Economic Event Characteristics and Disclosure Choice: Evidence from Influential Negative Economic Events

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ABSTRACT

This study examines the interplay between economic event characteristics and disclosure choices. We identify influential negative economic events that are readily observable by market participants (e.g., major industrial accident, natural catastrophe) and examine firms' subsequent disclosure choices. We present evidence that firms are 10 times less likely to issue a disclosure following events for which they might be blamed for causing relative to events for which they are likely to be perceived as blameless. We also show this blame-blameless asymmetric disclosure choice is more pronounced for firms with greater dependence on a positive reputation, such as frequent public debt issuers, NYSE firms, and profitable firms. These results are robust to controlling for event materiality, media attention, and firm characteristics. The results shed light on an event characteristic firms consider when making disclosure choices about individual economic events. Moreover, our focus on economic events highlights how samples based on disclosure events are more likely to contain relatively blameless rather than blamed events.

Keywords: voluntary disclosure, blame, litigation, reputation

JEL Classification: G14, G18, K22, M41, M48

1. Introduction

A vast accounting literature examines company disclosure events and provides evidence that firm and industry characteristics, among others, affect disclosure choices (see Beyer, Cohen, Lys, and Walther, 2010 for a review). Yet, whether and how the characteristics of the underlying economic events themselves influence disclosure choices has received much less attention. In this paper, we examine the interplay between event characteristics and disclosure choices regarding influential negative economic events that are first announced by a third-party (not the firm itself) and readily observable to market participants. This focus brings fresh insights into whether firms adopt differential disclosure practices when facing different types of economic events.

While GAAP, SEC rules, and securities laws require firms to disclose material economic events, the conceptual definition of materiality provides firms with a degree of discretion over which events require disclosure.[1] We argue that, in the wake of an influential negative economic event, firms consider factors in addition to materiality when choosing whether or not to issue a disclosure. Our main prediction is that managers are less likely to disclose information regarding negative economic events for which the firm might be "blamed" for causing (i.e., oil spill caused by employee error) relative to events for which they are relatively blameless (i.e., an oil spill caused by a hurricane). Our prediction follows from two broad streams of literature in management and law that argue the extent of potential blame is a fundamental force that shapes the disclosure

[1] For example, the FASB notes that "the Board cannot specify a uniform quantitative threshold for materiality or predetermine what could be material in a particular situation" (FASB SFAS No. 8 2010). The Supreme Court also highlights that materiality "is inherently fact-specific" (Matrixx Initiatives, Inc. v. Siracusano, No. 09-1156, 2011 WL 977060, U.S. Mar. 22, 2011). In addition, the SEC rules reinforce the notion that firms have a degree of discretion over which events to disclose via Form 8-K, as 8-K Item 8.01 states that "the registrant may, at its option, disclose under this Item 8.01 any events, with respect to which information is not otherwise called for by this form that the registrant deems of importance to security holders."(SEC 2004).

of negative events. The research asserts that the likelihood a firm could be blamed for a negative event increases the firm's reputation and litigation risks.

We examine our main prediction regarding the interplay between the perceived level of blame for an event's occurrence and subsequent disclosure choices by examining a sample of 292 influential negative economic events that are publicly observable.[2] The restriction to only negative events allows us to examine heterogeneous event characteristics that are not influenced by the asymmetric disclosure incentive between positive and negative news (e.g., Skinner, 1994; Kothari, Shu, and Wysocki, 2009). Our focus on publicly observable events instead of firms' self-reported events mitigates any potential selection bias that might be present due to firms' opportunistic disclosure behavior, such as reporting favorable events along with negative earnings news (Baginski, Hassell, and Kimbrough, 2004; Bliss, Partnoy, and Furchtgott, 2016). Moreover, our sample of *heterogeneous* economic events provides greater external validity vis-à-vis studies that focus on a specific type of event, such as Superfund firms (Barth, McNichols, and Wilson, 1997), product recalls (Lee, Hutton, and Shu, 2015), or firms experiencing a natural disaster or fire (Michels, 2016).

Our dependent variable captures whether a firm provides disclosures about the specific economic event identified. We read through Edgar filings and press releases for the 30 days following each event to identify event-specific disclosures.[3] We use three tests to assess the relation between the perceived level of blame at the time a third party announces a negative event and firms' subsequent disclosure choices. First, we focus on the subset of negative events that are

[2] We discuss our sample formation process in Section 3. Our sample includes, for example, severe casualty accidents reported by National Transportation Safety Board and Federal Aviation Administration, large-scale oil spills reported by Bureau of Safety and Environmental Enforcement (EPA), investor class actions filed in the courts, and white collar crimes highlighted by the FBI.

[3] For example, after the Tōhoku earthquake and tsunami occurred on March 11, 2011, Texas Instruments issued a press release that detailed the location of their affected facilities, how long their operations will be suspended, and the percentage of revenue affected by the event on March 14.

securities class action cases first announced by a third-party and not by the firm itself. We restrict the sample to only those cases that claim overly optimistic performance guidance to hold constant the nature of litigation. We then split the sample into those lawsuits that are subsequently non-dismissed and settled (blamed) versus those that are dismissed (blameless). We examine the disclosure choice immediately after the announcement of the securities litigation and use this ex post classification of blamed versus blameless to assess whether the extent of perceived blame at the time the class action is announced relates to disclosure behavior.

We find evidence of a relation between the perceived level of blame at the time the lawsuit is announced and the firm's subsequent disclosure choice. In particular, the likelihood a firm issues at least one disclosure following the filing of a blameless lawsuit is *more than 10 times greater* than that for a blamed lawsuit. These results are robust to controlling for event materiality, media attention, and firm/industry characteristics.

In our second test, we define our proxy based on suddenly occurring major industrial accidents caused by internal or external forces that are first announced by third parties (not by the firm itself). Internal forces are, for example, human error (blamed), while external forces are events such as natural disasters (blameless). Again, we find that the perceived level of blame at the time the event occurred relates to the firm's propensity to disclose. The likelihood of a firm issuing at least one disclosure after an externally-caused event is *10 times greater* than after an internally-caused event.

Our third test is motivated by studies that argue firms are more likely to be blamed for events for which it might have ignored early warning signs (e.g., white collar crime, investor class actions) than for those that occur suddenly (e.g., industrial accident, oil spill). Consistent with our prior results, we find that the perceived level of blame at the time the event is announced relates

to the firm's propensity to disclose. The likelihood of a firm issuing at least one disclosure after a suddenly occurring event is *more than 10 times greater* than after a smoldering event. These three tests present robust evidence that the extent of perceived blame is an important factor that shapes the disclosure of negative events.

We further examine whether the asymmetric disclosure behavior for blamed versus blameless events is associated with the firm's dependence on a positive reputation based on three proxies. First, firms that frequently rely on external markets to raise capital are likely to benefit more from asymmetric disclosure of blamed versus blameless events because their external capital providers potentially rely on a positive reputation to assess firm risk and determine their required cost of capital. Second, prior studies suggest that firms that seek to increase their visibility and reputation among investors choose to list on the NYSE (Cowan, Carter, Dark, and Singh, 1992), suggesting that NYSE-listed firms concern more about their reputation and likely benefit more from the asymmetric disclosure. Lastly, more profitable firms have greater reputation risk as prior research suggests that reputation is important in maintaining firm profitability (Roberts and Dowling, 1997). This suggests that profitable firms are more likely to benefit from asymmetric disclosure of blamed versus blameless events to maintain their reputation and profitability. Consistent with these expectations, we find that frequent public debt issuers and firms on the NYSE have greater blameless-blame asymmetric disclosure behavior. Similarly, we find that the asymmetry in disclosure behavior for blamed versus blameless events is positively associated with profitability and more pronounced for profit firms than loss firms.

Our study makes three contributions to accounting research. First, we identify a common event characteristic—blamed versus blameless events—that explains variation in managers' disclosure choices beyond the firm and industry characteristics established in prior studies. This

evidence provides fresh insights into the factors managers consider when making disclosure decisions about an individual economic event (Berger, 2011).

Second, our study documents that not all influential negative events are subsequently disclosed and finds evidence that blamed events are less likely to be disclosed than blameless events. This evidence has implications for studies that measure reporting quality based on the number of 8-K filings or the frequency of press releases, which could partially capture the different nature of economic events the firm experiences vis-à-vis the level of transparency (Balakrishnan, Core, and Verdi, 2014; Burks, Cuny, Gerakos, and Granja, 2016; Bird, Karolyi, and Ruchti, 2017).

Lastly, studies identifying economic events via company disclosures conduct joint tests of their main hypothesis and the firms' decision to disclose. For example, Francis, Hanna, and Vincent (1996) identify asset write-downs via press releases, while Michels (2016) relies on SEC filings to identify firms impacted by a natural disaster or fire. We show that not all influential negative events are subsequently disclosed and that blameless events are more likely to be disclosed than blamed events. This evidence suggests a potential sample selection bias in studies that rely on disclosure to identify economic events.

