007 (0.083)	0.156 (0.485)	0.309 (0.892)	0.264* (1.789)	0.293* (1.883)
FINANCING ( $\beta_{13}$ )	0.039 (0.815)	0.057 (1.080)	0.243** (2.288)	0.194* (1.718)	0.256 (0.986)	0.440* (1.656)	0.158 (1.142)	0.060 (0.408)
IND_MTOB ( $\beta_{14}$ )	0.013 (0.689)	0.024 (1.248)	-0.019 (-0.460)	-0.005 (-0.132)	0.055 (1.220)	0.051 (1.114)	0.025 (0.818)	0.007 (0.220)
FREE_CASH ( $\beta_{15}$ )		0.001 (0.044)		-0.177*** (-3.045)		-0.124 (-1.146)		-0.107 (-1.611)
F_SCORE ( $\beta_{16}$ )		-0.021 (-0.771)		0.115*** (3.612)		0.189*** (5.380)		0.108*** (4.336)
Chi-square test for $\beta_1 = \beta_2 = \beta_3$	11.98***	12.72***	9.37***	9.61***	6.75*	5.70*	9.40**	8.08**
Industry, Year dummies, Firm clustering	Yes, Yes	Yes, Yes	Yes, Yes	Yes, Yes	Yes, Yes	Yes, Yes	Yes, Yes	Yes, Yes
Pseudo-R square	0.010	0.010	0.014	0.017	0.095	0.098	0.097	0.098
Sample period	2000-2011	2000-2011	2000-2011	2000-2011	1998-2011	1998-2011	1998-2011	1998-2011
Number of observations with Y=1	5,769	5,164	1,180	1,074	476	428	784	713
Observations	47,702	42,833	41,849	37,580	57,920	52,256	57,920	52,256

**Table 8: Industry Noncompliance**

This table reports results with controls for industry culture of noncompliance. Industry noncompliance is the average value of noncompliance for all other firms in the two digit SIC. The sample includes all firm-year observations from 1998-2011 from Compustat with required data. The number of observations varies across different models due to differences in the starting year of the availability of the dependent variables. \*\*\*, \*\*, and \* indicate significance at the  $p < 0.01$ ,  $< 0.05$ , and  $< 0.10$  levels, respectively based on two-tailed z-test statistics clustered at the firm level. Definitions of the variables are in Appendix B.

