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Non-financial Corporate Misconduct and Earnings Restatements

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Purpose

This study examines the relation between penalties for non-financial regulatory violations and earnings restatements. Financial and non-financial corporate misconduct have been shown to be associated through channels such as shared internal controls and corporate culture.

Methodology

Using corporate misconduct data from the Violation Tracker dataset and coarsened exact matching or entropy balancing to match penalty firm-years with otherwise similar non-penalty firm-years, I examine the relation between regulatory penalties and concurrent and future earnings restatements.

Findings

I find earnings are significantly more likely to be restated in years when the firm is assessed a regulatory penalty. In addition, penalties strongly predict both the presence and number of earnings restatements in future years.

Originality

My findings extend our understanding of the relation between financial and non-financial corporate misconduct by applying modern econometric techniques to a significantly more extensive dataset than prior literature.

Practical/Social Implications

My results suggest penalties for non-financial misconduct are an important leading indicator for earnings restatements and can help stakeholders identify as yet undetected financial reporting problems. Stakeholders may choose to decrease their reliance on the financial statements if a penalty is assessed, and regulatory bodies may consider sharing information across agencies to exploit synergies in monitoring activities.

Introduction

Despite the long-held notion that the purpose of corporations is to maximize their stock prices (Ciepley, 2013; Schrempf-Stirling, 2013), in recent decades, investors have increasingly emphasized social, environmental, and ethical considerations as part of their investment decisions, calling on firms to incorporate corporate social responsibility (CSR) into their business practices (Renneboog et al., 2008; Starks, 2009; Tsang et al., 2023). As

investment strategies like environmental, social, and governance (ESG) investing and socially responsible investing (SRI) increase in popularity, investors prioritize not only financial performance but also the interests of non-financial stakeholders (Xu & Taehyun, 2022). The question of whether financial and non-financial stakeholder interests are aligned or at odds remains an open one; prior papers have variously found synergies or tradeoffs between *doing well* financially and *doing good* through responsible business practices (Falck & Heblich, 2007; Hong et al., 2012; Lu & Taylor, 2018¹; Xu & Taehyun, 2022). Likewise, it is unclear whether firms that commit misconduct in their operations do so as a substitute for or in addition to financial misconduct. In this paper, I examine the association between noncompliance with financial and non-financial regulations, which indicates distinct but interrelated types of irresponsible firm behavior.

Diverse types of corporate misconduct may be associated through channels such as corporate culture, shared internal controls, and common incentives for misconduct. Corporate culture is expected to influence compliance behaviors across both financial and non-financial aspects of a business. Indeed, the Committee of Sponsoring Organizations of the Treadway Commission (COSO), which develops guidelines to help businesses enhance internal control, risk management, governance, and fraud deterrence, lists demonstrating a commitment to integrity and ethical values as the first principle of its internal control integrated framework (COSO, 2013). The corporate ethical culture hypothesis suggests nurturing “a culture that promotes honesty, integrity, and appreciation of the greater good of society” manifests across diverse aspects of a business (Lemma et al., 2020, p. 2131). Conversely, an unethical corporate culture can promote myriad unethical and illegal behaviors, including aggressiveness and misrepresentation in financial reporting, violations of safety regulations, discrimination, price fixing, bribery, and many more (Mahadeo, 2006; Patelli & Pedrini, 2015).

Internal controls are also expected to support both financial and non-financial aspects of a company’s operations. Internal controls are internal governance mechanisms designed to “provide reasonable assurance regarding the achievement of objectives relating to operations, reporting, and compliance” (COSO, 2013). Operations objectives may include goals related to both operational and financial performance, while reporting objectives may relate to the reliability, timeliness, and transparency of financial and non-financial reports, and compliance objectives comprise the adherence to applicable laws and regulations (COSO, 2013). While this is a useful way to categorize internal control objectives, their respective aims overlap conceptually, and many financial and non-financial business activities rely on shared controls (Lawrence et al., 2018). In addition, controls designed to safeguard against operational issues can provide information that is used for

¹ See Bénabou and Tirole (2010) for a review of theories on the relation between CSR and profits.

financial reporting and decision-making (Feng et al., 2015). Further, many controls, such as codes of conduct, human resources policies and procedures, and the internal audit function, are implemented at the firm level (Fletcher et al., 2010). As a result, weaknesses in internal controls, especially pervasive entity-level controls, are likely to impact both financial and non-financial activities (Bauer, 2016; Feng et al., 2015; Lawrence et al., 2018).

Lastly, financial and non-financial misconduct can both arise due to incentives to inflate reported financial performance. It is perhaps unsurprising that financial pressures can incentivize financial misconduct (Chu et al., 2019), but behaviors aimed at inflating reported financial performance can also lead to non-financial misconduct. For example, if managers make cuts to safety-related expenses in an attempt to increase profits, this can give rise to non-financial misconduct such as violations of safety or labor laws as an unintended consequence (Caskey & Ozel, 2017). Other behaviors like wage theft can both directly increase profits and result in regulatory violations (Raghunandan, 2021). Thus, attempts to boost reported financial performance can drive both financial and non-financial misconduct.

