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ORIGINAL PAPER

Shine a Light: How Firm Responses to Announcing Earnings Restatements Changed After Sarbanes–Oxley

Jo-Ellen Pozner[1] · Aharon Mohliver[2] · Celia Moore[3]

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Abstract
We explore how the Sarbanes–Oxley Act of 2002 created pressure for firms to take more visible and costly corrective action following the announcement of an earnings restatement. Building on theory about focusing events, the institutional effects of legislative change, and the agenda-setting role of the media, we propose that Sarbanes–Oxley created reactive normative pressure on firms that announce earnings restatements, increasing the likelihood of CEO replacement in their aftermath. We theorize that Sarbanes–Oxley changed the meaning—and therefore the impact—of media coverage of earnings restatements. Our findings show that firm behavior after Sarbanes–Oxley did change in ways that are consistent with the intent of the legislation: to increase executives' accountability for the reliability of their firms' financial statements. Moreover, we show this change is a result both of the direct effect of the legislation on increasing CEO accountability as well as through intensifying the effect of the media spotlight on misconduct.

Keywords Earnings Restatements · Legislative change · CEO change · Media · Sarbanes–Oxley

Introduction

A long tradition of research in organizational theory and organizational sociology has investigated how legislation influences the behavior of firms. Largely, this work has focused on the direct and indirect ways that new laws compel firms to behave in ways that signify their compliance to them (DiMaggio and Powell 1983; Meyer and Rowan 1977; Scott 1995). Yet studying only how firms *comply* with legal requirements leaves us with an incomplete understanding of the influence of legislation over firm behavior. Firms that *violate* the law must also cope with new legislative environments. Given the pervasiveness of firms' non-compliance with legal and regulatory requirements (estimates suggest that as many as 14.5% of firms commit fraud annually, see Dyck et al. 2013), it is important to understand how legislation affects the behavior of firms that violate laws, as well as those that comply with them.

At the same time, research on the effect of legislation on firm behavior often focuses on the legislation per se, neglecting the role of other factors in the broader social context in which the legislation was enacted. To understand the consequences of legislative change comprehensively, it is necessary to investigate not only its direct effects, but also the ways in which it alters the effects of other social forces on firm behavior.

In this paper, we explore how the behavior of firms that announce earnings restatements changes after the enactment of the Sarbanes–Oxley Act of 2002. Specifically, we propose that the legislation was effective in increasing the Chief Executive Officer's (CEO) accountability for the reliability of their firm's financial statements, in two ways. First, we predict the legislation had a direct effect on the likelihood that firms would replace their CEO after announcing an earnings restatement. We expect that firms that announced an earnings restatement—an acknowledgement that previously reported Securities and Exchange Commission (SEC) filings were materially

✉ Jo-Ellen Pozner
jpozner@scu.edu

Aharon Mohliver
acohenmohliver@london.edu

Celia Moore
celia.moore@unibocconi.it

1 Leavey School of Business, Santa Clara University, Santa Clara, CA, US

2 London Business School, London, UK

3 Bocconi University, Milan, Italy

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incorrect—were more likely to replace their CEO, a particularly costly and highly visible signal of change, after the passage of Sarbanes–Oxley than they were before the legislative change. Second, we predict that the legislation altered the effect of the media in driving firm behavior. Specifically, we expect that Sarbanes–Oxley amplified the influence of media attention on individual firms' misconduct on the likelihood of CEO change. Taken together, these predictions make an argument that Sarbanes–Oxley not only affected the degree to which firms made CEOs accountable for accounting failures, but also changed how the media spotlight affected firm responses to them. In other words, new legislation changes the expectations of firms that have violated the law both directly and by changing how aspects of the broader social context, such as the media, affect firm behavior.

We draw on the concept of focusing events to develop theory about how new legislation enacted in their aftermath intensifies the effect of the media spotlight on firm behavior. Focusing events are relatively rare and unpredictable yet visible and harmful scandals or disasters that often culminate in legislative change and make what would have previously been seen as a series of random and idiosyncratic episodes into concrete and salient social problems (Birkland 1997). The Sarbanes–Oxley Act was passed in mid-2002 following a raft of corporate accounting scandals, including Enron, WorldCom, and Global Crossing. These scandals represent a focusing event that problematized the issue of financial statement reliability, intensified media attention on the importance of sound financial reporting, and triggered Sarbanes–Oxley's passage. While media coverage is an independent driver of firm behavior (Bednar 2012; Bednar et al. 2013; Dyck and Zingales 2002), our argument is not about the effect of the media per se, but rather that Sarbanes–Oxley reoriented the media spotlight toward specific firms' financial irresponsibility and amplified its effect on firm responses to financial restatement announcements.

We test our theory using data on firms that acknowledged misconduct by announcing earnings restatements for the first time between 1997 and 2006. Consistent with prior research on the effect of new legislation on firm behavior (Edelman and Suchman 1997; Delmas and Toffel 2004; Wholey and Sanchez 1991), we demonstrate that the likelihood of CEO replacement after an earnings restatement announcement increased after Sarbanes–Oxley. More interestingly, we find that Sarbanes–Oxley's passage positively moderates the effect of increased media attention on the likelihood of CEO replacement following those announcements. In other words, in the wake of Sarbanes–Oxley, media attention directed at firms' irresponsible accounting practices mattered more in the decision to replace the CEO.

Theory and Hypotheses

The Effect of New Legislation on Firm Behavior

The direct and indirect effects of legislation on organizational behavior are themes of interest for researchers in the institutional tradition. Because large-scale legislative change alters the official rewards and sanctions for organizational practices and behaviors, it also subsequently changes organizational practice (Delmas and Toffel 2004; Wholey and Sanchez 1991; Haveman et al. 2001). In some cases, these changes result from the coercive pressure new legislation creates for firms, while in others they result from firms' need to demonstrate symbolic compliance with the law. We propose that, although both coercive and normative pressures act upon all firms in the wake of legislative change, firms that have violated the law are subject to different demands based on what we term *reactive normative pressure*.

Coercive Pressure

New legislation generates coercive pressure on firms, affecting their calculations about what constitutes a rational response to material aspects of the law (Edelman and Suchman 1997). Such changes to firm behavior have been demonstrated in a number of studies of legislative change. For example, antitrust legislation led to a merger wave around the turn of the twentieth century because it outlawed cooperation among firms (Dobbin and Dowd 2000). Later, the Celler–Kefauver Act of 1950 discouraged within-industry mergers and led to acquisitions associated with unrelated diversification (Fligstein 1990). Corresponding spates of merger activity follow the subsequent relaxation of antitrust enforcement throughout the twentieth century (Stearns and Allan 1996). In a different setting, Wade and colleagues (1998) explore how state prohibition laws affected the founding and survival rates of beer brewers in the focal and neighboring states. These changes in firm behavior reflect substantive, rational responses to the coercive power of legislation.

Proactive Normative Pressure

Firms can also respond to legislative change in more symbolic ways. Legislative change shifts the "cultural rules, models and mythologies" that affect organizational practice (DiMaggio and Powell 1983; Edelman and Suchman 1997; Meyer and Rowan 1977), generating indirect, largely mimetic pressure for firms to respond in ways that signal their symbolic compliance. These pressures often lead to indirect outcomes that were unanticipated by the legislation's

crafters (Haveman et al. 2001; Merton 1936). These outcomes are more about conforming proactively to new norms than about responding to the law's coercive force.

As an example, organizations responded to Equal Employment Opportunity (EEO) legislation by developing "gestures of compliance" (Edelman et al. 1999, p. 406): organizational solutions that mimicked but were not directly responsive to the law. The EEO law prohibited employment discrimination but made no reference to employers' requirements to handle complaints. The internal grievance procedures most firms established, which might have appeared to be a rational response to the law, instead represent symbolic gestures of compliance to it. In finding a way to signal their compliance with the material aspects of the EEO law, organizations devised and diffused employment practices that were only indirectly related to it. These practices reflected changing cultural norms and understandings of employment relationships that the law, in part, created (Dobbin et al. 1993). This kind of response is a result of what has been labeled the *normative pressure*[1] legislation creates (Dobbin et al. 1993; Edelman 1990, 1992; Sutton et al. 1994).