The remainder of the paper proceeds as follows. In Section 2, we review the literature and develop our hypotheses. In Section 3, we describe our sample selection and variable definitions. In Section 4, we describe our research design and provide the results of our empirical tests. Section 5 presents our tests of cross-sectional differences in disclosure behavior. Section 6 concludes the paper with a summary of our results and a discussion of their implications.

2. Background and hypothesis development

This section first discusses the disclosure requirements regarding influential negative economic events, focusing particularly on the notion of materiality. We then propose that, in the wake of a negative event, firms consider the "level of blame" perceived by the manager when shaping their subsequent disclosure decision. Firms engage public relations consultants and legal counselors to help shape disclosure choices following influential negative events (e.g., major industrial accident, natural catastrophe). Premier public relations firms have consultants devoted to business crisis communications (e.g., http://www.edelman.com/practice/crisis-and-risk/). Similarly, major law firms often have practice areas that assist in shaping disclosures following an influential negative event (e.g., http://www.steptoe.com/practices-200.html). There is, therefore, a stream of literature in management and law on disclosures around negative evens. We develop our hypotheses regarding firms' disclosure choices with respect to negative events based on the literature in accounting, law, and management. We argue that while the full disclosure hypothesis predicts no difference in firms' disclosure choices between blamed and blameless events, the level of blame hypothesis predicts more disclosures following a blameless event relative to a blamed event.

2.1 DISCLOSURE REQUIREMENTS

The materiality of an event is an important aspect of disclosure (Heitzman, Wasley, and Zimmerman, 2010). While GAAP, SEC rules, and securities laws require firms to disclose material events, the conceptual definition of materiality provides firms with a degree of discretion over which events require disclosure. For instance, FASB's definition of materiality is:

> "*Information is material if omitting it or misstating it could influence decisions that users make on the basis of the financial information of a specific reporting entity. In other words, materiality is an entity-specific aspect of relevance based on the nature or magnitude or both of the items to which the information relates in the context of an individual entity's*

> *financial report. Consequently, the Board cannot specify a uniform quantitative threshold for materiality or predetermine what could be material in a particular situation.*"… FASB SFAS No. 8 (2010)

The Supreme Court also provides a broad-based definition:

> "*[materiality] is inherently fact-specific, depending upon whether a "reasonable investor" would have viewed the relevant information as having significantly altered the total mix of information made available.*"… Matrixx Initiatives, Inc. v. Siracusano, No. 09-1156, 2011 WL 977060 (U.S. Mar. 22, 2011)

SEC rules reinforce the notion that firms have a degree of discretion over which events to disclose via Form 8-K, as 8-K Item 8.01 states:

> "*The registrant may, at its option, disclose under this Item 8.01 any events, with respect to which information is not otherwise called for by this form that the registrant deems of importance to security holders.*"…SEC (2004)

The aforementioned requirements stipulate that firms are required to disclose material economic events, but the ambiguity in the definitions creates debate regarding which events require disclosure. For instance, in Matrixx Initiatives, Inc. v. Siracusano, No. 09-1156, 2011 WL 977060 (U.S. Mar. 22, 2011), the District Court initially dismissed the complaint on the basis of a lack of statistical correlation between the firm's stock price reaction and the third-party announcement of product-related information. However, the Supreme Court overruled, claiming that the lack of stock price reaction does not in itself imply that the event is immaterial to investors. As such, while event materiality is a critical determinant of subsequent disclosure, firms indeed have some degree of discretion when interpreting which "material" events require disclosure.

2.2 FULL DISCLOSURE HYPOTHESES BASED ON PRIOR RESEARCH

A stream of accounting literature identifies a potential benefit of providing disclosure about negative earnings news—disclosure might limit the ability of potential litigants to claim that the firm was withholding adverse information (Skinner, 1994). Moreover, because negative earnings

news often precipitates a decline in stock price, timely disclosure might reduce the probability of litigation with respect to disclosure by releasing information relatively frequently, rather than releasing infrequent disclosures that result in larger market reactions (Field, Lowry, and Shu, 2005). While this literature focuses on earnings disclosures (e.g., Francis, Philbrick, and Schipper, 1994; Skinner, 1997; Johnson, Kasznik, and Nelson, 2001; Rogers and Van Buskirk, 2009; Donelson, McInnis, Mergenthaler, and Yu, 2012; Billings, Cedergren, and Dube, 2016, among others), the arguments can be applied in the context of influential negative operational events. Specifically, the literature suggests that firms choose a full disclosure strategy in order to avoid litigation risk arising from withholding adverse information.

Studies in management, public relations, and journalism also offer full disclosure guidance to managers in the wake of influential negative operational events. This is because the manager's primary objective must be to protect the firm's reputation. This guideline has been referred to as a "tell it all and tell it fast" disclosure strategy (Dilenschneider and Hyde, 1985; Martinelli and Briggs, 1998), a "full disclosure" strategy (Kim and Wertz, 2013), or a "rapid disclosure" strategy (Arpan and Roskos-Ewoldsen, 2005). This perspective has led to a view that "executives should make full and immediate disclosures about the circumstances surrounding the events" (Kaufmann, Kesner and Hazen, 1994). Recent studies go a step further, arguing that managers should proactively disclose all facts about a negative event because these facts will eventually come out in the media (Arpan and Pompper, 2003; Arpan and Roskos-Ewoldsen, 2005; Claeys, Cauberghe and Pandelaere, 2016; Lee, 2016). In general, the consensus across the accounting and management literature proposes a full disclosure hypothesis.

2.3 LEVEL OF BLAME HYPOTHESIS

Notwithstanding these arguments, we propose a partial disclosure hypothesis based on a common event characteristic—"the level of blame" perceived by the firm.[4] We define a blamed event as a negative event for which the firm is likely to be perceived as responsible or at fault, and hypothesize that firms are less willing to provide disclosures regarding a blamed event than a blameless event due to concerns about reputation and litigation risks.

2.3.1 *Reputation risk with respect to blamed and blameless events*

We argue that firms may be less willing to disclose information about a blamed event relative to a blameless event because of reputation risk. The management literature defines reputation as the perception of a firm held by its stakeholders, and reputation risk reflects a potential decrease in reputation that may affect future actions of stakeholders toward a firm (Walker, 2010). This risk arises because stakeholders use reputation as an imprecise signal to assess firm attributes that are difficult to observe (e.g., process quality, corporate culture; Fombrun and Riel, 1997). We argue that disclosing information regarding a blamed event decreases the positive reputation more than disclosing information about a blameless event. In other words, detailed facts regarding a blamed event are more informative for stakeholders to downgrade a firm's reputation than facts regarding a blameless event. This argument is supported by the evidence that reputational loss, measured as the market reaction to a loss announcement, is greater following a negative event caused by internal forces than external forces (Perry and Fontnouvelle, 2005).

[4] A recent experiment also proposes a partial disclosure hypothesis in the wake of negative events whereby firms might benefit from remaining silent due to the greater likelihood investors will invest in an affected firm's stock when they are uncertain about an event's impact (Cikurel, Fanning, and Jackson, 2017).

2.3.2 *Litigation risk with respect to blamed and blameless events*

Although extant accounting research focuses on the potential of providing negative earnings warnings to preempt litigation, a stream of legal literature recognizes that any information disseminated could be used against the firm in litigation regarding the event itself. That is, given that influential negative operational events are likely to trigger litigation by stakeholders (e.g., local communities suing a firm after an oil spill or customers suing a firm after a consumer activist attack), the firm must consider the effect of the disclosures on the likelihood and outcome of any related litigation.[5]

Prior legal studies argue that firms may offer plaintiffs a generous settlement amount to avoid a legal process because they worry about disclosing certain information in a trial (Grundfest and Huang, 2006). For example, it is often challenging for plaintiffs to demonstrate that the defendant knew, or should have known, that his actions were wrong (i.e., scienter) at the start of the lawsuit before having access to witnesses and internal documents during a trial (Honigsberg, Rajgopal, and Srinivasan, 2017). Facts released via public disclosures prior to the lawsuit or during the trial process potentially help plaintiffs plead that the defendant had the proper scienter.

We argue that the nature of information that firms are reluctant to disclose likely relates to the level of blame perceived by the firm and that the facts regarding the blamed event are more likely to be used by plaintiffs to prove elements of their claims (e.g., scienter). The litigation risk (e.g., the likelihood for plaintiffs to plead a successful claim that is not dismissed by the court, or the amount of the expected damage conditional on a successful claim) related to disclosed facts

[5] We focus on the threat of litigation instead of the actual litigation because managers are likely to consider only the threat of litigation when they make disclosure decisions right after an influential negative event, rather than facing an actual litigation which often occurs several months or years after the event. For instance, plaintiffs are allowed to bring claims under Section 10(b) of the Exchange Act within five years after the violation (Honigsberg, Rajgopal, and Srinivasan, 2017).

regarding a blamed event is potentially greater than the litigation risk related to disclosed facts about a blameless event.

