

**REPAIRING LEGITIMACY AFTER ORGANIZATIONAL MISCONDUCT:
SIGNALING REMEDIATION VIA CORPORATE GOVERNANCE
CHANGE FOLLOWING DISCLOSURES OF
POTENTIAL CRIMINAL LIABILITY**

by

REBECCA A. BOGIE

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DEDICATION

This dissertation is dedicated to my parents who believed that knowledge is not only the key to a better life for every individual but that it is essential to a fairer and more just society. My parents never doubted that I would earn a college degree although they likely never expected me to earn three. Neither parent was alive to witness my pursuit of a doctoral degree, but I know they would have been as proud of this third degree as they were the first two.

ABSTRACT

REPAIRING LEGITIMACY AFTER ORGANIZATIONAL MISCONDUCT: SIGNALING REMEDIATION VIA CORPORATE GOVERNANCE CHANGE FOLLOWING DISCLOSURES OF POTENTIAL CRIMINAL LIABILITY

Rebecca A. Bogie, D.B.A.

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Supervising Professor: *R. Greg Bell, Ph. D.*

Organizational misconduct, which suggests ineffective monitoring and oversight, focuses attention on top-level management and may damage organizational legitimacy. Under the legal reforms that followed from multiple corporate scandals in the early 2000s, the board of directors and executives such as the CEO bear direct responsibility for organizational monitoring and oversight. As such, it is reasonable to examine whether disclosures of potential misconduct result in increased board director and CEO turnover and whether such corporate governance changes, if they do occur, are appropriate mechanisms for organizational legitimacy repair. This study, using a sample of U.S. publicly traded companies with matched controls, investigated organizational legitimacy damage and repair in the context of disclosures of potential, federal-level criminal liability; such disclosures are mandated in the U.S. by generally accepted accounting principles. Punctuated equilibrium theory provides insight into why negative firm events such as these disclosures may trigger periods of organizational change. Then, signaling theory explains why

observable changes such as board director and CEO turnover should be preferable for organizational legitimacy repair from the perspective of external stakeholders like market intermediaries. The study's findings build on the body of research known as ex post settling up, where limited empirical evidence exists around the presumed legitimacy repair benefits of board and executive turnover following organizational misconduct. Regarding practice, the findings may aid organizational management in planning for the consequences of these types of misconduct disclosures. Additionally, the findings lend support to issues previously identified by regulators in relation to credit agencies and the lack of influence of non-financial factors such as misconduct and corporate governance in their ratings.

Keywords: legitimacy, signaling, corporate governance, organizational misconduct

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CHAPTER 1

INTRODUCTION

Legitimacy, a general perception that the actions of an organization meet the standards of its environment, impacts the relationships between a firm and its stakeholders (Suchman, 1995). How stakeholders perceive or judge legitimacy affects their understanding of and actions toward an organization (Suchman, 1995). For example, when stakeholders perceive a high level of fit between a firm and the norms and standards of its environment, a passive, taken-for-granted status known as cognitive legitimacy exists (Suddaby, Bitektine, & Haack, 2017). The result of a taken-for-granted status should be less, or even no, routine scrutiny of a firm (Bitektine, 2011). Internally, less scrutiny enables a firm to reallocate resources from managing stakeholders to other business objectives. Externally, organizational legitimacy facilitates access to resources like competent employees and financial capital, which, over time, should improve firm performance measures such as profit, growth, and market share (Zimmerman & Zeitz, 2002). Given the advantages of organizational legitimacy, it is important to understand the processes and criteria used by stakeholders in making legitimacy judgments and the actions that firms can take to influence such judgments.

In practice, when firms match known criteria like characteristics common to a specific industry or organizational form, legitimacy can be a default judgment that results from bounded rationality (March & Simon, 1958; Simon, 1972) affecting the stakeholders' judgment processes (Bitektine, 2011). That is, stakeholders conduct organizational legitimacy evaluations with incomplete information and limits on their motivation, time, and cognitive abilities (Bitektine,

2011). Therefore, in familiar contexts, stakeholders are likely to categorize firms as legitimate, even under conditions of limited information and uncertainty, based simply upon firm existence and a lack of evidence to the contrary (Bitektine, 2011). As a result, firms that conform or meet expectations by “adopt[ing] the characteristics, practices, and forms imposed by regulations, standards, or norms” (Suddaby et al., 2017, p. 457) will likely be perceived as legitimate.

However, when circumstances suggest non-compliance with norms and standards, stakeholders’ perceptions of organizational legitimacy may be unfavorably affected (Pfarrer, Decelles, Smith, & Taylor, 2008) leading to an evaluation process known as sociopolitical legitimacy judgments (Aldrich & Fiol, 1994). In a sociopolitical legitimacy judgment process, stakeholders benchmark a firm’s observable features, structural attributes, and activity outcomes against the prevailing social and environmental norms and standards (Bitektine, 2011). The salience of such legitimacy evaluations varies based on factors such as the stakeholders involved and the organizational legitimacy type (e.g., managerial, regulatory, etc.) (Bitektine, 2011; Ruef & Scott, 1998). Sanctions such as monetary penalties or forced operational changes can result when stakeholders determine that mismatches exist between a firm’s characteristics and its environment (Bitektine, 2011).

According to Gillespie and Dietz (2009), threats to legitimacy occur at the firm level when uncertainty exists around: (a) firm abilities, which are the competence and capability to fulfill business objectives, (b) firm benevolence, which is consideration for stakeholders, or (c) firm integrity, which consists of adherence to common and reasonable ethical standards. Because organizational legitimacy has multiple aspects, such as pragmatic legitimacy (i.e., self-interested concerns) and moral legitimacy (i.e., broader social concerns) (Suchman, 1995), different stakeholders may have different concerns following a violation of expectations.

Repairing organizational legitimacy is complex, often requiring reactive responses to unforeseen events (Suchman, 1995). To be successful, firm managers need to identify the salient stakeholders, those that are active evaluators and elite (i.e., powerful), then tailor legitimacy repair activities toward them (Pfarrer et al., 2008). One goal for repair activities is to create a cognitive firewall between stakeholders' evaluations of past actions and expected future actions (Suchman, 1995). This task is difficult, in part because stakeholders are diverse, differing in their expectations, motivations, and predispositions (Suddaby et al., 2017), but also because events that violate stakeholders' expectations can have adverse effects on the credibility of signals sent by the organization (Gomulya & Mishina, 2016). The result is that stakeholders may change which organizational signals they focus on in their legitimacy evaluation processes (Gomulya & Mishina, 2016), demonstrating a preference for signals that are less susceptible to manipulation (Gomulya & Boeker, 2014). Firm managers must account for such changing stakeholder demands, which adds to the complexity of the organizational legitimacy repair process.

One method of repairing organizational legitimacy that may create a cognitive separation between past and future actions and that meets the criteria for a less manipulatable signal (i.e., visible, difficult or costly, and credible) is turnover at the board of director and executive management levels. The theory of ex post settling up suggests that stakeholders attribute both negative and positive organizational outcomes to the actions of firm management, which results in individual-level consequences for firm-level outcomes (Greve, Palmer, & Pozner, 2010). Academics from multiple disciplines such as management, accounting, and finance have studied this phenomenon following various firm-level events that demonstrate non-compliance with accepted norms and standards. These research studies have primarily focused on events that indicate failures in firm-level corporate governance such as financial earnings restatements.

Most of these studies support an increase in the probability of turnover for executives (e.g., CEOs or CFOs) and/or outside board directors¹ following negative events. For example, researchers found increased rates of turnover following financial restatements (Arthaud-Day, Certo, Dalton, & Dalton, 2006; Bereskin & Smith, 2014; Cowen & Marcel, 2011; Marcel & Cowen, 2014; Srinivasan, 2005), disclosures of internal control material weaknesses (ICMWs) (Johnstone, Li, & Rupley, 2011; Kachelmeier, Rasmussen, & Schmidt, 2016), and disruptive CEO successions (Marcel, Cowen, & Ballinger, 2013). Although higher rates of turnover may in part reflect individuals' desires to protect their reputations (Boivie, Graffin, & Pollock, 2012), such post-event turnover has been suggested as a mechanism by which organizations signal their intentions to prevent recurrences, thereby repairing legitimacy and averting consequences such as resource withdrawal (Arthaud-Day et al., 2006; Marcel & Cowen, 2014).

However, few studies have examined post-event turnover from external stakeholders' perspectives (Gangloff, Connelly, & Shook, 2016; Gomulya & Boeker, 2014). Therefore, questions still exist as to whether leadership turnover is an effective signal of organizational remediation, assisting with restoring legitimacy and preventing the loss of resources. This paper addresses those questions using punctuated equilibrium (Gersick, 1991; Romanelli & Tushman, 1994), legitimacy (Suchman, 1995), and signaling (Spence, 1973) theories to examine director and executive turnover, from both organizational and market stakeholder perspectives.

The events of interest in this study are disclosures of potential corporate criminal liability, specifically those related to federal-level laws and regulations. Although generally accepted

¹ Outside directors, also known as independent directors, are those who "have no relationship with the company other than their role as directors" (Srinivasan, 2005, p. 292). This definition excludes affiliated directors who have potential conflicts of interest such as interlocking board memberships. This study uses a broad definition of outside directors, following Marcel and Cowen (2014), as any non-management (i.e., non-employee) directors.

accounting principles (GAAP) mandate liability disclosures around this type of firm event for publicly traded firms in the United States (U.S.) stock market, these types of disclosures have not been extensively examined in the academic literature. That is, researchers have directed limited attention to negative organizational events other than financial earnings restatements even though such events may possess significant potential for impacts to firm value from market-based penalties (Aharony, Liu, & Yawson, 2015). Therefore, little is known about organizational actions and market stakeholder responses after negative, non-restatement events.

To build the body of research around organizational legitimacy and negative firm-level events, this paper reports on a two-stage study. The first stage examined rates of turnover, specifically board directors and CEOs, following public disclosures of potential corporate criminal liability (i.e., the event). The impact of media coverage on rates of turnover was also examined in this stage. The second stage shifted perspective to signal receiving, examining the subsequent reactions of market stakeholders, specifically security analysts and credit rating agencies. Given this context, this paper proposed three main effects. The first hypothesized effect was that the rates of turnover for board directors and CEOs would increase following disclosures of potential corporate criminal liability. The second expected effect was that the level of media coverage in the 90 days following disclosure would be positively associated with the rate or timing of turnover, that is, the magnitude of board director turnover and the velocity or speed of CEO exit. The final hypothesized effect was that board director and CEO turnover would be related to subsequent changes in security analyst and credit agency ratings, which, respectively, indicate short-term and long-term market expectations.

1.1 Research Questions

Following disclosures of negative information, organizations can reasonably be expected to act to avoid the anticipated adverse consequences of diminished reputations and legitimacy (Gomulya & Boeker, 2014). Examples of adverse consequences include increased costs in operational areas such as hiring employees and maintaining relationships with customers and suppliers – negative outcomes supported in the literature following earnings restatement events (Flanagan, Muse, & O'Shaughnessy, 2008). Publicly traded organizations face market-based consequences as well, such as increases in the cost of capital and diminished investor reactions to earnings announcements (Flanagan et al., 2008). Operational and market-based cost increases occur in addition to the direct expenses (e.g., legal support, investigations, and issue remediation) associated with the resolution of negative events such as criminal misconduct. Given the financial and operational repercussions that follow negative firm-level events, the decisions that management makes around how to respond are strategically important to organizational survival.

The objectives of this two-stage research study were to gain insights into the corporate governance changes that occur following disclosures of potential criminal liability and whether such changes, if they do occur, positively affect organizational outcomes following negative, legitimacy-threatening events. Corporate governance changes, specifically board director and CEO turnover, are the areas of focus because the events of interest suggest ineffective internal monitoring and oversight. Firm management bears such responsibilities under informal social standards as well as under formal regulatory standards. For example, under the United States Sentencing Commission (USSC) guidelines for corporations, the actions and involvement of firm managers, as individuals with substantial authority (e.g., high-level personnel such as CEOs) or governing authority (e.g., the board of directors), are specifically called out for review during the

sentencing process (USSC, 2015). Given such formalization of responsibility, it is reasonable to examine how governance changes such as management level turnover impact organizational legitimacy in the context of corporate criminal misconduct.

Based on this study's objectives, two research questions were developed:

1. Are disclosures of potential corporate criminal misconduct associated with changes in firm-level corporate governance?
2. Following such disclosure events, do corporate governance changes affect organizational legitimacy evaluations by market intermediaries?

To examine these research questions, this study draws on legitimacy, punctuated equilibrium, and signaling theories. Legitimacy theory contributes a basic premise of this study – that firm management cares whether external stakeholders perceive and evaluate an organization favorably for reasons such as access to resources and organizational survival. Therefore, management will act when a negative event threatens organizational legitimacy. Punctuated equilibrium theory provides insight into the types of negative events that are strong enough to trigger brief periods of substantial organizational change, overcoming the forces of inertia and resistance to change.

Signaling theory, in conjunction with legitimacy theory, helps explain why certain types of organizational change (i.e., corporate governance change) should be preferable in the context of criminal misconduct. Finally, the receiving aspect of signaling theory is employed to inform the examination of whether firm governance changes (i.e., board director and CEO turnover) are effective in repairing organizational legitimacy from the perspective of external stakeholders.

1.2 Overview of the Research Methodology

This study, in its design and methodology, draws inspiration from the existing body of ex post settling up research (e.g. Agrawal & Cooper, 2007; Arthaud-Day et al., 2006; Persons, 2006) and event-related signal receiving research (e.g. Gangloff et al., 2016; Gomulya & Boeker, 2014). Such research is typically conducted using public company samples due to the availability of data. That is, publicly traded firms are subject to disclosure requirements under GAAP which makes data such as event type and executive turnover identifiable in nature and in time. Given the rationale for data availability with a public company sample, this study reduces the potential population of firms with documented criminal incident(s) down to a convenience sample consisting only of U.S. based publicly traded firms. Further, only those firms with public disclosure events between 2000 and 2015 are included. This enables data collection over a two- to three-year post-event period following the method of Arthaud-Day et al. (2006).

The first stage of this study follows the typical procedures for governance-related event-history studies by measuring board director and CEO turnover in discrete intervals during the post-event period for case firms (i.e., disclosure event firms) and a group of control firms matched on characteristics such as firm size and industry. When studying outcomes that have low base rates of occurrence across time periods such as years, a matched case-control design is appropriate as it helps account for the low base rates as well as for potential effects from confounds such as general economic conditions (Shadish, Cook, & Campbell, 2002).

Because the turnover-related dependent variables are categorical and dichotomous, the analytical technique required is logistic regression. Both binary logistic and Cox regression, a type of logistic regression also known as a partial likelihood estimation of the proportional hazards model (Allison, 2014), were employed. Results from these logistic regression models are

expressed as odds or probability ratios, that is, ratios of incidence. This stage of the study also examines the magnitude of board director turnover and the velocity of CEO turnover in the event firms in relation to the level of news media coverage in the 90-day period immediately following the disclosure events. For this part of the analysis, standard linear regression was appropriate as the dependent variables were numerical measures.

In the second stage of the study, which examined signal receiving using two groups of market stakeholders, the matched control firms were dropped. The between-cases comparison shifted to disclosure event firms that had director and CEO turnover versus those without (or with lower levels) of such turnover. The dependent variables in this stage were the changes in firm ratings, measured before and after the disclosure events, as issued by the market intermediary groups of security analysts and credit rating agencies. For analysis, ordinal ratings were converted to numerical interval data which enabled the use of standard linear regression.

1.3 Contributions of the Study

From an academic perspective, studying organizational legitimacy in the context of corporate criminal misconduct offered an opportunity to examine the intersection of legitimacy and signal receiving in two groups of market stakeholders, security analysts and credit rating agencies. In the signaling literature, a lack of research that examines the effect of signals on external stakeholders besides shareholders has been identified as a gap (Connelly, Certo, Ireland, & Reutzel, 2011). This study, by focusing on security analysts and credit rating agencies, builds on that limited body of literature. At the same time, this study contributes to the body of ex post settling up research, where limited empirical evidence exists to support “the presumed benefits of executive turnover in the aftermath of wrongdoing” (Gangloff et al., 2016, p. 1614).

From a practical perspective, research in the context of criminal misconduct enabled the inclusion of a recent phenomenon in the resolution of corporate crime at the U.S. federal level -- out-of-court, negotiated settlement agreements. Such agreements, rare before the early 2000s, have been increasingly chosen by federal prosecutors as alternatives to trials and plea-bargained agreements. A vibrant debate exists in the legal domain about the lawfulness of contractual agreements as corporate criminal resolution mechanisms because firms can avoid admissions of guilt and formal convictions via these out-of-court negotiation processes (Alexander & Cohen, 2015). However, the ongoing and increasing use of contractual agreements to resolve corporate crime necessitates that stakeholders understand whether, and if so how, these options change the standards in the regulatory domain, which in turn may affect evaluations of organizational legitimacy. That is, the results from this research translate into insights for investors to use in their decision-making about firms with disclosures of corporate criminal misconduct. Insights from the research also informs firms about the usefulness of board and executive turnover for restoring legitimacy following disclosures of potential criminal liability.

1.4 Organization of the Paper

Chapter two has three objectives, which are: (a) providing information about the context of corporate crime, (b) summarizing the academic theories that support the research models, and (c) developing the hypotheses. First, the chapter summarizes the processes related to the identification, disclosure, and resolution of corporate criminal misconduct in U.S. federal regulatory contexts. A recent example is presented to help explain these processes. GAAP disclosure requirements for publicly traded firms are also discussed. The context review concludes with a discussion of the regulatory motivations that exist for firms to undertake remedial actions following a public disclosure event, but before incident resolution.

The academic theory section of chapter two begins with a discussion of organizational event research. Following that, the theoretical foundations of punctuated equilibrium, legitimacy, and signaling are reviewed. The final section develops the research models and hypotheses.

Chapter three summarizes the methodology that was applied in testing the hypothesized relationships. The discussion begins with a review of the research strategy and two-stage study design. Next, the sample and data sources are discussed. These are followed by a summary of the measures and a discussion of the analytical techniques that were used in each stage of the study. Chapter three concludes with a discussion of ethical considerations.

The results of the hypotheses tests are reported in chapter four. Descriptive statistics, correlation tables, and results tables are presented for all hypothesized relationships. The results of analyses that were conducted post hoc are covered in the final section of the chapter.

Chapter five discusses the implications of the results. The limitations of the study as designed along with contributions of the study to academic theory and to practice are covered. The final section of chapter five provides suggestions for future research.

CHAPTER 2

LITERATURE REVIEW

There are three objectives in this chapter. The first objective is to provide salient background information about the U.S. federal regulatory environment and corporate criminal misconduct. This contextual information helps explain the design of the study in terms of the public company sample, the data tracking periods, and the operationalization of certain variables. This information also highlights reasons why organizational events that have a regulatory basis may be of interest to other external, non-regulatory stakeholders, thus setting the stage for the proposed linkage between corporate criminal events and organizational legitimacy.

The second objective of this chapter is to summarize the relevant academic literature. This section begins with a discussion of the rationale for studying organizational events, which defines the event concept and then, examines the ability of certain types of events to trigger organizational change using the lens of punctuated equilibrium theory. A review of legitimacy theory, including a discussion of its intersection with signaling theory, follows.

Legitimacy is a prominent construct in academic studies of organizations although several conceptualizations of the theory exist (Suddaby et al., 2017). Such conceptualizations of legitimacy differ in their responses to questions of what it is, where it occurs, and how it occurs (Suddaby et al., 2017). The result is that legitimacy has been examined as a property (i.e., an asset or a resource), as a process (i.e., legitimation or an interactive social construction), and as a perception (i.e., an evaluation or social judgment) (Suddaby et al., 2017). This paper uses what Suddaby et al. (2017) refer to as the legitimacy as perception view because it retains the idea of

legitimacy as a property that organizations can possess (or lose) while recognizing that judgments of organizational legitimacy are made by individuals acting within a given context.

Both aspects of organizational legitimacy apply in developing the hypotheses, the third objective for this chapter. As a judgment or evaluation process, legitimacy necessarily involves three parties: (a) an entity for evaluation, (b) a change agent whose goal is to influence the evaluation, and (c) an evaluator making a legitimacy judgment (Suddaby et al., 2017). These parties act within a system of cultural meaning – a system that defines stakeholders’ normative expectations for legitimate organizational behaviors and characteristics (Suddaby et al., 2017).

For this study, the entities subject to legitimacy evaluations are publicly traded firms that have disclosed potential criminal liability, specifically around violations of U.S. federal laws and regulations. These firms and their top-level management are the change agents concerned with influencing stakeholders’ legitimacy judgments post-event. The disclosure events and internal organizational responses are the basis of the hypotheses in the first stage of the study. The hypotheses in the second stage shift perspective -- to evaluators making legitimacy judgments. The evaluators of interest are market intermediaries, specifically security analysts and credit rating agencies. The context within which the organizational actions and legitimacy evaluations occur is a complex setting – that is, the intersection of the U.S. federal regulatory and the U.S. stock market environments.

2.1 The Identification, Disclosure, and Resolution of Corporate Crime

This section reviews salient background information about the processes related to the identification, disclosure, and resolution of corporate criminal misconduct in the U.S. federal regulatory environment. A summary of the disclosure requirements that apply to public firms with potential future financial liability related to criminal misconduct is also presented.

2.1.1 Public firms and incidents of corporate criminal misconduct.

Whether an incident of corporate criminal misconduct is self-identified (i.e., verified at the time of disclosure) or other-identified (i.e., alleged and pending investigation), disclosure of the potential liability is required by the accounting standards for U.S. based, publicly traded firms. The intent of the disclosure requirement is to prevent investors being misled as to the future financial position of a firm. The disclosure requirement is part of the financial accounting standards (FAS) developed by the Financial Accounting Standards Board (FASB) and commonly referred to as generally accepted accounting principles or GAAP.

The disclosure of potential liabilities, referred to in the accounting standards as loss contingencies, was addressed by FAS 5, effective July 1, 1975, and by *Accounting Research Bulletin* No. 50 prior to that (FASB, 1975). FAS 5 was replaced and updated in July 2009 by the Accounting Standards Codification (ASC) Topic 450 (FASB, 2016). Under the current standard, ASC Topic 450, Subtopic 20, loss contingencies are defined as conditions or situations that have uncertain potential to result in a financial loss or expense depending on the occurrence, or non-occurrence, of one or more future events (FASB, 2016). A regulatory example of a loss contingency is described in ASC ss.450-20-55-14 as “an investigation of an entity by a governmental agency, if enforcement proceedings have been or are likely to be instituted” (FASB, 2016, para. 1). Under ASC ss. 450-20, as with the prior standard FAS 5, disclosure is required in the next financial statement filing with the U.S. Securities Exchange Commission (SEC). Additionally, a financial liability accrual may be required when factors, such the ability to reasonably estimate a loss, are met (FASB, 1975; FASB, 2016).