Reactive Normative Pressure

To date, the literature on legislative change has focused on how new legislation causes firms to take actions that—either substantively or symbolically—are consistent with the legislation's intent. In this way, the focus has been on how new laws motivate firms to proactively meet the new requirements or norms they create. We know relatively little, however, about how legislative change affects the behavior of firms that have violated the law and can therefore no longer signal their active compliance to it. *We argue that new legislation changes institutionally appropriate responses to violations of the law, just as it changes institutionally appropriate responses to conforming with it*.

We believe that following the enactment of new legislation, particularly legislation explicitly designed to limit misconduct, firms that acknowledge a violation of the law will be more likely to take costly and visible action to address the underlying causes of their malfeasance. In contrast to the *proactive* nature of the normative pressure described above (Dobbin et al. 1993; Edelman 1990, 1992; Sutton et al. 1994), we label the pressure firms face *after* violating a law in a new legislative environment *reactive normative pressure*. We focus on this reactive normative pressure in our empirical analysis.

Sarbanes–Oxley and CEO Change After Restatement Announcements

We take up the question of how firms respond to the reactive normative pressure that legislative change creates using the case of firms announcing earnings restatements after the enactment of the Sarbanes–Oxley Act in 2002. Earnings restatements are tantamount to revisions of a company's history, and while they may result from legitimate errors, fraud, misapplication of accounting regulations, or manipulation of facts, it is often difficult to distinguish between intentional and unintentional misstatements (Wu 2002). Regardless of whether they represent fraud or simply violations of the letter of the law, restatement announcements are typically seen as admissions of negligence or misconduct, and are accompanied by market and non-market penalties, including significant losses of shareholder value (Akhigbe and Kudla 2005; Collins et al. 2005; Palmrose et al. 2004; Wu 2002), impaired credibility of future financial disclosures (Farber 2005), diminished expectations of future earnings, and subsequent increases in the cost of capital (Farber 2005; Hribar and Jenkins 2004).

As with any potentially damaging disclosure, most firms seek to mitigate the negative consequences of a restatement announcement. Firms that have engaged in misconduct typically take steps to elicit more positive impressions from external stakeholders (Ashforth and Gibbs 1990; Elsbach 1994; Zavyalova et al. 2012). Because stakeholders frequently attribute responsibility for wrongdoing to the Chief Executive, the actor ultimately accountable for firm action, CEO replacement is one of the most visible signals of a firm's commitment to addressing the roots of the problem and is a well-documented response to revelations of organizational misconduct (Arthaud-Day et al. 2006; Desai et al. 2006; Srinivasan 2005; Cannella et al. 1995; Hennes et al. 2006; Tetlock 1985).

CEO replacement is also a costly undertaking that signals a commitment to change. Turnover among top managers incurs costs associated with executive search, socialization of new executives, and dismissal compensation, as well as costs associated with the disruption the change creates for boards of directors (Burks 2010; Wiersema 2002). In contrast to lower-cost, symbolic actions, such as announcing internal investigations, offering verbal accounts, or blaming third parties (Pozner 2007), replacing the CEO is a strong signal of a firm's intent to address the underlying sources of wrongdoing (Agrawal et al. 1999; Wiesenfeld et al. 2008; Gomulya and Boeker 2014). Extensive research

[1] DiMaggio and Powell (1983) use the term normative isomorphism to describe the spread of practices through professionalization. We note that they might describe the response to the pressure we describe here as proactive normative pressure (symbolic inter-firm imitation) as mimetic isomorphism. Nevertheless, we follow the organizational sociologists who term the pressure to comply symbolically with new legislation, leading to the emergence of new norms, as *normative pressure* (Dobbin et al. 1993; Edelman 1990, 1992; Sutton et al. 1994).

demonstrates that CEOs of firms that announce earnings restatements are replaced at a higher rate than their peers at firms that do not restate earnings (Hazarika et al. 2012; Hennes et al. 2006; Karpoff et al. 2008).

We propose that the general tendency to replace CEOs after announcing earnings restatements will increase significantly after Sarbanes–Oxley's enactment. The Sarbanes–Oxley Act was designed to improve firms' corporate governance and reduce the future likelihood of large-scale corporate frauds such as those that triggered the legislation. In the 15 years since it passed into law, we have learned a great deal about its effects on various aspects of firm behavior. For example, Sarbanes–Oxley increased the burden of financial reporting (Martin and Combs 2010) and raised the cost of launching a public offering (Engel et al. 2007), but, consistent with its intent, decreased the likelihood of earnings management (Cohen et al. 2005).

At the same time, empirical evidence about the effect of Sarbanes–Oxley on corporate leadership is relatively lacking. This gap is surprising, given that one of its primary objectives was to increase the accountability of senior leaders for the reliability of their firm's financial statements, and as such its provisions place significant pressure on firms to penalize senior leadership in the wake of corporate earnings restatements. Section 906 of the Act contains provisions requiring the CEO and the Chief Financial Officer (CFO) to certify the integrity of their firms' publicly filed financial statements, making executives directly and legally accountable for the actions of their firms. In light of these provisions, the legislation ought to have heightened expectations of appropriate corporate governance and made CEO replacement a particularly salient signal of commitment to change, sound management, and oversight (Goranova and Ryan 2014; Gomulya and Boeker 2016; Hillman et al. 2011).

To be clear, Sarbanes–Oxley does not require any executive to be replaced in the wake of financial impropriety, so this is not a story about the Act's coercive force. Rather, by naming the CEO as the actor ultimately responsible for the accuracy of a firm's financial reporting, the legislation creates reactive normative pressure on firms to take remedial action that is more visible and costlier than what they might have done previously. While it is possible that firms replace their CEO after misconduct because the CEO is, in fact, culpable, there is no reason to expect that CEOs are more culpable after a legislative change than they were before. Nevertheless, because Sarbanes–Oxley increased top executives' accountability for the veracity of their firms' financial statements, and because it has the specific goal of limiting corporate misconduct and improving corporate transparency, we expect that firms will be more likely to replace their CEO following the announcement of a financial restatement after the legislation was enacted than they were before. We consider this effect a response to the reactive normative pressure that the legislation created for firms that have violated the law.

H1 Firms that announce earnings restatements after the passage of Sarbanes–Oxley are more likely to replace their CEO than firms that announce earnings restatements before the passage of Sarbanes–Oxley.

The Effect of Media Attention on Firm Behavior

The news media have an important influence on firm behavior independent of the legislative environment in which they operate. By disseminating information, uncovering new information through independent investigation, and publicizing the opinions of influential stakeholders, the media play a key role in setting the agenda for what the public cares about (Bednar 2012; Aguilera et al. 2015; Bushee et al. 2010; McCombs and Shaw 1972; McCombs 2005). Specifically, they help audiences make sense of firm behavior (Deephouse and Heugens 2009; Pfarrer et al. 2010; Tewksbury and Scheufele 2007), and shape audience perceptions of firm actions (Kennedy 2008; Deephouse 2000).

Several studies provide substantial evidence that generalized media attention toward given topics represent an important source of influence over firm behavior. The media help adjudicate what behavior is considered acceptable (Suchman 1995) and unacceptable (Bednar et al. 2013; Greve et al. 2010), and thus generate social approval for or condemnation of firm behavior (Fombrun and Shanley 1990; Pollock and Rindova 2003). Consequently, positive media coverage conveys benefits in terms of firm legitimacy and reputation (Rao 1994; David 2000), while critical coverage of firms seen to fall short of audience standards and behavioral expectations results in commensurate penalties (Farrell and Whidbee 2002; Reuber and Fischer 2010). The influence of the media over firm behavior implies that it functions as a watchdog, ensuring firms maintain decent standards of corporate governance (Dyck et al. 2008; Aguilera et al. 2015; Bednar 2012; Liu and McConnell 2013).