3. Sample selection and variable definitions

3.1 INFLUENTIAL NEGATIVE ECONOMIC EVENTS

Our sample consists of influential negative events first announced by parties external to the firm. We identify the scope of influential negative economic events using the definition of a business crisis put forth by the Institute for Crisis Management (hereafter ICM), a prominent crisis consulting firm that has published an annual business crises report since 1990.[6] ICM defines a business crisis as "any issue, problem or disruption which triggers negative stakeholder reactions that impact the organization's business and financial strength." We focus on six out of 17 ICM crisis categories: catastrophes, casualty accidents, environmental damages, investor class actions, white collar crimes, and consumer activism (see Table 1).[7]

We use numerous sources to hand-collect our sample of negative events; please refer to Table 2 for a detailed discussion of the sources used and our data collection methods. We define the event date as the first date when an event occurred or when an event started to gain public

[6] These reports are available at http://crisisconsultant.com/.

[7] We exclude eleven crisis categories from our sample. First, we exclude cyber-crime cases because cyber-crimes often emerge internally, so the exact crisis date is unknown to outsiders. Recent cyber-crime studies focus on the disclosure events or assume that these disclosure dates are the first time the public is aware of these events (See Hilary, Segal, and Zhang, 2016; Sheneman, 2016). Second, we exclude whistleblowers because many of these cases are already included in our sample, such as FTC consumer protection complaints, or white collar crimes. Third, we exclude product recalls because FDA requires firms to issue their recall announcements through its website. Such requirement implies that recall disclosures are mandated instead of a voluntary disclosure decision. Fourth, major financial damage cases are already in our sample because these damages pertain to investor class actions, white collar crimes, or other lawsuits. Fifth, we exclude mismanagement, discrimination, and workplace violence cases because many of these events generate a minimal financial impact, which casts doubt that these events cause managers to evaluate the benefits and costs of publicly disclosing information. Sexual harassment cases often generate personal rather than corporate losses. Because our goal is to analyze corporate disclosure, we decide to exclude these personal loss related cases. Finally, executive dismissals, hostile takeovers, and labor strikes are extensively examined in the corporate finance and labor economics literature, so we do not focus on these events in our study.

scrutiny. Specifically, we identify the event date as the first date when a catastrophe, a casualty accident, or an oil spill occurred, the date when a litigation case or a consumer protection complaint was filed, or the date when a white collar criminal was arrested. We exclude events for which the firm was the first to announce the crisis. Hence, we restrict our sample to include only those negative events announced by external parties, thereby providing a quasi-exogenous setting in which to examine how the heterogeneous nature of these negative events relates to firms' disclosure choices.

For investor class action lawsuits, white collar crimes, and consumer activism events (sometimes referred to as "smoldering events"), we further search for company disclosures issued during the 90 days prior to the identified event date to address the concern that firms may provide disclosures to preempt negative market reactions around the event date. We choose the 90 day window because firms would have issued at least one financial report, either a 10-K or 10-Q, during this pre-event period. We exclude events for which the firm discussed a specific event before our identified event date. Therefore, we ensure that market participants are surprised by the event on our identified event date and likely rely on detailed information regarding the event from the affected firm to estimate the impact of the event on firm value.

Our final sample consists of 292 negative events involving 259 firms over the period of 2002-2015, with a concentration in 2005, 2011, and 2012. This large sample of *heterogeneous* negative economic events allows us to investigate how event characteristics explain variation in disclosure choices beyond the firm/industry determinants previously examined in the literature.

3.2 PROXIES FOR BLAMED VERSUS BLAMELESS EVENTS

We use three proxies to capture the firm's perceived level of blame regarding the event. An event is likely to be assumed by firms to be blamed if this event is under the firm's control. It

is important to note that our proxies are intended to capture the *relative* extent that the firm perceives the event to be blamed versus blameless. If our proxies do not capture a meaningful distinction between blamed and blameless events perceived by firms, we are likely to find an insignificant relation with disclosure choices. We describe our motivations for these proxies in the following subs-sections.

3.2.1 *Dismissed versus non-dismissed litigation cases*

Our first proxy is based on whether an investor class action lawsuit is dismissed by the court. We use the lawsuit outcome, dismissed versus non-dismissed and settled, to distinguish between litigation cases that are likely to be perceived by the firm as a blameless or a blamed event, respectively. We exclude cases that involve claims other than making overly optimistic statements, such as restatements or fraudulent acts, to hold constant the nature of litigation.[8] In our sample of 99 cases, we create a dummy variable, *Dismiss*, which equals one for 63 dismissed cases and zero for 36 cases that are not dismissed (see Figure 1). All non-dismissed cases are eventually settled between the defendant and the plaintiff in our sample. We exclude 10 cases from the analysis because we are not able to identify the case outcome. We predict that firms facing a litigation case that is subsequently dismissed are *more* likely to provide disclosure following the filing of a lawsuit than firms facing a non-frivolous litigation case. This expectation, based on legal theory, suggests that a firm is less likely to provide information in a settled (non-dismissed) case because the firm attempts to avoid public disclosure of the facts regarding a blamed event. In contrast, settlement is less likely to happen and the case is likely to be dismissed by the court for

[8] Investor class action lawsuit samples in prior studies often include all 10b-5 cases without distinguishing the nature of claims (e.g., Francis, Philbrick, and Schipper, 1994; Skinner, 1997, among others). We read through claims in each 10b-5 cases to identify a sample that is based on claiming only overly optimistic statements. Field, Lowry, and Shu (2005) take a similar approach by removing cases that involve restatements.

a blameless event. Consequently, a firm is more likely to provide information in a dismissed case because it is less concerned about releasing information about a blameless event,

3.2.2 *Externally-caused versus internally-caused events*

Our second proxy is based on the locus or controllability of an event. Motivated by the management and public relations literatures (see, for instance, Coombs (2007) and the discussion of Weiner's (1985, 1986) work on Attribution Theory), stakeholders are more likely to perceive a firm to be responsible for an event when it is caused by an internal force than an external force. This is because firms are perceived to have more control over internal forces than external ones. For example, the extent to which the firm might be blamed for an oil spill caused by human error (internally-caused event) is likely to be greater than when the oil spill is caused by a hurricane (externally-caused event).

We examine a sample of 129 sudden events. We partition these 129 sudden events into internally-caused and externally-caused events (see Figure 1). All 61 catastrophe events are classified as externally-caused events. For 43 casualty accidents, we read NTSB and FAA accident reports and conduct web searches to assess whether each accident was caused by an internal or external force. For 25 environmental damages cases, all of which are oil spills, the 12 events caused by Hurricanes Katrina and Rita and one event due to a lightning strike are classified as externally-caused events. Internal causes for casualty accidents and oil spills often relate to human error and equipment failures. Three sudden events are not included in the analysis because they have an unknown cause.

We create a dummy variable, *External*, that equals one for 77 externally-caused events and zero for 49 internally-caused events, as our second proxy for the extent to which the event might be perceived by the firm as relatively blameless (externally-caused) or the firm might be blamed

for the event (internally-caused). We predict that firms facing an externally-caused event are *more* willing to provide disclosure than firms facing an internally-caused event because external causes are unlikely to be under managerial control.

3.2.3 *Sudden versus smoldering events*

Our third proxy aggregates numerous types of negative economic events and relies on the path of events to classify the perceived level of blame. ICM defines a sudden event as one that happens without warning, and a smoldering event as "a problem that starts out small and someone within the organization *should* recognize the potential for trouble and fix it before it becomes a public issue." Studies often refer to smoldering events as relatively more blamed events and sudden events as more blameless because firms are assumed to have the ability to prevent smoldering events from spilling into the public domain (e.g., Regester and Larkin, 2005). We obtain ICM's classification algorithm and use it to identify smoldering and sudden events. Specifically, investor class actions, white collar crimes, and consumer activism are considered smoldering events because these events more likely emerged from a conflict between the firm and its stakeholders, including investors or customers. In our sample, sudden events consist of catastrophes, casualty accidents, and environmental damages because these events are largely unpredictable.

Note that the sudden versus smoldering proxy includes observations that are part of our previous two proxies. To conduct our analysis, we exclude the blameless events included in these two proxies, including dismissed investor class action lawsuits and externally-caused sudden events. We create our third proxy for the extent to which an event might be perceived by the firm as relatively blameless (sudden) or the firm might be blamed for the event (smoldering) using a dummy variable, *Sudden*, that equals one for 49 internally-caused sudden events and zero for 90 smoldering events (including 36 non-dismissed class action lawsuits, 41 white collar crimes, and

13 consumer activism events). We predict that firms facing a sudden event are *more* willing to provide disclosure than firms facing a smoldering event.