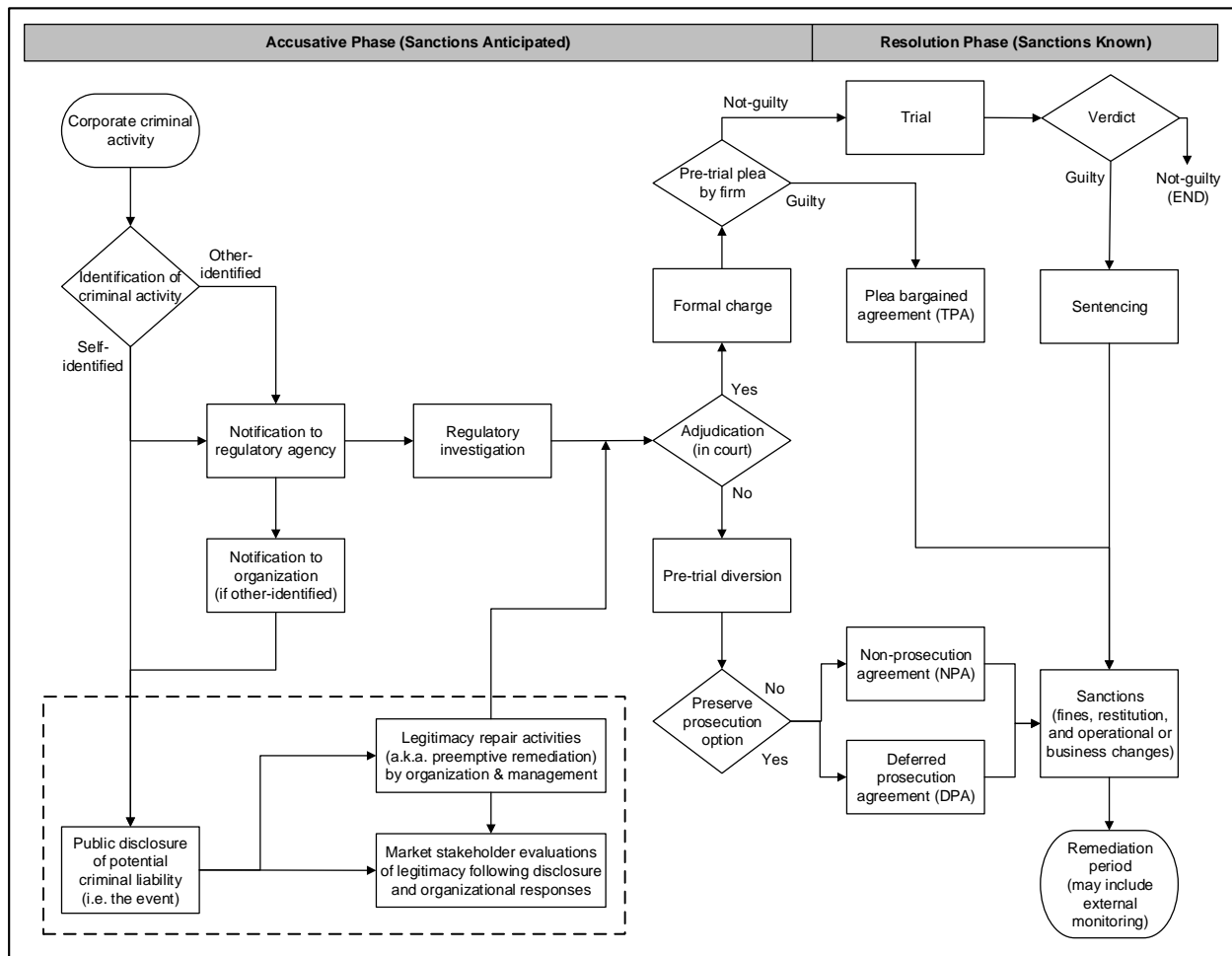
In addition to FASB standards, publicly traded companies are subject to disclosure requirements under several federal laws including the Sarbanes-Oxley Act of 2002 (SOX) and

the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 (SEC, 2013). The SEC administers the reporting requirements set forth under such laws, and the requirements apply to companies that have more than \$10 million in assets and that have 500 or more owners of issued securities (SEC, 2013). One report frequently used for disclosure, in addition to the quarterly form 10-Q and the annual form 10-K, is form 8-K (SEC, 2012). Form 8-K disclosure requirements give companies four business days to file with the SEC after a significant corporate event. The definition of a significant event includes “entry into a material definitive agreement” (SEC, 2012). As a result, an organization typically files form 8-K when entering into a settlement agreement with federal regulatory agencies to resolve an incident of criminal misconduct.

The period from the initial identification and disclosure of potential criminal liability to its eventual resolution can span a multi-year period due to many factors. From the perspective of regulators and prosecutors, such factors include the difficulty in obtaining data, the specialized knowledge required for reviewing complex financial and technical data, and the involvement of skilled defense and corporate attorneys (Benson, Maakestad, Cullen, & Geis, 1988). These factors, as well resource constraints in funding and personnel at the state and local levels, favor regulatory activity proceeding at the federal level for incidents of corporate criminal misconduct (Benson et al., 1988). The existence of regulatory challenges, particularly resource constraints, favors alternative means of resolution such as incapacitation (e.g., revoking a business license) or rehabilitation (e.g., negotiated, contractual agreements containing financial and operational penalties) over trials in court (Braithwaite & Geis, 1982).

The flowchart in Figure 1 illustrates the regulatory phases and processes at a high-level; the inspiration for this phased model comes from Pierce (2015). Processes related to both out-of-court settlement agreements and court trials are depicted. The events and actions examined in

this study are also depicted and separately identified in Figure 1 using a dashed box. The typical order of these items within the broader process is indicated by their placement in the flowchart.



Note: Dashed box indicates items examined by this study. Time flows both left to right and top to bottom.

Figure 1. Processes related to the resolution of potential corporate criminal liability.

A recent example that illustrates the length of time that these processes can span is the case of MoneyGram International, Inc. (MGI), a global money remittance service. MGI’s criminal conduct consisted of non-compliance with anti-money laundering laws from 2003 to 2009 (*United States of America v. MoneyGram International, Inc.* [USA v. MGI], 2012). In 2010, MGI was notified of a federal regulatory investigation (*USA v. MGI*, 2012). An escalation in the number of Consumer Fraud Reports filed by customers in the U.S. and Canada over a five-

year period triggered the investigation; the number of reports increased by more than tenfold from 2004 to 2008 (*USA v. MGI*, 2012). Disclosure of the regulatory investigation occurred in March 2011 with a statement in the notes of the 2010 annual 10-K report (MoneyGram International Inc., 2011). This 10-K was MGI's first SEC-required filing after the firm received notice of the federal regulatory investigation.

Following the investigation, federal prosecutors offered MGI a contractual settlement option, specifically a deferred prosecution agreement (DPA), which preserved the regulators' option for future prosecution. Negotiations between MGI and the federal prosecutors around the terms of the DPA concluded in late 2012. The DPA, which was effective beginning in November 2012, included monetary penalties as well as operational sanctions; MGI was also required to engage an external monitor (i.e., a law firm) for a five-year period (*USA v. MGI*, 2012).

The monitor requirement would have expired in November 2017, but MGI was deemed not to have met its DPA-mandated remediation targets; therefore, the monitor was first extended by one year, then by additional 30 months from November 2018 along with an additional \$125 million forfeiture (Department of Justice, 2018). After this monitoring extension expires in April 2021, MGI will remain subject to any perpetual provisions in the DPA. If MGI still has not met its remediation targets by this next date, the firm could be subject to prosecution. Excluding the initial 7 years of misconduct, the resolution process, from notice of the regulatory investigation to the end of monitor oversight, will span more than 11 years at a minimum

2.1.2 Motivations for organizational change following criminal misconduct.

For several decades, organizations that are subject to U.S. criminal law have had strong incentives to discipline employees, via demotions, compensation reductions, or terminations, when responsibility for regulatory violations can be determined. First, when an organization has

operating policies (or purchases liability insurance policies) that indemnify its directors and top executives for legal costs, expenses can be controlled or minimized via speedy terminations of the individuals responsible for the monitoring and oversight activities related to the violation (Persons, 2006). Second, and more importantly, there are leniency provisions in the 1991 U.S. Sentencing Commission guidelines for corporations that can significantly reduce the penalties for organizations that respond in specific ways following violations (Dalton, Metzger, & Hill, 1994). Similar leniency provisions exist in the Sarbanes-Oxley Act of 2002 (Persons, 2006).

Since 2003, organizations have had a third reason to discipline responsible employees and undertake other preemptive remedial activities following regulatory violations – that is, to obtain out-of-court, contractual settlements rather than going through court-based processes such as trials and plea-bargained agreements. Contractual settlements fall under the oversight of the U.S. Department of Justice (DOJ). The DOJ is the only government entity with settlement authority in corporate criminal matters, but it partners with other agencies, and with prosecutors from the regional U.S. Attorneys’ Offices, for investigations and issue resolution activities (Alexander & Cohen, 2015).

In federal criminal cases, a U.S. Attorney is the prosecutor, representing the interests of the U.S. (Administrative Office of the U.S. Courts [USC], n.d.). A key legal concept in criminal cases is that the burden of proof lies with the government, not with the defendants (USC, n.d.). This standard of proof “means the evidence must be so strong that there is no reasonable doubt that the defendant committed the crime” (USC, n.d.). Because of this strenuous requirement, as well as time and resource constraints, neither prevention of corporate crimes nor restitution to victims are guaranteed under traditional legal systems due to the practical difficulties of obtaining corporate convictions (Braithwaite & Geis, 1982).

Legal scholars such as Braithwaite and Geis (1982) have proposed two tactics for addressing these challenges. One tactic is to reform the law, making the conviction of guilty corporations easier. The second tactic is to allow regulatory agencies, when enough bargaining power exists, to use non-prosecutorial means such as out-of-court negotiated settlements to pursue their deterrence, incapacitation, and rehabilitation goals. Beginning in the early 2000s, U.S. federal prosecutors, applying guidance from the DOJ, embraced the latter tactic by increasing their use of DPAs and non-prosecution agreements (NPAs) to resolve matters of corporate criminal liability (Alexander & Cohen, 2015).

Such settlement agreements (collectively D/NPAs) differ from prosecutorial resolution mechanisms such as trials and traditional plea-bargained agreements (TPAs) in two important respects. First, the D/NPA process replaces court-based activities under judicial oversight with out-of-court contracts negotiated directly between prosecutors and firms. The result is a change in authority for the oversight and approval of settlements, a shift from courts and judges to regulators and prosecutors. Firms, via the out-of-court process, are able to forego admissions of guilt and formal convictions (Alexander & Cohen, 2015), and perhaps more importantly, are able to trade the uncertainty, risk, and potential time and expense of court-based processes for negotiated sanctions such as governance reforms and external oversight. Firms usually agree to waive common legal protections such as attorney-client and work-product privileges, as well as their “rights to speedy trial, to presentment within applicable statutes of limitation, and to challenge the admissibility of their statements in subsequent criminal proceedings” (Greenblum, 2005, p. 1871). In some cases, firms accept permanent business restrictions such as KPMG did in its 2005 DPA around certain auditor-provided tax services (Finley & Stekelberg, 2016).

Although the option of D/NPAs, that is, negotiated contractual settlements, significantly changes the potential legal and financial outcomes for firms that commit criminal misconduct (in comparison to traditional criminal trials and plea-bargained agreements), the disruption that comes from the high-profile, public disclosure of such misconduct remains. Organizational leaders must respond under conditions of enhanced scrutiny, considering not only how their actions after a disclosure event may be perceived by stakeholders such as investors, security analysts, and employees, but also whether their actions will influence prosecutors' decisions about whether to offer a negotiated settlement or to pursue prosecution. In such situations, preemptive remedial measures that demonstrate organizational change would be reasonable.

From a regulatory perspective, U.S. attorneys, with DOJ support, exercise prosecutorial discretion either by dismissing an investigation without charges (i.e., declination) or by selecting a resolution mechanisms (i.e., DPAs, NPAs, TPAs, and criminal trials) (Reilly, 2015). The decision points associated with these resolution mechanism options are depicted in the flowchart in Figure 1. However, the flowchart does not address the factors that prosecutors may consider when selecting a resolution mechanism. The ten factors are prescribed in sub-section 9-28.300 of the United States Attorneys' Manual (USAM), under Title 9, Section 9-28.000 – Principles of Federal Prosecution of Business Organizations. The factors -- noted as unique to the nature of the corporate "person" (Offices of the United States Attorneys, 2015) – are provided in Table 1. Although empirical settlement-related research that includes D/NPAs is limited, there is some support that prosecutors take cooperation and organizational remedial actions such as replacing responsible management, factors four and seven respectively, into consideration when making their resolution mechanism decisions. A content analysis study of D/NPAs (Kaal & Lacine, 2014) identified ten categories of preemptive remedial measures that regulators discussed as

influencing their resolution mechanism decisions. Table 2 lists the categories of preemptive remedial measures that were identified in the Kaal and Lacine (2014) study and provides the percentage of D/NPAs that mentioned each category.

Table 1

Factors to be Considered when Selecting a Resolution Mechanism

1	The nature and seriousness of the offense, including the risk of harm to the public, and applicable policies and priorities, if any, governing the prosecution of corporations for particular categories of crime
2	The pervasiveness of wrongdoing within the corporation, including the complicity in, or the condoning of, the wrongdoing by corporate management
3	The corporation's history of similar wrongdoing, including prior criminal, civil, and regulatory enforcement actions against it
4	The corporation's willingness to cooperate in the investigation of its agents
5	The existence and effectiveness of the corporation's pre-existing compliance program
6	The corporation's timely and voluntary disclosure of wrongdoing
7	The corporation's remedial actions, including any efforts to implement an effective corporate compliance program or to improve an existing one, to replace responsible management, to discipline or terminate wrongdoers, to pay restitution, and to cooperate with the relevant government agencies
8	The collateral consequences, including whether there is disproportionate harm to shareholders, pension holders, employees, and others not proven personally culpable, as well as impact on the public arising from the prosecution
9	The adequacy of remedies such as civil or regulatory enforcement actions
10	The adequacy of the prosecution of individuals responsible for the corporation's malfeasance

Note. From USAM Title 9 Sub-Section 9-28.300.

Table 2

Results from a Content Analysis Study of D/NPAs

Preemptive Remedial Measures	% D/NPAs
Cooperation	36%
Internal Review	30%
Compliance	27%
Reporting	25%
Terminating Employment	17%
Personnel Creations	15%
Training	15%
Monitoring	10%
New Management	6%
New Board	1%

Note. From Kaal and Lacine (2014) based on a sample (n=271) from the period of 1993-2013.

The measures most frequently cited by prosecutors relate to cooperation and compliance. Changes to management and the board of directors were the least frequently cited measures (six percent and one percent respectively). According to Kaal and Lacine (2014), monitoring and oversight was a key focus in the category of management changes, such as the creation of new positions like chief compliance officer. At the board level, the focus areas were subcommittees, membership, independence, and reporting. This data suggests that regulatory stakeholders consider management and board factors in their resolution decisions around corporate criminal misconduct and that organizational managers are aware that their actions may influence stakeholders' evaluations, which would be motivation to initiate preemptive remedial measures.

2.2 The Rationale for Studying Organizational Events

Examining internal organizational changes and external stakeholder responses after a public disclosure of potential corporate criminal liability is an example of event-oriented research. Studying events enables organizational researchers to investigate system relationships,

dynamics, and the processes of change (Morgeson, Mitchell, & Dong, 2015). To explain why event-oriented research creates such opportunities, a discussion of the key characteristics of organizational events and a review of punctuated equilibrium theory are presented.

2.2.1 The characteristics of organizational events.

According to Morgeson et al. (2015), organizational events are defined by three primary characteristics. First, events belong to an “environment or context that is external to the perceiver” (Morgeson et al., p. 520) although a specific event may be triggered either externally or internally. Examples of external events include environmental jolts (Meyer, 1982), which are unexpected shocks such as government regulation, economic crises, or technological innovation (Haveman, Russo, & Meyer, 2001) that occur at the industry or country levels, affecting many firms simultaneously. Internal events, on the other hand, are more likely to affect a single organization (e.g., CEO succession). The events examined in this paper, that is, disclosures of potential corporate criminal liability, occur at the individual organization level though they could be either internally initiated (e.g., self-reported to a regulatory agency) or externally initiated (e.g., based on the notice of a regulatory investigation). Regardless, these events are identified by the disclosure date of the information to external stakeholders.

The second characteristic of events is that they are discrete, that is, separate and distinct, with not just an identifiable beginning, but also an end (Morgeson et al., 2015). For this paper, the end of the event period is represented by the date of the agreement, that is, the TPA, NPA, or DPA, that resolves the criminal incident. This date indicates that both the actions to provide restitution for criminal misconduct and to prevent future recurrence (i.e., rehabilitation) have been formally identified and documented. As with the original criminal liability disclosure event, the resolution information is required to be publicly disclosed to external stakeholders.

The third characteristic necessary to define an event is a between-entity interaction (Morgeson et al., 2015). An event is the interaction point where the actions of one entity, whether an individual, a group, an organization, or even an environment, encounter the actions of another (Morgeson et al., 2015). In this paper, the event of interest, that is, the interaction point between an organization and its stakeholders, is the disclosure of potential criminal liability.

2.2.2 Punctuated equilibrium theory and events as triggers of change.

Punctuated equilibrium theory (Gersick, 1991) is useful for investigating the process of fundamental change in organizations, that is, changes in the patterns of activities over time (Romanelli & Tushman, 1994). A key premise of the theory is that organizational systems do not change gradually over long periods (i.e., incrementally), but change substantially during brief, punctuated bursts that are driven by intense, disruptive forces (i.e., revolutionary) (Romanelli & Tushman, 1994). Over time, organizations alternate between longer periods of stability and short periods of upheaval (Gersick, 1991). The changes that occur during the disruptive periods provide the foundation for the pattern of organizational activities during the next period of stability or equilibrium (Romanelli & Tushman, 1994). It is important to understand, however, that this pattern, alternating periods of stability and change, does not imply “forward” or linear progress, nor advancement through any universal stages or sequence of events (e.g., a lifecycle) (Gersick, 1991). Additionally, this pattern is not reliant on having an “end goal” (Sabherwal, Hirschheim, & Goles, 2001); rather, it is simply a process of change.

The drivers of this pattern, that is, the alternating periods of stability and transition, are the durable, deep structures of organizational systems (Gersick, 1991). These deep structures are highly resistant to change because they are derived from a complex network of organizational relationships and commitments (Romanelli & Tushman, 1994). Within this complex network, the

organizational structures acquire features that are unique to the systems where they developed, that are limited by history and by mutually exclusive choices, and that are reinforced via feedback loops (Gersick, 1991). These complex organizational structures and systems, with their built-in reinforcement mechanisms, are a strong force for inertia or resistance to change.

To overcome organizational resistance to change, a strong trigger, or a combination of triggers, is required (Sabherwal et al., 2001). Romanelli and Tushman (1994) proposed several triggers strong enough to overcome this resistance to change at the organization level; the factors supported by their results were major environmental changes and new leadership such as a CEO succession. In a multiple case study, Sabherwal et al. (2001) also identified environmental shifts (e.g., changes in laws) and new management as triggers, but also found support for the additional factors of sustained low performance, influential outsiders, and perception transformation (i.e., the perceived importance of an issue by an organization). Gersick (1991), who examined punctuated equilibrium at the group level, identified a milestone-type trigger, one that typically occurs at the perceived midpoint of a process or a deadline (i.e., a temporal milestone).

In the context of corporate crime, following public disclosures of potential criminal liability, several triggers of change or transition could apply. First, this type of situation “activates” influential outsiders such as regulators who have formal authority for organizational sanctions and who can mandate change. Because potential criminal liability indicates failures in internal monitoring and oversight, it may result in a perception transformation for the organization -- that its current controls and processes are deficient. This would trigger change and actions targeted at remediating existing operational systems. Finally, if there is turnover at the board or executive levels, a third trigger, that of new management, could also apply. Given the high profile of criminal liability disclosures, a combination of these three triggers is feasible.

2.3 Legitimacy

The concept of legitimacy, viewed through the lens of institutional theory, provides important insights into the phenomenon of event-driven organizational change. Insights emerge when institutional theory is applied in modeling the interactions between an organization's institutional context and its own internal dynamics (Greenwood & Hinings, 1996). A key premise of institutional theory is that "the rules, norms, and ideologies of the wider society" (Meyer & Rowan, 1983, p. 84 as cited in Greenwood, Oliver, Suddaby, & Sahlin, 2008) set standards for appropriate organizational conduct (Greenwood et al., 2008). Organizational legitimacy, then, can be viewed as a reflection of the degree of fit or congruence between the activities and outputs of an organization and its institutional environment (Suddaby et al., 2017). When threats to legitimacy exist (i.e., a lack of fit between organizational activities and the environment), firms are expected to act to restore legitimacy (Dowling & Pfeffer, 1975; Pfarrer et al., 2008). Negative events, such as disclosures of potential criminal liability, indicate a lack of fit between firms and their regulatory environments. Because this state threatens legitimacy, organizations are likely to act following negative events, initiating change to bring themselves into alignment with the accepted norms and standards of the institutional environment.

However, before proceeding with an investigation into the impacts of negative events on organizational legitimacy, it is necessary to review legitimacy as a theory and define how it will be applied in this study. Although legitimacy can be thought of as an asset or property that firms can gain, lose, increase and decrease, it is intangible, existing only when observers perceive it (Suddaby et al., 2017). In other words, legitimacy is the result of an evaluation process, one which is performed by "individuals under the influence of collective-level institutionalized judgments" (Suddaby et al., 2017, p. 453). Merging these two aspects of legitimacy creates an

approach that Suddaby et al. (2017) refer to as legitimacy as perception. This approach maintains the idea that legitimacy is an asset or property (i.e., a macro-level organizational effect) while incorporating the notion that legitimacy emerges from the process of individuals making social judgments (i.e., micro-level actions). This paper adopts the legitimacy as perception approach in its review of organizational legitimacy and related concepts.

2.3.1 Definitions and typologies of legitimacy.

The introduction of the concept of legitimacy is generally credited to Max Weber and his work on authority types (Deepphouse & Suchman, 2008). Although the academics working in organization theory began to embrace legitimacy in the 1970s, scholarship around the concept took off in the mid-1990s (Deepphouse & Suchman, 2008). Suchman (1995) published what has become the seminal definition of organizational legitimacy -- “a generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definitions” (p. 574). Scholars have expanded on this definition in the past two decades using numerous categories and typologies to help delineate the properties of legitimacy that may vary based on context and perspective (Suddaby et al., 2017). In this study, which looks at organizations in relation to a regulatory context, several categories, types, and aspects of legitimacy are relevant.

Organizational legitimacy is a category originally defined by Kostova and Zaheer (1999) as “acceptance of the organization by its environment” (p. 64). Underneath the broad umbrella of organizational legitimacy, evaluators’ judgments can be either cognitive or sociopolitical (Bitektine, 2011). These two types of judgments were originally defined by Aldrich and Fiol (1994) in the context of emerging industries. The judgment types differ in the degree of fit between an organization (i.e., its form, characteristics, and activities) and the norms (i.e., values

and beliefs) and regulations (i.e., laws) of society (Suddaby et al., 2017). Cognitive legitimacy reflects “such a high degree of congruence or acceptance between the normative expectations of the organization and its environment” (Suddaby et al., 2017, p. 454) that the existence of an organization is taken-for-granted. That is, the organization fits into a positively regarded, pre-existing cognitive classification (Bitektine, 2011). This differs from sociopolitical legitimacy, where stakeholders’ judgments of organizational legitimacy come from active, analytical evaluations in relation to prevailing societal standards (Bitektine, 2011).

The standards for benchmarking organizations can be based either on the norms, values and beliefs of broader society (i.e., normative) or on explicit laws, rules, and processes (i.e., regulative) (Bitektine, 2011). The concepts of normative and regulative legitimacy originated with Scott (1995), who viewed them as dimensions of organizational legitimacy. This paper follows Bitektine (2011) in considering normative and regulative legitimacy as sub-types of sociopolitical legitimacy. That is, although normative and regulative legitimacy differ in terms of their relevant standards, evaluating audiences, and compliance mechanisms, both use observable organizational actions and outcomes as part of the evaluation process (Bitektine, 2011).

Suchman (1995) also differentiated between cognitive and other categories of legitimacy. For Suchman (1995), the term moral legitimacy better described positive, normative judgments of organizations and their activities. His rationale was that such legitimacy judgments are not based on whether benefits accrue to evaluators directly, but on whether benefits accrue to broader society from the existence of the organization and the output of its activities. Suchman (1995) describes four forms of moral legitimacy that differ in which organizational aspect is the focus of evaluation. The aspects of organizations for evaluation are: (a) consequences and outputs, (b) processes and procedures, (c) structures of authority, and (d) the personal legitimacy

of representatives and leaders. The personal form of moral legitimacy is based on the charisma of organizational representatives; it can also be understood as the ability of individuals to wield personal influence (Suchman, 1995).

Academics outside the management domain study personal legitimacy using different criteria. For example, Lawrence (1998) demonstrated that occupation, and the standards of practice and limitations on membership within an occupation that are related to education, credentialing, and experience, can provide personal legitimacy. Rasinski, Tyler, and Fridkin (1985) examined the factors contributing to individual legitimacy under categories they called personal (i.e., traits of the individual) and institutional (i.e., related to an individual's position of authority such as a CEO or an elected official; hereafter referred to as positional legitimacy). The factors that loaded to personal legitimacy were perceived commitment, competence, and fairness, while the factors of office (i.e., role) and legal authority loaded to positional legitimacy.

Whether discussing organizational or personal legitimacy, it is important to differentiate the construct of legitimacy from other related constructs such as status and reputation. Although these three constructs overlap in relation to their antecedents, their socially constructed nature, and their consequences, there are key differences among their anchoring points (Deephouse & Suchman, 2008). Legitimacy is evaluated in relation to the values, norms, and rules of a given social system, making it non-rival, while reputation and status have rival or comparison aspects to them (Deephouse & Suchman, 2008). Reputation focuses on comparisons of various attributes of entities within a group (e.g., a comparison of quality between manufacturers of equivalent products) (Deephouse & Carter, 2005). Status focuses on the relative position of an entity within a group (Deephouse & Suchman, 2008). Devers, Dewett, Mishina, and Belsito (2009) discussed that reputation and status are individuating, focused on highlighting differences, while legitimacy

is non-individuating, focused on normative fit. According to Deephouse and Suchman (2008), legitimacy's focus on fitting in leads to dual objectives, which are: (a) satisficing or meeting normative standards at a sufficiently acceptable level, and (b) having a lack of negative issues (versus a history of positive attributes or accomplishments).