When media attention pinpoints specific, illustrative instances of problematic firm behavior, the pressure on those spotlighted firms to remedy their problematic behavior becomes intense. For example, media coverage of a firm's pollution is associated with a decrease in its likelihood of future polluting (Jia et al. 2016), media coverage of a firm's social responsibility efforts positively affects its later social and environmental disclosures (Islam and Deegan 2010), media coverage of the ineffectiveness of a firm's board forces that firm to take corrective action (Joe et al. 2009), and increases in press coverage of firms' corporate governance violations increases the likelihood that a firm will reverse its controversial practices (Dyck et al. 2008).

In sum, the amount of media coverage devoted to firm improprieties determines the degree to which firms feel pressured to signal their commitment to change (McDonnell and King 2013; King 2008). In contrast, those overlooked by the press are less motivated to engage in costly action (Farrell and Whidbee 2002; Bednar 2012; Bednar et al. 2013). When a firm is perceived to have violated a new legal requirement, media pressure will intensify the reactive normative pressure it experiences. Building on evidence that firms implicated in scandals are more likely to replace their CEOs as a function of the generalized level of media attention about a topic (Wiersema and Zhang 2013), we predict that the likelihood of CEO change will increase as media attention focuses on a particular firm's wrongdoing.

H2 The more media attention directed toward a given firm's earnings restatement announcement, the more likely that firm is to replace its CEO.

How Sarbanes–Oxley Amplifies the Effect of Media Attention on Firm Behavior

Missing from the discussion of the effect of the media on firm behavior is an understanding of whether media attention always affects firms the same way. We propose that after the enactment of Sarbanes–Oxley, media attention toward a given firm's financial restatement meant something different, becoming more influential in motivating a substantial corporate response, than it did before. We support this argument using Birkland's (1997) concept of focusing events: highly disruptive, relatively rare occurrences that are *ex ante* unpredictable and suggest harm or the possibility of future harms. Focusing events bring new problems to light, elevating attention around a particularly vexing trend and problematizing it for the public. As a result, focusing events are highly salient to policy makers, social control agents, and the public simultaneously (Birkland 1997; Birkland and Lawrence 2009).

Focusing events also lead to legislative action. Birkland (1997, 2006) describes several examples of focusing events that generated large-scale legislative change, including the 1979 Three Mile Island nuclear accident, the 1989 *Exxon Valdez* oil spill, and the terrorist attacks of September 11, 2001 (Birkland 2006). The Sarbanes–Oxley Act is another example of legislative change initiated in the wake of a focusing event: the series of highly visible corporate accounting frauds that caused major bankruptcies, as well as two spectacular indictments of the CEOs of major corporations on criminal charges, within the short time period between December 2001 and July 2002. Of the 20 largest bankruptcies in the U.S. through 2007 (the end of our study period), five were due to accounting fraud; three of these (Enron, WorldCom, and Global Crossing) occurred within the 18-month period preceding the passage of Sarbanes–Oxley, as did the very public indictments of Dennis Kozlowski, CEO of Tyco, and John Rigas, CEO of Adelphia. The density of these scandals within the 18-month period depicted in Fig. 1 represents a focusing event that ultimately led to the passage of Sarbanes–Oxley.

Focusing events do more than increase attention to a given issue, they also critically change what attention toward that issue means. Before these scandals broke, a firm announcing an earnings restatement was not particularly noteworthy, and earnings restatements were reported as one-off, disconnected, or random occurrences. Once the press identified earnings restatements as a social problem, however, specific instances of potential financial misconduct at individual firms became more meaningful and interesting. For example, on November 9, 2001, the *New York Times* wrote a story reporting that Enron needed to restate its financials, having overstated profits by $600 million over the previous five years, yet the rest of the article reports in a rather upbeat tone about ongoing negotiations for an acquisition by Dynergy (Oppel and Sorkin 2001). By 2003, articles in the *Times* about restatements read like the preface to a thriller:

> Financial accounting has gone squishy underfoot, and ''restatement'' is the business word of our time. Corporate America has announced billions in restatements as accounting has begun to look like a black art, with profits dissolving as if by a magical curse. (Schwartz 2003).

Once it was clear that the dry topic of a firm revising its financial records could explode into Enron-type scandal, the media began to attend much more closely to any given firm's financial restatements, and—critically—that attention alluded to much more vicious intent and catastrophic potential.

Thus, Sarbanes–Oxley supplied a new lens through which to make sense of organizational wrongdoing, changing the meaning and consequently the effect of media attention on firm responses to earnings restatement announcements. This suggests that the passage of Sarbanes–Oxley amplified the direct effect of media attention on the likelihood of CEO change. We therefore hypothesize that the passage of Sarbanes–Oxley positively moderates the effect of media attention on firms announcing earnings restatements, increasing the likelihood that they will replace their CEO.

H3 Sarbanes–Oxley positively moderates the effect of media attention on the likelihood of CEO replacement after the announcement of a financial restatement, such that the effect of media attention on the likelihood of CEO replacement is amplified after Sarbanes–Oxley's enactment.

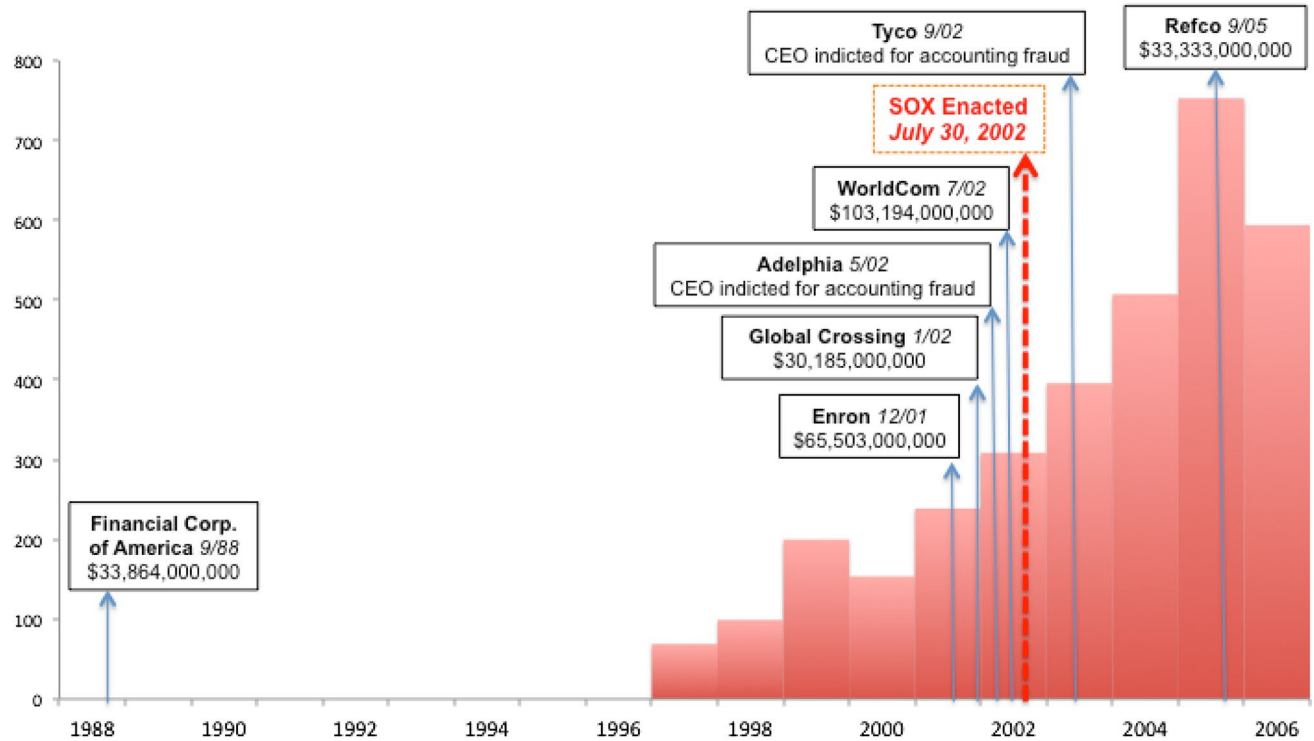

Fig. 1 The accounting scandals of 2001–2002 as a focusing event leading up to the passage of Sarbanes–Oxley. Note: Bars represent the absolute number of restatements by exchange-listed firms during our study period. Of the largest 20 ever bankruptcies in U.S. history, five took place prior to 2007 (the end of our study period) and were a direct result of fraud. Note that three happened within the 18-month period from December 2001 to July 2002. Prior to this period there had not been a bankruptcy due to fraud of similar magnitude since Financial Corporation of America filed for Chapter 11 in 1988