3.3 POST-EVENT DISCLOSURE CHOICE

We take an event-driven approach to identify disclosed information regarding a specific event. We read through Edgar filings and press releases for the 30 days following an event to identify event-specific information content. We assume that firms that release information regarding a specific negative event do so within the 30 days following the event.[9] We create an indicator variable, *Whether to disclose*, that equals one if we identify any SEC filings or press releases mentioning the event in our sample, and zero otherwise.[10] Our approach enables us to link event characteristics to firms' post-event disclosure behavior.

3.4 EXAMPLE OF WITHIN FIRM DISCLOSURE VARIATION

We provide an example drawn from our dataset to illustrate that a firm adopting different disclosure strategies based on the different nature of events. In 2005, Eastman Kodak did not release information following an announcement by the FBI of a white collar crime case involving illegal kickbacks. However, in 2012, the firm provided lengthy, detailed explanations in its 10-K about an investor class action lawsuit that was eventually dismissed by the court in 2013. The firm explained that the lawsuit claiming opportunistic statements was without merit and would not

[9] In the robustness test discussed in Section 4.5, we expand the post-event disclosure window to the 90 days with a focus on only 10-K/Q filings. Our results continue to hold within this extended disclosure window.

[10] Different from prior research's focus on earnings-related disclosures (e.g., earnings announcements, forecasts, or conference calls), our event-driven approach identifies both earnings and non-earnings related disclosures. Of the 228 disclosures, we find that 5 (3 percent) are released in an earnings announcement. Many events in our sample have impacts on earnings several quarters after the event date. However, during a long post-event disclosure window, studies show that managers strategically select favorable economic events to report in earnings disclosures to mitigate the magnitude of adverse market reactions to negative earnings news. For example, managers are more likely to highlight gains from selling property, plants, and equipment rather than losses (Schrand and Walther, 2000), firms are more likely to attribute positive earnings surprises to internal factors instead of external factors (Baginski, Hassell, and Kimbrough, 2004), or firms release a restatement along with a good news announcement to deter litigation (Bliss, Partnoy, and Furchtgott, 2016). Therefore, our study identifies event-specific information content without limiting to earnings-related disclosures and focuses on a short post-event disclosure window.

result in a material loss. This example in consistent with our predictions. That is, Eastman Kodak was less willing to disclose information regarding an event for which the firm was likely to be blamed (e.g., white collar crime), but more willing to provide detailed explanations for an event for which the firm was perceived as blameless (e.g., investor class action lawsuit that is eventually dismissed).

4. Empirical analysis and results

4.1 EMPIRICAL MODEL AND SUMMARY STATISTICS

We examine firms' disclosure choices in the wake of an influential negative event using the following empirical model:

$$\begin{aligned} Whether\ to\ disclose_{i,e,t} &= \beta\, Blameless\_Blamed_{i,e,t} \\ &+ \sum \gamma_j Materiality_{j,i,e,t} + \rho Media_{i,e,t} + \sum \delta_l OtherDeterminants_{l,i,t-1} \\ &+ \sum \alpha_k Year_k + \sum \mu_m Industry_m + \varepsilon_{i,e,t} \end{aligned}$$

The dependent variable is *Whether to disclose*, an indicator variable for firm i, event e, in year t. We estimate logistic regressions because the dependent variable is an indicator. Our variable of interest is $Blameless\_Blame$, a indicator variable that captures the relative degree in which firms perceive they are *blameless* regarding the negative event. Evidence consistent with our hypothesis would show $\beta > 0$.

We include four sets of control variables. First, as discussed previously, rules and regulations typically define materiality based on an investor's perspective. We use the first and second moments of the stock market reaction to the event date to capture event materiality (either

the day when a sudden event occurs or the day when a smoldering event is publicly revealed by a third party). The first moment of a stock return is the absolute value of cumulative market-adjusted return during the three days [0,+2] around the event date, which captures the shift in investor expectations of firm value (*Materiality 1*). The second moment is the change in implied volatility derived from option prices during six days [-3,+3] around the event date, which measures increases in investor uncertainty regarding the event (*Materiality 2*).

As discussed previously, event materiality is likely an important factor for firms to consider when selecting a post-event disclosure strategy. We take two steps to assess the validity of our materiality measures. Our first step is to examine the correlation between *Materiality 1* and *Materiality 2* (the first and second moments of event-date returns, respectively) and the incidence of an event-related 8-K filing. We find a positive and statistically significant correlation in both instances (ρ=0.12, p-value=0.08 for *Materiality 1*; ρ=0.19, p-value<0.01 for *Materiality 2*). We also examine the correlation between *Materiality 1* and *Materiality 2* and securities class action lawsuit settlement amounts. While the correlations are positive, they are not statistically significant at conventional levels (ρ=0.19, p-value=0.26 for *Materiality 1*; ρ=0.23, p-value=0.18 for *Materiality 2*). We view these positive correlations as consistent with event-date returns at least partially capturing event materiality.

Our second control variable captures the extent of media attention surrounding the negative event. Following Solomon, Soltes, and Sosyura (2014), we use Factiva to identify the number of news articles for a sample firm on the event date. We deflate this value by the average daily number of news articles of the same firm from the prior 365 days to capture the abnormal media attention around the event date. Since information by the media may be a complement to or a substitute for

a company's disclosure, the correlation between media attention and the likelihood of disclosure can be either positive (a complementary relation) or negative (a substitution relation).

Next, we include a comprehensive set of determinants that have been shown in the prior literature to relate to firms' disclosure choices (e.g., Leftwich, Watts, and Zimmerman, 1981; Botosan and Harris, 2000; Verrecchia and Weber, 2006; Khan and Watts, 2009; Rogers, Skinner, and van Buskirk, 2009; Fu, Kraft, and Zhang, 2012; Kim and Skinner, 2012). These characteristics are: firm size measured as market capitalization, the market-to-book ratio to capture growth, profitability in terms of return-on-assets and an indicative variable for loss firms, leverage, investment cycle measured as depreciation expenses deflated by lagged total assets, the value of past return momentum, the value of past return volatility, firm age, an indicator for firms listed on the NYSE, an indicator for firms incorporated in the U.S., an indicator for firms operating in a high litigation risk industry (following Francis, Philbrick, and Schipper, 1994), the Herfindahl index to capture industry structure, an indicator for firms issuing management guidance, the ownership percentage of insiders, the ownership percentage of institutional investors, the number of analysts following the firm, and the number of public debt offerings. All variables are from year t-1, the year prior to the event. Finally, we include year fixed effects $\sum \alpha_k Year_k$ and industry fixed effects $\mu_m Industry_m$, based on the first digit of the SIC code. We cluster standard errors by firm in all regressions. Please refer to Appendix A for the detailed descriptions of all control variables.

Table 3 reports that our sample of 292 influential negative events includes 108 instances (37 percent) in which affected firms issue a disclosure within the 30 days following the event (see the mean of *Whether to disclosure*). Except for four negative events with insufficient data, the 104 affected firms release a total of 186 disclosures, resulting in an average frequency of 1.8 disclosures for each negative event. Among these 104 affected firms, 62 of which issue their initial

disclosure within three days after the negative event. Half (75 percent) of the post-event disclosures are released within one (two) week following the event. Table 4 presents correlations among the variables used throughout the analysis.

Our data further allow us to examine the channels through which the events are disclosed. While the level of blame hypothesis is silent on the disclosure channel, the descriptive evidence is interesting in its own right (untabulated). Of the 186 disclosures, we find that 81 (44 percent) are released in an Edgar filing and 105 (56 percent) are issued in a press release without a concurrent Edgar filing. Among the 123 disclosures of sudden events, only 27 (22 percent) are released via an Edgar filing, while 54 of 63 disclosures (86 percent) of smoldering events and 39 of 42 disclosures (93 percent) of securities class actions are released via an Edgar filing. Firms appear to use Edgar filings to disclose smoldering and class action events and rely more on press releases for sudden events.

4.2 DISMISSED AND NON-DISMISSED LITIGATION CASES

In Table 5 we consider litigation that was eventually dismissed as having relatively less blame than cases that were not dismissed. Recall that our litigation sample includes investor class action lawsuits related only to claims of overly optimistic performance guidance without any other confounding claims, thereby holding constant the reason a firm is sued. Model (1) examines the relation between firm characteristics and the likelihood that the firm issues a disclosure following an influential negative economic event; the pseudo R^2 for the model is 0.48.