In this paper, I examine whether firms that have been penalized for noncompliance with various non-financial regulations are more likely to restate their financial statements as a result of error, fraud, or misapplication of accounting standards. I find that restatements are significantly more likely in years when the firm is assessed a regulatory penalty for a non-financial violation. In addition, non-financial regulatory penalties strongly predict both the presence and number of restatements in future years. The magnitude (dollar value) of regulatory penalties is also significantly associated with future restatements. My results are robust to multiple econometric approaches, including coarsened exact matching (CEM) and entropy balancing.

This study contributes to the nascent literature on the link between financial reporting issues and non-financial misconduct by showing that penalties for non-financial misconduct are an important leading indicator for accounting restatements. While restatements are issued only after firms have identified and corrected previous misreporting, penalties for corporate misconduct can be observed continuously as they are assessed. Thus, my results suggest stakeholders should monitor for broad types of regulatory penalties, as they can help identify as yet undetected financial reporting problems. This study synthesizes insights from the literatures on CSR, governance, and misconduct. As stakeholders increasingly emphasize CSR, they should be aware that irresponsible business practices may raise red flags about firms' financial reporting as well. My results also suggest that financial regulators such as the Securities and Exchange Commission (SEC) should monitor firms for non-financial misconduct, which may predict financial noncompliance in concurrent and future periods. Regulators should consider sharing information across agencies, as synergies in monitoring activities may

be possible. Further, more coordinated enforcement across agencies could potentially reduce firms opportunistically shifting to types of misconduct with less stringent enforcement.

Literature Review and Hypothesis Development

Corporate Misconduct

Corporate misconduct, which includes violations of environmental, labor, health and safety, consumer protection, and other regulations, is costly to investors, employees, governments, consumers, and society at large (Admati, 2017; Amiram et al., 2018). Penalties for misconduct range from fines to prison time to the complete cessation of a firm's operations (Caskey & Ozel, 2017; Kniesner & Leeth, 2014). In addition to the harmful direct effects of corporate misconduct, prior literature has documented an association between corporate misconduct and issues related to firms' financial reporting. A small but growing body of literature examines corporate misconduct using Violation Tracker, the first wide-ranging database on corporate misconduct (Good Jobs First, 2023). For example, Caskey and Ozel (2017) find that violations of the Occupational Safety and Health Administration's (OSHA) workplace health and safety regulations are positively associated with earnings management. This relation appears to be driven by firms reducing safety expenditures and increasing employee workloads as a means of inflating financial performance. Similarly, Raghunandan (2021) finds that wage theft is positively associated with earnings management, as both are driven by firms' financial incentives. Penalties for wage theft are both more likely and more severe (higher in dollar value) when firms have incentives to manage earnings (Raghunandan, 2021). Further, Raghunandan (2021) finds wage theft is more prevalent when regulatory enforcement is less robust. Raghunandan (2022) finds that firms receiving state subsidies are more likely to engage in corporate misconduct as a result of lenient misconduct enforcement, implying firms may behave in ways that harm the very stakeholders the subsidies were intended to benefit. Raghunandan (2021) also finds firms that have been caught engaging in wage theft are more likely to shift to outright financial misconduct. Raghunandan and Ruchti (2022) find firms that are penalized by OSHA in one state subsequently have fewer violations in that state but more violations in other states and that greater penalties in one state are associated with greater future penalties in other states. These results suggest that firms commit different types of misconduct for similar reasons. In addition, stringent enforcement related to one type of misconduct, rather than having a general deterrent effect, may in fact incentivize firms to commit other types of misconduct. Together, the existing literature on corporate misconduct indicates the robustness of the regulatory environment (or lack thereof) and financial incentives are key drivers of multiple types of corporate misconduct.

Restatements

Restatements entail the revision of previously issued financial statements to correct material inaccuracies due to error, fraud, or misapplication of accounting standards (Sievers & Sofilkanitsch, 2019). Restatements negatively impact stock prices and thus directly harm investors (Richardson et al., 2002). In addition, prior literature has found restatements to be associated with various negative circumstances such as earnings management (Richardson et al., 2002), low audit quality (Christensen et al., 2016), impaired auditor independence (Kinney et al., 2004), whistleblowing events (Bowen et al., 2010), and a lower-quality workforce (Call et al., 2017). Choi et al. (2019) document a positive association between accounting restatements and violations of SEC regulations, but the existing literature has not investigated the relation between restatements and violations of non-financial regulations. Still, taken together, the restatement literature indicates that, like non-financial corporate misconduct, accounting restatements can arise due to poor control environments and firms' financial incentives.

Link between Financial and Non-financial Misconduct

Prior literature has identified links between financial reporting problems and non-financial misconduct, which can be broadly categorized as relating to: 1) firm culture, 2) shared internal controls, and 3) shared incentives for noncompliance.

Prior literature has shown that corporate culture can drive both financial and non-financial noncompliance. Lemma et al. (2020) posit the corporate ethical culture hypothesis, which suggests nurturing “a culture that promotes honesty, integrity, and appreciation of the greater good of society” manifests across diverse aspects of a business (Lemma et al., 2020, p. 2131). On the contrary, “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” (Kedia et al., 2017, pp. 2–3). Lemma et al. (2020) find that firms with higher carbon risk exposure have lower financial reporting quality, and Kedia et al. (2017) find that misconduct related to product safety, antitrust, worker safety, and environmental regulations predicts future financial fraud. Kedia et al. (2017) note that some firms may develop a culture of “pushing the envelope” with respect to both financial and non-financial regulatory compliance. Similarly, in a sample of US pharmaceutical companies, Altamuro et al. (2022) identify a positive relation between Food and Drug Administration (FDA) inspection failures and accounting restatements, suggesting a weak ethical culture can result in noncompliance behaviors that span a firm's various functions and locations (Altamuro et al., 2022).