2.3.2 Legitimacy and organizational survival.

Meyer and Rowan (1977) proposed that organizational success and survival are enhanced by maximizing legitimacy. According to Zimmerman and Zeitz (2002), "survival is the most frequently recognized effect of legitimacy" (p. 417). The survival effect comes from "better access to resources, and reduced chances of opposition" (Bitektine, 2011, p. 158). For example, the taken-for-granted status conferred by cognitive legitimacy should result in less (or even no) scrutiny from stakeholders (Bitektine, 2011). Reduced scrutiny frees internal firm resources, such as human, financial, and technological capital, to focus on business objectives rather than stakeholder management. Legitimacy, as a firm resource, enables access to external resources such as competent employees and financial capital, which, over time, should enhance measures of performance such as profit, growth, and market share (Zimmerman & Zeitz, 2002).

2.3.3 Sources of organizational legitimacy.

Under a legitimacy as perception approach, legitimacy is conferred via actors making social judgments, and these actors are influenced by the institutional context (Suddaby et al., 2017). However, within a given institutional context, not all actors have the authority to confer legitimacy, and not all actors confer legitimacy using the same criteria (Deephouse, 1996). Additionally, legitimacy can exist differentially at multiple levels such as industry, organization, and organizational subunit (e.g., business unit or a function) (Ruef & Scott, 1998). When looking at multinational enterprises (MNEs), the legitimating environment can be broad (Kostova &

Zaheer, 1999). That is, it may consist of an MNE's "home and host country institutional environments as well as supranational institutions" (Kostova & Zaheer, 1999, p. 65), which are groups such as global media and global activists. Although considerations like these introduce complexity for organizations seeking to obtain, enhance, or rebuild legitimacy, there are multiple methods that have been proposed and supported by academic researchers.

Kostova and Zaheer (1999) identified three factors that influence organizational legitimacy, which are: (a) characteristics of the organization, (b) characteristics of the institutional environment, and (c) the legitimation processes through which institutional actors develop their perceptions of organizations. Focusing on the organization, Dowling and Pfeffer (1975) discussed that organizations can change their characteristics, their operations, or both to conform to prevailing standards. A study by Deephouse (1996) supported that legitimacy is related to strategic isomorphism or conformity to normally accepted business strategies. Organizations can also adopt internal structures that demonstrate commitment to a stated goal (Ruef & Scott, 1998), for example, creating affirmative action offices to demonstrate a commitment to diversity in hiring.

In some cases, organizational structures and organizational activities are both focused on meeting accepted standards. However, this can also be symbolic, such as when organizations engage in decoupling tactics (Meyer & Rowan, 1977). Decoupling occurs via communication, with organizational spokespersons using impression management tactics to segregate legitimate, formal, organizational structures from specific illegitimate actions (Elsbach & Sutton, 1992). Under decoupling, impression management tactics include "defenses of innocence, justification, and entitlings" (Elsbach & Sutton, 1992, p. 730).

Shifting to the characteristics of the institutional environment (Kostova & Zaheer, 1999), organizational options are limited. That is, changing social norms is difficult, so this tactic may be the least likely to be pursued (Dowling & Pfeffer, 1975). However, one way to pursue this tactic is via communication, but specifically communication with the intent to influence society's standards of legitimacy so that they match an organization's existing practices (Dowling & Pfeffer, 1975). Industry and other types of membership associations could be a way to increase the ability to influence societal and governmental standards through the joint efforts of multiple organizations. Additionally, membership associations may function as a source of external standards, suggesting another tactic identified by Dowling and Pfeffer (1975).

The next tactic, cooptation, addresses the third factor identified by Kostova and Zaheer (1999), that is, the legitimation processes used by stakeholders in their legitimacy judgments. Cooptation relies on organizational communication, but incorporates identification of the organization with other "symbols, values, or institutions which have a strong base of social legitimacy" (Dowling & Pfeffer, 1975, p. 127). Under cooptation, identification with others can take the form of both individual and organizational sources. This was supported in a study of a nonprofit with an educational mission; the nonprofit used a cooptation strategy in affiliating itself with political and educational leaders (Dowling & Pfeffer, 1975). Elsbach and Sutton (1992) proposed that individuals who are viewed as credible experts in their fields can also enhance organizational legitimacy via endorsements or via their alignment with the organization as an employee or retained consultant. Factors affecting expert status include professional association memberships and affiliations (based on career field) as well as "individually legitimating characteristics, such as experience and personality" (Lawrence, 1998, p. 1127)

From the perspective of organizational sources, Dowling and Pfeffer (1975) proposed that charitable donations were another likely cooptation strategy. They speculated that the amount of an organization's charitable contributions would likely vary by time or by context in line with the relative importance of legitimacy. Other cooptation strategies include obtaining and communicating external accreditations, which demonstrate that an organization's operations meet accepted standards (Ruef & Scott, 1998), and communicating high rankings by independent evaluators such as industry regulators or issuers of social responsibility indexes (Díez-Martín, Prado-Roman, & Blanco-González, 2013). Identification with other institutions can have market aspects as well as social aspects, for example, strategic alliances allow organizations to benefit from affiliations with partnering firms (Dacin, Oliver, & Roy, 2007).

2.3.4 Consequences of a loss of or reduction in organizational legitimacy.

Although the “normative embeddedness of an organization within its institutional context” (Greenwood & Hinings, 1996, p. 1023) is seen as a strong driver of organizational resistance to change, organizations must respond to external pressures to maintain legitimacy. Scott (2014) suggests that legitimacy is so fundamental to an organization's survival that it is more than a mere property, resource, or asset. Rather, legitimacy is a condition of existence so important that its loss is “immediately and painfully apparent” (Scott, 2014, p. 72).

The potential effects of a loss or reduction in organizational legitimacy include higher costs (e.g., cost of debt), reduced revenue (e.g., loss of customers), employee turnover and reduced ability to hire new employees in the labor market (Yu, Sengul, & Lester, 2008). In the market, one key impact is a reduced stock price in the short-term (Davidson & Worrel, 1988), which typically occurs early in the process, that is, during the period of allegations, public disclosure, and formal charges (i.e., the accusative phase) versus at the time of sentencing or

resolution (i.e., the adjudicative phase) (Pierce, 2015). When an event is criminal in nature, regulatory sanctions, both financial and operational, are also possible (Alexander & Cohen, 2015). Finally, a legitimacy crisis may also result in stakeholders reducing or withdrawing their support for and loyalty to organizational decision makers (Pearson & Clair, 1998).

2.3.5 The process of organizational legitimacy judgments.

To inform the discussion of stakeholder evaluations following public disclosure events related to potential corporate criminal liability, Bitektine's (2011) model of the social judgments of organizations is applied. A social judgment is "defined as an evaluator's decision or opinion about the social properties of an organization" (Bitektine, p. 152), the result of which is conferring (or not) the properties of organizational legitimacy, status, or reputation. The model, which examines social judgments from evaluators' perspectives, presumes that multiple factors influence evaluators in selecting a form of judgment. Additionally, evaluators form judgments under conditions of bounded rationality (March & Simon, 1958; Simon, 1972), that is, with incomplete information on available alternatives as well as with limits on their motivation, time, and cognitive abilities.

In the context of corporate criminal misconduct, there are three important concepts related to the institutional regulatory environment that may affect stakeholders' judgments. First, there is the concept of corporate governance legitimacy, which consists of "the practices and structures within a nation that are perceived to result in corporate behavior that is appropriate to meet the needs of society" (Judge, Douglas, & Kutan, 2008, p. 768). Corporate governance legitimacy is partially determined by the extent to which corruption is tolerated, that is, there is an inverse relationship between corruption and a given country's governance legitimacy (Judge et al., 2008). Therefore, regulators at the federal level who enforce the laws and regulations that

apply to business organizations are, along with lawmakers, the watchdogs of a country's corporate governance legitimacy. Because regulators can investigate and sanction organizations that violate laws, they have legitimate authority, and have influence with other stakeholders around how organizational legitimacy in the regulatory domain is perceived.

The second concept is that legitimacy can be affected by what Kostova and Zaheer (1999) define as spillover, that is, impacts to the perceptions of stakeholders based on the actions of other entities, such as subunits in a large firm (internal) or even competitors in the same industry (external). Spillovers occur because these other entities are related to the focal organization in stakeholders' cognitive categories and schema (Kostova & Zaheer, 1999). Yu et al. (2008) proposed that this spillover effect is enhanced via intermediaries such as regulators, the news media, watchdog groups, scholars, and investment analysts.

Finally, because the regulatory domain is formalized and codified in laws, regulations, and rules, external stakeholders have common standards and references for observing and interpreting organizational legitimacy within the institutional environment (Kostova & Zaheer, 1999). That is, within the regulatory domain, compliance with the explicit laws and regulations of the system is necessary for organizational legitimacy (Kostova & Zaheer, 1999).

When making a sociopolitical legitimacy judgment, the stakeholder is rendering a "judgment as to whether the organization, its form, its processes, and its outcomes are socially acceptable, and hence should be encouraged (or at least tolerated), or are unacceptable, and hence the organization should be sanctioned, dismantled, or forced to change the way it operates" (Bitektine, 2011, p. 162). Specifically addressing regulative legitimacy, Bitektine (2011) suggests that organizational legitimacy will not be the default assumption when an

evaluator has evidence of non-compliance with laws or other compulsory standards, as would be the case with a disclosure event related to potential corporate criminal liability.

In the context of corporate criminal misconduct, a prosecutor's selection of a resolution mechanism is a decision that will result in differing levels of sanctions to the focal organization, and the federal regulatory context is highly institutionalized. Because of the public disclosure event aspect, there is broad visibility to the issue; therefore, stakeholders making legitimacy judgments could experience social pressure (e.g., news media) to punish corporate misconduct. Also because of the highly visible context, stakeholders' observable choices could be subject to criticism and scrutiny.

From a feature-based evaluation perspective, Bitektine (2011) identifies seven subtypes of organizational legitimacy that should be relevant. These subtypes are procedural, structural, consequential, and personal (i.e., leaders' charisma) legitimacy (Suchman, 1995) along with linkage legitimacy (Baum & Oliver, 1991) and technical and managerial legitimacy (Ruef & Scott, 1998). This paper focuses on the interaction of personal legitimacy, at the board of director and executive team levels, with organizational legitimacy in examining the evaluations of legitimacy that occur following disclosure events related to potential corporate criminal liability.

2.3.6 Organizational event-history studies in negative contexts.

Since 1990, academic researchers have examined a variety of negative organizational events and the associated turnover-related consequences for firm leaders. Typically, these studies use a discrete time, event-history analysis method. In the most common study design around management turnover, key organizational events are identified in time, then turnover rates are measured in the event firms, in the post-event period. These rates are compared to the rates in control firms, matched on attributes such as firm size and industry, looking for statistically

significant differences. The output of an event-history study is the probability or likelihood of an event occurring (e.g., CEO turnover is 1.5 times more likely in the two years following a defined firm event than in the matched control firms).

In studies of board of director and executive leader turnover, a limited time period, up to three years, is common. For example, some studies use the next board re-election (e.g. Marcel & Cowen, 2014), one year (e.g. Johnstone et al., 2011), two years (e.g. Arthaud-Day et al., 2006; Kachelmeier et al., 2016), or examine the firms in pre-event years (e.g. Bereskin & Smith, 2014; Daily & Dalton, 1995). Given this design strategy, event-history studies are longitudinal rather than cross-sectional. The dependent variables in event-history studies are often binary (e.g., an executive leader did or did not leave a company). This type of organizational event study differs from quantitative financial event studies, which are short-term analyses of the cumulative, abnormal returns (i.e., returns independent from the broader sector or industry share price movement) in a firm's stock price following an unexpected event (Koch & Fenili, 2013).

From an independent variable perspective, however, event-history studies that examine leader turnover or other organizational changes around a negative organizational event are like financial event studies because there is specific, dated event around which changes are measured. A search of the academic accounting, finance, law, management, and strategy domains identified 30 event-history (or similar time-series) studies that examined leader turnover (many of these studies test other hypotheses as well). All studies except one use samples from U.S. public companies due to the availability of leader and company information; one study (Jostarndt & Sautner, 2008) used a German public company sample.

Of the 30 studies, 27 examined events related to financial conditions or mandated financial reporting in public company settings. The most common events, in descending order of

frequency, were financial earnings restatements, securities-related lawsuits, internal control material weaknesses (ICMWs), bankruptcy, and interest coverage shortfalls. Only three studies focused on events that include significant operational aspects such as intellectual property, environmental, or diversity lawsuits, and interim CEO successions.

Given the financial event focus, it is not surprising that a majority, 18 of the 30 studies, were published in journals from the accounting and finance domains. Two studies were published in law journals, and one study was a law school working paper; two of these three focused on events related to securities lawsuits. There was one early study published in a management journal (Daily & Dalton, 1995), which looked at bankruptcy events, but the majority of studies in the management and strategy domains, 8 of 30 studies, were published in the last decade following a key article in the *Academy of Management Journal* by Arthaud-Day et al. (2006). Most of these studies, six of the eight, use financial earnings restatements as the event of interest, which is similar to the studies from the accounting and finance domains. The 30 studies are listed in Table 3, with the research results for each related to leader turnover.

Over half of the studies, 18 of 30, examined turnover related to boards of directors. Three studies in this group examined turnover in directorships held at other firms as well as turnover in the firm with the negative event; a fourth looked only at other firm directorships. Four studies looked at board turnover broadly as well as in relation to specific committee membership (three at audit committee members and one at compensation committee members). Two examined firms where the board chair was also the CEO and/or president. Most studies that examined board members used samples consisting of only outside directors, although three studies since 2011 examined both inside and outside directors. Ten studies had samples with events from

years prior to SOX in 2002; the other eight had samples with events in years that were partially or entirely post-SOX. The most recent events examined in any study were from 2007.

Shifting to research that looks at executive and manager turnover, 18 of the 30 studies are relevant (several studies looked at both boards and executives). CEOs were the most frequently examined executive role (included in 15 of the 18 studies); CFOs were examined less frequently (included in 7 of the 18 studies). Four studies also examined turnover in other officer or senior manager roles. Nine studies had samples with events from years prior to SOX; the other nine had samples with event ranges that included both pre- and post-SOX years, the most recent in 2007.

Overall, there was convergence in the results from these multiple research studies that negative firm events increase the probability of director and executive turnover versus control firms. There were three studies (Agrawal, Jaffe, & Karpoff, 1999; Beneish, 1999; Fich & Shivdasani, 2007) whose results did not support an increased likelihood of turnover versus control firms for directors, officers, or senior managers following negative events. However, all three studies did find statistical support for increased rates in specific circumstances such as subsequent bankruptcy (Beneish, 1999) or in other firm directorships (Fich & Shivdasani, 2007).

Although an increase in the probability of director and executive turnover was supported by most of the studies, factors such as the magnitude and timing of turnover rates did vary by study. That is, the likelihood of increased rates of turnover was influenced by several other variables including individual demographic characteristics such as age, tenure, committee memberships, service on other boards, social capital (i.e., networks) and human capital (e.g., business expert status) as well as full board characteristics such as board size. Situational factors such as firm performance, firm size, and external monitoring via parties such as institutional investors or security analysts influenced the findings. Finally, event features such as lawsuit type

(e.g. Aharony et al., 2015) or the magnitude and direction of earnings restatements (e.g. Srinivasan, 2005) also influenced the research findings.

In the research from the management and strategy domains, there were several types of theories applied in these studies. One set of theories uses a “changing of the guard” or “cleaning house” view, with resource-dependence and organizational legitimacy at the core. The key premises are: (a) that firms have resource dependencies on external parties, (b) that external parties may withdraw resources or support following events that demonstrate non-compliance with societal norms (i.e., a reduction in organizational legitimacy), and (c) that board and executive turnover serves as a signal of organizational remediation, a signal intended to prevent resource withdrawal (Arthaud-Day et al., 2006; Marcel & Cowen, 2014). A second set of theories looks at the motivations of individuals who serve on boards and in executive roles. Under this set of theories, which have self-determination and prestige at the core, increased rates of turnover are a result of individuals’ desires to preserve their reputations by disassociating from organizations that have been compromised (Boivie et al., 2012).

In both these sets of theoretical frameworks, the perspective is primarily internal, that is, from the viewpoints and motivations of the focal firm and its employees and directors. A few of these 30 studies examine external perceptions indirectly by looking at turnover rates in firms where directors from the organization with the negative event hold other directorships. However, the main perspective taken in these event-history studies of negative organizational events is that of the internal stakeholders.

Table 3

Summary of Event-Related Corporate Governance Research

Year	Author(s) <i>Journal</i>	Sample (excl Controls) *	Event(s) **	Role Turnover	Key Findings and Conclusions
1990	Gilson <i>Journal of Financial Economics</i>	111 publicly traded companies (U.S.)	Bankruptcy or private restructuring (events from 1979-1985)	Outside directors, including other firm directorships	- Corporate default is associated with higher turnover of incumbent directors - These directors also experience increased loss of directorships on other firm boards
1991	Romano <i>Journal of Law, Economics, & Organization</i>	535 publicly traded companies (U.S.) with 139 suits in 99 firms	Shareholder derivative and direct action lawsuits (events from late 1960s to 1987)	CEOs and board chairs	- Turnover in the CEO and board chair positions was significantly higher in the firms with lawsuits than in the matched controls
1995	Daily & Dalton <i>Strategic Management Journal</i>	57 publicly traded companies (U.S.) 50 publicly traded companies (U.S.)	Corporate bankruptcy used as the DV; turnover is the IV and is measured in the five-year period prior (events from 1998-1999 and 1990 respectively)	Outside directors (pre and post the current CEO), and CEOs	- Both CEO and director turnover is significantly higher in the five-year period prior to bankruptcy as compared to control firms

Table 3 – continued

Year	Author(s) <i>Journal</i>	Sample (excl Controls) *	Event(s) **	Role Turnover	Key Findings and Conclusions
1999	Agrawal, Jaffe, & Karpoff <i>The Journal of Law & Economics</i>	103 publicly traded companies (U.S.)	Financial earnings restatements (events from 1981- 1992)	Senior managers and directors	<p>- Turnover for senior managers and directors is similar in firms that do and do not restate earnings when controlling for other attributes (in multivariate analysis)</p> <p>- Support was found for higher turnover rates when examining firms where the positions of board chair, CEO, and president were held by a greater number of individuals (in multivariate analysis)</p> <p>- By fraud type, there were no there was no significant difference in turnover for regulatory violations (under multivariate analysis, which differed from the initial univariate analysis)</p>
1999	Beneish <i>The Accounting Review</i>	93 officers (23 of which are CEOs) in publicly traded companies (U.S.)	Financial earnings restatements including firms with subsequent bankruptcy (events from 1987-1993)	Officers, CEOs	<p>- Officer turnover is similar in firms that do and do not restate earnings</p> <p>- In firms that subsequently file bankruptcy, however, the turnover rate is significantly higher than firms that do not file bankruptcy</p>

Table 3 – continued

Year	Author(s) <i>Journal</i>	Sample (excl Controls) *	Event(s) **	Role Turnover	Key Findings and Conclusions
1999	Niehaus & Roth <i>Financial Management</i>	56 publicly traded companies (U.S.) matched on industry 46 publicly traded companies (U.S.) matched on size	Securities class action lawsuits (events from 1988-1994 that settled prior to 1995)	CEOs	- Defendant firm CEOs are more likely to turnover than CEOs in matched control firms - CEO turnover is more likely when factors associated with meritorious lawsuits are present
2005	Srinivasan <i>Journal of Accounting Research</i>	409 publicly traded companies (U.S.)	Accounting earnings restatements (events from 1997-2001)	Outside directors; audit committee members; directors at restating firms with other firm directorships	- The likelihood of director turnover increases with downward earnings restatement versus both control firms and firms with upward restatements - The effect is similar for directors in relation to their board directorships at other firms - The likelihood of director turnover is higher for audit committee members than for directors in other roles at the restating firm both at that firm and at firms where other directorships are held

Table 3 – continued

Year	Author(s) <i>Journal</i>	Sample (excl Controls) *	Event(s) **	Role Turnover	Key Findings and Conclusions
2006	Arthaud-Day, Dalton, Certo, & Dalton <i>Academy of Management Journal</i>	116 publicly traded companies (U.S.)	Material financial restatements (events from 1998- 1999)	Outside directors; audit committee members, CEOs and CFOs	- Organizations with a material financial restatement had CEO and CFO turnover rates more than twice as high as the control firms - Turnover for outside directors, including audit committee members, was approximately 70 percent higher than in the control firms
2006	Desai, Hogan, & Wilkins <i>The Accounting Review</i>	146 publicly traded companies (U.S.)	Financial earnings restatements (events from 1997- 1998)	Chairman, CEO, and/or President	- Managers in restating firms are significantly more likely to turnover than are their counterparts at control firms - The effect remained significant even after removing firms who subsequently filed for bankruptcy and firms that were subject to Accounting and Auditing Enforcement Releases
2006	Land <i>Pacific Accounting Review</i>	230 publicly traded companies (U.S.)	Financial earnings restatements (events from 1996- 1999)	CEOs	- There was a significant association between the likelihood of CEO turnover and the severity of the earnings restatement

Table 3 – continued

Year	Author(s) <i>Journal</i>	Sample (excl Controls) *	Event(s) **	Role Turnover	Key Findings and Conclusions
2006	Persons <i>Journal of Business Ethics</i>	224 publicly traded companies (U.S.) with 277 events	Multiple types of fraud and lawsuits (events from 1992-2000)	CEOs	<p>- CEO turnover was significantly higher in firms with fraud/lawsuit revelation reports in the Wall Street Journal than in control firms</p> <p>- Fraud/lawsuit firms were more likely to turn over the CEO when the CEO was not the board chair or when the CEO had shorter board tenure</p> <p>- Board independence was positively associated with executive turnover in fraud/lawsuit firms</p>
2007	Agrawal & Cooper <i>Quarterly Journal of Finance</i>	518 publicly traded companies (U.S.)	Financial earnings restatements (events from 1997-2002)	CEOs and CFOs	<p>- Evidence is strong for increased turnover rates for CEOs, CFOs, and other top management (e.g., board chair, president, controller, treasurer) following restatement events versus control firms</p> <p>- The effect is larger for negative, downward, and more serious restatements</p>

Table 3 – continued

Year	Author(s) <i>Journal</i>	Sample (excl Controls) *	Event(s) **	Role Turnover	Key Findings and Conclusions
2007	Ferris, Jandik, Lawless, & Makhija <i>Journal of Financial and Quantitative Analysis</i>	174 publicly traded companies (U.S.) with 215 lawsuits	Derivative lawsuits with plaintiff shareholders (events from 1982- 1999)	Board directors	- The turnover rate of board directors is significantly higher post-event than for the control firms - The turnover rate is also higher in firms where the lawsuits settled against management versus those where the lawsuits settled in favor of management
2007	Fich & Shivdasani <i>Journal of Financial Economics</i>	216 publicly traded companies (U.S.)	Class action lawsuits filed after allegations of reporting violations (events from 1998-2002)	Outside directors, including their other firm directorships	- The turnover rate for outside directors was not significantly higher than rates documented for annual turnover in large firms - However, the rate for loss of directorships at other firms significantly increased
2008	Collins, Reitenga, & Sanchez <i>Advances in Accounting</i>	81 publicly traded companies (U.S.)	Financial restatements and restatement-related securities class action lawsuits (events from 1997- 2003)	CFOs	- Restatements are associated with higher CFO turnover rates; however, the earnings restatement had to lead to class- action securities litigation for penalties to be imposed

Table 3 – continued

Year	Author(s) <i>Journal</i>	Sample (excl Controls) *	Event(s) **	Role Turnover	Key Findings and Conclusions
2008	Hennes, Leone, & Miller <i>The Accounting Review</i>	188 observations in publicly traded companies (U.S.) including 83 errors and 105 irregularities	Earnings restatements referencing errors, irregularities, or investigations into accounting (events from 2002-2006)	CEOs and CFOs	- Firms with restatements related to irregularities had significantly higher turnover for both CEOs and CFOs than did firms with restatements related to errors
2008	Jostarndt & Sautner <i>Journal of Banking & Finance</i>	267 publicly traded companies (Germany)	Back-to-back interest coverage shortfalls (events from 1996-2004)	CEOs and board chairs	- Average turnover rates for the CEOs and board chairs were nearly twice as high as normal levels
2008	Karpoff, Lee, & Martin <i>Journal of Financial Economics</i>	Publicly traded companies (U.S.) with 788 actions	SEC and DOJ enforcement actions (events from 1978-September 2006)	2,206 Individuals identified as responsible parties	- 93% of individuals identified as the responsible party turn over by the end of the regulatory enforcement period - The likelihood of turnover increases with shareholders' costs and the firm's governance quality - The speed of culpable management turnover slows depending on factors such as firm governance, whether the CEO is the board chair, and whether a company founder is a culpable party