A model of the relationships we hypothesize among legislative change, media attention to wrongdoing, and the likelihood of CEO turnover is presented in Fig. 2.

Data and Analysis

Empirical Setting

We examine corporate responses to the announcement of an earnings restatement between 1997 and 2006, representing the period in which earnings restatements became a significant aspect of corporate life in the United States. In 2006, an estimated 1420 U.S. public companies restated earnings, a full ten percent of publicly traded companies (Harris 2007; Scholz 2008). This observation window straddles the periods before and after the focusing event of corporate meltdowns in 2001 and 2002 and the passage of the Sarbanes–Oxley Act in the summer of 2002. Among other provisions, the Act outlines detailed disclosure requirements for publicly traded firms, regulates the governance of firms' relationships with their external auditors, assigns personal liability to directors, and requires the CEO and CFO to verify the authenticity and accuracy of their firm's financial statements personally. We examine the likelihood of a firm replacing its CEO in the wake of announcing an earnings restatement before and after the passage of the Act.

Sample

Our sample of restating firms comes from two databases issued by the U.S. Government Accountability Office (GAO). The first report covers restatements announced

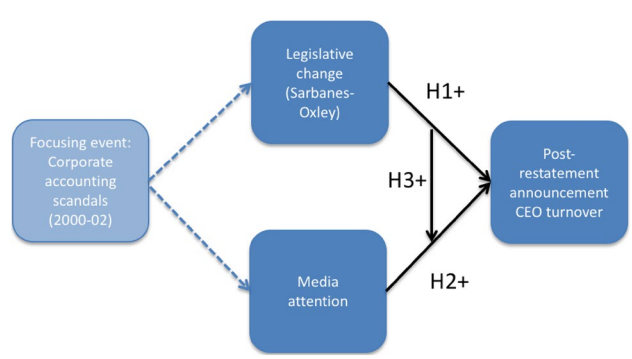

Fig. 2 Proposed model of relationships among legislative change, media attention to wrongdoing, and CEO change

between January 1, 1997 and June 30, 2002 (U.S. GAO 2003), and the second covers restatements announced between July 1, 2002 and June 30, 2006 (U.S. GAO 2006). The GAO excludes all restatements resulting from routine corrections that might be driven by a change in accounting practices or bookkeeping errors. As such, the GAO database only includes cases due to "so-called 'aggressive' accounting practices, intentional and unintentional misuse of facts applied to financial statements, oversight or misinterpretation of accounting rules, and fraud" (U.S. GAO 2002, p. 72). In other words, both the U.S. government and a wide range of other researchers perceive these firms to have engaged in misconduct (Arthaud-Day et al. 2006; Harris and Bromiley 2007; Pfarrer et al. 2008b; Prechel and Morris 2010). Together those data comprise 2309 restatement announcements covering a decade.

Of the sample identified by the GAO, complete data on all the study variables, with the exception of governance data, were available for 412 firms. To avoid artificially inflating the number of observations, we include only the first restatement for each firm in our analysis. One hundred and nine firms in our sample announced more than one restatement during the observation window; including multiple restatements of the same firm as separate observations would nearly double the sample size without introducing new information to the models. In analyses that include governance variables, our sample comprises 260 firms about which we were able to collect more detailed information. This restricted sample is a function of the fact that many of the firms in our sample are quite small and not covered by *Execucomp*, upon which we relied for our governance data.[2] Nevertheless, this sample compares favorably with those used by other researchers with similar datasets. For example, Gomulya and Boeker (2014) have a sample of 352 restating firms; Gomulya and Boeker (2016) have a sample of 500 restatements; Cowen and Marcel (2011) and Marcel and Cowen (2014) each test a sample of 63 restatements.

Measures

Dependent Variable

We test firm responses to restatement announcements using the binary variable *CEO Change*, which takes the value of 1 if the CEO was replaced within the year (365-day period) following the restatement announcement and 0 otherwise. CEO change was coded based on corporate 8-K filings with the SEC, which describe the departure of certain corporate officers. We confirmed the timing of such changes through media reports from public sources.

In supplementary analyses, we compare the effect of Sarbanes–Oxley on CEO change to its effect on auditor change. Thus, we also used these filings to create a variable indicating *Auditor Change*, a dummy taking the value of 1 if the focal firm changed its external auditor in the 365 days following the restatement announcement, and 0 otherwise.

Independent Variables

Our primary independent variable is *Post-Sarbanes–Oxley*. This dummy variable was given a value of 1 if the restatement was announced after the Sarbanes–Oxley Act was signed into law on July 30, 2002, and 0 if announced prior to that date.

Our second independent variable, *Restatement Media Coverage (logged)* captures the logged count of newspaper articles published about the focal firm that included the word "restatement" or one its variants in the year (365-day period) following the restatement announcement or until the day before the CEO replacement was announced, whichever came first. For firms that replaced their CEO, we ended the search the day before the firm announced its CEO's departure; doing so ensures that we do not artificially inflate our count of media hits by eliminating mentions that are likely to deal with the CEO change rather than the restatement announcement. We used the *Lexis Nexis Academic* database of newspapers to calculate this measure, dropping duplicates using the database's de-duplicate function, and restricting our search to U.S. newspapers.

We also collected two measures of attention to use in the first stage of a two-step Heckman procedure in our analyses (see Empirical Strategy). To account for the fact that media coverage and attention reflects as well as predicts firm action (Bednar 2012, p. 140), we created a dummy variable from our measure of restatement media coverage that takes the value of 1 if the firm received any media coverage of its restatement in the year (365-day period) following the restatement announcement (*Any Restatement Media Coverage*), and 0 otherwise. We also collected data on the *Number of Analysts* that covered the firm over the prior year, as a measure of the general level of attention a firm received.

Control Variables

We included six measures of the seriousness of the restatement to ensure that our independent variables are capturing the variance in CEO change attributable to the act of announcing a restatement, rather than to seriousness of restatement itself, following previous studies (Arthaud-Day et al. 2006; Hennes et al. 2008; Srinivasan 2005). *Restatement Increased Net Income*, a dummy indicating that the

[2] T-tests (available upon request) reveal the only differences in the variables of interest between firms with governance data and those without are related to firm size.

restatement resulted in an increase in net income, was included because such restatements generally elicit less severe penalties than those that decrease net income (Akhigbe and Kudla 2005). *Net Effect of Restatement* represents the absolute value of the effect of the restatement on firm net income, logged in dollars. We include it because the overall effect of a restatement on net income affects market responses to restatement announcements (Feroz et al. 1991; Srinivasan 2005). These data were drawn from restatement filings, annual reports, 10Ks, 10Qs, proxy statements, and other filings from the SEC's *EDGAR* database. We include fixed effects for a firm's industry in all of our models using 1-digit SIC codes.