Weaknesses in internal controls can give rise to a range of financial and non-financial issues as well. Weak internal controls over financial reporting have been shown to be associated with operational issues not directly related to financial reporting, such as inventory impairments and lower inventory

turnover (Feng et al., 2015); higher effective tax rates (Bauer, 2016); less efficient investments (Cheng et al., 2013); lower credit ratings, profitability, and cash flows from operating activities (Elbannan, 2009); more variable earnings (Elbannan, 2009); and higher leverage (Elbannan, 2009). Feng et al. (2015) suggest firms produce lower-quality financial information as a result of weak internal controls over financial reporting and that managers then act on that low-quality information and make poor operational decisions. In addition, weak internal controls over a business's operations have been shown to be associated with financial reporting issues such as restatements, SEC comment letters, and weak internal controls over financial reporting (Lawrence et al., 2018). Furthermore, many controls, such as codes of conduct, human resources policies and procedures, and the internal audit function, are implemented at the organisation level and thus, by design, impact both financial and non-financial compliance activities (Fletcher et al., 2010).

Lastly, prior literature has shown efforts to increase reported financial performance can drive both financial and non-financial misconduct. While committing outright financial fraud is one means to improve reported financial performance (Chu et al., 2019), non-financial misconduct may also arise from efforts to boost financial performance. Specifically, firms can increase earnings and potentially compromise regulatory compliance by cutting spending in areas such as environmental efforts and worker safety. Clarkson et al. (2011) find firms with negative changes to their financial resources subsequently have lower environmental performance, suggesting when firms' resources are constrained, they may elect to forgo environmental efforts even despite increasingly stringent environmental regulations. Xu and Taehyun (2022) similarly find that firms decrease their environmental efforts when financially constrained, and Graham et al. (2005) find managers are willing to cut maintenance expenditures to meet earnings benchmarks. Caskey and Ozel (2017) find firms that are suspected of managing earnings have significantly higher injury rates among employees, suggesting that firms improve accounting performance by cutting safety-related expenditures and/or increasing employee workloads, which can compromise safety if employees are overexerted or circumvent safety protocols to save time. Raghunandan (2021) finds that firms are more likely to commit wage theft, which constitutes a violation of labor regulations and directly increases earnings, when they are incentivized to manage earnings. The literature as a whole suggests behaviors aimed at inflating reported financial performance can lead to both financial and non-financial regulatory violations.

Hypotheses

As financial and non-financial regulatory noncompliance may be linked for several reasons, including corporate culture, shared internal controls, and common incentives, I formulate the following hypothesis:

H1: Firms that are assessed penalties for violations of non-financial regulations in the current year are more likely to issue accounting restatements in current and future years.

Following Raghunandan (2021) and Raghunandan and Ruchti (2022), I also investigate the severity of regulatory penalties:

H2: The dollar value of penalties for violations of non-financial regulations in the current year is positively associated with the likelihood of an accounting restatement in current and future years.

While existing literature and theory suggest a potential relation between financial and non-financial misconduct, it is not obvious *ex ante* that the two must be positively related. Controls related to the environment, workplace safety, etc. need not necessarily have financial consequences (and vice versa). Managers may have separate systems for monitoring financial and non-financial compliance, and operational decisions are not necessarily made based on the financial reports that are disclosed publicly. Supporting this notion, Chang et al. (2021) find weak internal controls over operations are *not* associated with financial restatements in Taiwanese firms. Altamuro et al. (2022) offer a summarizing example, “On the surface, failure of the shop floor operators to behave consistently in compliance with the FDA’s ... [safety and sterilization] regulations would not seem directly related to financial reporting deficiencies in the accounting and finance function in corporate offices” (Altamuro et al., 2022, p. 430). In addition, prior studies have documented a tradeoff between CSR and financial performance (Gargouri et al., 2010; Lemma et al., 2020; Velte, 2021). If firms commit financial misconduct to offset the financial impact of costly regulatory compliance, this could give rise to a *negative* relation between financial and non-financial misconduct (Gargouri et al., 2010; Lemma et al., 2020). Thus, the relation between non-financial misconduct and financial reporting issues remains an open question.