We find that loss firms (*Loss firms*, p-value<0.05) are more likely to disclose among firms in this sample, consistent with the assumption that loss firms potentially face greater litigation risk and are more likely to disclose to preempt litigation. Table 5 also shows that firms that have previously issued earnings guidance are more likely to disclose, indicating these firms might be

more transparent in general or recognize their duty to update previously disclosed earnings projections or anticipated business risks (*Guidance*, p-value<=0.01). We find evidence that firms in less competitive industries are more likely to disclose, consistent with the notion that industry competition is one potential reason for firms to withhold proprietary information (*Herfindahl index*, p<0.01; e.g., Verrecchia 1983). Table 5 also reports that greater analyst following (*Analyst following*, p-value<0.05) is negatively related to the likelihood to disclose, suggesting a substitution effect between analyst information and disclosure. In addition, the results in Table 5 suggest that firms that issue more public debt are more likely to disclose (*Public debt issuance*, p-value<0.05), which is consistent with evidence presented in prior disclosure research (Lang and Lundholm 2000; Verrecchia and Weber 2006).

We next augment the model to include event materiality and media attention around the event date; the pseudo R^2 increases by 0.08 to 0.56. While we find a similar pattern of evidence among the relations between firm characteristics and disclosure propensity compared with Model (1), we note that neither event-date stock returns nor greater levels of media attention are associated with the propensity to issue a disclosure among firms in this sample of influential negative events. Moreover, we find some evidence that firms are somewhat *less* likely to disclose when the event heightens investor uncertainty on average (p-value <0.10).

Model (3) presents our main result for relatively blameless (dismissed) and blamed (non-dismissed) litigation cases. We continue to find a similar pattern of evidence among the relations between firm characteristics and disclosure propensity compared with Models (1) and (2). Importantly, we find evidence of a positive association between *Dismissed* litigation cases and the likelihood a firm issues a subsequent disclosure (β=5.15, p-value<0.01). A comparison of Model (3) with Model (2) establishes that our blameless-blame event characteristic has explanatory

power, evidenced by an increase pseudo R^2 of 16% ((0.65-0.56)/0.56). Our blameless-blame event characteristic is also economically important—the likelihood that a firm issues at least one disclosure following the filing of an investor class action lawsuit that is subsequently dismissed is more than 10 times greater than that for a case that is subsequently not dismissed. Taken together, the statistical significance, incremental improvement in explanatory power, and economic magnitude indicate that the perceived level of blame associated with an economic event is an important determinant of firms' disclosure decisions incremental to event materiality, media attention, and firm characteristics documented in the literature.

4.3 EXTERNALLY-CAUSED AND INTERNALLY-CAUSED EVENTS

In Table 6 we consider externally-caused versus internally-caused negative events as our second proxy for the level of blame. Model (1) examines the relation between firm characteristics and the likelihood of disclosure following an externally-caused influential negative economic event; the pseudo R^2 is 0.31. Note that few of the firm characteristics relate to the likelihood of issuing a disclosure following a sudden negative event. We next augment the model to include event materiality (*Materiality 1, Materiality 2*) and media attention (*Media*) around the event date; the pseudo R^2 increases by 0.10 to 0.41. We find evidence that firms are more likely to issue a disclosure when the sudden negative event increases investor uncertainty (p-value<0.05 for *Materiality 2*) and when the sudden event increases media attention (p-value<0.10 for *Media*).

Model (3) presents our main result for externally-caused and internally-caused sudden events. The positive association between *External* and the likelihood that a firm issues a subsequent disclosure indicates the blameless-blame event characteristic is an important determinant of disclosure (β=5.15, p-value<0.01). A comparison of Model (3) with Model (2) establishes that our blameless-blame event characteristic has meaningful explanatory power,

evidenced by an increase in pseudo R^2 of 12% ((0.46-0.41)/0.41). Our blameless-blame event characteristic is also economically important—the likelihood that a firm issues at least one disclosure following an externally-caused negative event is 10 times greater than that for an internally-caused event. Overall, consistent with the evidence presented in Table 5, we again find support for the level of blame hypothesis—the perceived level of blame regarding an economic event is an important factor that shapes firms' disclosure choice.

4.4 SUDDEN AND SMOLDERING EVENTS

In Table 7 we consider sudden versus smoldering events as our third proxy for the level of blame. As discussed previously, this analysis focuses only on the sample of blamed events based on our previous two proxies and examines whether there is an incremental impact of the sudden versus smoldering classification among blamed events. Model (1) examines the relation between firm characteristics and the likelihood of disclosure following an influential negative economic event; the pseudo R^2 is 0.46. Model (2) includes our measures of event materiality (*Materiality 1*, *Materiality 2*) and media attention (*Media*) around the event date; the pseudo R^2 increases by 0.05 to 0.51. Conditional on a blamed event, we do not find evidence that firms are more likely to issue a disclosure for events with greater materiality or when the event increases media attention. This can be seen from the insignificant coefficient estimates on *Materiality 1*, *Materiality 2*, and *Media*.

Model (3) presents our main test for sudden and smoldering events. The positive association between *Sudden* and the likelihood that a firm issues a subsequent disclosure indicates that, conditional on a blamed event, sudden events are more likely to be disclosed than smoldering events (β=2.76, p-value<0.10). A comparison of Model (3) with Model (2) establishes that the sudden versus smoldering event characteristic has meaningful explanatory power, evidenced by an increase in pseudo R^2 of 8% ((0.55-0.51)/0.51). Our blameless-blame event characteristic is also

economically important—conditional on a blamed event, the likelihood that a firm issues at least one disclosure following a sudden event is more than 10 times greater than that for a smoldering event. Overall, consistent with the evidence presented in Tables 5 and 6, we again find support for the level of blame hypothesis.

4.5 ROBUSTNESS TESTS WITH AN EXPANDED POST-EVENT DISCLOSURE WINDOW

The analyses presented in Tables 5-7 are based on a post-event disclosure window of 30 days following the negative event. To address the concern that this window may be too short for a firm to release information regarding a specific event, we further collect information from firms' first post-event 10-K/Q issued during the 60-90 days window following the event. Using this alternative measure, we continue to find that firms are more willing to disclose following a blameless event. The likelihood that a firm issues at least one disclosure following a subsequently dismissed case is 10 times greater than that for a case that is subsequently not dismissed (p-value<0.01). In addition, the likelihood that a firm issues at least one disclosure following an externally-caused sudden event is more than 10 times greater than that following an internally-caused event (p-value<0.01). Taken together, our inferences remain unchanged after lengthening the post-event disclosure window.

5. Cross-sectional analysis

Our evidence suggests that the level of blame influences the likelihood that a firm issues a disclosure following an influential negative economic event. In this additional analysis, we further explore the asymmetric disclosure choice between blamed and blameless events by considering the effect of firm characteristics. Specifically, we explore whether the asymmetric disclosure choice is associated with the firm's reliance on a positive reputation. We use three proxies to

capture firms that are more concerned with their reputation. First, firms that frequently use external financing may rely more on their reputation because capital providers' required cost of capital is partially a function of the firm's reputation. Second, prior studies suggest that firms that seek to increase their visibility and reputation among investors choose to list on the NYSE (Cowan, Carter, Dark, and Singh, 1992). Lastly, more profitable firms have greater reputation risk as prior research suggests that reputation is important in maintaining firm profitability (Roberts and Dowling, 1997). These findings suggest that firms that access external capital, NYSE firms, and profitable firms are more likely to benefit from asymmetric disclosure of blamed versus blameless events to maintain their reputation. We examine these three expectations in the following subsections.

5.1 FREQUENT EXTERNAL FINANCING

Lang and Lundholm (2000) show that firms selectively disclose favorable news prior to equity offerings to 'hype' their stock price by issuing favorable news and fewer pessimistic statements prior to equity offerings.[11] This, in turn, subsequently increases proceeds from security issuance. While we do not have a sufficient number of equity offerings among our sample firms, we apply their argument to frequent public debt issuers and expect these firms to have greater asymmetry in their blameless-blame disclosure behavior to potentially increase the proceeds from debt issuance.

Table 8 presents evidence consistent with this expectation; frequent public debt issuers indeed have greater asymmetry in their blameless versus blamed disclosures across both the *Dismiss* and *External* proxies.[12] This can be seen by the positive and statistically significant coefficient estimates on the interaction term *Blameless*Debt issuance* in Models (1) and (2) (p-

[11] Using recent years of data, Shroff, Sun, White, and Zhang (2013) also document a disproportional increase in good news prior to equity offerings.

[12] We do not use the *Sudden* proxy in the cross-sectional analysis because this proxy to some extent overlaps with *Dismiss* and *External*.

value<0.01 in both models). This supports the notion that, in the wake of an influential negative event, firms are more willing to issue a disclosure after a blameless event than a blamed event to potentially increase the proceeds from debt issuance.