Independent variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	RESTATE		IN RESTATE		AAER		CLASS	
Constant ( $\beta_0$ )	-2.776*** (-20.600)	-2.922*** (-20.535)	-3.770*** (-13.322)	-3.883*** (-13.135)	-8.554*** (-11.269)	-9.109*** (-10.837)	-8.014*** (-25.783)	-7.896*** (-18.603)
logNC_INDEX ( $\beta_1$ )	0.036* (1.732)	0.041* (1.930)	0.092* (1.912)	0.099** (2.030)	0.169*** (4.097)	0.145*** (3.122)	0.051* (1.762)	0.073* (1.829)
logIND_NCINDEX ( $\beta_2$ )	0.735*** (13.992)	0.741*** (13.857)	0.602*** (5.253)	0.584*** (5.068)	0.872** (2.467)	0.805** (2.109)	0.672*** (6.817)	0.653*** (4.323)
logMV ( $\beta_3$ )	0.009 (0.916)	0.014 (1.379)	-0.013 (-0.614)	-0.014 (-0.609)	0.419*** (10.138)	0.406*** (9.607)	0.445*** (20.369)	0.433*** (15.970)
ROA ( $\beta_4$ )	0.007 (0.093)	0.038 (0.455)	0.349** (2.026)	0.563*** (2.819)	0.225 (0.773)	0.482 (1.424)	0.184 (0.951)	0.383*** (2.710)
ABRET ( $\beta_5$ )	0.178*** (6.796)	0.158*** (5.823)	0.108* (1.885)	0.115* (1.955)	0.029 (0.174)	0.014 (0.092)	0.244*** (4.142)	0.259*** (4.229)
MTOB ( $\beta_6$ )	0.003 (0.709)	0.002 (0.518)	-0.008 (-0.786)	-0.008 (-0.704)	-0.022* (-1.897)	-0.021* (-1.948)	0.010 (1.606)	0.018*** (3.210)
LEV ( $\beta_7$ )	0.165** (2.002)	0.136 (1.529)	0.386** (2.143)	0.432** (2.290)	0.703 (1.573)	0.821* (1.730)	0.325 (1.634)	0.096 (0.494)
SALE_GROWTH ( $\beta_8$ )	-0.109*** (-3.781)	-0.105*** (-3.178)	0.133*** (2.772)	0.069 (1.187)	0.127 (1.457)	-0.110 (-0.932)	0.225*** (4.934)	0.125 (1.557)
STDRET ( $\beta_9$ )	1.654 (1.595)	3.037*** (2.771)	3.746* (1.775)	3.580 (1.600)	15.880*** (3.112)	18.169*** (3.146)	16.701*** (7.192)	17.248*** (5.607)
logFIRMAGE ( $\beta_{10}$ )	-0.004 (-0.184)	0.011 (0.468)	-0.049 (-1.018)	-0.043 (-0.855)	-0.431*** (-7.014)	-0.372*** (-6.233)	-0.389*** (-7.617)	-0.396*** (-6.721)
BIG_N ( $\beta_{11}$ )	0.164*** (4.096)	0.143*** (3.374)	-0.043 (-0.517)	-0.021 (-0.249)	0.112 (0.554)	0.277 (1.386)	0.244 (1.644)	0.275 (1.591)
FINANCING ( $\beta_{12}$ )	0.040 (0.873)	0.062 (1.248)	0.239** (2.248)	0.192* (1.692)	0.270** (2.449)	0.452*** (4.136)	0.149 (1.079)	0.051 (0.350)
IND_MTOB ( $\beta_{13}$ )	-0.017 (-1.009)	-0.007 (-0.382)	-0.061 (-1.379)	-0.048 (-1.074)	0.055 (0.422)	0.052 (0.402)	0.043 (1.343)	0.023 (0.570)
FREE_CASH ( $\beta_{14}$ )		-0.004 (-0.126)		-0.172*** (-2.960)		-0.125 (-1.160)		-0.100 (-1.494)
F_SCORE ( $\beta_{15}$ )		-0.033 (-1.229)		0.113*** (3.533)		0.192*** (8.424)		0.112*** (4.866)
Industry and Year dummies	Yes, Yes	Yes, Yes	Yes, Yes	Yes, Yes	Yes, Yes	Yes, Yes	Yes, Yes	Yes, Yes
Pseudo-R square	0.015	0.016	0.016	0.019	0.098	0.100	0.099	0.100
Sample period	2000-2011	2000-2011	2000-2011	2000-2011	1998-2011	1998-2011	1998-2011	1998-2011
Number of observations with Y=1	5,769	5,164	1,180	1,074	476	428	784	713
Observations	47,702	42,833	41,849	37,580	57,920	52,256	57,920	52,256

**Table 9: Role of the CEO**

This table reports results from a subsample. The subsample includes all firm-year observations from 1998-2011 from Compustat with required data with CEOs that worked in multiple firms with at least three year stay in each firm. Fixed CEO effects are included in the regression and the chi-square tests are for joint significance of the manager fixed effects. \*\*\*, \*\*, and \* indicate significance at the  $p < 0.01$ ,  $< 0.05$ , and  $< 0.10$  levels, respectively, based on two-tailed z-test statistics clustered at the firm level. Definitions of the variables are in Appendix B.