Research Design

Methodology

My main tests examine the relation between penalties for corporate misconduct and accounting restatements. Each test takes the form:

$$\begin{aligned} \text{RESTATEMENT_VARIABLE}_{it} = & \beta_0 \\ & + \beta_1 \text{PENALTY_VARIABLE}_{it} \\ & + \beta_2 \text{CONTROLS}_{it} + \text{YEAR_FE} \\ & + \text{CEM_WEIGHTS} + \varepsilon_{it} \end{aligned} \quad (1)$$

My restatement variables are *RS*, an indicator set equal to one if the firm issued an accounting restatement in the current year and zero otherwise; *FUT_RS*, an indicator set equal to one if the firm issued an accounting restatement in any future year in the sample period and zero otherwise; and *N_FUT_RS*, the total number of accounting restatements in all future years of the sample period. My penalty variables are *PEN*, an indicator set equal to one if the firm had a regulatory penalty in the current year and zero

otherwise, and *PEN_AMT*, the total dollar value of penalties assessed to the firm in the current year. Control variables are *ROA*, return on assets; *LEV*, the debt-to-equity ratio; *LOSS*, an indicator set equal to one if net income is negative and zero otherwise; *BIGN*, an indicator set equal to one if the firm has a Big-N auditor and zero otherwise; *AGE*, the number of years since the firm's initial public offering; *MTB*, the market-to-book ratio; and *STOCKRET*, the annualized stock return. *YEAR_FE* are year fixed effects, and *CEM_WEIGHTS* are the outputs of the CEM process.

I use CEM to match penalty firm-years with otherwise similar non-penalty firm-years. CEM is a matching method that allows the researcher to match treated and control observations with exactly the same values of some covariates (e.g. identical industries) and similar values of other covariates (e.g. similar firm size). Compared with approximate matching methods, such as propensity score matching, which are common in accounting research, CEM allows for improved estimation of relations between variables. Compared with exact matching methods, CEM generates considerably larger matched samples. In addition, CEM requires fewer assumptions and possesses more attractive statistical properties than other matching methods (Blackwell et al., 2009, p. 524). Using CEM, I match firm-year observations with penalties to observations without penalties having identical values of three-digit SIC code, *LOSS*, and *BIGN* and in the same quartile of all other control variables. *CEM_WEIGHTS* do not impact the regression with *N_FUT_RS* as the dependent variable since *N_FUT_RS* is not a dichotomous variable.

Data and Sample Selection

My sample is constructed from Compustat, Audit Analytics, and Violation Tracker. Violation Tracker, a dataset produced by the Corporate Research Project of Good Jobs First, is “the first wide-ranging database on corporate misconduct” and details “banking, consumer protection, false claims, environmental, wage & hour, safety, discrimination, price-fixing, and other cases resolved by [United States] federal regulatory agencies and all parts of the Justice Department since 2000” (Good Jobs First, 2023). It includes 397,026 penalties for both public and private companies from 2000 to 2019. Agencies currently represented in the dataset include the EPA, OSHA, the United States Department of Justice, the Federal Aviation Administration, the Federal Communications Commission, the National Labor Relations Board, and more. Restatement data is sourced from Audit Analytics over the same sample period for firms both with and without penalties. Control variables are from Compustat. I require non-missing values for each of my control variables and at least two consecutive years of data for their construction.

I drop firm-year observations with penalties from the SEC, as the acts or conditions for which the firm has been penalized by the SEC may be one and the same as those that resulted in the need to issue a restatement. To the extent that SEC penalties and accounting restatements are distinct in

Table 1. Descriptive Statistics

VARIABLES	(1) mean	(2) sd	(3) p50	(4) p25	(5) p75	(6) N
<i>RS</i>	0.0874	0.2824	0	0	0	48,946
<i>FUT_RS</i>	0.2220	0.4156	0	0	0	48,946
<i>N_FUT_RS</i>	1.6933	4.3542	0	0	0	48,946
<i>PEN</i>	0.0687	0.2530	0	0	0	48,946
<i>PEN_AMT</i>	53.1815	466.7021	0	0	0	48,946
<i>ROA</i>	-0.0819	0.4594	0.0142	-0.1182	0.0704	48,946
<i>LEV</i>	0.5768	2.4982	0.2001	0	0.7945	48,946
<i>LOSS</i>	0.2804	0.4492	0	0	1	48,946
<i>BIGN</i>	0.7329	0.4424	1	0	1	48,946
<i>AGE</i>	11.0757	8.0217	10	5	15	48,946
<i>MTB</i>	2.7736	7.0527	1.8540	0.9667	3.493	48,946
<i>STOCKRET</i>	0.2242	1.0096	0.0304	-0.294	0.4269	48,946

RS is an indicator set equal to one if the firm issued an accounting restatement in the current year and zero otherwise, *FUT_RS* is an indicator set equal to one if the firm issued an accounting restatement in any future year in the sample period and zero otherwise, and *N_FUT_RS* is the total number of accounting restatements in all future years of the sample period. *PEN* is an indicator set equal to one if the firm had a regulatory penalty in the current year and zero otherwise, and *PEN_AMT* is the total dollar value of penalties assessed to the firm in the current year. Control variables are *ROA*, return on assets; *LEV*, the debt-to-equity ratio; *LOSS*, an indicator set equal to one if net income is negative and zero otherwise; *BIGN*, an indicator set equal to one if the firm has a Big-N auditor and zero otherwise; *AGE*, the number of years since the firm's initial public offering; *MTB*, the market-to-book ratio; and *STOCKRET*, the annualized stock return.

their economic substance, my results may be underestimated. My final sample yields 48,946 firm-year observations for 6,297 unique firms. All continuous variables are winsorized at the 1% and 99% levels.