Table 3 – continued

Year	Author(s) <i>Journal</i>	Sample (excl Controls) *	Event(s) **	Role Turnover	Key Findings and Conclusions
2011	Cowen & Marcel <i>Academy of Management Journal</i>	63 publicly traded companies (U.S.)	Downward earnings restatements related to fraud (events from 2001- 2004)	Directors at restating firms with other firm directorships	<p>- Higher levels of pension fund ownership were significantly and negatively related to boards dismissing a director comprised at another firm</p> <p>- Higher levels of analyst coverage was significantly and positively related to higher rates of director turnover for this same group</p> <p>- Higher levels of governance-rating agency coverage was positively, but weakly, related to higher rates of director turnover for this same group</p> <p>- Social capital has a significant, inverted U-shaped relationship with boards dismissing a director comprised at another firm; human capital was insignificant</p>

Table 3 – continued

Year	Author(s) <i>Journal</i>	Sample (excl Controls) *	Event(s) **	Role Turnover	Key Findings and Conclusions
2011	Johnstone, Li, & Rupley <i>Contemporary Accounting Research</i>	Publicly traded companies (U.S.) with 733 events	Disclosure and remediation of internal control material weaknesses (events from 2004- 2006)	Inside and outside directors CEOs and CFOs	<p>- Internal control material weaknesses (ICMWs) are associated with increased director, audit committee member, CEO, and CFO turnover versus control firms</p> <p>- ICMW remediation has a positive relationship with increases in the percentage of independent directors</p> <p>- Characteristics of the reconstituted audit committee such as a member of the audit committee member as board chair, greater financial expertise, and increases in members' shareholdings each have a positively association with ICMW remediation</p>
2012	Boivie, Graffin, & Pollock <i>Academy of Management Journal</i>	Random 30% of directors serving on the board of at least one (U.S.) S&P 500 firm during 1996-2003	Shareholder lawsuits and financial restatements (moderators in two hypotheses of a time series study)	Outside directors	<p>- Director exit occurs in 30 percent of the firm-years, and turnover is related to numerous factors including the prestige and time demands of board service</p> <p>- As moderators, lawsuits and restated earnings events were significant to the relationship between firm performance and director turnover; the effect was negative when performance was high, but positive when performance was low</p>

Table 3 – continued

Year	Author(s) <i>Journal</i>	Sample (excl Controls) *	Event(s) **	Role Turnover	Key Findings and Conclusions
2012	Brown, Buchholtz, Stewart, & Dennis <i>Academy of Management Proceedings</i>	103 publicly traded companies (U.S.) from the S&P 500	Gender and racial discrimination lawsuits (events from 2003-2006)	Outside directors (also hires by gender and race)	<ul style="list-style-type: none"> - Organizations with gender discrimination lawsuit(s) subsequently have a more gender diverse board (i.e., more female directors are hired) - Organizations with multiple racial discrimination lawsuits subsequently have a less racially diverse board (i.e., firms experience turnover in minority directors)
2012	Correia & Klausner <i>Stanford Law School Working Paper</i>	1,738 turnover observations in publicly traded companies (U.S.) including 391 with SEC actions or class actions	Officers as defendants in securities class action lawsuits (events from 2000- 2011)	CEOs, CFOs and other officers	- CEOs, CFOs and other officers have an increased probability of turnover following securities class action lawsuits
2012	Hazarika, Karpoff, & Nahata <i>Journal of Financial Economics</i>	1,637 turnover observations in publicly traded companies (U.S.)	Earnings management via discretionary accruals (using turnover events from 1992-2004)	CEOs and CFOs	<ul style="list-style-type: none"> - Aggressive earnings management in a year increases the likelihood of forced CEO turnover in the following year - The results are similar for CFOs - Earnings management is positively related to either forced CEO or CFO turnover, but not both

Table 3 – continued

Year	Author(s) <i>Journal</i>	Sample (excl Controls) *	Event(s) **	Role Turnover	Key Findings and Conclusions
2012	Humphery-Jenner <i>Journal of Financial Intermediation</i>	Publicly traded companies (U.S.) with 416 securities class actions	Securities class actions (events from 1996-2007)	CEOs and CFOs	<ul style="list-style-type: none"> - CEOs are significantly more likely to turnover if their company experiences a securities class action suit - CFOs are significantly more likely to turnover only if the CEO also leaves - Leaving the company post an SCA harms CEOs' job prospects
2012	Nini, Smith, & Sufi <i>The Review of Financial Studies</i>	47,523 quarterly observations in publicly traded companies (U.S.) from the S&P 1500	Violations of a financial covenant in a credit agreement (events from 1997 to 2008)	CEOs	- CEO turnover increases in the quarter of the covenant violation and remains above normal for the following two quarters (the effect is statistically significant only in the first quarter after the violation)
2013	Marcel, Cowen, & Ballinger <i>Journal of Management</i>	438 publicly traded companies (U.S.)	CEO successions with board-elected interim CEOs (events from 2002-2005)	Outside directors	- Outside director turnover is elevated following interim CEO successions; however, the strength of that relationship changes with environmental dynamism and firm performance (i.e., whether the performance trajectory is positive or negative)

Table 3 – continued

Year	Author(s) <i>Journal</i>	Sample (excl Controls) *	Event(s) **	Role Turnover	Key Findings and Conclusions
2014	Bereskin & Smith, Jr. <i>Journal of Applied Corporate Finance</i>	102 publicly traded companies (U.S.)	Public disclosure of backdating of stock options (events from 2006)	Inside and outside directors; compensation committee members Named directors in backdating	<ul style="list-style-type: none"> - In the event year, turnover rates increased for both inside and outside directors versus prior years - Inside directors were also more likely to experience employment turnover - Compensation committee members had significantly higher turnover rates; chairs had higher rates than other members - All directors named as responsible for backdating submitted resignations - In the three subsequent years, directors lost board positions with high-prestige firms; where they gained directorships, it was with lower prestige firms
2014	Marcel & Cowen <i>Strategic Management Journal</i>	63 publicly traded companies (U.S.)	Financial fraud (events from 2001-2004)	Outside directors	<ul style="list-style-type: none"> - Directors with low social capital are significantly more likely to turnover following a negative event than are directors with high social capital - This result suggests that boards are signaling that legitimacy repair efforts are underway, that is, a "cleaning house" motivation

Table 3 – continued

Year	Author(s) <i>Journal</i>	Sample (excl Controls) *	Event(s) **	Role Turnover	Key Findings and Conclusions
2015	Aharony, Liu, & Yawson <i>Journal of Corporate Finance</i>	1,653 publicly traded companies (U.S.)	Environmental, antitrust, intellectual property, and contractual lawsuits (16,901 lawsuit events from 2000-2007)	Inside and outside directors CEOs	<ul style="list-style-type: none"> - Organizational responses vary based on the nature of the lawsuits / allegations - Contractual lawsuits were associated with CEO and inside director turnover - Environmental and IP lawsuits were associated with outside director turnover
2016	Gomulya & Boeker <i>Strategic Management Journal</i>	500 publicly traded companies (U.S.)	Downward financial restatements that are related to revenue and expense recognitions (events from 1995- 2006)	CEOs	<ul style="list-style-type: none"> - The probability of CEO replacement significantly increases following restatement events - The likelihood of CEO replacement increases with the replacement of outside directors, audit committee members, and the CFO, but decreases with higher return on assets by firms - Boards with higher proportions of inside members and members appointed by CEO have negative relationships with CEO replacement; - Negative events such as restatements as well as the Sarbannes-Oxley Act of 2002 weaken this relationship

Table 3 – continued

Year	Author(s) <i>Journal</i>	Sample (excl Controls) *	Event(s) **	Role Turnover	Key Findings and Conclusions
2016	Kachelmeier, Rasmussen, & Schmidt <i>Contemporary Accounting Research</i>	597 publicly traded companies (U.S.) S&P 1500 with non-classified boards	Financial reporting failures such as restatements and internal control material weaknesses (events from 2007)	Directors who are audit committee members	- Audit committee (AC) members who have ineffective characteristics such as questionable independence or a lack of financial expertise or who are tainted by serving with other audit committee members with such traits experience higher rates of turnover than AC directors classified as effective
2017	Gao, Kim, Tsang & Wu <i>Review of Accounting Studies</i>	195 publicly traded companies (U.S.)	Securities class action suits that were settled (events from 1997- 2007)	Outside directors	- Outside director turnover is higher prior to disclosure of fraud, that is, during the fraud committing period - Directors who are female, have high levels of stock ownership, and more directorships with other firms are more likely to depart

* Note: The event-history/time series studies listed in this table typically used a matched control sample design as well as Cox, probit, or logistic regression methods due to binary dependent variables.

** Note: In the studies reviewed, organizational events are most often the independent variable and leadership turnover is most often the dependent variable. When this pattern differs, the changes in variable(s) are described.

2.4 Signaling Theory

Signaling theory (Spence, 1973) is useful for describing behavior in contexts where information asymmetry exists, that is, when each party has different information available about a situation (Connelly et al., 2011). Although signaling can involve more than two parties, and can consist of multiple signals, potentially even contradictory or competing signals, definition using a dyadic communication model with one sending party and one receiving party is common. Key underlying premises of signaling theory, in organizational contexts, are that the sender or signaler has an insider access to private or privileged information about aspects of the organization such as its products, management, and pending decisions or actions, and that the sender intentionally chooses to communicate such information to another party (Connelly et al., 2011). In a simple communication model, the sender determines whether and how to signal the privileged information to the receiver, who interprets the information and provides feedback to the sender, restarting the cycle (Connelly et al., 2011).

Signaling, however, involves more than a process of communication. Effective signals not only must be communicated to and be observable by the intended receivers, but must also have credibility, such as being difficult or costly to mimic when the underlying characteristic is not actually present (Connelly et al., 2011; Spence, 1973). For example, there may be signaling costs for the sender such as an individual obtaining a college degree to compete for employment in the job market (Spence, 1973) or a company obtaining an ISO9000 certification that communicates its status as a high-quality manufacturer to compete for business from other firms (Connelly et al., 2011). As these examples illustrate, there are expected benefits to the signaler from the receiver that would otherwise not have occurred without the information contained in

the signal; these benefits should offset the signaling costs, having a strategic effect for the sender (Connelly et al., 2011).

The most common effect from signaling is the receiver's "selection of the signaler in favor of some alternatives" (Connelly et al., 2011, p. 45). However, as applied in the context of potential corporate criminal liability, the outcomes of interest are external stakeholders' evaluations of the quality and credibility of an organization's preemptive remedial activities (i.e., the signals). In either view, signaling is concerned with differentiation, that is, distinguishing high-quality from low-quality for use in receiver decision-making (e.g., investors selecting among firms for investment or consumers selecting among products for purchase). Therefore, the signaler must be perceived as honest (i.e., having the unobservable quality being evaluated) in addition to sending a credible signal that fits or correlates with the unobservable quality (Connelly et al., 2011).

Focusing on firm-level corporate governance and leadership, the signals would be turnover at the board of director and executive team levels as well as the resulting changes to management characteristics from the newly hired replacements. Examples of changes in management characteristics include expertise (e.g., industry experience) and board composition (e.g., the percentage of independent board directors). Such signals would fulfill the criteria of being observable and credible (i.e., costly to undertake and perceived as correlated with the unobservable quality). These signals would allow for differentiation in quality, lending to favorable perceptions of signaler honesty. Additionally, these turnover and replacement actions are tactics that change the characteristics of the organization (Kostova & Zaheer, 1999) and that coopt legitimacy from other sources (Dowling & Pfeffer, 1975), in this case, from the newly hired board directors and executives. Therefore, these actions should help the organization regain

the legitimacy that was lost or reduced with the violation of stakeholders' expectations that occurred when the criminal misconduct was publicly disclosed.

2.5 Hypotheses

To examine organizational legitimacy in the context of negative firm events, this study uses a two-stage research model that draws on signaling theory, addressing both sending and receiving perspectives. The first stage focuses on signal sending by examining whether firm-level governance changes, specifically board director and CEO turnover, occur following public disclosures of potential corporate criminal liability. This stage also looks at whether the volume of news media coverage after the disclosure event is related to the rate (i.e., the magnitude and velocity) of the governance changes that occur. The second stage shifts perspective to signal receiving, examining the responses of market intermediaries, specifically investment analysts and credit rating agencies, to the governance change signals that follow disclosure events. The expectation is that a relationship will exist between executive and board turnover and the post-event changes made to the firm ratings issued by these two groups of market intermediaries.

The following sections develop the hypotheses for both stages of this study. First the proposed conceptual relationship between threats to organizational legitimacy and organizational change is reviewed. The relationship is operationalized for testing using disclosures of potential criminal liability as the legitimacy-threatening events and management turnover as the firm-level governance changes. Next, the proposed conceptual relationship between stakeholder attention and the rate of organizational change is reviewed. To operationalize this relationship, the volume of media coverage related to the disclosure events along with the magnitude of board director turnover and the velocity of CEO turnover are used. Finally, the proposed relationship between post-event governance change and organizational legitimacy repair is reviewed. CEO turnover

and board director turnover are used to operationalize the governance changes while legitimacy repair is represented by changes in external stakeholder evaluations, specifically the firm ratings issued by security analysts and credit rating agencies.

2.5.1 The management consequences of organizational legitimacy damage.

Threats to organizational legitimacy occur when evaluators become aware of actual or potential disparities between firms' activities and the norms of acceptable behavior within the relevant socio-institutional environment (Dowling & Pfeffer, 1975). Disparities may arise when firms do not protect past legitimacy gains, for example, by failing to "polic[e] internal operations to prevent miscues" (Suchman, 1995, p. 595). When a firm discloses potential criminal liability, it is not only communicating a potential disparity between its activities and the standards of society, but also a potential failure to monitor and control internal operations. Although legitimacy is not solely dependent upon firm activities being legal or illegal, in democratic systems, the correlation between laws and societal norms and values, although imperfect, is likely to be significant (Dowling & Pfeffer, 1975). As such, a strong interdependency exists between the legality of firm activities and organizational legitimacy (Dowling & Pfeffer, 1975).

However, indications of non-compliance with societal norms (i.e., laws) and a failure to have effective internal oversight are not the only reasons that disclosures of potential criminal liability threaten organizational legitimacy. Such disclosures, as negative events, are high-profile and disruptive. According to Zavyalova, Pfarrer, Reger, and Shapiro (2012), firms that engage in misconduct "are likely to generate negative media coverage" (p. 1082), which in turn draws stakeholder attention and scrutiny, resulting in unfavorable reputational impacts. Under normal circumstances, stakeholder attention is limited by cognitive capacity and stakeholder decision-making is affected by conditions of bounded rationality (Barnett, 2014). However, increased

media attention enhances stakeholder awareness of firm activities even in the absence of active firm monitoring, although questions do exist around how the media source may affect this informational relationship (Barnett, 2014). From an organizational legitimacy lens, the threat is that increased stakeholder attention will result in potentially unfavorable re-evaluations of firms.

When faced with threats to organizational legitimacy from negative events such as disclosures of potential criminal liability, firms are expected to act for two primary reasons. First, as suggested by punctuated equilibrium theory, trigger events that are intense and disruptive can enable firms to overcome their normal resistance to change, that is, the force of inertia generated from complex system structures and networks of relationships (Gersick, 1991; Romanelli & Tushman, 1994). Enabled by disclosure events to overcome inertia, firms are motivated to act because of the relationship between legitimacy and organizational survival. Legitimacy is important to firm survival because it enhances organizational access to resources and reduces the likelihood of stakeholder scrutiny (Bitektine, 2011). Without legitimacy, firms face a multitude of negative consequences such as higher costs of debt in the financial market, decreased revenue from lost customers, and increased operational costs from employee turnover (Yu et al., 2008) as well as short-term reductions to stock prices (Davidson & Worrel, 1988). For reasons like these, firms are expected to attempt to repair organizational legitimacy following negative events.

Although no explicit theory has been developed around the link between organizational misconduct and its consequences for organizational management, “several economic theories can logically be extrapolated to address this question” (Greve et al., 2010, p. 90). Ex post settling up in the managerial labor market (Fama, 1980) is an appropriate economic theory for this purpose because it suggests that both negative and positive organizational outcomes are attributed to the actions and talents of managers, who are then penalized or rewarded in proportion to the impacts

at the firm-level (Greve et al., 2010). This logic relies on signaling theory which holds that, given situations with uncertainty and information asymmetry, observable outcomes are accurate signals of some underlying reality (Greve et al., 2010). In the context of organizational misconduct, disclosures of potential criminal liability would be concrete signals of the underlying, potentially low quality of managerial skills and capabilities in relation to monitoring and oversight. From an ex post settling up perspective, signals of low quality should trigger consequences in the labor market such as board director and executive turnover. According to Arthaud-Day et al. (2006), turnover at the board of director and executive levels does not repair damage to organizational legitimacy directly, but rather symbolizes the organizational commitment to “preventing recurrences of ethical lapses” (p. 1121).

Scholars from the domains of management, accounting, and finance have conducted studies of top-level management turnover following earnings restatements and a limited number of other negative firm events, generally finding increased rates of CEO, CFO, and outside board director turnover. Stage one of this study follows the research design used in such governance-related, event-history studies. That is, following a defined firm-level event, board director and CEO turnover is measured and analyzed in comparison to a group of matched control firms. Figure 2 depicts the proposed relationship between the trigger event and governance change.

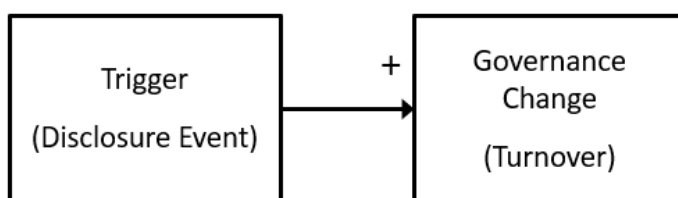


Figure 2. Research model for stage one, part one.

Firms that have disclosed potential criminal liability provide a unique context in which to study the relationship between organizational legitimacy and governance change. Different than

financial restatements, the most frequently studied firm event, resolutions of corporate criminal activity typically involve significant time lags following disclosure. With restatement events, the direction, either upward or downward, and the magnitude of the amount are typically available in a short period of time following the restatement announcement.² Additionally, restatements fall under the purview of specific organizational actors such as CFOs and board-level audit committees. With disclosures of potential criminal liability, unless they are self-reported by firms, the extent of the violation is unknown, and the identities of those most directly responsible must be inferred from limited information. The potential impacts, financial and operational, are also unknown. What is known is that U.S. federal regulators suspect violations of one or more federal laws and that they believe the accusations and/or evidence have enough merit to warrant investigation. In such circumstances, both firms and their external stakeholders will be making decisions and acting within a highly uncertain environment, potentially leading to different outcomes than those seen following restatement events. Because disclosures of potential criminal liability are likely to threaten organizational legitimacy, it is expected that board director and CEO turnover will increase in the post-event period as corporate governance change, in the form of management turnover, is a viable signal of remediation.

2.5.1.1 Board directors and firm monitoring.

Disclosures of potential criminal liability are expected to damage organizational legitimacy because they suggest failures by boards of directors to monitor firms. Monitoring firms on behalf of shareholders is one of two primary board roles according to Withers, Hillman,

² Badertscher and Burks (2011) examined a sample (n=1,315) of publicly traded firms with restatements from 1997 to September 2005. For restatements unrelated to fraud, 76.6 percent of the sample, the earnings impact was available in a mean of 20.4 days following announcement; for restatements constrained by fraud, 23.4 percent of the sample, the mean increased to 128.9 days. Respectively, the median number of days were 1.0 and 76.0.

and Cannella Jr (2012). Although questions exist around the abilities of boards to execute the monitoring role, the notion that boards, and in particular independent directors, can and should oversee management is deeply embedded in U.S. culture. (Boivie, Bednar, Aguilera, & Andrus, 2016). This sentiment is reflected formally in legislation and academic research, and more broadly, in informal expressions of social norms such as news media accounts (Boivie et al., 2016). Given such socio-institutional norms, when firms that are publicly traded disclose potential criminal liability, the disclosures suggest not only violations of legal standards by firms, but also failures by boards to monitor firms. Because monitoring is a key board role, one that is accepted throughout the U.S. socio-institutional system, indications of failure are likely to damage organizational legitimacy.

Given the salience of legitimacy to organizational survival, it is reasonable to expect that boards will attempt to repair damage via actions that demonstrate a commitment to accepted standards (Marcel et al., 2013). Director turnover is one mechanism available to boards for publicly demonstrating their commitment to monitoring firms. A majority of the studies that examined board turnover following negative events found statistically significant probabilities of higher rates of turnover, either versus control firms (e.g. Arthaud-Day et al., 2006; Johnstone et al., 2011) or versus turnover in the pre-event years (e.g. Bereskin & Smith, 2014). It is likely that some level of board turnover following negative events is attributable to directors' desires to protect their individual reputations and avoid stigma by association (Boivie et al., 2012). However, support exists for a "cleaning house" motivation in that boards have been shown to retain directors with higher social capital and turn over those with lower capital (Marcel & Cowen, 2014). This result suggests that boards use director turnover to signal their intentions to

improve monitoring capabilities, thereby repairing organizational legitimacy and averting resource withdrawal (Marcel & Cowen, 2014).

Board director turnover should be an effective signal of boards' intentions to improve monitoring following a negative firm-level event because it is observable, costly, and difficult to symbolically mimic. It is also reasonable to expect increases in turnover as some individual directors seek to protect their reputations and avoid stigma in the labor market. Given this combination of reasons at the board and the individual director levels, it is likely that board director turnover will increase following disclosures of potential criminal liability. Put formally:

Hypothesis 1) Disclosures of potential criminal liability are associated with increases in board director turnover, as compared to control firms.

2.5.1.2 CEO reputation.

When organizational failures occur, observers are likely to question the competence of the people in charge – in particular executives, because of the power and control they have over organizational activities (Pfeffer & Salancik, 1978). Questioning executive competence following an organizational failure is a reasonable stakeholder response, even though observers are likely to attribute disproportionate amounts of blame for failures (or credit for successes) to executives (Meindl, Ehrlich, & Dukerich, 1985). In news coverage, executive competence has become an increasingly important topic, growing in its frequency of mention since the 1990s (Park & Berger, 2004). In such coverage, discussions of CEO characteristics such as experience and business acumen are typical (Park & Berger, 2004). Viewing competence as an important CEO quality is in line with academic conceptions of CEO reputation. For example, Sohn and Lariscy (2012) included competence as one of two dimensions of CEO reputation in their study of the link between the reputations of CEOs and organizations during crisis situations. However,

competence is not the only individual CEO quality that stakeholders are likely to question following negative organizational events.

Ethicality is another individual quality that is likely to be questioned following negative organizational events (Sohn & Lariscy, 2012). This may be particularly true when criminal activity is involved. For stakeholders to have confidence in CEOs and the organizations they represent, CEOs must be perceived as having integrity, an aspect of trust particularly associated with law-abiding behavior (Ingenhoff & Sommer, 2010). Although CEOs may not have direct participation in or control over organizational crises, as executives, they are nevertheless connected to events “by virtue of their physical proximity, temporal connection, and positional authority” (Arthaud-Day et al., 2006, p. 1122). Therefore, it is reasonable to expect stakeholders to question the ethicality and integrity of CEOs after negative organizational events.

Because of the strong linkage between stakeholders’ perceptions of organizations and executives like CEOs, disassociating from the executives who held positions of authority at the time of a negative event can help organizations regain legitimacy (Arthaud-Day et al., 2006; Gomulya & Boeker, 2014). That is, the replacement of executives is an important mechanism for responding to external constraints and increased uncertainty, and for improving alignment or fit with the institutional environment (Pfeffer & Salancik, 1978). Prior academic studies (e.g. Arthaud-Day et al., 2006; Johnstone et al., 2011; Persons, 2006) have supported this premise, finding increased rates of CEO turnover after negative events such as financial earnings restatements and internal control material weaknesses.

As disclosures of potential criminal liability, like other negative firm events, suggest organizational deficiencies, it is likely that stakeholders will question the competence and integrity of CEOs given their positional authority and decision-making ability. Therefore, it is

reasonable to expect that organizations will respond by disassociating from their CEOs to help repair organizational legitimacy. Put formally:

Hypothesis 2) Disclosures of potential criminal liability are associated with increases in CEO turnover, as compared to control firms.

2.5.1.3 The role of media coverage.

The level of media coverage that follows disclosures of potential criminal liability is expected to influence the magnitude and pace of corporate governance change because it draws attention to firm-level violations of social norms and standards. Such attention increases the likelihood of stakeholder scrutiny, leading to re-evaluations of organizational legitimacy and possible resource withdrawal. To explain this proposed effect, it is necessary to understand the relationship between the media, in its role as a stock market intermediary, and organizational legitimacy. It is also necessary to understand how and why the volume of media coverage (i.e., the number of unique news articles and reports) around an event is likely to affect stakeholder cognition and legitimacy judgment processes. Figure 3 illustrates the proposed relationships.