We included a dummy variable for the most egregious form of restatements, *Restatement Due to Fraud*, which typically results in particularly adverse outcomes relative to other types of restatements (Hennes et al. 2008; Palmrose et al. 2004; Wilson 2008). We coded restatement type by comparing designations assigned by the GAO to firms' restatement filings with the SEC and adjusting accordingly. We also created a variable for *Restatement Resulted in a Lawsuit* using the Stanford Shareholder Lawsuit Database, a dummy taking on a value of 0 if no shareholder lawsuits were filed and 1 otherwise. To control for how commonplace, and therefore taken-for-granted or unusual, a given announcement is, we collected data on *Number of Firms Restating, Prior Year*, a count of the number of public firms announcing restatements each year, collected from a U.S. Treasury report (Scholz 2008).

We also collected data on the firms themselves. *Firm Size* is a measure of logged total assets in millions, lagged by one year. *S&P 500* is a dummy variable coded as 1 if the restating firm was included in the S&P 500 in the year the restatement was announced, and a 0 if it was not. Both variables were collected using the *CRSP/Compustat* merged database. We account for firm performance, with the expectation that CEOs of poorly performing firms were more likely to be fired than CEOs of firms experiencing financial success. *Earnings Per Share*, a standard measure of firm financial health, was collected from the *CRSP/Compustat* merged database.

Finally, because CEO departure is by its very nature an ambiguous event, we collected data on CEO and governance characteristics using the *Execucomp* database to try to account for other reasons why the CEO may have been replaced. Research on the relationship between board independence and CEO compensation (e.g., Boyd 1994; Coughlan and Schmidt 1985; Fich and White 2003; Weisbach 1988) suggests that more powerful, highly paid CEOs may be less likely to depart following revelations of misconduct. Thus, we include data on *CEO Compensation*, which we introduce into our models as a logged term, as a proxy of the CEO's status, power, and importance to the firm. In addition, CEOs at the end of their careers might be more willing or likely to depart a firm after misconduct is revealed. Thus, we gathered data *CEO Age* to take the CEO's career stage into account. Including CEO age in the models also helps control for departure that represents a normal retirement and succession process (e.g., Murphy 1999; Weisbach 1988; Huson et al. 2001). Finally, we coded whether the CEO replacement announcement included references to the CEO's *Resignation* or *Retirement*, in contrast to other explanations for CEO turnover, to gage the likelihood that the turnover might have been either voluntary or part of a planned retirement and succession process. Since a degree of symbolic management accompanies high-level staff changes (Pozner 2007), these disclosures are likely not entirely reliable. Nevertheless, they give us an idea of how the focal firm is making sense of the departure. Finally, there is a stronger, negative relationship between firm performance and CEO turnover among firms with smaller boards (e.g., Jensen 1993; Yermack 1996; Huson et al. 2001; Zajac and Westphal 1996). Thus, we also control for *Board Size*, which is calculated as the total number of both inside and outside directors on the focal firm's board.

Empirical Strategy

We hypothesize (H1) a main effect for Sarbanes–Oxley on CEO change after a restatement announcement, (H2) a main effect for media attention on CEO change after a restatement announcement, and, critically, (H3) that the enactment of Sarbanes–Oxley will amplify the effect of media attention on CEO change. Media attention, however, may both reflect the future prospect of CEO change as well as influence it (Bednar 2012, p. 140), leading to concerns about selection. Even with the extensive set of variables we include as controls, there are legitimate reasons to worry about this source of endogeneity. To address this, we use a two-stage Heckman procedure for our primary analysis (Guilhem 2008; Heckman 1979). This model first predicts the likelihood of a firm's restatement announcement receiving any media coverage using a probit model, and then controls for that likelihood in a second-stage regression. This approach, consistent with Bednar (2012), lets us account the fact that the media attention a firm receives is not random.

In the first stage of this model, we include all of the variables that were significantly related to the likelihood of media attention (*Restatement Increased Net Income, Net Effect of Restatement, Restatement Due to Fraud, Number of Firms Restating Prior Year, Firm Size, S&P500, CEO Compensation*, and *SIC code*), and one variable that is excluded from the second stage (*Number of Analysts, Prior Year*) because it is correlated with media attention but not CEO change. The results from the first-stage probit (available from the authors upon request) include a calculation of the inverse Mills ratio

(*Lambda*), which controls for this source of sample selection bias. We use this ratio (*Lambda*) in the second-stage model to account for the fact that there might be systematic differences between firms that receive attention by the media and firms that do not (i.e., a firm's media attention is not random). The media attention variable in our full models thus accounts for its unique impact on the likelihood of CEO change, correcting for any systematic differences between firms that are subject to media attention and firms that are not.

In all models, we include industry fixed effects at the 1-digit SIC level as well as a linear time trend.

Results

We report descriptive statistics and correlations among all variables in Table 1.

Table 2 reports the second stage of our Heckman two-stage model, predicting the likelihood of CEO dismissal based on the joint effects of the passage of Sarbanes–Oxley and media coverage. For ease of interpretation, we interpret the odds-ratio coefficients of the main effects at their means. In model 1, we test Hypothesis 1 using our full sample. Model 1 reveals that the effect of Sarbanes–Oxley on the likelihood of CEO replacement after an earnings restatement announcement is positive and significant ($p < 0.01$).

Model 2 tests Hypothesis 2, which predicts a main effect of media attention on the likelihood of CEO dismissal. The effect of *Restatement Media Coverage (logged)* is not significant in this model, providing no support for Hypothesis 2. Nevertheless, because this result may be an artifact of our empirical strategy, which conditions our results on the likelihood of receiving any media coverage and weights our observations accordingly, we ran an additional test of Hypothesis 2 using simple logistic regression. The results of three different specifications of this analysis are presented in Table 3. Our findings suggest that any media coverage mentioning a firm's announcement of a restatement of earnings increases the likelihood of CEO dismissal ($p < 0.10$) and that the more media coverage there is of a particular firm's restatement, the more likely it is to replace its CEO ($p < 0.05$). This analysis provides support for the assertion that attention to financial misconduct increases the likelihood CEO replacement, in line with previous findings (Wiersema and Zhang 2013).

We include the main effects of both Sarbanes–Oxley and media coverage in model 3 of Table 2, with no change to the significance or general magnitude of either effect. To test Hypothesis 3, we add the interaction of *Restatement Media Coverage (logged)* and *Post-Sarbanes–Oxley* in model 4 of Table 2 and find that the interaction positively and significantly ($p < 0.05$) affects the likelihood of CEO replacement. Figure 3 depicts the interaction by plotting the effect of *Restatement Media Coverage (logged)* on the likelihood of CEO replacement following an earnings restatement announcement both before (dotted line) and after (dashed line) Sarbanes–Oxley's enactment.

In models 5 through 8 of Table 2, we report results for models that include our corporate governance controls. Lack of data availability on many of the small firms included in our analysis reduces our sample in this step from 412 firms to 260 firms. Model 5 shows that the effect of the passage of Sarbanes–Oxley is large, positive (0.701), and statistically significant ($p < 0.001$), providing support again for our hypothesis that the passage of the legislation has a direct effect on the likelihood of removing the CEO after a restatement announcement. In model 6, we enter the effect of media attention alone, which again is not significant, and model 7 includes both main effects. Model 8 includes the interaction of *Post-Sarbanes–Oxley* and *Restatement Media Coverage (logged)*, which again is significant and positive ($p < 0.001$), providing support for our argument that that media attention amplifies the effect of the passage of Sarbanes–Oxley on the likelihood of CEO dismissal.

Robustness Checks

Costliness and Visibility

We have argued that firms are more likely to replace their CEOs after Sarbanes–Oxley, in part because it intensified the media spotlight on firms announcing earnings restatements, and CEO change carries symbolic weight as a costly and visible response to reactive normative pressure. It could be argued, however, that changing any actor involved in financial statement preparation and verification might be amplified after Sarbanes–Oxley's passage, particularly when the earnings restatement announcement receives significant media attention. Moreover, one might argue that this is not at all a symbolic management technique, but rather a rational assessment of culpability in the wake of monitoring system failures. To test this alternative explanation, we modeled another corporate action that might represent a more direct response to the reactive normative pressures that follow earnings restatement announcements after Sarbanes–Oxley: changing the external auditor.