Results

Descriptive Statistics

[Table 1](#) presents descriptive statistics. Approximately 9% of firms have a restatement in a given year, and approximately 22% of sample firms have a restatement at some point in the sample period for an average of 1.7 restatements during the sample period. About 7% of firm-year observations have a regulatory penalty. While the majority of firms do not have penalties, penalties for those that do can be quite large. The mean and median annual penalty amount for penalty firms are nearly \$800,000 and \$53,000, respectively (untabulated). *ROA* has a small positive median and a small negative mean. Firms are on average approximately 58% levered, with a median of approximately 20%. Loss firm-years represent approximately 28% of my sample. Over 73% of firms have big-N auditors. Mean and median firm age are 11 and 10 years, respectively. Mean and median market-to-book ratio are 2.77 and 1.85, respectively. Mean annual stock return is over 22%, with a smaller median of 3%.

[Table 2](#) presents the Pearson (below the diagonal) and Spearman (above the diagonal) correlations for my sample variables. Unsurprisingly, the restatement variables are highly correlated with one another.

Table 2. Correlation Matrix

VARIABLES	(1) <i>RS</i>	(2) <i>FUT_RS</i>	(3) <i>N_FUT_RS</i>	(4) <i>PEN</i>	(5) <i>PEN_AMT</i>	(6) <i>ROA</i>	(7) <i>LEV</i>	(8) <i>LOSS</i>	(9) <i>BIGN</i>	(10) <i>AGE</i>	(11) <i>MTB</i>	(12) <i>STOCKRET</i>
<i>RS</i>	1	1	0.5778	0.0014	0.0014	0.0001	0.0130	(0.0016)	0.0267	(0.0448)	(0.0112)	0.0107
<i>FUT_RS</i>	0.5793	1	0.9897	0.0127	0.0121	(0.0135)	0.0098	0.0101	0.0290	(0.1055)	(0.0062)	0.0141
<i>N_FUT_RS</i>	0.4558	0.7281	1	0.0157	0.0152	(0.0083)	0.0122	0.0055	0.0344	(0.1072)	(0.0041)	0.0160
<i>PEN</i>	0.0014	0.0127	0.0214	1	0.9990	0.1399	0.1493	(0.1458)	0.1226	0.1119	0.0425	0.0330
<i>PEN_AMT</i>	(0.0041)	(0.0073)	(0.0057)	0.4194	1	0.1396	0.1496	(0.1455)	0.1227	0.1123	0.0424	0.0330
<i>ROA</i>	0.0028	(0.0173)	(0.0030)	0.0766	0.0319	1	0.1110	(0.8483)	0.1789	0.1500	0.2139	0.2527
<i>LEV</i>	0.0098	0.0037	0.0024	0.0590	0.0256	0.0570	1	(0.1545)	0.1408	0.0406	0.1824	0.0425
<i>LOSS</i>	(0.0016)	0.0101	(0.0118)	(0.1458)	(0.0599)	(0.4394)	(0.0513)	1	(0.1721)	(0.1545)	(0.1634)	(0.2340)
<i>BIGN</i>	0.0267	0.0290	0.0488	0.1226	0.0552	0.1512	0.0575	(0.1721)	1	(0.0950)	0.1293	0.0557
<i>AGE</i>	(0.0551)	(0.1187)	(0.0975)	0.1120	0.0767	0.0753	0.0055	(0.1556)	(0.0501)	1	(0.0217)	0.0381
<i>MTB</i>	(0.0114)	(0.0048)	(0.0024)	0.0023	0.0082	(0.0167)	0.5114	(0.0133)	0.0362	(0.0276)	1	0.3404
<i>STOCKRET</i>	0.0214	0.0377	0.0314	-0.0106	(0.0075)	0.0085	(0.0012)	(0.0684)	(0.0005)	(0.0282)	0.1045	1

Pearson (Spearman) correlations are presented below (above) the diagonal. *RS* is an indicator set equal to one if the firm issued an accounting restatement in the current year and zero otherwise, *FUT_RS* is an indicator set equal to one if the firm issued an accounting restatement in any future year in the sample period and zero otherwise, and *N_FUT_RS* is the total number of accounting restatements in all future years of the sample period. *PEN* is an indicator set equal to one if the firm had a regulatory penalty in the current year and zero otherwise, and *PEN_AMT* is the total dollar value of penalties assessed to the firm in the current year. Control variables are *ROA*, return on assets; *LEV*, the debt-to-equity ratio; *LOSS*, an indicator set equal to one if net income is negative and zero otherwise; *BIGN*, an indicator set equal to one if the firm has a Big-N auditor and zero otherwise; *AGE*, the number of years since the firm's initial public offering; *MTB*, the market-to-book ratio; and *STOCKRET*, the annualized stock return.