5.2 NYSE LISTING

Kedia and Panchapagesan (2011) argue that firms with frequent public issuances have greater incentives to list on NYSE to enjoy greater visibility among investors and higher liquidity. They find that NYSE firms issue more debt relative to firms that are qualified to list on the NYSE but instead are listed on the NASDAQ. Cowan, Carter, Dark, and Singh (1992) report similar results, finding that mid-sized firms that seek to increase their visibility among investors and improve their liquidity choose to list on the NYSE. Baker and Johnson (1990) reports survey evidence that managers believe an important benefit of NYSE listing is increased investor visibility. These arguments suggest NYSE firms might be more likely to choose an asymmetric disclosure policy for blameless versus blamed events.

Table 9 examines this expectation and reports that firms listed on the NYSE present a greater blameless-blame asymmetric disclosure behavior across both the *Dismiss* and *External* proxies. This can be seen by the positive and statistically significant estimates on the interaction term *Blameless*NYSE* in Models (1) and (2) (p-value<0.01, p-value<0.05, respectively). This supports the notion that, in the wake of an influential negative event, NYSE-listed firms are more willing to issue a disclosure after a blameless event than a blamed event perhaps due to their ex ante decision to increase their visibility among investors and improve their liquidity.

5.3 PROFITABILITY

Studies suggest that profitable firms with a positive reputation are more likely to sustain their profitability (Roberts and Dowling, 1997), suggesting that profitable firms have greater

reputation risk related to a blamed versus a blameless event. We therefore expect the asymmetry in the blameless versus blamed event disclosures to be increasing in firm profitability and to be less pronounced for loss firms relative to profit firms.

Table 10 presents evidence from this analysis. Models (1) and (3) report that among the sample of dismissed versus settled class action lawsuits, more profitable firms are more likely to issue a disclosure following the negative event relative to a blamed event (*Blameless*ROA*, p-value<0.10) although the result for the comparison of loss firms to profit firms is of the expected sign but does not reach conventional levels of statistical significance (*Blameless*LOSS*, p-value>0.10). Models (2) and (4) show that when using a sample of externally-caused versus internally-caused sudden events, profit firms are more likely to issue a disclosure following the negative event relative to a blamed event than loss firms (*Blameless*LOSS*, p-value<0.05 in Model (4)) although the result for the *Blameless*ROA* interaction is of the expected sign but does not reach statistical significance (p-value>0.10). Overall, the results in Table 10 suggest that the asymmetry in disclosure behavior for blamed versus blameless events is positively associated with profitability and more pronounced for profit firms than loss firms.

6. Conclusion

There is a long-held view of accounting as an information system that reflects underlying economic activities (e.g., Canning, 1929; AAA Pathways Commission[13]). We examine one feature of the process of translating original, disaggregated economic events into disclosure choices by hypothesizing that managers are more willing to provide disclosures when they perceive an event as relatively blameless than when they face a blamed event. We collect a large sample of

[13] Interpreted from its vision model at http://commons.aaahq.org/groups/2d690969a3/summary

heterogeneous influential negative events, and, for each event, we assess the extent to which the firm is likely to be perceived as blamed for the event or to be perceived as blameless.

We use three proxies to capture the extent to which managers might perceive an event as blameless: dismissed versus non-dismissed litigation cases, externally-caused versus internally-caused sudden events, and sudden versus smoldering events. Overall, we present evidence consistent with our "level of blame" hypothesis—firms are less likely to release information regarding influential negative events when the firm might be blamed for causing the event relative to when it is likely to be perceived as blameless. We further present evidence that the blameless-blame asymmetric disclosure choice is more pronounced for firms with greater dependence on a positive reputation, such as frequent public debt issuers, NYSE firms, and profitable firms.

Our study contributes to the literature by showing that studies based on only disclosure events potentially rely on a sample that consists of more blameless events because firms are less likely to disclose blamed events. In addition to voluntary disclosure choices immediately after the influential negative events, future research may explore managerial discretion over how and when these events are reflected in accounting numbers reported in subsequent financial reports.

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Appendix A
Variable definitions

Variable	Definition	Source
Dismiss	An indicator variable equals 1 for dismissed cases, and 0 for non-dismissed, settled cases. The sample includes investor class action lawsuits claiming overly optimistic performance reporting	Stanford SCAC
External	An indicator variable equals 1 if a sudden crisis is caused by external forces, and 0 if a sudden event is caused by internal forces	NTSB, BSEE
Sudden	An indicator variable equals 1 for sudden crises (catastrophes, casualty accidents and environmental damages), and 0 for smoldering crises (investor class actions, white collar crimes, and consumer activism)	NTSB, BSEE, FTC, FBI, Bloomberg Law, Stanford SCAC, LexisNexis
Whether to disclose	An indicator variable equals 1 for firms providing any disclosures regarding a specific crisis event within the month following the cisis	Edgar, RavenPack
Materiality 1	Absolute value of the cumulative market-adjusted return during [0,+2] around a crisis	CRSP
Materiality 2	Change in implied volatility derived from option prices [-3,+3] around a crisis	Option Metrics
Media	Natural logarithm of the ratio of the number of news articles on the event day to the average daily news articles from the prior year	Factiva
Size	Natural logarithm of market capitalization	CRSP
Market-to-book	Natural logarithm of the market-to-book ratio	CRSP, Compustat
Return-on-assets	Income before extraordinary items divided by beginning total assets	Compustat
Loss firm	An indicator variable set to 1 if actual earnings is negative	Compustat
Leverage	Book value of long-term debt divided by beginning total assets	Compustat

Appendix A (continued)
Variable definitions

Variable	Definition	Source
Investment cycle	the length of investment cycle is captured by the ratio of depreciation expense to lagged total assets	Compustat
Return momentum	Twelve months market adjusted buy-and-hold return in a year	CRSP
Return volatility	Standard deviation of monthly stock returns over a year	CRSP
Firm age	Natural logarithm of the number of years a firm is publicly traded	CRSP
NYSE firm	An indicator variable set to 1 if a firm is listed on NYSE	CRSP
USA firm	An indicator variable set to 1 if a firm is incorporated in the U.S.	Compustat
Litigation	An indicator variable set to 1 if a firm operates in a high-litigation industry: biotechnology (SIC codes 2833-2836), computers (3570-3577 and 7370-7374), electronics (3600-3674), and retailing (5200-5961)	Compustat
Guidance	Natural logarithm of the number of management guidance issued in a year	First Call, IBES
Herfindahl index	Based on revenues of firms in a SIC three-digit industry	Compustat
Insider ownership	Percentage of outstanding shares held by insiders, defined as those required to file the Form 4	Thomson Reuters, CRSP
Institutional investor	Percentage of outstanding shares held by institutional investors, defined as those required to file the 13F	Thomson Reuters, CRSP
Analyst following	Natural logarithm of the number of analysts in a year	IBES
Public debt issuance	Natural logarithm of the number of public debt issuances in a year	Thomson Reuters SDC Platinum

FIGURE 1
Illustrations of event characteristic indicators

Our sample includes 292 negative events related to 259 unique firms over the period of 2002-2015 with a concentration in 2005, 2011, and 2012. *Sudden* equals one for catastrophes, casualty accidents and environmental damages, and zero for investor class actions, white collar crimes, and consumer activism. *External* equals one for sudden events caused by external forces, and zero for sudden events caused by internal forces. *Dismiss* equals one for dismissed cases, and zero for non-dismissed, settled cases. *Dismiss* is based on a sample of investor class action lawsuits claiming only overly optimistic performance guidance.