<i>Independent variables</i>	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	<i>RESTATE</i>		<i>IN_RESTATE</i>		<i>AAER</i>		<i>CLASS</i>	
<i>Constant</i> ( $\beta_0$ )	-2.254*** (-3.063)	0.725 (0.660)	4.433*** (3.116)	4.276*** (2.999)	-9.107*** (-5.337)	-8.831*** (-5.489)	-6.602*** (-7.599)	-6.514*** (-7.265)
<i>logNC_INDEX</i> ( $\beta_1$ )	0.332*** (4.436)	0.364*** (4.359)	0.013 (0.081)	0.035 (0.217)	0.337** (2.336)	0.348*** (2.617)	0.133* (1.881)	0.093* (1.739)
<i>logMV</i> ( $\beta_2$ )	-0.091* (-1.870)	-0.079 (-1.523)	0.072 (0.572)	0.081 (0.644)	0.546*** (5.882)	0.467*** (5.177)	0.373*** (3.416)	0.375*** (3.288)
<i>ROA</i> ( $\beta_3$ )	-0.626 (-1.581)	-0.814 (-1.644)	-0.566 (-0.539)	-0.507 (-0.450)	-0.815 (-1.443)	-0.496 (-0.632)	-0.587 (-1.225)	-1.285 (-1.285)
<i>ABRET</i> ( $\beta_4$ )	0.122 (1.121)	0.184 (1.630)	-0.080 (-0.308)	-0.081 (-0.312)	-0.196 (-0.463)	-0.205 (-0.786)	0.676*** (2.744)	0.656*** (2.794)
<i>MTOB</i> ( $\beta_5$ )	-0.032* (-1.855)	-0.040** (-2.101)	0.033 (0.997)	0.033 (0.977)	0.034* (1.935)	0.030 (1.622)	0.035 (1.144)	0.035 (1.148)
<i>LEV</i> ( $\beta_6$ )	0.467 (1.066)	0.796* (1.658)	-0.427 (-0.523)	-0.415 (-0.503)	2.585*** (4.408)	3.601*** (4.120)	0.335 (0.675)	0.245 (0.442)
<i>SALE_GROWTH</i> ( $\beta_7$ )	0.047 (0.346)	0.088 (0.518)	0.595 (1.261)	0.529 (0.986)	0.847*** (4.122)	0.805** (2.547)	0.421** (2.236)	0.398* (1.889)
<i>STDRET</i> ( $\beta_8$ )	23.044*** (4.483)	21.295*** (3.772)	-7.134 (-0.591)	-5.303 (-0.418)	-2.698 (-0.129)	-19.635 (-0.814)	5.007 (0.396)	3.946 (0.327)
<i>logFIRMAGE</i> ( $\beta_9$ )	-0.055 (-0.514)	-0.060 (-0.492)	-0.135 (-0.845)	-0.142 (-0.881)	-0.306** (-2.023)	-0.404*** (-3.191)	-0.298** (-2.013)	-0.354*** (-2.739)
<i>BIG_N</i> ( $\beta_{10}$ )	-0.055 (-0.126)	0.190 (0.384)	-0.301 (-0.346)	-0.258 (-0.300)		0.419 (1.214)	0.133 (1.081)	0.093 (0.739)
<i>FINANCING</i> ( $\beta_{11}$ )	-0.329 (-1.183)	-0.442 (-1.470)	-0.482 (-0.652)	-0.415 (-0.560)			-0.598 (-0.810)	-0.496 (-0.592)
<i>IND_MTOB</i> ( $\beta_{12}$ )	0.089 (1.355)	0.038 (0.519)	-0.030 (-0.256)	-0.038 (-0.315)	0.200 (0.882)	0.290* (1.657)	0.084 (1.054)	0.109 (1.363)
<i>FREE_CASH</i> ( $\beta_{13}$ )		-0.107 (-0.818)		0.069 (0.262)		-1.264*** (-9.092)		-0.024 (-0.078)
<i>F_SCORE</i> ( $\beta_{14}$ )		0.018 (0.202)		-0.070 (-0.315)		0.559*** (3.449)		0.014 (0.100)
Industry and Year dummies	Yes, Yes	Yes, Yes	Yes, Yes	Yes, Yes	Yes, Yes	Yes, Yes	Yes, Yes	Yes, Yes
CEO dummies included	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Chi-square on fixed effects for CEOs	0.08	0.01	45.16***	66.90***	45.87***	33.05***	44.07***	31.66***
Pseudo-R square	0.115	0.128	0.115	0.271	0.156	0.307	0.156	0.159
Observations	3,708	3,521	3,708	3,521	3,708	3,521	3,708	3,521