Table 3. Presence of Regulatory Penalties and Accounting Restatements

VARIABLES	(1) <i>RS</i>	(2) <i>FUT_RS</i>	(3) <i>N_FUT_RS</i>
<i>PEN</i>	0.0146*** (3.02)	0.0749*** (11.17)	0.7407*** (10.05)
<i>ROA</i>	-0.0105* (-1.96)	-0.0215*** (-2.90)	-0.2662*** (-3.27)
<i>LEV</i>	0.0034*** (6.44)	0.0026*** (3.53)	0.0091 (1.15)
<i>LOSS</i>	0.0175*** (4.98)	0.0232*** (4.76)	0.0680 (1.27)
<i>BIGN</i>	0.0151*** (3.09)	0.0162** (2.39)	0.2409*** (3.23)
<i>AGE</i>	-0.0014*** (-10.79)	-0.0039*** (-21.15)	-0.0341*** (-16.90)
<i>MTB</i>	-0.0013*** (-6.29)	-0.0008*** (-2.94)	-0.0025 (-0.81)
<i>STOCKRET</i>	-0.0041** (-2.40)	0.0043* (1.81)	0.0383 (1.47)
Constant	0.0335*** (5.98)	0.1095*** (14.14)	1.0741*** (12.62)
Observations	48,946	48,946	48,946
R-squared	0.0429	0.0997	0.0722
Fixed Effects	Year	Year	Year

t-statistics in parentheses

*** p < 0.01, ** p < 0.05, * p < 0.1

RS is an indicator set equal to one if the firm issued an accounting restatement in the current year and zero otherwise, *FUT_RS* is an indicator set equal to one if the firm issued an accounting restatement in any future year in the sample period and zero otherwise, and *N_FUT_RS* is the total number of accounting restatements in all future years of the sample period. *PEN* is an indicator set equal to one if the firm had a regulatory penalty in the current year and zero otherwise. Control variables are *ROA*, return on assets; *LEV*, the debt-to-equity ratio; *LOSS*, an indicator set equal to one if net income is negative and zero otherwise; *BIGN*, an indicator set equal to one if the firm has a Big-N auditor and zero otherwise; *AGE*, the number of years since the firm's initial public offering; *MTB*, the market-to-book ratio; and *STOCKRET*, the annualized stock return.

Regression Results

The results of estimating equation (1) for my tests of H1 are presented in [Table 3](#). In Column (1), I found that accounting restatements are significantly more likely in firm-years with regulatory penalties. In addition, in Columns (2) and (3), I found that penalties in the current year strongly predict both the presence and number of restatements in future years as well. Less profitable, more highly levered, and younger firms are more likely to issue accounting restatements. Firms with Big-N auditors are also more likely to issue restatements, probably due to the increased likelihood of detection of any material inaccuracies. Taken together, these results support H1.

[Table 4](#) presents results related to the magnitude of regulatory penalties (H2). Interestingly, larger penalties are not significantly associated with concurrent restatements (Column (1)), but they are associated with both the presence and number of future restatements (Columns (2) and (3)). Thus, I found partial support for H2. It should be noted that the Violation Tracker

Table 4. Size of Regulatory Penalties and Accounting Restatements

VARIABLES	(1) <i>RS</i>	(2) <i>FUT_RS</i>	(3) <i>N_FUT_RS</i>
<i>PEN_AMT</i>	0.0000 (0.93)	0.0000*** (3.16)	0.0001** (2.09)
<i>ROA</i>	-0.0103* (-1.93)	-0.0207*** (-2.80)	-0.2589*** (-3.18)
<i>LEV</i>	0.0034*** (6.49)	0.0027*** (3.74)	0.0106 (1.34)
<i>LOSS</i>	0.0176*** (4.99)	0.0234*** (4.80)	0.0703 (1.31)
<i>BIGN</i>	0.0151*** (3.08)	0.0161** (2.37)	0.2399*** (3.22)
<i>AGE</i>	-0.0014*** (-10.74)	-0.0038*** (-20.93)	-0.0337*** (-16.68)
<i>MTB</i>	-0.0013*** (-6.33)	-0.0009*** (-3.08)	-0.0029 (-0.93)
<i>STOCKRET</i>	-0.0041** (-2.38)	0.0044* (1.86)	0.0394 (1.51)
Constant	0.0343*** (6.14)	0.1141*** (14.74)	1.1202*** (13.17)
Observations	48,946	48,946	48,946
R-squared	0.0428	0.0976	0.0704
Fixed Effects	Year	Year	Year

t-statistics in parentheses

*** p < 0.01, ** p < 0.05, * p < 0.1

RS is an indicator set equal to one if the firm issued an accounting restatement in the current year and zero otherwise, *FUT_RS* is an indicator set equal to one if the firm issued an accounting restatement in any future year in the sample period and zero otherwise, and *N_FUT_RS* is the total number of accounting restatements in all future years of the sample period. *PEN_AMT* is the total dollar value of penalties assessed to the firm in the current year. Control variables are *ROA*, return on assets; *LEV*, the debt-to-equity ratio; *LOSS*, an indicator set equal to one if net income is negative and zero otherwise; *BIGN*, an indicator set equal to one if the firm has a Big-N auditor and zero otherwise; *AGE*, the number of years since the firm's initial public offering; *MTB*, the market-to-book ratio; and *STOCKRET*, the annualized stock return.

dataset covers regulatory penalties rather than noncompliance behaviors themselves. To the extent that there are undetected violations or a lag between violations and associated penalties, my tests may underestimate the relation between corporate misconduct and accounting restatements.