External auditors are responsible for ensuring the quality of financial disclosures and uncovering shortcomings or material errors, and so are directly responsible for the certification of the financial statements of the firms which employ them. Moreover, in its effort to ensure transparency and accuracy in financial statements, Sarbanes–Oxley has several provisions relevant to auditor independence and oversight. Following an earnings restatement announcement, therefore, it is not unreasonable for a firm to place

Table 1 Descriptive statistics and correlations

Variable	Mean	SD	1	2	3	4	5	6
1 CEO change	0.307	0.462	1.000					
2 Restatement increased net income	0.237	0.426	– 0.014	1.000				
3 Net effect of restatement	– 4.974	13.095	– 0.007	0.8641*	1.000			
4 Restatement due to fraud	0.097	0.296	0.063	– 0.093	– 0.1055*	1.000		
5 Restatement resulted in a lawsuit	0.348	0.477	0.038	– 0.039	– 0.035	0.2410*	1.000	
6 Number of firms restating, prior year	52.260	15.600	0.067	– 0.082	– 0.049	– 0.1430*	– 0.090	1.000
7 Firm size	5.245	2.487	0.001	– 0.047	– 0.035	0.1214*	0.1124*	0.023
8 S&P 500	0.246	0.431	0.029	0.014	0.022	– 0.028	0.1773*	0.045
9 Earnings per share	0.130	4.677	– 0.088	– 0.008	– 0.043	– 0.043	– 0.1633*	– 0.051
10 Logged CEO compensation	7.894	1.277	– 0.013	– 0.023	0.032	– 0.012	0.1410*	0.079
11 CEO age	54.580	7.639	– 0.1318*	– 0.048	– 0.058	– 0.038	– 0.072	0.070
12 CEO age squared	3037.091	851.182	– 0.1306*	– 0.047	– 0.060	– 0.028	– 0.060	0.060
13 Reason for leaving: resigned	0.406	0.493	0.161	– 0.034	– 0.019	0.034	0.107	– 0.070
14 Reason for leaving: retired	0.462	0.501	– 0.084	0.131	0.123	– 0.005	– 0.146	0.081
15 Reason for leaving: other	0.113	0.318	– 0.074	– 0.122	– 0.114	– 0.024	0.055	– 0.065
16 Board size	6.546	1.582	0.005	– 0.013	– 0.032	0.040	0.2855*	– 0.069
17 Post-Sarbanes–Oxley	0.481	0.500	0.1921*	– 0.048	– 0.081	– 0.2087*	– 0.1997*	0.2742*
18 Any Restatement media coverage (dummy)	0.490	0.500	0.1408*	– 0.1002*	– 0.1207*	0.091	0.2519*	0.068
19 Restatement media coverage (logged)	0.747	1.729	0.1192*	0.003	– 0.007	0.077	0.1265*	0.1185*
20 Number of analysts: prior year	5.993	6.053	0.015	0.022	0.009	0.022	0.1396*	– 0.001
21 Auditor change	0.124	0.330	0.061	0.032	0.007	– 0.008	0.056	– 0.017

Variable	7	8	9	10	11	12	13	14
7 Firm Size	1.000							
8 S&P 500	0.2981*	1.000						
9 Earnings per share	– 0.024	0.061	1.000					
10 Logged CEO compensation	0.2516*	0.3931*	0.051	1.000				
11 CEO age	– 0.092	– 0.003	– 0.089	0.011	1.000			
12 CEO age squared	– 0.102	– 0.011	– 0.100	0.9944*	0.000	1.000		
13 Reason for leaving: resigned	– 0.060	– 0.2616*	– 0.002	– 0.3648*	1.000	– 0.3606*	1.000	
14 Reason for leaving: retired	0.018	0.1961*	0.060	0.3488*	– 0.7660*	0.3349*	0.185	1.000
15 Reason for leaving: other	0.033	0.083	– 0.101	0.012	– 0.2952*	0.028	0.102	– 0.3313*
16 Board size	0.1795*	0.1700*	– 0.113	– 0.104	– 0.007	– 0.097	0.018	– 0.079
17 Post-Sarbanes–Oxley	– 0.1020*	– 0.1092*	0.006	0.106	0.043	0.099	– 0.002	– 0.025
18 Any restatement media coverage (dummy)	0.2152*	0.2999*	– 0.1074*	– 0.064	– 0.045	– 0.071	0.1785*	– 0.025
19 Restatement media coverage (logged)	0.2249*	0.083	0.092	– 0.067	0.159	– 0.064	0.039	– 0.109
20 Number of analysts: prior year	0.2753*	0.4141*	– 0.060	– 0.1303*	– 0.127	– 0.1329*	0.3550*	0.166
21 Auditor change	– 0.030	– 0.040	– 0.087	– 0.010	– 0.134	– 0.013	– 0.029	0.085

Variable	15	16	17	18	19	20	21
15 Reason for leaving: other	1.000						
16 Board size	0.122	1.000					
17 Post-Sarbanes–Oxley	– 0.092	– 0.1641*	1.000				
18 Any restatement media coverage (dummy)	0.120	0.066	0.1687*	1.000			
19 Restatement media coverage (logged)	– 0.132	0.2496*	0.012	0.1723*	1.000		
20 Number of analysts: prior year	– 0.042	0.044	– 0.0998*	0.2804*	0.049	1.000	
21 Auditor change	0.099	– 0.022	0.076	0.015	– 0.010	– 0.055	1.000

$N = 260$ for variables 10–16, $N = 412$ for all other variables; *$p < 0.05$

Table 2 Second-stage Heckman selection models predicting the effect of Sarbanes–Oxley and media coverage on the likelihood of CEO change (logit)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Restatement increased net income	1.081	1.118	1.082	1.057	0.045	0.264	0.060	− 0.024
	(0.182)	(0.192)	(0.181)	(0.174)	(0.303)	(0.342)	(0.298)	(0.315)
Net effect of restatement	0.998	0.999	0.998	0.999	− 0.005	− 0.008	− 0.005	− 0.001
	(0.005)	(0.005)	(0.005)	(0.005)	(0.009)	(0.011)	(0.009)	(0.010)
Restatement due to fraud	1.312*	1.152	1.295*	1.340**	0.156	− 0.032	0.146	0.155
	(0.146)	(0.124)	(0.144)	(0.148)	(0.238)	(0.267)	(0.234)	(0.244)
Restatement resulted in a lawsuit	1.166+	1.036	1.157+	1.148+	0.079	0.248	0.070	0.174
	(0.098)	(0.081)	(0.097)	(0.095)	(0.183)	(0.203)	(0.179)	(0.196)
Number of firms restating, prior year	0.999	1.000	0.998	0.998	0.003	0.001	0.002	0.004
	(0.002)	(0.002)	(0.002)	(0.002)	(0.007)	(0.008)	(0.007)	(0.007)
Firm size	0.969	0.954*	0.965+	0.963+	− 0.040	− 0.037	− 0.041	− 0.050
	(0.019)	(0.019)	(0.019)	(0.019)	(0.045)	(0.050)	(0.045)	(0.040)
S&P 500	1.143	0.956	1.145	1.155	− 0.054	0.152	− 0.104	0.287
	(0.138)	(0.103)	(0.137)	(0.137)	(0.281)	(0.318)	(0.284)	(0.309)
Earnings per share	0.981+	0.990	0.982+	0.980+	− 0.0357*	− 0.039*	− 0.035*	− 0.048**
	(0.010)	(0.010)	(0.010)	(0.010)	(0.016)	(0.019)	(0.016)	(0.019)
Logged CEO compensation					0.012	− 0.018	− 0.003	− 0.013
					(0.058)	(0.069)	(0.061)	(0.058)
CEO age					− 0.108	− 0.006	− 0.062	− 0.249+
					(0.118)	(0.149)	(0.132)	(0.137)
CEO age squared					0.001	0.000	0.000	0.002+
					(0.001)	(0.001)	(0.001)	(0.001)
Reason for leaving: resigned					0.004	− 0.031	− 0.029	− 0.046
					(0.229)	(0.259)	(0.232)	(0.206)
Reason for leaving: retired					0.062	− 0.047	0.011	0.164
					(0.191)	(0.227)	(0.202)	(0.191)
Board size					0.028	0.004	0.013	0.026
					(0.055)	(0.066)	(0.058)	(0.055)
Post-Sarbanes–Oxley	1.322**		1.314**	1.222*	0.701***		0.725***	0.530**
	(0.120)		(0.119)	(0.115)	(0.210)		(0.211)	(0.203)
Restatement media coverage (logged)		1.026	1.023	0.976		0.008	0.028	− 0.070
		(0.019)	(0.018)	(0.026)		(0.042)	(0.038)	(0.044)
Post-SOX x restatement media (logged)				1.082*				0.196***
				(0.036)				(0.058)
Constant	1.852+	3 353***	1.958+	2.151*	6.631+	− 0.324	6.285	9.966**
	(0.676)	(1.102)	(0.716)	(0.780)	(3.850)	(3.779)	(3.832)	(3.853)
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time trend	Yea	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Lambda	1.124	0.846	1.118	1.092	0.177	0.307	0.094	0.490
Observations	412	412	412	412	260	260	260	260