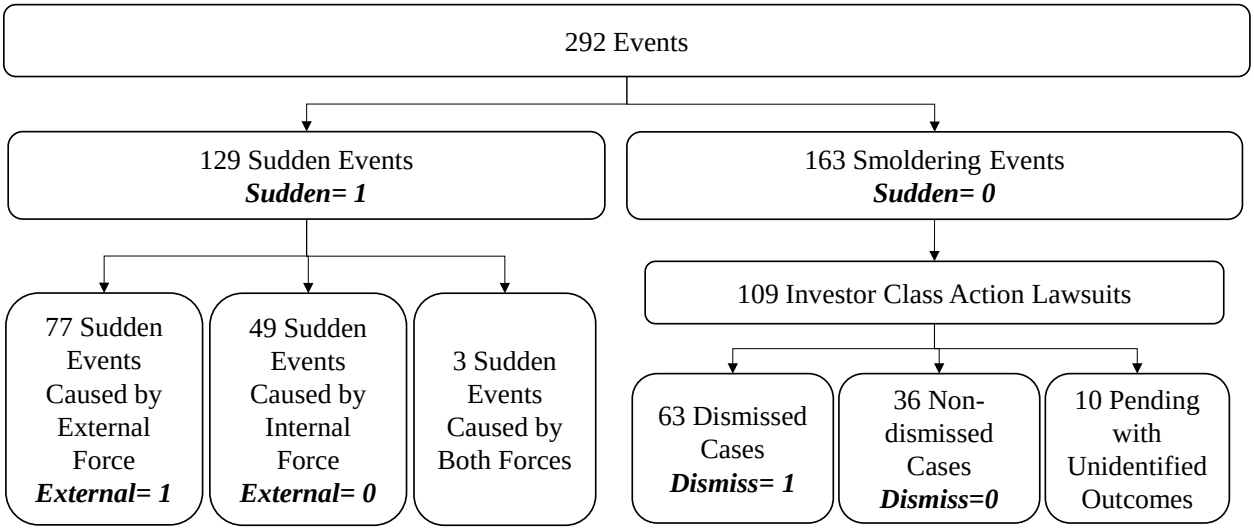

TABLE 1
Influential negative event sample construction

This table summarizes the sample of influential negative events and identifies the sources used to construct the sample. Our sample includes 292 negative events related to 259 unique firms over the period of 2002-2015 with a concentration in 2005, 2011, and 2012. We focus on seven crisis categories proposed by the Institute for Crisis Management: catastrophes, casualty accidents, environmental damages, investor class actions, white collar crimes, and consumer activism.

Crisis category	**# of events**	**Source**
Catastrophes	61	Web search
Casualty accidents	43	NTSB
Environmental damages	25	BSEE
Investor class actions	109	Stanford SCAC
White collar crimes	41	FBI, Bloomberg Law
Consumer activism	13	FTC, LexisNexis
	292	

TABLE 2
Identification of influential negative events

Catastrophes	Since catastrophes rarely occur, we begin by searching major catastrophes around the globe from 2011-2015 and 2005 (due to Hurricane Katrina). Because years 2005, 2011, and 2012 have more severe catastrophes than other years, we decide to focus on these three years as our sample period. We identify affected firms based on the incidence of a stock price crash following a catastrophe when there are no other confounding business events. If a firm experiences a stock price crash within five trading days following a catastrophe, this firm is assumed to be affected by this catastrophe. Stock price crash is identified as occurring when a firm experiences at least one firm-specific weekly return falling two or more standard deviations below the mean firm-specific weekly return for its fiscal year based on the residual from regressing five weeks of market return on an individual firm's return (following Kim, Li, and Zhang, 2011). We do not use the stock price crash measure in Hutton, Marcus, and Tehranian (2009) because they control for industry returns, while we want to keep industry-wide crises in our sample. Consistent with their sample selection criteria, we require at least three trading days in a week, CRSP share code to be 10 or 11 (excluding non-US firms, ADRs, close-end funds, and REITs), and year-end stock price at least five dollars. To rule out confounding business events, we search RavenPack press releases, Proquest news articles, Edgar filings, and Google news to confirm that no major firm disclosures were released during the five day window around the catastrophe. Our final sample includes 61 publicly traded firms affected by five catastrophes: 28 by 2005 Hurricane Katrina, 19 by 2011 Japan Tsunami, 12 by 2012 Hurricane Sandy, 1 by 2011 Joplin Tornado, and 1 by 2011 New Zealand Earthquake. We define the crisis event date as the first date when the catastrophe occurred.
Casualty accidents	Our casualty accidents sample comes from the National Transportation Safety Board (NTSB) casualty accident reports and the FAA aviation accident database (http://www.ntsb.gov/investigations/AccidentReports/Pages/AccidentReports.aspx and http://www.ntsb.gov/_layouts/ntsb.aviation/index.aspx). The sample years include 2005, 2011, and 2012, to be consistent with the catastrophe sample. When comparing the NTSB accident reports to the FAA aviation accident database, we find that NTSB writes reports on more severe casualty accidents in terms of the severity of injuries, the number of deaths, and the degree of damages to facilities. Therefore, we restrict our search of the FAA aviation database to the following: 1) accidents involving deaths and substantial damages to aircrafts, and 2) accidents leading to destroyed aircrafts. Our final sample includes 43 publicly-traded companies affected by casualty accidents during 2005, 2011, and 2012. Among these 43 firm-events, 20 are aviation accidents, 15 are railroad accidents, 6 are marine accidents, and 2 are pipeline accidents. We define the crisis event date as the accident date indicated in the NTSB reports or in the FAA accident database. Two marine accidents occurred internationally and three casualty accidents involved more than one firm. Twelve accidents occurred in 2005, thirteen in 2011, and the rest in 2012.
Environmental damages	Environmental damages speak to a wide range of events. The Environmental Protection Agency includes violations regarding numerous environmental regulations. For example, in each year, there are 4,000+ violations against the Clean Water Act, 1000+ violations against the Clean Air Act, 500+ violations against the Safe Drinking Water Act, and ~400 about Superfund sites. Many of these violations do not create a significant financial impact on the firm. Instead of including all these violations in our sample, we use the Bureau of Safety and Environmental Enforcement oil spill summary reports to identify one particular type of environmental damages—oil spills (from https://www.bsee.gov/site-page/spills). Different from our approach, Barth, McNichols, and Wilson (1997) examine disclosure choices within publicly-traded firms named as potentially responsible parties to clean up Superfund sites. Our sample includes only severe oil spills, defined as those spills involving greater or equal to 50 barrels, and spanning across three domestic regions: the Gulf of Mexico, Alaska, and the Pacific. Our final sample includes 25 oil spills by publicly traded firms during 2005, 2011, and 2012, 12 of which are caused by Hurricane Katrina or Hurricane Rita in 2005. We define the crisis event date as the oil spill date indicated in the BSEE reports.

TABLE 2 (continued)
Identification of influential negative events

Investor class actions	The class action lawsuit sample comes from the Stanford Law School's Securities Class Action Clearinghouse (SCAC), which covers class action lawsuits filed in Federal Courts. We restrict our sample to include only cases that are alleged primarily due to bullish disclosure/guidance or failing to warn about poor performance (i.e., a subset of 10b-5 lawsuits), and remove cases that are confounded with other allegations (e.g., accounting fraud and restatements, related party transactions, government investigation and violations, etc.). We choose to restrict our sample to disclosure-related lawsuits because other confounding allegations often relate to white collar crime cases, which are classified as another crisis category in our study. The event date is the case filing date. We exclude events for which the firm was the first to announce the lawsuit or had discussed the lawsuit prior to the case filing date. Our final sample includes 109 cases during 2005, 2011, and 2012.
White collar crimes	Our white collar crime sample consists of 50 cases, 12 of which come from the FBI financial crime reports and the remaining 38 are from the Bloomberg Law database. The FBI defines financial crimes as matters relating to fraud, theft, or embezzlement occurring within or against the national and international financial community. FBI crime reports are available from 2005-2011, and only high profile cases are mentioned in these reports. The 38 cases from Bloomberg Law involve bribery, deceiving customers, option backdating, insider trading, manipulating the market, accounting fraud, or healthcare reimbursement fraud during 2005, 2011, and 2012. In Bloomberg Law, we search for "fraud" or "theft" or "embezzlement" and "financial" and "company" and "criminal" and "public" during 2005, 2011, and 2012. We restrict the sample to cases brought by government agencies, such as the DOJ, SEC or state prosecutors, and remove crime cases conducted by individuals or free-lancers, such as computer hackers, individual doctor malpractices, drug dealers, stalkers, identity thefts and other types of thefts. We further remove sexual harassment and tax evasion cases because those either are not in the scope of our study or have been extensively examined in another literature. We define the crisis event date as the date the white collar was first arrested or when the first government agency filed its initial charge. We do not consider cases that were self-announced by the suited firm (e.g., deferred prosecution agreement, restatement announced by the investigated firm) because our goal is to examine how managers of the target firms react to these unexpected investor class actions with respect to disclosure behavior. We exclude events for which the firm had discussed the crime prior to our identified event date, leading to a final sample of 41 cases.
Consumer activism	We collect 14 consumer protection complaints during 2005, 2011, and 2012 from the Federal Trade Commission's database (https://www.ftc.gov/enforcement/cases-proceedings). In addition, we identify two consumer activism events by the Foundation for Taxpayer and Consumer Rights and the Texas Consumer Association. These two organizations solicited FTC or state officials to take consumer protection actions against the targeted firms. We define the crisis event date as the initial filing date by FTC or the public announcement date by a consumer activism organization. After excluding events for which the firm had discussed the event prior to our identified event date, our final sample consists of 13 events.