These results suggest that investors and other stakeholders should monitor firms for regulatory penalties, even those that are unrelated to financial reporting, as they can be used to predict coming restatements. While restatements occur only after initial (misstated) financial results have been reported, penalties for corporate misconduct can be observed continuously as they are assessed. Thus, penalties are a particularly important signal as a leading indicator of potential undetected financial reporting problems. My results also suggest that financial regulators such as the SEC should monitor firms for non-financial misconduct, which may predict financial noncompliance in concurrent and future periods. Regulators should consider increasing information-sharing across agencies and/or monitoring firms that

receive penalties from other agencies, as enhanced synergies in monitoring activities may be possible. Further, more coordinated enforcement across agencies could potentially reduce firms opportunistically shifting to types of misconduct with less stringent enforcement.

Additional Analyses

Prior literature has identified links between financial and non-financial performance, focusing specifically on issues related to workplace safety (Caskey & Ozel, 2017; Kedia et al., 2017) and environmental protection (Clarkson et al., 2011; Kedia et al., 2017; Lemma et al., 2020; Lu & Taylor, 2018; Velte, 2021; Xu & Taehyun, 2022). As such, I re-examined my main tests, focusing on the subsets of penalties issued by OSHA and the Environmental Protection Agency (EPA) in turn. I estimated equation (1) with one key change: instead of the indicator variable *PEN*, I included in [Table 5](#) *OSHA*, an indicator set equal to one if the firm had a penalty from OSHA in the current year and zero otherwise, and in [Table 6](#), *EPA*, an indicator set equal to one if the firm had a penalty from the EPA in the current year and zero otherwise. *CEM_WEIGHTS* are recalculated to match observations with OSHA ([Table 5](#)) or EPA ([Table 6](#)) penalties to similar observations without penalties from that agency. Other agencies (such as the FDA, as examined in Altamuro et al., 2022) are not represented with enough frequency in my sample to examine separately.

In [Table 5](#), I found that my results are qualitatively unchanged when I examine only the subset of OSHA penalties. As with penalties more broadly, OSHA penalties are significantly associated with concurrent and future restatements. In [Table 6](#), I found that EPA penalties are also associated with future restatements but, interestingly, not with concurrent restatements.

Robustness

My main tests use CEM to balance my sample; other statistical approaches are possible. In [Table 7](#), I re-estimated equation (1) using entropy balancing to reweight my sample instead of CEM. [Table 7](#) confirms my main results are robust to using entropy balancing instead of CEM. In fact, the relations between *PEN* and both *RS* and *FUT_RS* are statistically more significant and greater in economic magnitude when I use entropy balancing. The results in Column (3) are identical to those presented in [Table 3](#) as *N_FUT_RS* is not a dichotomous variable, but I present them again in [Table 7](#) for consistency. In untabulated results, I found my conclusions are qualitatively unchanged if I use propensity score matching instead of CEM. Results are also robust to using logistic regression without matching (*RS* and *FUT_RS*) and a linear probability model (*RS* and *FUT_RS*) or OLS (*N_FUT_RS*). Lastly, my results are robust to the inclusion of industry or industry-year fixed effects.

Table 5. OSHA Penalties and Accounting Restatements

VARIABLES	(1) <i>RS</i>	(2) <i>FUT_RS</i>	(3) <i>N_FUT_RS</i>
<i>OSHA</i>	0.0124* (1.77)	0.0496*** (5.13)	0.5788*** (5.29)
<i>ROA</i>	-0.0321*** (-3.05)	-0.0486*** (-3.34)	-0.6191*** (-3.76)
<i>LEV</i>	0.0034*** (6.55)	0.0019*** (2.63)	-0.0219*** (-2.69)
<i>LOSS</i>	0.0035 (0.85)	0.0017 (0.31)	-0.1011 (-1.58)
<i>BIGN</i>	0.0149*** (2.90)	0.0358*** (5.04)	0.3518*** (4.38)
<i>AGE</i>	-0.0013*** (-9.77)	-0.0034*** (-18.25)	-0.0287*** (-13.78)
<i>MTB</i>	-0.0012*** (-6.00)	-0.0006** (-2.25)	0.0113*** (3.58)
<i>STOCKRET</i>	-0.0023 (-1.20)	0.0079*** (3.02)	0.1978*** (6.69)
Constant	0.0358*** (6.12)	0.0913*** (11.31)	0.9266*** (10.16)
Observations	46,473	46,473	46,473
R-squared	0.0446	0.1070	0.0814
Fixed Effects	Year	Year	Year

t-statistics in parentheses

*** p < 0.01, ** p < 0.05, * p < 0.1

RS is an indicator set equal to one if the firm issued an accounting restatement in the current year and zero otherwise, *FUT_RS* is an indicator set equal to one if the firm issued an accounting restatement in any future year in the sample period and zero otherwise, and *N_FUT_RS* is the total number of accounting restatements in all future years of the sample period. *OSHA* is an indicator set equal to one if the firm had an OSHA penalty in the current year and zero otherwise. Control variables are *ROA*, return on assets; *LEV*, the debt-to-equity ratio; *LOSS*, an indicator set equal to one if net income is negative and zero otherwise; *BIGN*, an indicator set equal to one if the firm has a Big-N auditor and zero otherwise; *AGE*, the number of years since the firm's initial public offering; *MTB*, the market-to-book ratio; and *STOCKRET*, the annualized stock return.