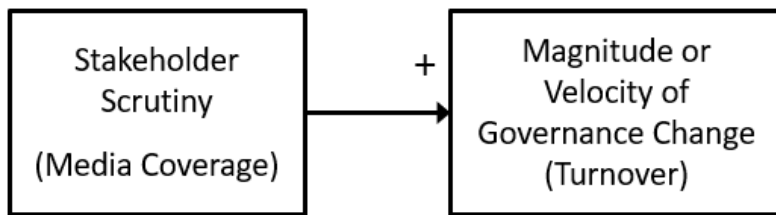


Figure 3. Research model for stage one, part two.

In the market, the media's role is that of an informational intermediary, or infomediary, who provides information to facilitate economic exchanges (Pollock & Rindova, 2003). The media functions as a social arbiter, interpreting firms and related individuals from a platform that is perceived as "prominent and legitimate" (Wiesenfeld, Wurthmann, & Hambrick, 2008, p. 234). In relation to organizational legitimacy, the media promulgates the norms and standards of

society around acceptable firm behavior in the process of reporting and interpreting firms' activities (Bednar, 2012). As such, the media is an important stakeholder for firms because the information (and the interpretations of information) disseminated shapes other stakeholders' perceptions of firms (Hybels, 1995; Pollock & Rindova, 2003). Such stakeholder influence has been supported in the context of the U.S. stock market. For example, a study by Bushee, Core, Guay, and Hamm (2010) found a relationship between business press coverage around earnings announcements and reduced bid-ask spreads in the market. The breadth of coverage (number of unique sources) had a larger impact than quantity (number of words) or quality (media source) of the coverage given informational content relevant to the announcements (Bushee et al., 2010).

The informational content of media coverage is important because it has multiple effects on stakeholders. Media coverage not only enhances stakeholders' awareness and knowledge of firm activities (Barnett, 2014), but also influences perceptions of importance -- based on which events are covered (Bednar, Boivie, & Prince, 2013; Farrell & Whidbee, 2002). In the communications domain, this effect, called agenda-setting, refers to the media's influence in establishing the importance of an issue on the public agenda (Carroll & McCombs, 2003). Research has demonstrated that individuals form associations between firms and issues based on media coverage, which is agenda-setting at the first-level (i.e., the firms that are important) and the second-level (i.e., how to interpret firm-related issues) (Meijer & Kleinnijenhuis, 2006).

In addition to creating a public agenda, media coverage frames issues, helping audiences make sense of them (An & Gower, 2009). In a content analysis study of media coverage related to organizational crises, An and Gower (2009) found the most common frame was an attribution of responsibility. When crises were perceived as accidental, the media coverage was more likely to frame responsibility at an organization level; when crises were perceived as preventable, the

responsibility framing was more likely to be at the individual level (An & Gower, 2009). Reuber and Fischer (2010) posit that when perceived control is associated with negative firm actions, the likelihood of organizational reputation loss is greater unless firms are seen to be taking actions to address issues and prevent reoccurrence.

The effects of agenda-setting and framing on perceptions of organizations are not limited to external stakeholders; media coverage can also motivate internal stakeholders, such as top-level management, to act on specific issues (Bednar, 2012). For example, studies have found support for a relationship between media coverage and governance-related firm actions. Bednar (2012) found a positive relationship between negative coverage and CEO dismissal as well as a negative relationship for positive coverage. Farrell and Whidbee (2002) found a greater number of news stories on earnings decreases increased the likelihood of CEO turnover over and above the turnover effect associated with poor firm performance. Liu and McConnell (2013) found an interaction effect from the level and tone of media coverage and the cumulative abnormal return (i.e., change in stock price) on firms' decisions to proceed with or end acquisition activities.

The relationship between media coverage and firm actions, however, is contingent on many factors. Such factors include the tenor of coverage (Bednar, 2012; Liu & McConnell, 2013), a change in the tenor of coverage (Jia, Tong, Viswanath, & Zhang, 2016), the breadth of coverage (Farrell & Whidbee, 2002; Liu & McConnell, 2013) and the media source (i.e., local in relation to the firm) (Jia et al., 2016). Aspects of media coverage, such as volume and tenor, serve different goals in research studies. For example, Desai (2011) discussed that coverage volume is useful for understanding the relative importance of specific issues while coverage tenor is "more appropriate for understanding critical or obtrusive scrutiny" (p. 269).

Although studies indicate a linkage between media coverage and firm-level governance activities, the effectiveness of the media as a firm monitor is questionable (Bednar, 2012). The media is perceived as a monitor because it reports on illegitimate firm activities (Hybels, 1995), and in some cases, members of the media actively identify corporate misconduct (Dyck, Morse, & Zingales, 2010). However, media coverage has been shown to respond favorably to symbolic firm changes such as increases in formal board independence that do not represent true social independence (e.g., affiliated directors), indicating a reliance on “superficial metrics” (Bednar, 2012, p. 145). Additionally, systematic biases exist in business press coverage because media providers are businesses that need to make a profit (Miller, 2006). Therefore, coverage focuses on firms and issues that are likely to attract a broader audience and have lower costs to identify and develop, such as rebroadcasting information from other sources such as security analysts and court actions (Miller, 2006).

As such, it is reasonable to expect that the media will report on issues disclosed by public firms, such as potential criminal liability involving violations of federal law. That is, the cost of reporting is low (rebroadcasting firms’ disclosures), the issues are likely to be negative (which attracts attention), and the audience should be broad (given publicly traded firms). When the characteristics of a firm, an issue, or a combination of both have audience-value, it is likely that the volume of coverage about the issue will be greater, reinforcing the perceived importance of the items and drawing increased stakeholder attention and scrutiny. At this phase in the criminal resolution process, that is, at initial disclosure, few details about the misconduct will be known (unless the firm self-identified the issue), so focusing on the tenor of coverage should be less valuable. Therefore, this study focuses on volume of coverage, counting the number of unique articles and reports about the issue in the period immediately following the disclosure event.

Rather than testing whether a greater volume of media coverage increases the likelihood of board director and CEO turnover, this study takes advantage of the opportunities afforded by an event-history dataset, that is, a longitudinal dataset with multiple observations over time. First, examining the magnitude of board director turnover, that is, the percentage of the total board that turns over, should provide insights into whether an issue's salience with external stakeholders translates into issue salience with top-level firm management. Second, measuring CEO turnover as a numerical value of the amount of time between the disclosure event and the turnover event (or a value of zero for no turnover) makes it possible to incorporate a temporal aspect to the evaluation of the firms' governance actions. This should enable insights into whether increased external attention and scrutiny motivate top-level managers to initiate change at a faster pace. Pace has been identified as a temporal dimension that can enrich studies of strategic change (Kunisch, Bartunek, Mueller, & Huy, 2017). Put formally:

Hypothesis 3a) The volume of media coverage following disclosures of potential criminal liability is positively related to the magnitude of board director turnover.

Hypothesis 3b) The volume of media coverage following disclosures of potential criminal liability is positively related to the velocity of CEO turnover.

2.5.2 Stakeholder evaluations following organizational legitimacy damage.

This stage of the study focuses on signal receiving, examining whether the board director and/or CEO turnover that is expected to follow disclosures of potential criminal liability has a relationship with changes in the evaluations of firms by market intermediaries. Specifically, the study looks at changes in the post-disclosure firm evaluations of security analysts and credit rating agencies. To develop the hypotheses for this stage of the study, an understanding of the processes and motivations of these two groups of market intermediaries is needed.

Market intermediaries are entities that facilitate stock market transactions; those that gather and disseminate information about public firms are known as infomediaries (Pollock & Rindova, 2003). Infomediaries play a role in facilitating market exchanges by increasing the flow of information, which reduces uncertainty (Pollock & Rindova, 2003). As such, infomediaries are salient external stakeholders for firms because their recommendations and ratings have the potential to affect stock prices and investor behavior. An alternate view of this provision of information role comes from institutional theory, where infomediaries, as market experts, may “legitimate firms by influencing stakeholder perceptions of the desirability and appropriateness of firm actions and characteristics” (Pollock & Rindova, 2003, p. 631). From either perspective, it is reasonable to expect that firms as well as other stakeholders will pay attention to the rating changes made by these infomediaries following disclosures of potential criminal liability. This stage of the study examines whether management turnover functions as an effective signal of organizational remediation following such disclosure events -- one that favorably influences the subsequent evaluations of these infomediaries.

Negative organizational outcomes in other event contexts have been shown to focus stakeholders’ attention on management (Kang, 2008), so it is expected that disclosures of potential criminal liability will elicit a similar response from infomediaries. Meindl et al. (1985) asserted that the concept of leadership (i.e., top-level management) has attained such a high level of status and significance that it has become “a permanently entrenched part of the socially constructed reality that we bring to bear in our analysis of organizations” (p. 78). This is particularly important in situations where stakeholders are seeking to explain the causes of organizational events and outcomes, that is, causal attribution, (Meindl et al., 1985). When events are out of the ordinary, with the potential for significant causes and significant effects, the

associations with top-level management are stronger (Meindl et al., 1985). From the perspective of management, signaling by means other than written or verbal statements is likely to be preferable when the potential exists for civil and criminal lawsuits based on the content, timing, and flow of information from organizations to stakeholders (e.g., the U.S. regulatory environment for publicly traded firms) (Lawless, Ferris, & Bacon, 1998).

Legitimacy theorists recognize that a link exists between organizational legitimacy and management legitimacy such that stakeholders' organizational legitimacy judgments may be based on "evaluations of leaders and representatives" (Suchman, 1995, p. 579). Suchman (1995) refers to this perceived linkage between organizations and their representatives as the *personal legitimacy form* of organizational legitimacy. Because this linkage exists, it is reasonable that when organizational legitimacy is damaged, firms may attempt repair with changes in top-level management (i.e., corporate governance changes). Figure 4 illustrates the proposed relationship between post-event governance changes and organizational legitimacy repair.

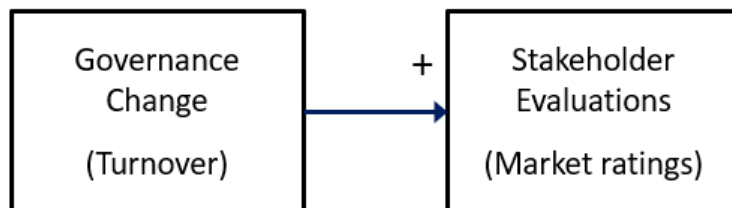


Figure 4. Research model for stage two.

When a firm event indicates a violation of social expectations, stakeholders may not only question firm legitimacy, but may also change the type of information that they rely on to judge or evaluate the organization (Gomulya & Mishina, 2016). In such situations, the credibility of the firms (the signalers) has been compromised, so stakeholders (signal receivers) will prefer to evaluate firms using data and information (the signals) that are "less susceptible to errors and manipulation" (Gomulya & Mishina, 2016, p. 40). Governance changes such as CEO and board

director turnover should be effective signals to external stakeholders in situations such as potential criminal liability because they are visible and entail significant costs (e.g., severance payouts, search costs for new personnel, etc.), making them difficult to manipulate and mimic. This stage of the study examines whether two market infomediaries, security analysts and credit rating agencies, consider top-level management turnover an effective signal of firm remediation.

2.5.2.1 Security analysts.

Security analysts, also known as sell-side, buy-side, investment, or financial analysts depending on the type of employer, are stock market infomediaries who gather, analyze, and disseminate information about the past and expected future financial performance of publicly traded firms. Analysts' reports typically include extensive analysis, both quantitative and qualitative, which is summarized with three standard metrics: (a) an earnings forecast, (b) a stock price target, and (c) a recommendation for investor action (e.g., sell, hold, or buy a stock) (Asquith, Mikhail, & Au, 2005). A common recommendation system³ uses five values, which are strong sell, sell, hold, buy, and strong buy; each can be classified as a downgrade, reiteration, or upgrade when compared to the most recent, prior recommendation (Asquith et al., 2005).

As market infomediaries, analysts are salient external stakeholders for firms because the information they provide influences the evaluations and behaviors of other stakeholders such as investors (Aguilera, Desender, Bednar, & Lee, 2015). Analysts are social arbiters with market legitimacy who are considered qualified to evaluate firms and their managers (Wiersema &

³ Recommendation terms and/or the meanings of terms can differ by firm. In 2002, the SEC, concerned about potential conflicts of interest, updated its rules, adding new disclosures and other requirements. These include that: (a) recommendation terminology is consistent with the plain meaning of terms and (b) research reports define all ratings terms. Research reports must also provide a plot (i.e., a chart or graph) of historical price movements that indicates the points where firms initiated and changed ratings and price targets for a stock (SEC, 2010).

Zhang, 2011). This is in part due to analysts' interactions with key audiences (Wiesenfeld et al., 2008), which in the stock market are parties such as firm managers, investors, and regulators.

As market professionals, analysts review not only financial information, but also non-financial information in areas such as governance, economics, and corporate social responsibility (Cohen, Holder-Webb, & Zamora, 2015). For governance information, analysts rely on firm filings, preferably audited annual filings, as their primary source (Cohen et al., 2015). Although analysts may also source information from third parties, the media, firm websites, and the government, they prefer firm filings where legal disclosure requirements apply (Cohen et al., 2015). As such, it is reasonable to expect that analysts will pay attention to firm disclosures of potential criminal liability, which communicate important loss contingency information.

Given the influence that analysts' reports can have on investors and other stakeholders, analysts, via negative recommendations, "have the potential to serve a critical role in corporate control" (Westphal & Clement, 2008, p. 874). However, concerns exist about the ability of analysts to be independent monitors of firms. The reasons include reciprocity in manager-analyst relationships (Westphal & Clement, 2008), conflicts of interest around business relationships between firms and analysts' employers, and a number of behavioral factors such as herding and positivity bias (Wiersema & Zhang, 2011). Despite such issues, analysts are expected to have direct, although moderate, influence on the top management of firms not only from the threat of ratings downgrades, but also as providers of information (Aguilera et al., 2015).

Research has demonstrated that analyst activity increases during periods of uncertainty, suggesting that analysts are likely to enhance report content and issue more recommendation changes and/or reiterations following disclosures of potential criminal liability. That is, non-routine events are expected to increased investor demand for analysts' information and forecasts

(Choi, Chen, Wright, & Wu, 2014). For example, studies have found increased analyst activity following economic recessions (Loh & Stulz, 2014) and security class action lawsuits (Jennings, 2014). Although the evidence suggests that analysts' forecast accuracy declines during periods of high uncertainty (Choi et al., 2014), analysts' rating changes may still motivate action by other stakeholders, internal as well as external.

Several recent studies have found relationships between changes in analysts' ratings and firm-level actions. One study (Wiersema & Zhang, 2011) found that analysts' downgrades were associated with a higher probability of CEO dismissal. Results from another study (Westphal & Graebner, 2010) suggested that negative analyst ratings led to increases in formal, although not true, board independence. A third study (Boivie, Harrison, & Sharp, 2015) found an association between downgrades from preeminent analysts and an increased probability of director exit. However, only one of these studies (Westphal & Graebner, 2010) examined whether firms' governance changes resulted in "more favorable subsequent analyst appraisals" (p. 15).

This study follows that model, specifically examining whether CEO turnover following disclosures of potential criminal liability is associated with less severe analyst rating changes. CEOs were selected as the focus because the types of criminal misconduct under consideration in this study have operational implications (e.g., a loss of government contracts due to fraudulent billing activity or remediation costs related to environmental violations). Therefore, it is likely that security analysts will critically evaluate CEOs as part of the increased analytical activities expected to be associated with disclosures of negative information. Put formally:

Hypothesis 4) Following disclosures of potential criminal liability, CEO turnover is associated with less negative change in firm ratings by security analysts.

2.5.2.2 Credit rating agencies.

Credit rating agencies (CRAs) are market intermediaries who gather and analyze information about bond issuers, resulting in published “creditworthiness” ratings (White, 2013), which are relative, but not absolute probabilities of default by firms (Frost, 2007). CRAs meet Wiesenfeld et al.'s, (2008) criteria for classification as social arbiters not only because they are legitimate (e.g., SEC-regulated as Nationally Recognized Statistical Rating Organizations), but also because they interact with key audiences in the bond market, that is, firms, investors, and regulators. As such, CRAs are presumed to be qualified to evaluate firms and managers. Operationally, however, there are aspects of the CRA system that differentiate it from other market-based informational intermediary systems.

First, investors in the bond market are largely institutional entities such as insurance companies, banks, and investment funds (White, 2013). In 2012 for example, households accounted for a mere 13.3 percent of the total bond market, and were significant direct holders, at 47 percent, only in the municipal category (White, 2013). Although some institutions, like banks and insurance companies, are required by industry regulation to use bond ratings for selecting investments, the CRA business model is issuer-paid rather than investor-paid, making potential conflicts of interest inherent in the system (White, 2013). Additionally, there is the “well-established phenomenon that the major CRAs tend to lag the markets in recognizing the changes in circumstances of a bond issuer and then changing their ratings” (White, 2013, p. 109). Although some observers attribute this phenomenon to the issuer-pays model, researchers have traced its genesis to the 1930s when an investor-pays model was standard (White, 2013). The practice of promoting ratings stability by ignoring changes in issuers’ financial positions, when such changes were presumed to relate to short-run fluctuations in business cycles, resulted from

an industry belief that investors were best-served by avoiding the unnecessary transaction costs of selling, then re-buying bonds (White, 2013).

In the U.S., three major CRAs, Moody's Investors Service, S&P Global Ratings and Fitch Ratings, dominate the ratings market despite the SEC's recent expansion of registered CRAs to ten firms (Ramakrishnan & Scipio, 2016) and concerns around potentially anticompetitive practices (Frost, 2007). In recent years, the major CRAs received widespread criticism around the accuracy and usefulness of their ratings. The first round of significant criticism related to the ratings for Enron and Lehman Brothers prior to those firms' failures in the early 2000s (Cheng & Neamtiu, 2009; White, 2013); the second round related to mortgage-backed securities (MBS) ratings prior to the 2008 financial crisis (Ramakrishnan & Scipio, 2016). Following the 2008 issues, CRAs were under increased regulatory oversight in both the U.S. and internationally (Alsakka & ap Gwilym, 2012). In response, CRAs adjusted their processes, leading to improved timeliness and accuracy as well as reduced volatility (Cheng & Neamtiu, 2009). However, some level of lag in the change process persists (White, 2013), in part due to the role of credit ratings in private contracting and industry regulation (Frost, 2007). The principle of conservatism, which necessitates greater levels of support for ratings upgrades (versus downgrades), also underpins some of the lag in the rating change process (Frost, 2007).

The credit rating process is typically a committee-based "analysis of both business risk (industry characteristics and the company's competitive position and management quality) and financial risk (financial characteristics, financial policy, capital structure, cash flow protection, and financial flexibility)" (Frost, 2007, p. 473). As such, ratings are long-term indicators of an issuer's credit quality (Alsakka & ap Gwilym, 2012). Supplemental items, outlook and watch signals, are the short-term "indicators of the likely direction and timing of future credit changes"

(Alsakka & ap Gwilym, 2012, p. 45). Regardless of indicator type, CRAs have documented how management and governance factors affect the analysis process for corporate bond issuers. For example, from a management perspective, aspects such as operational effectiveness, the level of expertise and experience, and the depth and breadth of personnel available within the firm can impact ratings in positive, neutral, and negative ways (S&P Global Ratings, 2012).

Governance, however, does not contribute to positive rating changes; rather good governance is considered neutral while poor governance contributes to negative rating changes (FitchRatings, 2017; S&P Global Ratings, 2012). Aspects of governance that may be evaluated include boards' strategies for financial oversight and succession planning, as well as board member characteristics such as independence, number of other directorships, and familiarity with the business (FitchRatings, 2017). Regulatory violations are also considered under the umbrella of governance. A lack of violations is neutral to ratings while violations, in relation to number, type and/or severity, can have negative impacts (FitchRatings, 2017). CRAs recognize that federal criminal investigations (i.e., those initiated by the DOJ) pose significant financial risks for firms; as such, negative rating actions are likely to be taken during the investigation phase rather than at settlement (Moody's Investors Service Global Credit Research [MISGCR], 2007). For example, Moody's noted that from a sample of 26 corporate bond issuers who eventually signed federal settlements, it had downgraded seven and issued negative outlooks or downgrade reviews on another three, in part due to the disclosure of the investigation (MISGCR, 2007).

From an academic perspective, researchers have found support that governance factors, such as those related to board structures and processes, are associated with firms' credit ratings (Ashbaugh-Skaife, Collins, & LaFond, 2006). For example, credit ratings have been shown to be positively related to board independence, stock ownership, and expertise (as measured by other

outside directorships), but negatively related to CEO power (as measured by a board chair role and/or key committee memberships) (Ashbaugh-Skaife et al., 2006). Based on a hypothetical analysis, Ashbaugh-Skaife et al. (2006) expect that firms possessing the desirable governance traits have “approximately double [the] likelihood of receiving an investment-grade credit rating [... which] can translate into significant debt cost savings” (p. 240).

Overall, this review indicates that CRAs are salient organizational stakeholders because their ratings can influence the evaluations and behaviors of other external stakeholders such as investors and regulators. In relation to disclosures of potential criminal liability, CRAs are expected to act because they recognize that these situations carry financial risk for firms. Given the nature of such disclosures, and the relationship of governance factors to ratings (i.e., neutral or negative, but not positive), any rating changes are likely to be downward. With the lagged timing typical for rating changes and because CRAs consider governance factors such as board oversight and independence in their analyses, it is reasonable to expect that any turnover of board directors, subsequent to disclosures of potential criminal liability, will also be considered. If board turnover is an effective signal of firms’ intentions to “clean house” (Marcel & Cowen, 2014) and prevent reoccurrences (Arthaud-Day et al., 2006), then firms with turnover should have more favorable results, that is, a less severe downgrade or no ratings change, in comparison to firms without turnover. Put formally:

Hypothesis 5) Following disclosures of potential criminal liability, board director turnover is associated with less negative change in firm ratings by credit agencies.

CHAPTER 3

METHODOLOGY

This chapter describes the research design and methodology used in this two-stage study. The first section provides an overview of the research design strategy. The second section covers the sample and then discusses data collection and sources. The third section describes how the constructs were operationalized and lists the measures, that is, the independent, dependent, and control variables. After reviewing the analytical techniques required for each stage of the study, the chapter ends with a review of the ethical considerations that apply to the study as designed.

3.1 Research Strategy and Study Design

This two-stage study looks at organizational outcomes following disclosures of potential criminal liability. The first stage of the study, using a matched-pair sampling design, examines whether the rates of turnover for CEOs and directors are affected by disclosure events. The second stage of the study has two aspects. The first examines whether public visibility (i.e., the amount of media coverage) immediately following disclosure events is related to the magnitude of director turnover and the velocity of CEO turnover. The second aspect shifts perspective to examine whether the magnitude of director turnover and the velocity of CEO turnover are related to the post-event responses of external stakeholders, specifically security analysts and credit agencies who, as market intermediaries, monitor and grade publicly traded firms.

Examining these types of organizational outcomes necessitates observing behaviors within the natural system, therefore, a field-based research strategy is appropriate (McGrath, 1982). Given this study's interest in the differences between non-random groups of cases (i.e.,

firms), a field-based quasi-experiment is a more appropriate strategy than a field study (Schwab, 2011). In a field-based quasi-experiment, the variables, which vary freely within their natural system, are measured, but not manipulated. As McGrath (1982) discusses, this choice of research strategy maximizes contextual realism, but limits control over the behavioral variables.

For stage one, where the outcomes of interest are the rates of turnover for CEOs and directors following disclosure events, three conditions drive the design choice of a between-cases, quasi-experimental study. First, experimental manipulation in the context of corporate criminal misconduct would be both infeasible and unethical. Second, temporal concerns exist around the typical length of corporate criminal resolution processes. Third, because of the potential effects from economic and other confounds during the post-event measurement period, a control group matched on firm characteristics such as size and financial performance, but lacking disclosures and/or settlements of similar federal-level criminal activity, is needed. These conditions suggest a case-control design (Shadish et al., 2002).

Case-control designs, also known as case-history or retrospective designs, consist of at least one group of cases that have the outcome of interest and a group of control cases that do not (Shadish et al., 2002). Case-control studies are useful when outcomes are rare or develop over lengthy periods such as years and when the data is archival or retrospective (Shadish et al., 2002). Such matched-pair sampling designs have been used in other organizational studies that involve infrequent or low probability events such as financial restatements (e.g. Arthaud-Day et al., 2006; Gomulya & Boeker, 2014; Harris & Bromiley, 2007) because they are “generally considered an appropriate way to study phenomena with a low base rate of occurrence” (Arthaud-Day et al., p. 1125).

In stage two of the study, the sample changes from the sets of board directors and CEOs related to the event and control firms to only the event firms. In stage two, aspect one, the amount of media coverage received in the 90 days immediately following the disclosure event that was related to the disclosure and/or the underlying potential criminal issues is examined for relationships to the speed of CEO exit and the magnitude of director turnover. This is a one-group posttest-only design (Shadish et al., 2002) in which the level of treatment (i.e., the amount of media coverage) varies freely in the system and is measured, but not manipulated. In aspect two, the magnitude of director turnover and the speed of CEO exit are examined for relationships with the amount of change in credit agencies' and security analysts' ratings, respectively, using the differences between one-year pre-event values and two-year post-event values. This is a one-group pretest-posttest design (Shadish et al., 2002).