Standard errors in parentheses; + $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

accountability for material errors on its external auditor, and make an auditor change accordingly.

We replicate our analysis of the likelihood of CEO replacement in Table 4, using the same procedure and independent variables, to predict the likelihood of auditor replacement. Model 1 excludes governance controls and model 2 includes them. We find no significant relationship between the passage of Sarbanes–Oxley, media coverage, and their interaction on the likelihood of external auditor replacement following Sarbanes–Oxley's passage. This result provides support for our assertion that Sarbanes–Oxley creates reactive normative pressure on firm to take visible and costly action (changing the CEO rather than the auditor) in the wake of announcing misconduct and amplifies the influence of media attention to given firms' earnings restatements on CEO replacement.

Table 3 Logistic regression models predicting the effect of media coverage on CEO change

	(1)	(2)	(3)
Restatement Increased Net Income	− 0.014	− 0.008	− 0.011
	(0.523)	(0.520)	(0.527)
Net Effect of Restatement	0.004	0.002	0.004
	(0.017)	(0.017)	(0.017)
Restatement Due to Fraud	0.613+	0.634+	0.582
	(0.354)	(0.365)	(0.363)
Restatement Resulted in a Lawsuit	0.175	0.201	0.118
	(0.253)	(0.261)	(0.256)
Number of Firms Restating, Prior Year	0.002	− 0.001	0.000
	(0.008)	(0.008)	(0.008)
Firm Size	− 0.085	− 0.093	− 0.107
	(0.072)	(0.073)	(0.073)
S&P 500	0.220	0.326	0.202
	(0.312)	(0.300)	(0.315)
Earnings Per Share	− 0.044	− 0.050	− 0.044
	(0.033)	(0.034)	(0.032)
Any Restatement Media Coverage (dummy)	0.468+		0.426+
	(0.255)		(0.259)
Restatement Media Coverage (logged)		0.159*	0.150*
		(0.069)	(0.069)
Constant	− 6.446**	− 6.916**	− 5.994*
	(2.397)	(2.359)	(2.414)
Industry FE	YES	YES	YES
Time trend	YES	YES	YES
Observations	407	407	407

Standard errors in parentheses; + $p<0.1$, * $p<0.05$, ** $p0.01$, *** $p<0.001$

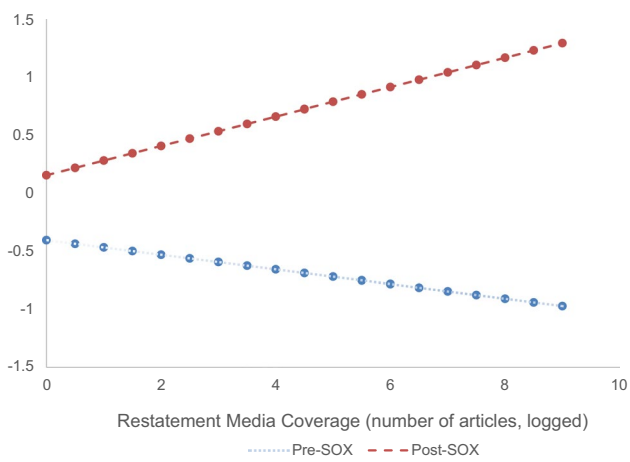

Fig. 3 The predicted likelihood of CEO change as a function of *Restatement Media Coverage*, pre- and post- Sarbanes–Oxley

Timing

So far, we have used the date on which Sarbanes–Oxley was officially passed by Congress (July 30, 2002), as a precise date that differentiates our two groups of restatement announcers. This choice might bias our results for two reasons. First, the legislation had been debated very publicly for several months before its passage, as well as received a great deal of media attention. Thus, firms knew about the proposed changes in advance of the legislation's formal passage and might have altered their behavior in anticipation of the legislative change. In addition, some firms may have timed their restatement announcements strategically. Although SEC regulations stipulate that firms must file a form 8-K and make a public announcement within four days of determining that an earnings statement needs to be amended, which formally restricts their discretion over timing, it is possible that some firms bent the rules to their advantage.

To rule out the influence of strategic firm behavior around the date of Sarbanes–Oxley's passage, we conducted additional analyses on restricted samples, where we exclude firms that announced earnings restatements within three months and six months on either side of the July 30, 2002 date. We report results for each of these restricted samples, excluding and including governance controls, in models 3 through 6 of Table 4. Models 3 and 4 exclude firms that announced earnings restatements within the period spanning three months before to three

Table 4 Second-stage Heckman selection models predicting the likelihood of auditor change, and predicting CEO change with restricted windows

	Auditor change		CEO change, excluding restatements			
			3 months +/− SOX		6 months +/− SOX	
	(1)	(2)	(3)	(4)	(5)	(6)
Restatement increased net income	1.183	0.883	0.122	− 0.178	0.295	0.493
	(0.153)	(0.158)	(0.173)	(0.332)	(0.201)	(0.760)
Net effect of restatement	0.994	0.998	− 0.004	0.001	− 0.009	− 0.021
	(0.004)	(0.006)	(0.006)	(0.010)	(0.007)	(0.023)
Restatement due to fraud	1.025	0.989	0.299*	0.247	0.284*	− 0.050
	(0.089)	(0.139)	(0.122)	(0.231)	(0.139)	(0.399)
Restatement resulted in a lawsuit	1.099	0.890	0.235*	0.216	0.285**	0.448
	(0.072)	(0.095)	(0.097)	(0.193)	(0.108)	(0.347)
Number of firms restating, prior year	0.999	1.001	− 0.003	0.004	− 0.006*	− 0.008
	(0.002)	(0.004)	(0.002)	(0.007)	(0.003)	(0.012)
Firm Size	0.997	0.952+	− 0.025	− 0.014	− 0.028	− 0.039
	(0.015)	(0.026)	(0.020)	(0.040)	(0.020)	(0.068)
S&P 500	1.090	1.220	0.207	0.090	0.311+	0.206
	(0.101)	(0.209)	(0.136)	(0.319)	(0.172)	(0.557)
Earnings per share	0.984*	0.989	− 0.014	0.013	− 0.032+	− 0.023
	(0.008)	(0.010)	(0.013)	(0.031)	(0.016)	(0.050)
Logged CEO compensation		0.984		− 0.071		0.049
		(0.036)		(0.056)		(0.110)
CEO age		0.990		− 0.151		− 0.493
		(0.083)		(0.191)		(0.422)
CEO age squared		1.000		0.001		0.004
		(0.001)		(0.002)		(0.004)
Reason for leaving: resigned		1.001		− 0.306		− 0.223
		(0.139)		(0.205)		(0.333)
Reason for leaving: retired		0.936		− 0.002		0.118
		(0.116)		(0.210)		(0.344)
Board size		0.948		0.000		− 0.033
		(0.033)		(0.060)		(0.134)
Post-Sarbanes–Oxley	1.118	1.012	0.222	1.039***	0.090	0.670
	(0.081)	(0.096)	(0.148)	(0.242)	(0.175)	(0.444)
Restatement media coverage (logged)	1.032	1.002	− 0.029	− 0.020	− 0.028	− 0.208
	(0.021)	(0.028)	(0.027)	(0.044)	(0.033)	(0.145)
Post-SOX × restatement media (logged)	0.963	0.998	0.088*	0.149**	0.092*	0.324*
	(0.025)	(0.037)	(0.035)	(0.054)	(0.040)	(0.147)
Constant	0.944	5.054	− 0.261	10.43+	− 2.381	15.740
	(0.265)	(11.480)	(1.494)	(5.472)	(1.807)	(13.400)
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Time trend	Yes	Yes	Yes	Yes	Yes	Yes
Lambda	1.238+	0.959	0.222	0.455	0.412+	0.695
Observations	412	260	378	238	334	211