Conclusion

In this paper, I showed that current and future accounting restatements are significantly associated with regulatory penalties. My findings extend our understanding of the relation between financial and non-financial noncompliance. This relation may arise due to various channels such as corporate culture that encourages misconduct, shared internal controls, or firms' use of both financial and non-financial misconduct to inflate reported financial performance. My results are relevant to a wide array of stakeholders including investors, boards of directors, auditors, managers, regulators, and academics. I suggest that any stakeholder relying on firms' financial statements should monitor for regulatory penalties, even those that are unrelated to financial reporting, as regulatory penalties are an important leading indicator for accounting restatements. My results also suggest that financial regulators should monitor firms for non-financial misconduct, which may predict financial noncompliance in concurrent and future

Table 6. EPA Penalties and Accounting Restatements

VARIABLES	(1) <i>RS</i>	(2) <i>FUT_RS</i>	(3) <i>N_FUT_RS</i>
<i>EPA</i>	0.0037 (0.43)	0.0811*** (6.80)	0.6537*** (4.88)
<i>ROA</i>	-0.0239** (-2.48)	-0.0520*** (-3.90)	-0.5149*** (-3.44)
<i>LEV</i>	0.0033*** (6.13)	0.0036*** (4.81)	0.0047 (0.55)
<i>LOSS</i>	0.0002 (0.04)	-0.0035 (-0.66)	-0.1966*** (-3.33)
<i>BIGN</i>	0.0180*** (3.32)	0.0360*** (4.81)	0.3836*** (4.57)
<i>AGE</i>	-0.0013*** (-9.33)	-0.0032*** (-16.56)	-0.0261*** (-12.14)
<i>MTB</i>	-0.0012*** (-4.54)	-0.0012*** (-3.32)	0.0021 (0.54)
<i>STOCKRET</i>	-0.0036** (-2.21)	0.0017 (0.74)	0.0856*** (3.40)
Constant	0.0335*** (5.40)	0.0897*** (10.48)	0.8895*** (9.26)
Observations	46,374	46,374	46,374
R-squared	0.0412	0.0982	0.0739
Fixed Effects	Year	Year	Year

t-statistics in parentheses

*** p < 0.01, ** p < 0.05, * p < 0.1

RS is an indicator set equal to one if the firm issued an accounting restatement in the current year and zero otherwise, *FUT_RS* is an indicator set equal to one if the firm issued an accounting restatement in any future year in the sample period and zero otherwise, and *N_FUT_RS* is the total number of accounting restatements in all future years of the sample period. *EPA* is an indicator set equal to one if the firm had an EPA penalty in the current year and zero otherwise. Control variables are *ROA*, return on assets; *LEV*, the debt-to-equity ratio; *LOSS*, an indicator set equal to one if net income is negative and zero otherwise; *BIGN*, an indicator set equal to one if the firm has a Big-N auditor and zero otherwise; *AGE*, the number of years since the firm's initial public offering; *MTB*, the market-to-book ratio; and *STOCKRET*, the annualized stock return.

periods. Regulatory bodies should consider increasing information-sharing across agencies, both to take advantage of synergies in their monitoring activities and to potentially reduce firms opportunistically shifting to types of misconduct with less stringent enforcement.

Table 7. Entropy Balancing

VARIABLES	(1) <i>RS</i>	(2) <i>FUT_RS</i>	(3) <i>N_FUT_RS</i>
<i>PEN</i>	0.0158*** (2.96)	0.0719*** (9.55)	0.7407*** (10.05)
<i>ROA</i>	-0.0041 (-1.63)	0.0016 (0.14)	-0.2662*** (-3.27)
<i>LEV</i>	0.0044*** (3.52)	0.0050*** (3.22)	0.0091 (1.15)
<i>LOSS</i>	0.0188** (2.57)	0.0174* (1.76)	0.0680 (1.27)
<i>BIGN</i>	0.0075 (0.82)	0.0044 (0.34)	0.2409*** (3.23)
<i>AGE</i>	-0.0011*** (-5.68)	-0.0028*** (-9.52)	-0.0341*** (-16.90)
<i>MTB</i>	-0.0017*** (-3.89)	-0.0021*** (-3.59)	-0.0025 (-0.81)
<i>STOCKRET</i>	-0.0041 (-1.31)	0.0025 (0.48)	0.0383 (1.47)
Constant	0.0225** (2.35)	0.0723*** (4.96)	1.0741*** (12.62)
Observations	48,946	48,946	48,946
R-squared	0.0416	0.1231	0.0722
Fixed Effects	Year	Year	Year

Robust t-statistics in parentheses

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

RS is an indicator set equal to one if the firm issued an accounting restatement in the current year and zero otherwise, *FUT_RS* is an indicator set equal to one if the firm issued an accounting restatement in any future year in the sample period and zero otherwise, and *N_FUT_RS* is the total number of accounting restatements in all future years of the sample period. *PEN* is an indicator set equal to one if the firm had a regulatory penalty in the current year and zero otherwise. Control variables are *ROA*, return on assets; *LEV*, the debt-to-equity ratio; *LOSS*, an indicator set equal to one if net income is negative and zero otherwise; *BIGN*, an indicator set equal to one if the firm has a Big-N auditor and zero otherwise; *AGE*, the number of years since the firm's initial public offering; *MTB*, the market-to-book ratio; and *STOCKRET*, the annualized stock return.



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