3.2 Sample and Data Sources

U.S. GAAP requires that publicly traded firms disclose items that may result in future financial liability, such as criminal investigations, in the periodic financial statements (i.e., forms 10-Q and 10-K) filed with the SEC. Because of this disclosure requirement, the sample consists of publicly traded firms only. Disclosures of federal-level subpoenas and investigations or self-reported violations of federal laws are the organizational events of interest in this study.

For the sample, publicly traded firms with disclosure events occurring between 2000 and 2015 are included. This range of years was selected for two reasons. First, federal regulatory use of out-of-court settlement agreements, that is, DPAs and NPAs, was extremely limited until the 2000s; therefore, the corporate criminal incidents resolved prior to that were only those where the availability of evidence was adequate to expect successful resolution via a court-based process. With DPAs and NPAs, federal regulators and prosecutors had an alternative means for

resolution in instances where bargaining power existed, so an expansion of the cases that could be pursued occurred. Second, following the method of Arthaud-Day et al. (2006), data collection occurs in the event year and the two years following to ensure the adequacy of director information. Therefore, the sample must be limited to disclosure events occurring no later than 2015 to enable the post-event data collection.

Although corporate violations of law can occur at multiple jurisdictional levels such as federal, state or local, the sample for this study includes publicly traded firms with disclosures of potential criminal liability at the federal level only. This allows for a convenience sample based on listings of corporate criminal cases that are developed and maintained by academics in the legal domain. For inclusion in the final sample of event firms, the criminal activity had to meet the same criteria applied by Alexander and Cohen (2015). The criteria are that: (a) the criminal activity must violate one or more federal statutes; (b) the plaintiff is the U.S. Department of Justice and/or an affiliated U.S. Attorney's office; and (c) the defendant is a public firm (or is an affiliate like a subsidiary).

The list that was the starting point of the sample for this study, called the Corporate Prosecution Registry, is a dataset developed and maintained by Garrett and Ashley (2018) in a joint project of Duke University and the University of Virginia School of Law. This dataset lists over 3,400 corporate case resolutions from 1992 to 2018 (as of February 2019). A list of 383 cases, updated through October 10, 2018, was the initial population after excluding cases resolved prior to 2000 and non-public companies. Of the 383, 19 were excluded where the resolution was either an acquittal, declination, or dismissal. An additional 191 were excluded due to a lack of data availability related to three issues: (a) the firms were not public companies during the relevant measurement period preceding the case resolution; (b) the firms, although

publicly traded on U.S. markets in some form (such as American Depositary Receipts), were non-U.S. based firms that have substantially different SEC reporting requirements; or (c) the firms were not included in the data sets of the primary data providers used in the study such as Compustat and BoardEx. Exclusions based on the latter two issues are in line with prior studies (e.g., Gomulya & Boeker, 2014; Harris & Bromiley, 2007).

For the remaining 173 cases, research was conducted to identify each firm's initial disclosure of the potential federal criminal activity in an SEC-filed report such as a 10-K, 10-Q or 8-K using the text search and filter capabilities available via BamSEC's online services. The date of the public filing was used as the disclosure event date for tracking post-event items such as leadership turnover, ratings changes, and media coverage. The text of each disclosure was retained for analysis of items such as self-report status and criminal activity type.

Based on this process, 13 cases were excluded after research of their SEC filings determined that the firms either had not disclosed the potential criminal liability at all (5 firms) or had disclosed it only at the time of resolution (8 firms). In these cases, external stakeholders had no disclosure event with unknown outcomes to judge and respond to. Finally, 13 cases related to 10 firms were consolidated because the firms had multiple disclosure events in the same period. The data from this group of cases highlighted the need for a firm-level control variable addressing the issue of multiple disclosure events in one measurement period. The net sample of 147 disclosure event cases represented 123 unique firms; that is, 24 cases came from firms with two or more disclosure events in different years from 2000 to 2015.

For stage one of the study, a matched control firm, or a firm with no federal criminal settlement and related pre-settlement disclosure, was needed for each disclosure event firm. Control firms were identified using information in the Compustat annual updates dataset

accessed via Wharton Data Research Services (WRDS). Potential matches were initially selected using the criteria of four-digit standard industrial classification (SIC) codes to match industry and total assets in the relevant fiscal year to match firm size (Arthaud-Day et al., 2006; Gomulya & Boeker, 2014). Using four-digit SIC codes, 50 of the 147 cases were matched. The list of potential control firms was expanded using three-digit SIC codes, the industry group level, which enabled 23 additional matches. Using two-digit SIC codes, the major group level, enabled a match for the remaining 74 cases. To help ensure equivalency in the control cases given the use of two-digit SIC codes, a criterion for financial performance was added. Sales revenue in the relevant fiscal year (Harris & Bromiley, 2007) was selected for this purpose. The matched control list was also checked to verify that none of the event firms were matched as a control to another event firm and that none of the firms that were excluded from the original dataset for reasons such as data availability or lack of disclosure were selected as control firms.

Following the method of Arthaud-Day et al. (2006) to validate the equivalency of the matched pairs, their similarity in terms of total assets, sales revenue, log of total assets, log of sales revenue, return on assets, and return on equity (as a substitute for stock market returns) was tested. Following Gomulya and Boeker (2014), the two groups were also tested for similarity in terms of stockholders' equity and net income. No significant differences between the two groups were found on any of these dimensions using a confidence interval analysis, one- or two-tailed as appropriate, at a 99% confidence level. Combined the two groups yielded a final sample of 294 cases. Like the event firms, where 147 cases represented 123 unique firms, the 147 control cases represented only 122 unique firms. Although this result was unintentional, in many instances, there was only one potential control firm to match to an event firm due to the combination of industry, firm size, and the lack of a potential federal-level criminal liability issue.

Each of the hypotheses in this study was tested with a substantially different data set developed from the starting point of either the 147 event cases or the 294 combined event and control cases. That is, the data sources used to develop each sample set and the number of observations available for each hypothesis test varied based on the study design and variables. The characteristics of the different sample sets and the specific data sources for each are discussed in the next section.

3.3 Measures

This section discusses the dependent, independent, and control variables used in the study. A summary table of the variables, including category, level, time period, SPSS name, and definition with the applicable stages and hypotheses is provided at the end of the discussion.

3.3.1 Dependent variables.

In stage one of the study, that is, Hypotheses 1 and 2, the dependent variables, *director turnover* and *CEO turnover* are dichotomous and categorical; the *time to CEO exit* variable used with CEO turnover in the Cox regression analysis is numerical and continuous. For director turnover, the binary value is 1 for individuals who turned over in the two- to three-year tracking period following the disclosure event (the tracking period varies by firm due to differences in fiscal year and/or disclosure event timing). CEO turnover is measured in the two calendar years immediately following the disclosure event (same date used for each matched control firm) and the time to CEO exit is captured in months using exact dates. For the binary dummy variables in both datasets, a value of 1 indicates that an individual experienced turnover in a given time interval; a value of 0 indicates that an individual did not turnover. With the time to CEO exit variable, a value of 24 (i.e., 2 years) indicates that an individual did not turn over during the tracking period; any value less than 24 indicates the time of exit during the tracking period. Data

for these variables was collected from multiple sources including BoardEx (2017), Audit Analytics via Wharton Research Data Services (2018a), and company filings with the SEC such as DEF 14A proxy statements via BamSEC Inc. (2019), an online service that offers search and filter capabilities for public company filings and exhibits.

For stage two of the study, for Hypotheses 3a and 3b, the dependent variables are, respectively, *board turnover*, the percent of the outside board directors that turned over during the two- to three-year tracking period and *CEO exit speed* is the reversed set of monthly values (24 – month value of CEO exit) from the time to CEO exit variable. Both variables are numerical measures, allowing for the magnitude of board turnover and the velocity of CEO exit to be examined in this set of hypotheses.

For outside board director turnover, the measure is a proportion with a value in the range of 0 to 1. A value of 0 indicates no outside board director turnover for a firm in the two- to three-year post-event period. A value of 1 indicates all outside board directors, or 100 percent, turned over during the measurement period. For the CEO exit speed variable, a value of 0 indicates that an individual did not turn over in the two-year post-event period, while a value of 24 indicates exit in the month following the disclosure event. These variables were calculated from the data collected for Hypotheses 1 and 2.

For Hypotheses 4 and 5, the dependent variables are numerical values that represent the changes, whether positive, negative, or non-existent, in firm ratings from the fiscal year prior to the disclosure event, time $t-1$, to the end of the two-year period following disclosure, time $t + 2$. The ratings of interest are those issued by two groups of market intermediaries, security analysts and credit rating agencies. The dependent variable names, respectively, are *security analysts' ratings change* and *credit agencies' ratings change*. Data was collected from the I/B/E/S

recommendations database via Wharton Research Data Services (2018c) and transformed into numerical measures for the analysis as described below.

Firm ratings are categorical values, such as the buy, hold or sell recommendations issued by security analysts. Each rating is associated with a number (e.g., 1 = strong buy, 2 = buy, ... to 5 = sell). In the Thomson Reuters data set in WRDS, the ratings from security analysts' are aggregated to a mean recommendation, or average, as of a point in time. For the variable in this study, the change in security analysts' ratings was calculated by subtracting the mean recommendation at time $t+2$ from the value at time $t-1$. Given the reverse nature of this scale (i.e., lower values like 1 indicate more favorable ratings), a positive value after the subtraction process will indicate a favorable change, while a negative value will indicate an unfavorable change. For example, a rating of 3 at time $t-1$ (a hold recommendation) minus a rating of 2 at time $t+2$ (a buy recommendation) would result in a value of 1 (a favorable ratings change going from a hold to a buy recommendation). A value of 0 would indicate no change in the mean recommendation.

Credit agencies' ratings use categorical scales, combining letters and numbers and/or plus/minus indicators (e.g., AAA, AA+, AA-, A, BBB, etc., out to C and D) (White, 2013) as well as commentary such as credit watch and outlook modifiers (Frost, 2007). In these systems, A-level ratings represent opinions of strong ability by firms to repay debt while D-level ratings represent opinions of high default risk; the upper levels are commonly referred to as investment grade bonds while the lower levels are referred to as speculative or "junk" bonds (White, 2013).

Although categorical, the ratings imply an ordinal ranking. As such, it is acceptable to convert them to numerical, interval-type scales for analysis. For example, the data set of Standard & Poor's (S&P) long-term issue credit ratings consists of ten major categories from

AAA to D (Standard & Poor's Financial Services LLC, 2016) used with plus/minus indicators that create a set of 22 ratings categories. After conversion to a numerical scale, the highest rating of AAA is represented by a value of 22, AA+ by 21, etc., down to the lowest rating of D at a value of 1. To calculate a change in firm rating, such as a reduction from AAA to AA+, the prior value of 22 is subtracted from the new value of 21 resulting in a rating change value of -1.

3.3.2 Independent variables.

In stage one of the study, for Hypotheses 1 and 2, the independent variable is the firm disclosure event, that is, the disclosure of potential criminal liability. This measure, *disclosure*, is binary and categorical. It is a dummy variable coded 1 for firms with disclosure events and 0 for control firms based on the firm lists developed for the sample.

For Hypotheses 3a and 3b in stage two of the study, the independent variable, the volume of *media coverage*, is a numerical measure. The variable is a count of the number of unique news articles and reports appearing in the 90-day period following each event firm's disclosure date; the control firms are excluded in this stage of the study. News items were located using the Factiva database published by Dow Jones (2019).

Articles were located using the following general search parameters: (a) All Sources, (b) All Authors, (c) All Industries, (d) All Regions, and (e) English. Specific company names and 90-day periods following disclosure events were searched with the following selections in the Subject field: Corporate Crime/Legal Action OR Government Filings OR Product/Consumer Safety OR Regulation/Government Policy OR Corporate Actions OR Anti-Competition Issues.

For Factiva's Text search field, the terms were adapted from Alexander and Cohen (2015) and supplemented with additional federal regulatory agency abbreviations. The final Text search string was: (prosecut* OR plea OR "plead guilty" OR "guilty plea" OR guilt OR crimin*

OR dpa OR “deferred prosecution” OR npa OR “non prosecution” OR nonprosecution OR “non-prosecution” OR “prosecution agreement” OR “plea agreement” OR “plea bargain” OR subpoena OR investigat* OR violat* OR enforcement) AND (“u.s. attorney” OR “united states attorney” OR usao OR “department of justice” OR “justice department” OR doj OR regulat* OR "grand jury" OR SEC OR EPA OR USDA OR FRB OR DOL OR FBI OR ICE OR FDA OR DEA OR DHHS OR FINCEN). Factiva’s option to eliminate duplicate results (exact) was used.

The set of articles from each company search using these parameters was downloaded and saved to an Adobe PDF file. The PDF, which included the full article text and publication information, was later reviewed to determine how many of the articles included information on the disclosure and/or the underlying criminal activity and circumstances. Only items that contained this information were counted for each company.

In Hypothesis 4, the independent variable is a dichotomous, categorical dummy variable of CEO turnover (one observation per event firm) determined using the CEO exit data collected for Hypothesis 2. In Hypothesis 5, the independent variable is the numerical measure for outside board director turnover, which was the dependent variable from Hypothesis 3a. As with the media coverage variable, this data is only applicable to the disclosure event firms, not to the control firms, which are excluded in this stage of the study.

3.3.3 Control variables.

Control variables are needed at multiple levels of analysis for the two stages of this study. These include the firm level, the board level (i.e., governance controls), and the individual level. The use of controls at these different levels follows the methods of other event studies concerned with leadership turnover such as Arthaud-Day et al. (2006) and Johnstone et al. (2011).

3.3.3.1 Organizational size and financial controls.

For Hypotheses 1, 2, 3a, and 3b, there are four control variables in this category. First, *firm size* is the natural log of each firm's total assets in the fiscal year preceding the disclosure event. It is a continuous, numerical measure treated as a fixed effect. For financial controls, there are three variables, also collected for the fiscal year preceding the disclosure event and treated as fixed effects. These variables are *return on assets* (ROA), *return on equity* (ROE), and *leverage*. ROA is a numerical measure calculated as net income divided by total assets. ROE is a numerical measure calculated as net income divided by stockholders' equity. Both ROA and ROE can be negative, zero, or positive values. Leverage is a numerical measure calculated as total debt divided by total assets; theoretically, the ratio can range from 0 (no debt) upwards.

Stage two of the study uses the changes in these four size and financial measures as controls for Hypotheses 4 and 5. The change is measured over the period from the fiscal year preceding the disclosure to two years following the event (calculated as the value at time $t + 2$ minus, or compared to, the value at $t - 1$). Data for the variables, *firm size change*, *leverage change*, *return on assets change*, and *return on equity change*, as well as the fixed control versions described above, was collected from multiple sources including Wharton Research Data Services for Compustat annual updates (2018b), WRDS financial firm ratios (2018e), and the MSCI GMI database (2018d).

3.3.3.2 Organizational governance controls.

Different sets of governance-related control variables were required for specific hypotheses, some treated as fixed effects and other as changes over time. For Hypotheses 1, 2, 3a, and 3b, the following controls were treated as fixed effects and measured in the fiscal year prior to the disclosure event. *CEO duality*, or the same person serving simultaneously as CEO

and chair of the board of directors, is a binary variable with a value of 1 when this condition existed and a value of 0 when two different people held these roles. *Board independence* is a percentage calculation of the number of outside (i.e., non-executive including affiliated) directors divided by the total number of board members. *Block-holders >5%* is a numerical measure that represents the percentage of equity owned by outside investors with holdings greater than 5 percent. To determine CEO duality and calculate the independence percentage, items from the Hypothesis 1 and 2 director and CEO datasets were used.

For Hypotheses 4 and 5, two of the governance-related control variables were used, but as measured as changes over time (calculated as the value at time $t + 2$ minus, or compared to, the value at $t - 1$). These change controls are *CEO duality change* and *board independence change*. Additionally, controls for *gender diversity*, a numerical variable indicating the change in the percentage of women holding board seats, and *board size change*, a count of the change in the total number of board members, were used for this stage of the study. Data for these change-related controls was collected from the same sources as Hypotheses 1 and 2 such the BoardEx database, but for different points in time so that the change could be calculated or determined.

3.3.3.3 Individual controls.

Two demographic variables are necessary to control for individual differences in the board director and CEO datasets. The individual controls apply only to Hypotheses 1 and 2 in stage one of the study. This data was collected from the same sources as the dependent variables in Hypotheses 1 and 2 such as the BoardEx database and company proxy filings with the SEC.

The specific variables include:

- *Age*: the natural log of the numerical value for each individual's age in the fiscal year before the disclosure event; used to help distinguish management turnover related to retirement from turnover driven by other reasons (e.g. Aharony et al., 2015); and
- *Tenure*: the natural log of the numerical value for each individual's length of service in the role (i.e., outside board director or CEO), not including the service in other organizational roles, if any; used to control for director and/or CEO replacements that occurred prior to the disclosure event, but which were recent enough that the replacements would not likely be perceived as responsible for the criminal misconduct by stakeholders.

3.4 Analytical Techniques

The nature of the research design in this two-stage study necessitates the use of several categorical variables which are binary (i.e., a single dichotomous variable). Although binary variables are used as independent, dependent, and control measures in this study, only as dependent variables do they drive the use of specific analytical techniques. In stage one, the dependent variables of director turnover and CEO turnover are categorical and dichotomous.

Director turnover is measured once over the tracking period from the fiscal year prior to the disclosure event ($t-1$) to the fiscal period two years after the event ($t+2$). Therefore, binary logistic regression is the appropriate method. Logistic regression, useful for discrete-time, event-history analysis, is necessary for categorical dependent variables because, by their nature, these types of variables will violate the assumptions of linear relationships in linear regression (Field, 2013). Logistic regression uses logarithmic transformations of data to overcome this issue, allowing the model to predict the probability of an event occurring for a given unit (e.g., person or firm) (Field, 2013).

For CEO turnover, there are multiple measurements for each person in the sample – one at the end of year one following the disclosure event and another at the end of year two. The time to exit, measured in months, is also captured for this dataset. Therefore, Cox regression, a type of logistic regression also known as a partial likelihood estimation of the proportional hazards model, is appropriate. In both binary logistic regression and Cox regression, the prediction is expressed as an odds ratio (also known as a hazard or probability ratio), that is, a ratio of incidence (Allison, 2014).

In stage two of the study, to examine the relationships between the volume of media coverage and both CEO and director turnover, standard linear regression is appropriate as the dependent variables are numerical scales. Similarly, the dependent variables used in examining the relationships between CEO and board turnover and the post-event changes in market intermediaries' ratings are numerical measures. For example, a positive ratings change is indicated by a value such as 1, no change by 0, and negative change by a value such as -1. Therefore, standard linear regression is the appropriate analytical technique.

3.5 Ethical Considerations

This study relies on publicly available, archival data gathered from multiple sources such as company annual reports, databases of news reports, databases of legal cases, databases of firm demographic and financial information, and government agency websites. This research design meets the University of Dallas Institutional Review Board (IRB) guidelines for general exemption from approval as no human subjects are involved in the research. Therefore, the only requirement is registration of the research study on the IRB website.

As the study focuses on corporate governance in publicly traded firms, some data about the individuals serving in executive roles such as CEO or serving on boards of directors has been

collected. This includes information such as name, role, tenure, gender, and work experience. These facts exist in archival data due to the nature of these individuals' roles with publicly traded corporations, so there is no reasonable expectation of privacy or confidentiality associated with the information. However, any individually identifiable information has been removed in reporting and discussing the research results to ensure privacy and confidentiality. The results are either reported in aggregate or are discussed at an organizational rather than an individual level.

CHAPTER 4

RESULTS

This chapter reports the results of all hypotheses tests with associated summary data. At the end of the chapter, a discussion of the additional analyses performed post hoc is included.

4.1 Changes in the Rate of Director Turnover Following Disclosure Events

Hypothesis 1 predicted that disclosures of potential criminal liability (i.e., disclosure events) would be positively associated with an increased rate of outside, or non-executive, director turnover in comparison to control firms. The final sample in this panel dataset consisted of 2,578 outside directors, of which 49 percent were from a control firm and 51 percent were from a disclosure event firm. The sample consisted of board directors identified from the proxy statement (via the BoardEx data set or direct review of company filings) in the fiscal year preceding the disclosure for each event firm and its matched control firm. Following Arthaud-Day et al., (2006), each director was tracked through three subsequent proxy statements. Given that the disclosure and proxy dates varied for each event firm and its matched control, actual time periods for tracking ranged from two to three years calendar years after the disclosure event date. The final dataset included one observation per director across this tracking period.

In the event firms, 34.4 percent (486 / 1,411) of the directors turned over in the tracking period following the disclosure. In the control firms, 31.3 percent (422 / 1,347) of the directors turned over. Table 4 provides these sample counts and Table 5 provides the correlation matrix and descriptive statistics, including means and standard deviations, for the director dataset used to test Hypothesis 1.

Table 4

Director Dataset Counts

Variable	Observations	Turnover
<i>Directors</i>		
Control	1,347	422
Disclosure	1,411	486
Combined	2,758	908

To test for multicollinearity, variance inflation factors (VIF) were generated using linear regression, a method employed in studies such as Hillman, Shropshire, and Cannella (2007) to evaluate multicollinearity in a logistic regression model. Two VIFs were near 2.5, which is a conservative cutoff when a variable of interest has a high correlation with a control variable (Allison, 2012). In this test, one of the variables near the 2.5 cutoff was the primary variable of interest, the disclosure event dummy, which shows a correlation of -0.71 ($p < .01$) with leverage, a financial control and the other variable near the cutoff. A decision was made to leave the leverage control variable in the model because (a) the multicollinearity was not severe (i.e., not significantly above the 2.5 cutoff limit); (b) the multicollinearity was data-based, or present in the data versus being structural such as the byproduct of an interaction term; and (c) the underlying relationship between the two variables was negative rather than positive. Additionally, the linear regression analysis of the data indicated a Durbin-Watson value of 1.933. Since this value was near 2, no issues with serial auto-correlation were indicated.

The results of the binary logistic regression analysis appear in Table 6. To facilitate the evaluation of the results of the analysis, the odds ratio (also known as a probability or hazard ratio) is reported in lieu of a coefficient for each variable.

Table 5

Correlations and Descriptive Statistics for Director Turnover Dataset

Variables	1	2	3	4	5	6	7	8	9	10	<i>M</i>	<i>SD</i>
1. Director Turnover											0.33	0.47
2. Disclosure	0.03										0.51	0.50
3. Age (ln)	0.18**	0.02									4.11	0.13
4. Tenure (ln)	0.14**	-0.15**	0.28**								1.77	0.88
5. CEO Duality	-0.10**	-0.01	-0.02	0.03							0.74	0.44
6. Block-holders >5%	0.00	0.33**	-0.02	-0.12**	-0.04						0.22	0.25
7. Board Independence	0.02	-0.05*	-0.02	-0.09**	-0.19**	-0.07**					0.86	0.08
8. Firm Size (ln Assets)	0.05*	0.02	0.09**	-0.06**	0.09**	-0.17**	0.31**				9.51	2.16
9. Leverage	0.03	-0.71**	-0.02	0.07**	-0.03	-0.20**	0.13**	0.17**			0.44	0.28
10. Return on Assets	-0.10**	0.01	-0.02	0.08**	0.10**	-0.12**	-0.05**	0.08**	-0.22**		0.04	0.10
11. Return on Equity	0.08**	-0.03	0.01	0.01	-0.09**	0.06**	-0.04	-0.09**	0.08**	-0.48**	0.23	1.65

Note: $N = 2,758$.

* $p < .05$ (2-tailed)

** $p < .01$ (2-tailed)

Table 6

Results of Logistic Regression Analysis for Director Turnover

Variables	<i>Exp (B)</i>	95% C.I.	
		Lower	Upper
Disclosure	1.55**	1.192	2.026
Age (ln)	12.14***	6.010	24.510
Tenure (ln)	1.36***	1.226	1.504
CEO Duality	0.63***	0.519	0.759
Block-holders >5%	0.98	0.678	1.409
Board Independence	0.91	0.282	2.908
Firm Size (ln Assets)	1.05*	1.005	1.096
Leverage	1.75*	1.102	2.786
Return on Assets	0.19**	0.070	0.532
Return on Equity	1.10	0.987	1.221
Constant	0.00***	-	-
X^2	29.14***		
<i>n</i>	2,758		

* $p < .05$ ** $p < .01$ *** $p < .001$

The odds ratio for the disclosure event dummy variable indicates that directors at event firms were about 55 percent more likely to turn over than were directors at control firms (odds ratio = 1.55, $p < .01$). Hypothesis 1 was supported.