Standard errors in parentheses; + $p < 0.1$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

months after the passage of Sarbanes–Oxley. Models 5 and 6 exclude firms that announced restatements within a six-month window before and after the legislation's passage. Our results are consistent with our primary analysis, such that the interaction of Sarbanes–Oxley and media attention significantly predicts ($p < 0.05$) an increased likelihood of CEO replacement. These results suggest that any strategic timing of the restatement announcement does not mitigate the joint impact of media attention and the legislation on the likelihood of CEO change.

Discussion

We investigate how firms that acknowledge misconduct by announcing an earnings restatement respond to these revelations following the passage of the Sarbanes–Oxley Act, a large-scale legislative action designed to curb corporate misconduct. We argue that the accounting scandals in the 2000–2002 period represent a focusing event (Birkland 1997, 2006) that initiated a tectonic shift in the social understanding of organizational wrongdoing. This focusing event led to the enactment of Sarbanes–Oxley, creating reactive normative pressure on firms perceived to have violated the law. Ultimately, after Sarbanes–Oxley's enactment, firms respond to announcements of financial malfeasance with more visible, costly action (CEO replacement), and are more sensitive to media attention toward their restatement announcements, than they were prior to this tectonic shift.

Our analysis provides support for the assertion that the passage of Sarbanes–Oxley heightened CEO accountability for their firms' financial restatements, both directly and by amplifying the effect of media attention on firm behavior. It also demonstrates that it is not a reaction to the new norms created by the law that altered the pattern of observed firm response to misconduct. Rather, these findings suggest that the legislative change ultimately gave the media spotlight a new lens through which news of financial misconduct was interpreted publicly.

Our findings are significant for a number of reasons. First, they help broaden our understanding of the ways in which legislative change affects firm behavior. Although much research has demonstrated that new legislation has both coercive and normative effects on the structure of markets and firm practices, our study is the first to explore the ways in which legislative change affects the behavior of firms that are already perceived to have violated the law. Our study helps explain how new legislation designed to limit firm misconduct changes how firms respond to perceived violations of the law.

Second, our study points to an important link missing in the current literature: the way in which new laws change how firms respond to aspects of the social environment. While extant research has been thorough in enumerating the costs of misconduct to firms and individuals associated with them, it has so far paid less attention to how firms respond to the societal mechanisms driving such costs, as well as how firms respond to other societal pressures after announcing misconduct, notably media attention. Our findings suggest new laws can change how factors within the social context influence firm behavior, in our case the effect of media coverage of individual firms' misconduct on the likelihood of CEO change. In other words, it is not only features of the firm and the misconduct that dictate firm reactions to revelations of malfeasance, but also the effect of legislation on the importance of media attention to firm behavior.

Our research also contributes to the literature on symbolic management and institutional theory. We extend the symbolic management literature by specifying triggers of CEO change in an effort to remediate firms' reputations. Changing the CEO is one of the many options available to firms interested in managing external stakeholder impressions. Further research into the factors that promote the use of less costly measures, or that make CEO change even more costly, may provide further insight into firm decision-making processes. Similarly, considering the frequency of CEO change relative to auditor change, which has less symbolic heft but makes a clearer connection to the forces underlying financial misconduct, identifies some of the trade-offs inherent in reactive normative responses to legislative infractions, and highlights the more symbolic nature of such acts.

We have not been able to rule out one important plausible alternative explanation for our results. It could be that firms that announce a restatement are more likely to replace their CEOs after Sarbanes–Oxley because they are truly more interested in assigning executive accountability for restatements to the heads of the firm. It is possible that boards think the CEO ought to be held responsible for wrongdoing within his firm, leading to an increased likelihood of CEO dismissal. Moreover, it is possible that these assessments are independent of media coverage and public discourse, so that the CEOs would depart even absent increased media coverage. Though this is not an unreasonable explanation, the empirical evidence we provide regarding the moderating effect of the legislative change on media attention counters it fairly convincingly.

We also note that our governance controls did not significantly predict the likelihood of CEO turnover. We believe that the lack of a significant relationship here suggests that turnover among our sampled firms is not merely the result of normal executive-board dynamics and political behavior, as would be predicted by previous research (e.g., Huson et al. 2001; Jensen 1993; Weisbach 1988; Zajac and Westphal 1996). Instead, the absence of significant results here suggests that the processes driving change in top management following misconduct have more to do with institutional pressure than internal firm dynamics, supporting our central hypotheses.

Generalizability and Future Research

We believe our findings will generalize to a broad range of legislative actions, particularly those triggered by focusing events or large-scale social change. That legislative change affects firm behavior is not a new idea, and findings from

that stream of literature confirm that legislative change affects firm behavior in coercive and proactively normative ways. We extend this literature by suggesting that legislation also affects the behavior of firms perceived to be in violation of the law, through *reactive normative* pressure. Nevertheless, it is reasonable to ask whether all legislative changes engender similar reactive normative pressure on firms, or if reactive normative pressure is felt more keenly after legislation enacted following a focusing event. Our findings suggest that media attention that follows a focusing event will elicit a more intense reaction from firms. While we do not have evidence on which to base an empirical conclusion, we suspect that legislation born out of other types of political discourse may engender less reactive normative pressure than legislation that follows a focusing event. This question remains an open question ripe for future research.

Our findings also open avenues for future research about the downstream consequences of CEO change after announcing an earning restatement, a topic that has yet to be addressed (Pozner and Harris 2016). Is the gesture effective in remedying the firm's reputation (Pfarrer et al. 2008a)? Does it lead to more friendly coverage by the media or stock market analysts? Does symbolic action in the wake of legislative change reduce the likelihood of future misconduct, suggesting that it is more substantial than window dressing? Investigating such questions would elucidate whether the reactive normative response is, in fact, a rational one.

Though we know much about the ways in which firms strive to appear to conform to the law, either symbolically or substantively, this paper is the first to address how firms that violate the law react to legislative change. When we fail to investigate the dark side of firm behavior—misconduct, corruption, fraud, and their consequences – we are left with an incomplete understanding of a major component of firm life. Ultimately, our findings contribute nuance to our understanding of the effect of Sarbanes–Oxley, the sociology of legislative change, the relationship between the media and corporate governance, and how firms respond to incidents of financial misconduct. We hope this study renews interest in using firm wrongdoing to build organizational theory.

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