From an individual control perspective, age and tenure were both significant at $p < .001$. Both age and tenure had odds ratios greater than one, indicating that each increased, the odds of turnover increased. However, these relationships are nonlinear because both variables were log-transformed for the analysis. The other variables in the model were organization-level controls.

First, firm size, like age and tenure was log-transformed for the analysis. This control variable, although significant, had an odds ratio near one (odds ratio = 1.05, $p < .05$). Next, CEO duality was significant and negatively related to turnover (odds ratio = 0.63, $p < .001$). That is, firms whose CEO also served as chair of the board had lower rates of director turnover than the firms with an independent chairperson. There were two organizational control variables in the model that have generally been associated with stronger corporate governance. These were the percentage of stock owned by block-holders with greater than five percent holdings and the percentage of board independence. Neither variable was significant in the base model. From a financial perspective, one control variable, leverage, was significant and positively associated with increased director turnover (odds ratio = 1.75, $p < .05$). Return on assets demonstrated a significant negative relationship with director turnover (odds ratio = 0.19, $p < .01$). Return on equity, significant at $p < .10$, had an odds ratio crossing 1; therefore, it was not significant.

At the model level, the Hosmer and Lemeshow Test of Chi-Square (X^2) was significant at $p < .001$. Additional tests were performed to evaluate the model's overall goodness-of-fit using multiple techniques suggested by Field (2013) for logistic regression. First on goodness-of-fit, the 95 percent confidence intervals on all significant variables were reviewed to verify that none included 1. This review found only the issue with return on equity; all other variables that were significant did not cross 1 in their confidence intervals. Next, several of the sets of residuals that were saved with the model in SPSS were reviewed. There were no unusually high values of Cook's distance (COO_1); all were less than 1. The range of leverage values (LEV_1) from .001 to .178 was between 0 and 1, and the mean value of 0.004 was in line with the expected value of 0.004 (calculated as the number of predictors plus 1 divided by the sample size).

In the studentized residuals (SRE_1), the standardized residuals (ZRE_1) and the deviance values (DEV_1), all sets met the desired parameters of less than 5 percent of the cases outside of +/-1.96 and less than 1 percent outside of +/-2.58. For the three sets of residuals, the ranges were 1.02 to 3.01 percent outside of +/-1.96 and 0.04 to 0.73 percent outside of +/-2.58. The final check with these three sets of residuals was on number of cases near or above values of 3. The sets of studentized residuals and deviance values each had 1 case near 3. In the set of standardized residuals, 10 cases or 0.36 percent of the sample were above 3. These 10 cases were reviewed and no justification for excluding them from the sample was identified. Finally, the DF Beta values for the constant (DFB0_1) and the disclosure event dummy variable (DFB1_1) were reviewed to determine if any values exceeded 1. No cases exceeded this parameter.

To evaluate the real-world explanatory power of the model, the two R-square equivalents, the Cox & Snell and the Nagelkerke, that SPSS calculates for logistic regression models were reviewed. The values were 6.9 and 9.6 percent respectively. The results in SPSS's Classification Table for the model suggests that this low level of explanatory power is related to the directors that turned over. That is, the model correctly predicted 94.6 percent of the directors that did not turn over in the tracking period, but only correctly predicted 17.2 percent of those that did, leading to an overall prediction accuracy of 69.1 percent. This discrepancy between the prediction accuracy for the two groups suggests that additional factors or interactions must be considered to more fully explain director turnover. Alternative models were examined post hoc. The results of the additional analyses are discussed in the last section of this chapter.

4.2 Changes in the Rate of CEO Turnover Following Disclosure Events

Hypothesis 2 predicted that disclosures of potential criminal liability would be positively associated with an increased rate of CEO turnover in comparison to control firms. The final

sample in this panel dataset consisted of 294 CEOs (147 each from the event and control firms) generating 550 person-year observations in the survival risk set comprised of the number at risk in each of the 2 calendar years from the disclosure event dates.

In the event firms, 29.9 percent (44 / 147) of the CEOs exited in the two-year tracking period following the disclosure. In the control firms, 19.7 percent (29 / 147) of the CEOs turned over in the same period. Table 7 provides the correlation matrix and descriptive statistics, including means and standard deviations, for the CEO dataset used to test Hypothesis 2.

To test for multicollinearity, variance inflation factors (VIF) were generated using linear regression. Testing for multicollinearity identified no issues with all VIFs except two at or under 1.6; the remaining two were near 2.3, but under 2.5, the conservative cutoff suggested by Allison (2012) when a variable of interest is highly correlated with a control variable. The two variables correlated at -0.81 ($p < .01$) are the two parts of the dependent variable for the Cox model (i.e., the time and status variables); therefore, the high correlation is not an issue.

Table 8 provides the results of the Cox regression analysis for Hypothesis 2. In the first block of the analysis only the two individual controls, the natural logs of age and tenure, were included. At this stage, the disclosure event dummy variable had an odds ratio greater than 1 (odds ratio = 1.75; $p < .05$) and the age variable was also above 1 ($p < .01$). However, after the organization-level controls were added, only age remained significant ($p < .05$). At this stage, the overall model was no longer significant. Hypothesis 2 was not supported, that is, the analysis did not support a statistically significant increase in CEO turnover for event firms versus control firms.

Table 7

Correlations and Descriptive Statistics for CEO Turnover Dataset

Variables	1	2	3	4	5	6	7	8	9	10	11	<i>M</i>	<i>SD</i>
1. Disclosure												0.50	0.50
2. Time to CEO Exit	-0.07											29.32	11.11
3. CEO Turnover	-0.02	-0.81**										0.36	0.48
4. Age (ln)	-0.10	-0.17**	0.14*									3.99	0.13
5. Tenure (ln)	-0.19**	-0.09	0.11	0.29**								1.73	0.87
6. CEO Duality	-0.10	-0.09	0.05	0.19**	0.35**							0.63	0.48
7. Block-holders >5%	0.31**	-0.01	0.02	-0.05	-0.06	-0.06						0.22	0.24
8. Board Independence	-0.01	0.01	-0.01	-0.02	0.02	0.02	-0.02					0.84	0.09
9. Firm Size (ln Assets)	0.03	-0.04	-0.03	0.15*	-0.10	0.12*	-0.15*	0.35**				9.03	2.27
10. Leverage	-0.67**	0.07	-0.04	0.07	0.07	0.11	-0.16**	0.14*	0.21**			0.43	0.28
11. Return on Assets	-0.02	0.02	-0.03	-0.03	0.10	0.00	-0.14*	-0.07	0.10	-0.20**		0.04	0.10
12. Return on Equity	-0.04	0.00	0.10	0.03	-0.05	-0.09	0.07	-0.02	-0.08	0.09	-0.52**	0.25	1.91

Note: $N = 294$; correlations and descriptive statistics based on one observation per CEO.

* $p < .05$ (2-tailed)

** $p < .01$ (2-tailed)

Table 8

Results of Cox Regression (Survival) Analysis for CEO Turnover

Variables	Block 1			Block 2		
	<i>Exp (B)</i>	95% C.I.		<i>Exp (B)</i>	95% C.I.	
		Lower	Upper		Lower	Upper
Disclosure	1.75*	1.087	2.812	1.46	0.714	3.004
Age (ln)	14.22**	2.123	95.244	12.31*	1.694	89.474
Tenure (ln)	1.09	0.821	1.433	1.07	0.781	1.469
CEO Duality				1.24	0.708	2.160
Block-holders >5%				0.95	0.353	2.581
Board Independence				1.03	0.048	21.930
Firm Size (ln Assets)				1.04	0.920	1.175
Leverage				0.61	0.154	2.397
Return on Assets				0.52	0.048	5.587
Return on Equity				0.99	0.837	1.173
χ^2	14.34**			15.62		
<i>n</i>	550			550		

* $p < .05$ ** $p < .01$

To further examine this dataset and understand the results of the Cox regression, the Kaplan-Meier procedure, one of the other survival analysis methods available in SPSS, was used to compare the time-to-event variables by the factor variable (i.e., the disclosure event dummy). The 95 percent confidence intervals for the mean survival times were computed as were a series of Chi-Square significance factors, the Log Rank (Mantel-Cox), the Breslow, and the Tarone-

Ware, to test the equality of the survival distributions for the different values of the disclosure event dummy (0, 1). Finally, a graph of the hazard function, that is, odds of CEO turnover for the event firms and the control firms, was prepared.

The graph of the hazard function in Figure 5 shows a distinct separation between the cumulative odds of CEO turnover for the event (disclose = 1) and control firms (disclose = 0) across the 24-month tracking period. The three Chi-Square factors all indicated significance of the data ($p < .05$). However, the mean survival times indicated the potential issue, an overlap in the 95 percent confidence intervals (for disclose = 1, LL 21.47 and UL 22.74; for disclose = 0, LL 22.14 and UL 23.21). These confidence intervals should not overlap for the time to CEO exit differences between the two sets of firms to be statistically significant.

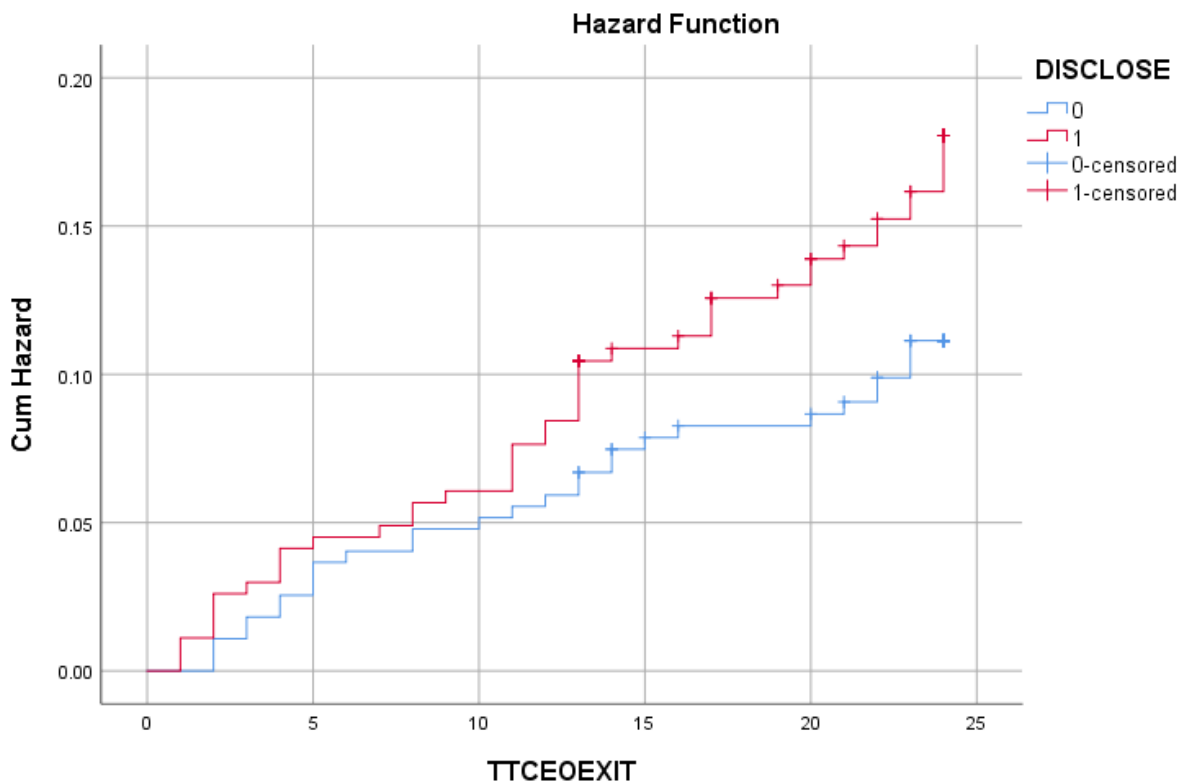


Figure 5. The hazard function for CEO turnover based on disclosure event status.

4.3 The Effect of Media Coverage on Post-Event Director and CEO Turnover

In Hypotheses 3a and 3b, the relationships of post-event media coverage (in the 90 days immediately following the disclosure) with the magnitude of board director turnover and the velocity of CEO turnover were predicted to be positive. That is, event firms with larger amounts of post-disclosure media coverage would experience higher levels of director turnover and faster CEO turnover. Table 9 categorizes the event firms by the amount of media coverage received post-disclosure (that discussed the disclosure and/or the underlying information). Approximately 47 percent of the firms had no disclosure-related media coverage in the 90 days following the event. The next 31.2 percent received minimal business news media coverage of 1 to 5 articles. The next 16.4 percent had between 6 and 20 articles, and only 5.6 percent received coverage of more than 20 articles.

Table 9

Summary of Post-Event Amount of Media Coverage

Post-Disclosure Media Coverage	Number of Firms	Percentage of Firms	Cumulative Percentage
0	69	46.9%	46.9%
1	18	12.2%	59.2%
2-5	28	19.0%	78.2%
6-10	12	8.2%	86.4%
11-20	12	8.2%	94.6%
21-99	6	4.2%	98.6%
>100	2	1.4%	100.0%
<i>n</i>	147		

Table 10 provides correlations, means, and standard deviations for the Hypotheses 3a and 3b dataset. Testing for multicollinearity identified no issues. All VIFs were under 1.4.

Table 10

Correlations and Descriptive Statistics and Correlations for Media Coverage

Variables	1	2	3	4	5	6	7	8	9	<i>M</i>	<i>SD</i>
1. Board Turnover										0.34	0.29
2. CEO Exit Speed	0.09									3.49	6.78
3. Media Coverage	0.25**	-0.03								10.24	50.34
4. CEO Duality	-0.03	0.07	-0.09							0.59	0.49
5. Block-holders >5%	-0.05	-0.04	0.07	-0.01						0.29	0.28
6. Board Independence	-0.11	-0.07	0.09	-0.02	-0.01					0.84	0.08
7. Firm Size (ln Assets)	0.03	0.07	0.20**	0.17*	-0.07	0.33**				9.09	2.31
8. Leverage	0.04	-0.06	0.01	0.02	0.11	0.14*	0.21**			0.24	0.15
9. Return on Assets	-0.34**	0.03	-0.01	0.07	-0.13	-0.08	0.15*	-0.15*		0.04	0.10
10. Return on Equity	0.04	0.09	-0.02	-0.02	-0.04	0.10	0.04	-0.10	-0.12	0.17	0.77

Note: N=147

* $p < .05$ (2-tailed)

** $p < .01$ (2-tailed)

The regression analysis results for Hypotheses 3a and 3b are shown in Table 11.

Hypothesis 3a predicted that post-event media coverage would be positively associated with the magnitude of board turnover. Media coverage was significant in the analysis ($p < .01$) and the overall model demonstrated an adjusted R-square of 0.18 ($p < .001$). However, the coefficient of the media coverage variable was zero, demonstrating no effect from this variable. Therefore, Hypothesis 3a was not supported. Two of the control variables included in this model, board independence and return on assets, had significant negative relationships with the magnitude of board turnover.

Table 11

Results of Linear Regression Analysis for Post-Event Media Coverage

Variables	Hypothesis 3a <i>DV = Board Turnover</i> <i>B</i>	Hypothesis 3b <i>DV = CEO Exit Speed</i> <i>B</i>
Constant	0.89**	8.07***
CEO Duality	0.00	0.72
Block-holders >5%	(0.12)	(0.57)
Board Independence	(0.71)*	(8.46)
Firm Size (ln Assets)	0.01	0.31
Leverage	0.01	(2.67)
Return on Assets	(1.11)***	0.18
Return on Equity	0.00	0.77
Media Coverage	0.00**	(0.01)
R-Square (Adjusted)	0.18***	(0.02)
<i>n</i>	147	147

* $p < .05$

** $p < .01$

*** $p < .001$

Hypothesis 3b predicted that post-event media coverage would be positively associated with the velocity or speed of CEO exit. The regression analysis indicated no relationship, so Hypothesis 3b was not supported. None of the variables in this model other than the constant had significant relationships with the speed of CEO exit; the overall model was not significant.

4.4 The Effects of Leadership Turnover on Market Intermediaries' Post-Event Evaluations

In Hypotheses 4 and 5, the relationship between post-event leadership turnover and post-event ratings change by market intermediaries was predicted to be negative. That is, firms with higher rates of post-event leadership turnover would have less unfavorable change in their ratings than firms with lower rates of leadership turnover. Specifically, CEO turnover and changes in security analysts' ratings were examined in Hypothesis 4 while director turnover and changes in credit agencies' ratings were examined in Hypothesis 5. Table 12 summarizes the percent of event firms in each sample that had ratings changes during the tracking period with the direction of the change, if any.

Table 12

Changes in Market Intermediaries' Ratings Post-Event

Direction of Change	Security Analysts' Ratings Change	Credit Agencies' Ratings Change
Downward	45.2%	26.3%
No Change	5.8%	54.5%
Upward	49.0%	19.2%
<i>n</i>	103	97

Tables 13 and 14 provide correlations, means, and standard deviations for the Hypotheses 4 and 5 datasets respectively. Of the 147 disclosure event firms, data on security analysts' ratings was available for 103 and on credit agencies' ratings for 97, so the correlations and descriptive

statistics reflect these reduced sample sizes. Testing for multicollinearity on the Hypothesis 4 dataset identified no issues as VIFs for all variables were under 1.3. In the Hypothesis 5 dataset, the variables for the change in return on assets and change in return on equity were positively correlated at 0.70 ($p < .001$) and each had a VIF of 2.3 (VIFS for all other variables were at or below 1.4). A decision was made to remove the change in return on assets from the model to address the issue as the 95 percent confidence interval for this variable included zero while the variable for the change in return on equity did not. With this adjustment to the model, the VIFs for all variables, including the change in return on equity, were at or below 1.4.

The regression analysis results for Hypotheses 4 and 5 are shown in Table 15. Hypothesis 4 predicted that CEO turnover, as a binary measured from before the disclosure event to two years following the event, would be positively associated with less unfavorable security analysts' ratings change during the same period. The analysis found no relationship between these variables, therefore, Hypothesis 4 was not supported. None of the control variables in this model had significant relationships with changes in security analysts' ratings; therefore, the overall model was not significant.

Hypothesis 5 predicted that director turnover, as a percentage of the board measured from prior to the disclosure event to two fiscal years after the event, would be positively associated with less unfavorable credit agencies' ratings change during the same time period. Hypothesis 5 was not supported by the regression analysis. Four of the control variables included in this model, board size change, gender diversity change, firm size change and return on equity change, had significant relationships with the changes in credit agencies' ratings. Therefore, the model was significant with an adjusted R-square of 0.23 ($p < .001$).

Table 13

Correlations and Descriptive Statistics for Security Analysts' Ratings Change

Variables	1	2	3	4	5	6	7	8	9	<i>M</i>	<i>SD</i>
1. Security Analysts' Ratings Change										0.03	0.60
2. CEO Turnover	-0.05									0.27	0.45
3. CEO Duality Change	-0.04	0.02								0.24	0.43
4. Board Size Change	0.04	0.05	0.15*							-0.56	2.50
5. Board Independence Change	0.13	0.05	-0.04	0.02						0.03	0.09
6. Board Gender Diversity Change	0.09	0.07	-0.10*	-0.06	-0.21					0.02	0.07
7. Firm Size Change	0.01	0.08	0.14	-0.13	-0.15	-0.17**				0.15	0.33
8. Firm Leverage Change	-0.08	0.02	-0.12	0.04	0.10	-0.17**	-0.18*			-0.02	0.07
9. Firm Return on Assets Change	0.12*	0.21**	0.01	0.01	0.17	0.05	-0.16	0.33**		-0.01	0.08
10. Firm Return on Equity Change	0.18*	0.11	0.01	-0.08	-0.22	0.11	0.25*	0.00	-0.16*	0.04	0.57

Note: $N=103$

* $p < .05$ (1-tailed)

** $p < .01$ (1-tailed)

Table 14

Correlations and Descriptive Statistics for Credit Agencies' Ratings Change

Variables	1	2	3	4	5	6	7	8	<i>M</i>	<i>SD</i>
1. Credit Agencies Ratings Change									-0.18	1.18
2. Director Turnover	-0.03								0.32	0.26
3. CEO Duality Change	0.00	0.10							0.23	0.42
4. Board Size Change	0.20*	-0.08	-0.11						-0.66	2.79
5. Board Independence Change	0.09	-0.06	0.00	-0.02					0.02	0.09
6. Board Gender Diversity Change	0.29**	0.11	0.18*	0.03	0.33**				0.02	0.08
7. Firm Size Change	0.29**	-0.11	0.07	0.06	0.25**	0.33**			0.18	0.30
8. Firm Leverage Change	-0.23*	0.11	0.07	-0.09	-0.10	0.00	-0.01		-0.01	0.08
9. Firm Return on Equity Change	0.40**	-0.06	0.01	0.04	0.23*	0.17*	0.08	-0.47**	-0.03	0.31

Note: $N=97$

* $p < .05$ (1-tailed)

** $p < .01$ (1-tailed)

Table 15

Results of Linear Regression Analysis for Market Intermediaries' Ratings Change

Variables	Hypothesis 4 <i>DV = Security Analysts' Ratings Change</i>	Hypothesis 5 <i>DV = Credit Agencies' Ratings Change</i>
	<i>B</i>	<i>B</i>
CEO Duality Change	(0.05)	(0.10)
Board Size Change	0.00	0.07†
Board Independence Change	0.73	(1.41)
Board Gender Diversity Change	0.99	3.01†
Firm Size Change	(0.03)	0.86*
Leverage Change	(0.25)	(0.89)
Return on Assets Change	1.23	
Return on Equity Change	0.15	1.31**
Constant	0.01	(0.27)
CEO Turnover	0.03	
Director Turnover		0.05
R-Square (Adjusted)	-0.01	0.23***
<i>n</i>	103	97

† $p < .10$ * $p < .05$ ** $p < .01$ *** $p < .001$ **4.5 Post Hoc Analyses**

To provide additional insights related to disclosures of potential criminal activity, several additional analyses were performed on the director-related datasets. Some of the additional analyses applied to the full dataset of directors from event and control firms; some were only

applicable to the event firms. For the individual director turnover dataset, the event-only sample was 1,411 observations. At the firm level, the sample size was 147 event firms.

To begin, additional control variables were examined at the individual and the firm levels. First, an individual-level variable for current board directorships, as of the period prior to the disclosure event, was added. This variable is a numerical count of public, private, and other directorships. Next, a variable for multiple disclosures was added. This binary variable was coded 1 for firms, or directors on the boards of firms, that had multiple disclosures in a single tracking period and 0 for firms with a single disclosure and for control group firms.

Third, a binary variable for independence was added to examine whether turnover rates differed by director type, either affiliated (coded 0) or independent (coded 1). Fourth, a binary variable to denote audit committee membership was used to examine whether turnover rates differed between directors that do not serve on this key committee (coded 0) and those that do (coded 1). The variables for director independence and audit committee membership were examined using the base model and the expanded model with criminal activity type variables.

The type of criminal activity was examined using a set of binary variables. This typology for federal-level corporate crime is based on the work of Alexander and Cohen (2015) who identified eight categories, which are: government fraud, bribery, anti-trust, import/export or immigration, money laundering or tax evasion, environmental/safety, healthcare/food and drug, and all other. Each category was represented by a dummy variable. Event firms, and their directors, either have a value of 1 in at least one category based on the information contained in each firm's disclosure text while control group firms have values of 0 in all eight dummy variables. As prior studies of changes in corporate governance have shown (e.g. Aharony et al., 2015), situational factors can affect the type of firm-level governance changes that occur

following significant events. In the context of corporate criminal misconduct, it was reasonable to expect that the existence of multiple potential instances of corporate misconduct and/or the type of criminal activity could be associated with differences in director turnover rates.

Table 16 reports the results of the analysis using the current board directorships variable. The addition of this control variable minimally improved the overall explanatory power of the model, with increases in the Cox & Snell and the Nagelkerke values. These values increased to 7.4 and 10.3 percent from 6.9 and 9.6 percent, respectively. The new model correctly predicted 94.4 percent of the directors that did not turn over in the tracking period and 20.5 percent of those that did, up from 17.2 percent in the base model, leading to an overall prediction accuracy of 70.1 percent. The odds ratio for the disclosure event dummy variable decreased slightly from a rate of about 55 percent more likely to turn over to 51 percent (odds ratio = 1.51, $p < .01$). The current board directorships variable was significant and demonstrated a negative relationship with director turnover (odds ratio = 0.93; $p < .001$).

Table 17 reports the results of the analysis using the multiple disclosures variable (126 items in the 2,758 sample size). The addition of this control variable minimally improved the overall explanatory power of the model, with increases in the Cox & Snell and the Nagelkerke values. These values increased to 7.2 and 10.0 percent from 6.9 and 9.6 percent, respectively. The new model correctly predicted 94.5 percent of the directors that did not turn over in the tracking period and 17.7 percent of those that did, up from 17.2 percent in the base model, leading to an overall prediction accuracy of 69.3 percent. The odds ratio for the disclosure event dummy variable decreased slightly from a rate of about 55 percent more likely to turn over to 49 percent (odds ratio = 1.49, $p < .01$). The multiple disclosures variable was significant and demonstrated a positive relationship with director turnover (odds ratio = 1.78; $p < .01$).

Table 16

Results of Logistic Regression Analysis with Current Board Directorships

Variables	<i>Exp (B)</i>	95% C.I.	
		Lower	Upper
Disclosure	1.51**	1.159	1.972
Board Directorships	0.93***	0.897	0.965
Age (ln)	11.94***	5.899	24.171
Tenure (ln)	1.36***	1.223	1.501
CEO Duality	0.64***	0.527	0.773
Block-holders >5%	1.03	0.709	1.480
Board Independence	0.96	0.299	3.112
Firm Size (ln Assets)	1.06*	1.014	1.107
Leverage	1.76*	1.104	2.794
Return on Assets	0.18***	0.066	0.500
Return on Equity	1.10	0.987	1.224
Constant	0.00***	-	-
X^2	33.22***		
<i>n</i>	2,758		

* $p < .05$ ** $p < .01$ *** $p < .001$

Table 18 summarizes the number of items coded as 1 for each criminal activity type variable and each's respective percentage of the full director sample of 2,758 observations. Five of the eight criminal activity types, that is, government fraud, bribery, anti-trust, import/export or immigration, and all other, occurred in multiple industries. The remaining three types, money laundering or tax evasion, environmental/safety, and healthcare/food and drug, have more limited industry occurrences, respectively financial services, oil and gas, and healthcare.

Table 17

Results of Logistic Regression Analysis with Multiple Disclosures

Variables	<i>Exp (B)</i>	95% C.I.	
		Lower	Upper
Disclosure	1.49**	1.136	1.941
Multiple Disclosures	1.78**	1.200	2.646
Age (ln)	11.80***	5.834	23.851
Tenure (ln)	1.37***	1.235	1.515
CEO Duality	0.61***	0.504	0.740
Block-holders >5%	0.97	0.673	1.399
Board Independence	0.73	0.226	2.371
Firm Size (ln Assets)	1.05*	1.001	1.093
Leverage	1.78*	1.119	2.833
Return on Assets	0.17***	0.059	0.457
Return on Equity	1.09	0.982	1.218
Constant	0.00***	-	-
X^2	27.61***		
<i>n</i>	2,758		

* $p < .05$ ** $p < .01$ *** $p < .001$

Table 19 reports the results of the analysis using the criminal activity type variables. This set of eight binary variables replaced the binary disclosure event variable following the method of Aharony et al. (2015). The addition of these contextual predictor variables improved the overall explanatory power of the model, with increases in the Cox & Snell and the Nagelkerke values. These values increased to 10.3 and 14.3 percent from 6.9 and 9.6 percent, respectively. The new model correctly predicted 92.8 percent of the directors that did not turn over in the

tracking period and 25.7 percent of those that did, up from 17.2 percent in the base model, leading to an overall prediction accuracy of 70.7 percent. The odds ratio for the disclosure event dummy variable in the base model indicated that directors were about 55 percent more likely to turn over following an event (odds ratio = 1.55, $p < .01$). In the expanded model with the criminal activity type variables, six of the eight variables demonstrated positive relationships with director turnover. Three of the six were significant: environmental/safety (odds ratio = 3.21, $p < .001$), governmental fraud (odds ratio = 1.82, $p < .05$), and money laundering/tax evasion (odds ratio = 4.00, $p < .001$). Of the two variables that demonstrated negative relationships with director turnover, only one was statistically significant: anti-trust (odds ratio = 0.27; $p < .05$).

Table 18

Counts and Percentages of Criminal Activity Types in the Board Director Dataset

Criminal Activity Type	Count	Percentage
Bribery	405	14.7%
Environmental or Safety	327	11.9%
Import/Export or Immigration	43	1.6%
Government Fraud	109	4.0%
Healthcare or Food and Drug	306	11.1%
Money Laundering or Tax Evasion	46	1.7%
Anti-Trust	43	1.6%
All Other	235	8.5%
<i>n</i>	2,758	100.0%

The odds ratios on the three criminal activity variables with significant positive relationships with director turnover had higher rates of turnover than did the base disclosure variable indicating that the two variables with negative relationships, which were healthcare/food and drug and anti-trust, impacted the blended base rate of director turnover.

Table 19

Results of Logistic Regression Analysis with Criminal Activity Type Variables

Variables	<i>Exp (B)</i>	95% C.I.	
		Lower	Upper
CA Bribery	1.25	0.924	1.696
CA Environmental / Safety	3.21***	2.334	4.427
CA Import/Export or Immigration	1.38	0.671	2.832
CA Governmental Fraud	1.82*	1.077	3.060
CA Healthcare / Food & Drug	0.78	0.557	1.104
CA Money Laundering / Tax	4.00***	2.057	7.783
CA Anti-Trust	0.27*	0.101	0.735
CA All Other	1.32	0.894	1.944
Age (ln)	12.71***	6.215	25.969
Tenure (ln)	1.39***	1.253	1.547
CEO Duality	0.57***	0.466	0.692
Block-holders >5%	0.98	0.659	1.463
Board Independence	0.87	0.264	2.895
Firm Size (ln Assets)	1.05*	1.002	1.103
Leverage	1.65*	1.047	2.614
Return on Assets	0.21**	0.072	0.589
Return on Equity	1.07	0.978	1.174
Constant	0.00***	-	-
X^2	25.97**		
<i>N</i>	2,758		

* $p < .05$ ** $p < .01$ *** $p < .001$

The next sets of analyses compare the base model with a single disclosure event dummy variable to the expanded model with the eight criminal activity variables using a panel method to

examine the differences between affiliated and independent directors and between directors serving on the audit committee and those who do not.

Table 20

Results of Logistic Regression Analysis with Affiliated and Independent Panels

Variables	Affiliated Directors		Independent Directors	
	<i>Exp (B)</i>	<i>Exp (B)</i>	<i>Exp (B)</i>	<i>Exp (B)</i>
Disclosure	0.70		1.69***	
CA Bribery		0.35*		1.49*
CA Environmental / Safety		0.60		3.95***
CA Import/Export or Immigration		>100		0.76
CA Governmental Fraud		1.57		1.21
CA Healthcare / Food & Drug		0.50		0.79
CA Money Laundering / Tax		0.53		5.64***
CA Anti-Trust		0.30		0.22*
CA All Other		0.83		1.37
Age (ln)	15.32**	17.60**	22.49***	21.27***
Tenure (ln)	0.78	0.78	1.37***	1.44***
CEO Duality	0.37**	0.42*	0.68***	0.62***
Block-holders >5%	1.35	1.20	0.74	0.80
Board Independence	0.07	0.21	2.27	2.17
Firm Size (ln Assets)	1.14	1.08	1.04	1.05
Leverage	0.45	0.39	1.84*	1.72*
Return on Assets	0.05	0.25	0.22**	0.22**
Return on Equity	1.34	1.18	1.11	1.08
Constant	0.00*	0.00*	0.00***	0.00***
X^2	9.97	11.60	40.05***	37.31***
<i>N</i>	295	295	2,463	2,463

* $p < .05$

** $p < .01$

*** $p < .001$

Table 20 reports the results of the analyses comparing affiliated and independent directors. Affiliated directors are not employees of a company but have other potential conflicts of interest such as interlocking board directorships that may affect their independent status. For this subset of the board directors, which was only 8.5% of the total director sample population, neither the base model nor the expanded model with the criminal activity types were significant. Overall, the pattern of odds ratios across all predictor and control variables demonstrated predominately negative relationships with turnover for this group.

For the independent directors, however, both models overall were significant, and each improved the overall explanatory power of the models, with increases in the Cox & Snell, the Nagelkerke, and other values. The odds ratio and significance level for the disclosure event dummy variable increased (odds ratio = 1.69, $p < .001$) versus the base model (odds ratio = 1.55, $p < .01$). In the expanded model with the criminal activity type variables, five of the eight variables demonstrated positive relationships with director turnover. Three of the five were statistically significant: bribery (odds ratio = 1.49, $p < .05$), environmental/safety (odds ratio = 3.95, $p < .001$), and money laundering/tax evasion (odds ratio = 5.64, $p < .001$). Of the three variables that demonstrated negative relationships with director turnover, only one was significant: anti-trust (odds ratio = 0.22; $p < .05$).

Table 21 reports the results of the analyses comparing board director turnover rates based on whether they were audit committee members. Audit committee members were 1,248 of 2,758 directors or 45.3% of the sample population. For those board directors who were not audit committee members (54.7% of the sample), as with the affiliated directors panel, neither the base model nor the expanded model with the criminal activity types were significant. Only a limited number of variables such as age and CEO duality demonstrated significant relationships.

Table 21

Results of Logistic Regression Analysis with Audit Committee Panels

Variables	Non-Audit Committee		Audit Committee	
	<i>Exp (B)</i>	<i>Exp (B)</i>	<i>Exp (B)</i>	<i>Exp (B)</i>
Disclosure	1.05		2.51***	
CA Bribery		0.35*		2.06**
CA Environmental / Safety		0.60		5.96***
CA Import/Export or Immigration		>100		3.17*
CA Governmental Fraud		1.57		3.26**
CA Healthcare / Food & Drug		0.50		0.85
CA Money Laundering / Tax		0.53		5.74***
CA Anti-Trust		0.30		0.22
CA All Other		0.83		2.28**
Age (ln)	7.53***	17.60**	30.62***	29.55***
Tenure (ln)	1.32***	0.78	1.38***	1.45***
CEO Duality	0.63***	0.42*	0.60***	0.51***
Block-holders >5%	1.37	1.20	0.61	0.57
Board Independence	0.57	0.21	1.18	1.33
Firm Size (ln Assets)	1.07*	1.08	1.02	1.01
Leverage	1.13	0.39	2.99*	2.92**
Return on Assets	0.14**	0.25	0.24	0.24
Return on Equity	1.10	1.18	1.10	1.07
Constant	0.00***	0.00***	0.00***	0.00***
X ²	11.02	11.60	29.15***	20.69**
N	1,510	1,510	1,248	1,248

* $p < .05$ ** $p < .01$ *** $p < .001$

For audit committee members, however, both models overall were significant, and each had improved explanatory power with increases in the Cox & Snell, the Nagelkerke, and other values. The odds ratio for the disclosure event variable increased (odds ratio = 2.51, $p < .001$) versus the base model (odds ratio = 1.55, $p < .01$). In the expanded model with the criminal activity type variables, six of the eight variables demonstrated positive relationships with director turnover. All were significant: bribery (odds ratio = 2.06, $p < .01$), environmental/safety (odds ratio = 5.96, $p < .001$), import/export or immigration (odds ratio = 3.17, $p < .05$), governmental fraud (odds ratio = 3.26, $p < .01$), money laundering/tax evasion (odds ratio = 5.74, $p < .001$), and all other (odds ratio = 2.28, $p < .01$). Neither of the two variables that demonstrated negative relationships with turnover, which were healthcare/food and drug and anti-trust, were significant. These increases in the odds of turnover for audit committee members versus other groups is not surprising given that several of the criminal activity types are financial in nature such as bribery and money laundering/tax evasion. The audit committee models also demonstrated higher turnover rates related to firm leverage than any of the other models.

The final post hoc analysis used the firm-level dataset from Hypotheses 4 and 5 and included a new multi-category variable for settlement type (NPA, DPA, or TPA). The analysis examined whether CEO and board turnover are associated with the type of regulatory settlement as might be expected based on item 7 from the list of factors that prosecutors can consider when selecting a resolution mechanism (refer to Table 1 in chapter 2). Multinomial logistic regression was the analysis technique as the dependent variable for settlement type had three categories. Control variables were the types of criminal activity and whether the event was self-reported.

The overall model was significant ($X^2 = 75.41$; $p < .001$) with alternative r-square values of 23.4, 40.1 and 45.2 percent (respectively, McFadden, Cox & Snell, and Nagelkerke metrics).

However, neither CEO nor board turnover had a significant relationship with settlement type. The model's reference category was set as the TPA settlement, so the odds ratios in Table 22 indicate the probability of receiving an NPA or DPA settlement instead of a TPA.

Table 22

Results of Logistic Regression Analysis for Settlement Type

Variables	DV = NPA Settlement Type			DV = DPA Settlement Type		
	<i>Exp (B)</i>	95% C.I.		<i>Exp (B)</i>	95% C.I.	
		Lower	Upper		Lower	Upper
CEO Turnover	2.32	0.804	6.690	1.13	0.370	3.456
Director Turnover	0.65	0.124	3.436	0.46	0.082	2.567
Environmental/Safety	0.01***	0.001	0.125	0.09**	0.018	0.478
Healthcare/Food and Drug	0.27*	0.080	0.921	0.36	0.099	1.340
Bribery	1.80	0.458	7.068	4.76*	1.206	18.794
Export/Import or Immigration	0.64	0.045	9.152	1.44	0.099	21.043
Governmental Fraud	0.73	0.096	5.570	3.22	0.506	20.492
Money Laundering/Tax Ev	0.00	0.000	0.000	0.70	0.087	5.664
Anti-Trust	0.45	0.049	4.021	0.00	0.000	0.000
Self-Report	1.02	0.185	5.591	1.46	0.258	8.305
X^2	75.34***			75.34***		
<i>n</i>	147			147		

* $p < .05$

** $p < .01$

*** $p < .001$

For the NPA settlement type, if the criminal activity was related to environmental/safety or healthcare/food & drug, the odds of receiving an NPA instead of a TPA were reduced. For the DPA settlement type, an environmental/safety violation was associated with lower odds of a DPA while a bribery-related violation was associated with a 4.76 increase in the odds of a DPA settlement. None of the other variables in either model were significant.

CHAPTER 5

DISCUSSION, MANAGERIAL IMPLICATIONS, AND CONCLUSION

This study, in its examination of the two- to three-year period following disclosures of potential criminal misconduct, that is, contingent liabilities requiring disclosure under GAAP, found results that were largely inconsistent with predictions. Although an increased rate of director turnover was supported following such disclosure events, the increased rate of CEO turnover was not statistically significant. News media coverage, in 59% of the events, was minimal or non-existent in the 90-days immediately following disclosure, and there were no significant relationships between the amount of coverage and the magnitude of board or the velocity of CEO turnover. Additionally, the signal receiving aspect of the study was not supported as both CEO and board turnover were not significantly related to the changes in market intermediaries' ratings (security analysts and credit agencies, respectively) following disclosure events. However, post hoc analyses using board director characteristics such as the number of other board directorships, independence status, and audit committee membership as well as the types of criminal activity did lead to additional insights regarding the post-event board director turnover rates and the importance of examining the contexts in which corporate governance change is expected.

5.1 Limitations of the Study

Although this study builds on the body of academic literature by examining a violation of stakeholder expectations different from financial restatements, there are several limitations that exist due to the sample and study design. First, the use of a U.S. publicly traded company sample

limits the generalizability of the results. This type of sample is frequently used in organizational research because of the public disclosure requirements that apply to such firms and the market environment that enables tracking of certain stakeholder responses to disclosures. However, because different (and/or fewer) requirements apply in other jurisdictions or to other types of organizations (e.g., private or nonprofit), the study's results cannot be broadly generalized.

The use of archival data also has implications. Although the strategy of a longitudinal field study maximizes realism as behaviors are observed and measured within their natural system, it limits control over the variables. That is, factors outside those being measured can affect the outcomes. Research techniques such as the use of a control sample and pre- and post-event measurements helped offset this limitation and created quasi-experimental designs for several of the hypotheses.

Finally, despite the longitudinal study design, this study only examines behaviors that occur in the two- to three-year window following a disclosure of potential criminal liability. Given the extended timeline and scope of activities surrounding such events (beginning with the criminal activity itself to public disclosure then to resolution via the court system or out-of-court contractual settlements), the full effect of these incidents on firms and their internal and external stakeholders has not been captured by examining only a limited set of circumstances around board director and CEO turnover following disclosures.

5.2 Contributions to Theory

From the perspective of punctuated equilibrium theory, this study hypothesized that a public disclosure of potential criminal liability would function as a trigger of organizational change for two primary reasons. First, the disclosure should “activate” influential outsiders including regulators and market intermediaries such as credit rating agencies who play a

monitoring role in the market environment. Next, because incidents of criminal misconduct suggest failures in internal monitoring and oversight, their disclosure could result in perception shifts around the effectiveness and adequacy of current controls and processes. The study's findings were mixed in this regard – supporting disclosure events as triggers of change at the board level but not at the CEO level.

However, prior studies using the lens of punctuated equilibrium theory (Gersick, 1991; Sabherwal et al., 2001) found that perceptions around factors such as temporal proximity (i.e., available time to implement change) and importance of the issue (e.g., type of criminal violation and coverage by the news media and/or market intermediaries) can affect the timing and amount of change that occurs following trigger events. Given that more than half of disclosure events in this study's sample initiated minimal, immediate stakeholder reactions in the form of news media coverage and that corporate criminal misconduct typically takes years to investigate and resolve, one possible explanation is that there was a low perceived need for firms to react quickly, which is in line with the perceptual aspects of punctuated equilibrium theory.

From an ex post settling up perspective, increased rates of board director turnover following certain types of criminal activity and for specific subsets of directors such as audit committee members and independent directors overall suggest that there are labor market consequences at the individual-level for those deemed to have responsibility for firm-level monitoring and oversight. That some types of criminal activity, specifically healthcare/food and drug and anti-trust, have negative relationships with director turnover suggest that certain types of violations like anti-trust are not necessarily perceived as negative situations for firms. Such perspectives could also be industry-based such as healthcare firm boards accepting some amount of organizational misconduct as the norm and/or that directors do not perceive these types of

issues as under their control but as operational issues for executive oversight. Regulators and market intermediaries may need to be concerned about such results and their implications for longer term regulatory compliance.

5.3 Contributions to Practice

This study makes several contributions to practice – from the perspective of firms as well as the perspective of key external stakeholders. First, the managers of firms who are faced with potential criminal liability can expect a higher proportion of director turnover in the years following a disclosure event. Whether this increased rate is driven by individual motivators or by firms seeking to “clean house” (Marcel & Cowen, 2014) following a violation of stakeholder expectations, the turnover provides an opportunity to add or change capabilities at the board level if firms are aware of and plan for the transition.

Next, the results of this study did not support that security analysts, credit agencies, or regulators use director and CEO turnover as a signal of remediation in the context of criminal misconduct. That is, firms should not expect that such turnover will influence these specific stakeholder groups in their respective post-event evaluations. Therefore, firms will need to consider alternative actions and strategies to rebuild legitimacy with these stakeholder groups.

From the perspective of the external stakeholders, specifically credit rating agencies and regulators, the lack of a significant relationship between CEO turnover and post-event ratings is troubling. For example, in a Special Comment paper issued by Moody’s (2007) that addressed credit ratings changes following DOJ criminal investigations (and generally prior to settlement), Moody’s emphasized that factors such as the quality of board oversight, key person risk (i.e., top management), and the pervasiveness of compliance weaknesses, along with the potential financial impacts, are considered in evaluating a firm’s credit quality. However, this study found

no statistical support that changes in corporate governance in such contexts were related to changes (or lack thereof) in credit ratings. This result suggests that governance factors continue to be less important than financial factors (e.g., in hypothesis 5 testing, the change in return on equity had a significant relationship with change in credit ratings while board turnover did not). This result also supports findings from a 2018 SEC summary of the credit ratings environment.

The SEC monitors and licenses credit rating agencies (called nationally recognized statistical rating organizations or NRSROs). As part of its regulatory oversight, the SEC routinely tests NRSRO operational practices. The most recent summary of such testing, from December 2018, reported that NRSROs do, in certain instances, experience issues with “properly apply[ing] or adhere[ing] to their methodologies, criteria, or policies and procedures for determining ratings” (Staff of the U.S. Securities and Exchange Commission, 2018, p. 11). This demonstrates that opportunities to improve the monitoring of publicly traded firms continue to exist despite enhanced regulatory efforts (such as SOX in the early 2000s).

5.4 Directions for Future Research

Given the types of remediation activities mandated in the D/NPAs related to this study’s sample, there are opportunities to examine organizational legitimacy and signaling from the perspective of other governance changes (e.g., new board committees such as compliance or new management positions such as chief compliance officer). Additionally, future research can examine whether there are longer term differences in performance, both financial and operational, in the sample firms that experienced higher levels of board and/or CEO turnover, either versus the control firms or from a pre- and post-event perspective.

At the individual and board levels, there are also opportunities for future research. One aspect of ex post setting up research that has been examined in other contexts such as financial

restatements is whether an individual's directorships at other firms are affected by association with an event firm. A similar perspective could be examined in relation to directors who served on the boards of firms with corporate criminal misconduct events. Additionally, the quality of board monitoring and oversight could be examined using individual director characteristics such as expertise and experience pre- and post-event consolidated at the overall board level.

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APPENDIX A

SUMMARY OF VARIABLES

Table A.1

Summary of Variable Information

Variable Information					
Name	Category	Level	Time	SPSS	Definition
Age	Control	Indiv	t-1 or hire	AGE	The natural log of each individual's age.
Block-holder Ownership	Control	Firm	t-1	BLOCKHLD	A value from 0 to 1 that indicates the percentage of equity owned by outside block-holders >5%.
Board Gender Diversity Change	Control	Firm	t-1 to t+2	GEN_DIVCH	Change in the proportion of female independent board directors.
Board Independence	Control	Firm	t-1	BOD_INDP	A value from 0 to 1 that indicates the proportion of independent board directors.
Board Independence Change	Control	Firm	t-1 to t+2	BDIND_CH	Change in the proportion of independent board directors.
Board Size Change	Control	Firm	t-1 to t+2	BDSZ_CH	Change in the natural log of firm size.
Board Turnover	Independent Dependent (H3a Dep; H5 Indep)	Firm	t-1 to t+2	BOD_TURN	A value from 0 to 1 that indicates the proportion of board directors who turned over during the two to three fiscal year period following a disclosure event.

Variable Information					
Name	Category	Level	Time	SPSS	Definition
CEO Duality	Control	Firm	t-1	CEO_CHR	Equals 1 if the CEO also serves as the board chair; otherwise 0.
CEO Duality Change	Control	Firm	t-1 to t+2	CEO_CHRCH	Equals 1 if the CEO duality status changed.
CEO Turnover	Independent Dependent (H2 Dep; H4 Indep)	Indiv Firm	t0 to t+2	CEO_EXIT	For H2, equals 1 for a CEO who experienced turnover in the two-year period following a disclosure event; otherwise 0. Same data used for each event firm in H4.
CEO Exit Speed	Independent	Firm	t0 to t+2	CEOEXTVEL	A value from >0 to 24 that indicates the time to exit in months during the two-year period following a disclosure event; a value of 24 indicates no CEO exit in the period.
Time to CEO Exit	Dependent (H2 Time)	Firm	t0 to t+2	TTCEOEXIT	Values are reversed (24 – x) from CEO exit speed so that higher values represent shorter times to exit. For example, a value of 24 indicates exit in month 1 following an event while a value of 0 indicates no CEO exit in the period.
Credit Agencies' Rating Change	Dependent	Firm	t-1 to t+2	CA_RTCHG	Change in the ratings issued by credit rating agencies for disclosure event firms.
Director Turnover	Dependent	Indiv	t0 to t+2	DIR_TURN	Equals 1 for board directors who experienced turnover in the two- to three-year period following a disclosure event; otherwise 0.
Disclosure	Independent	Firm	t0	DISCLOSE	Equals 1 for firms that disclosed potential federal criminal liability; otherwise 0 (control firms).
Firm Size	Control	Firm	t-1	FIRM_SZ	The natural log of the total assets of a firm.

Variable Information					
Name	Category	Level	Time	SPSS	Definition
Firm Size Change	Control	Firm	t-1 to t+2	FIRM_SZCH	Change in the firm size.
Leverage	Control	Firm	t-1	LEVERAGE	Equals total debt/total assets.
Leverage Change	Control	Firm	t-1 to t+2	LVRG_CH	Change in the leverage ratio.
Media Coverage	Independent	Firm	90 days	MEDIACOV	A count of the number of articles and reports appearing in media sources in the 90-day period immediately following a disclosure event.
Return on Assets	Control	Firm	t-1	ROA	Equals net income/total assets.
ROA Change	Control	Firm	t-1 to t+2	ROA_CH	Change in the return on assets.
Return on Equity	Control	Firm	t-1	ROE	Equals net income/total stockholders' equity.
ROE Change	Control	Firm	t-1 to t+2	ROE_CH	Change in the return on equity.
Security Analysts' Rating Change	Dependent	Firm	t-1 to t+2	SA_RTCHG	Change in the ratings issued by security analysts for disclosure event firms.
Tenure	Control	Indiv	t-1 or hire	TENURE	Natural log of an individual's length of service in role.