TABLE 3
Summary statistics of variable distributions

This table presents descriptive statistics of the variables used in the analysis. *Dismiss* equals one for dismissed cases, and zero for non-dismissed cases. *Dismiss* is based on a sample of investor class action lawsuits claiming only overly optimistic performance guidance. *External* equals one for sudden events caused by external forces, and zero for sudden events caused by internal forces. *Sudden* equals one for catastrophes, casualty accidents and environmental damages, and zero for investor class actions, white collar crimes, consumer activism, and product recalls. *Whether to disclose* equals one for firms providing any disclosures regarding a specific crisis event within the month following the event. *Materiality 1* is the absolute value of the cumulative market-adjusted return during [0,+2] around the event, and *Materiality 2* is the change in implied volatility derived from option prices [-3,+3] around the event. *Media* is the natural logarithm of the number of news articles on the event day to the average daily news articles from the prior year. Please refer to Appendix A for other variable definitions.

	N	Mean	25th	Median	75th	Std Dev
Dismiss	99	0.64	0.00	1.00	1.00	0.48
External	126	0.61	0.00	1.00	1.00	0.49
Sudden	292	0.44	0.00	0.00	1.00	0.50
Whether to disclose	292	0.37	0.00	0.00	1.00	0.48
Materiality 1	292	0.04	0.01	0.02	0.05	0.07
Materiality 2	292	0.02	-0.01	0.00	0.02	0.24
Media	292	0.87	0.00	0.72	1.30	0.83
Size	292	7.77	6.27	7.98	9.72	2.52
Market-to-book	292	-0.57	-1.07	-0.52	0.00	1.14
Return-on-assets	292	0.04	0.00	0.04	0.08	0.17
Loss firm	292	0.18	0.00	0.00	0.00	0.39
Leverage	292	0.17	0.00	0.12	0.28	0.18
Investment cycle	292	0.05	0.02	0.04	0.06	0.07
Return momentum	292	0.12	-0.10	0.11	0.28	0.45
Return volatility	292	0.10	0.06	0.09	0.13	0.06
Firm age	292	2.56	1.79	2.71	3.56	1.23
NYSE firm	292	0.60	0.00	1.00	1.00	0.49
USA firm	292	0.84	1.00	1.00	1.00	0.37
Litigation	292	0.27	0.00	0.00	1.00	0.45
Guidance	292	0.94	0.00	1.10	1.61	0.90
Herfindahl index	292	0.17	0.06	0.13	0.20	0.17
Insider ownership	292	0.04	0.00	0.00	0.00	0.37
Institutional investor	292	0.52	0.06	0.63	0.81	0.35
Analyst following	292	2.02	0.00	2.48	3.22	1.41
Public debt issuance	292	0.14	0.00	0.00	0.00	0.51

TABLE 4
Correlation matrix (right: Pearson; left: Spearman)

Please refer to Appendix A for detailed variable definitions. * Two-tailed p<0.10; ** p<0.05; *** p<0.01.

	Dismiss	External	Sudden	Whether to disclose	Materiality 1	Materiality 2	Media	Size	Market-to-book	Return-on-assets	Loss firm	Leverage	Investment cycle	Return momentum	Return volatility	Firm age	NYSE firm	USA firm	Litigation	Guidance	Herfindahl index	Insider ownership	Institutional investor	Analyst following	Public debt issuance
Dismiss				0.24	(0.15)	(0.11)	(0.18)	0.08	(0.10)	0.21	(0.18)	0.01	0.11	0.01	0.09	0.16	0.02	(0.03)	(0.03)	0.04	(0.05)	(0.00)	(0.06)	(0.01)	(0.05)
				**			*			**	*														
External				0.37	0.18	0.27	(0.06)	(0.30)	(0.25)	0.09	(0.02)	(0.20)	0.05	(0.06)	(0.20)	(0.17)	(0.25)	0.23	0.26	(0.05)	(0.01)	(0.12)	(0.20)	(0.17)	(0.22)
				***	**	***		***	***			**			**	*	***	***	***				**	*	**
Sudden				0.10	(0.17)	0.00	(0.26)	0.14	0.20	0.08	(0.25)	0.09	(0.02)	0.11	(0.34)	0.29	0.19	0.06	(0.23)	(0.02)	(0.12)	0.05	0.11	0.12	0.02
				*	***		***	**	***		***			*	***	***	***		***		**		**	**	
Whether to disclose	0.24	0.37	0.10		(0.02)	0.07	0.12	(0.09)	(0.00)	0.07	0.02	(0.05)	0.05	0.08	0.05	(0.05)	(0.08)	(0.05)	(0.00)	(0.09)	0.02	(0.04)	(0.06)	(0.08)	(0.11)
	**	***	*				**																		**
Materiality 1	(0.07)	0.19	(0.12)	(0.02)		0.07	0.17	(0.25)	(0.10)	(0.35)	0.36	(0.12)	0.07	0.00	0.45	(0.28)	(0.23)	0.06	0.15	0.04	(0.04)	(0.01)	(0.07)	(0.11)	(0.10)
		**	**				***	***	*	***	***	**			***	***	***		***					*	*
Materiality 2	0.06	0.20	0.15	0.04	0.09		0.20	0.01	0.02	(0.07)	0.13	0.07	(0.02)	(0.10)	0.06	0.01	0.06	0.04	(0.04)	0.03	(0.03)	0.01	(0.06)	(0.05)	(0.02)
		**	***				***				**														
Media	(0.18)	(0.10)	(0.29)	0.11	0.03	0.02		(0.02)	(0.06)	(0.11)	0.12	(0.04)	(0.02)	(0.10)	0.06	(0.09)	0.00	(0.07)	0.07	(0.01)	(0.01)	(0.06)	(0.06)	(0.02)	(0.02)
	*		***	**						*	**			*											
Size	0.11	(0.30)	0.18	(0.10)	(0.28)	0.08	0.09		(0.21)	0.34	(0.37)	0.19	(0.09)	0.22	(0.30)	0.49	0.52	0.15	(0.06)	0.25	0.06	0.06	0.35	0.57	0.32
		***	***	*	***				***	***	***	***		***	***	***	***	***		***			***	***	***
Market-to-book	(0.12)	(0.11)	0.25	0.03	(0.08)	0.12	(0.09)	(0.25)		(0.21)	0.06	(0.00)	(0.05)	(0.30)	(0.09)	0.03	0.20	(0.33)	(0.27)	(0.19)	(0.09)	0.04	(0.08)	(0.14)	(0.02)
			***			**		***		***				***			***	***	***	***				***	
Return-on-assets	0.23	(0.07)	0.09	(0.01)	(0.12)	(0.12)	(0.01)	0.46	(0.45)		(0.54)	(0.04)	(0.13)	0.26	(0.23)	0.10	0.08	0.03	(0.03)	0.03	0.03	0.00	0.20	0.20	(0.00)
	**		*		**	**		***	***		***		**	***	***	*							***	***	
Loss firm	(0.18)	(0.02)	(0.25)	0.02	0.22	0.07	0.10	(0.40)	0.15	(0.65)		(0.04)	0.13	(0.29)	0.45	(0.25)	(0.20)	0.05	0.15	(0.12)	0.00	(0.01)	(0.23)	(0.26)	(0.11)
	*		***		***		*	***	***	***			**	***	***	***	***		***	**			***	***	**
Leverage	(0.12)	(0.25)	0.15	(0.02)	(0.12)	0.08	0.02	0.25	0.13	(0.03)	(0.06)		0.15	(0.01)	(0.03)	0.25	0.22	0.04	(0.25)	0.10	0.13	(0.03)	0.12	0.11	0.13
		***	***		**			***	**				***			***	***		***	*	**		**	*	**
Investment cycle	0.03	(0.08)	(0.02)	(0.00)	0.10	0.03	0.03	(0.02)	(0.08)	0.05	0.19	0.16		(0.09)	0.21	(0.02)	(0.07)	0.05	0.05	(0.01)	0.16	(0.01)	(0.05)	(0.03)	(0.08)
					*						***	***		*	***						***				
Return momentum	(0.05)	(0.07)	0.18	0.04	(0.04)	(0.01)	(0.04)	0.26	(0.35)	0.28	(0.28)	0.05	0.01		(0.02)	(0.04)	0.01	0.06	0.05	(0.03)	(0.06)	0.00	0.00	0.03	0.02
			***					***	***	***	***														
Return volatility	0.08	(0.23)	(0.37)	0.01	0.34	(0.07)	0.06	(0.44)	(0.10)	(0.11)	0.42	(0.06)	0.22	(0.11)		(0.29)	(0.31)	0.04	0.24	0.06	0.04	(0.03)	(0.16)	(0.21)	(0.18)
		***	***		***			***	*	**	***		***	**		***	***		***				***	***	***
Firm age	0.15	(0.14)	0.29	(0.06)	(0.19)	0.06	0.00	0.48	0.04	0.20	(0.26)	0.33	0.05	0.00	(0.33)		0.45	0.25	(0.21)	0.21	0.17	0.02	0.27	0.31	0.18
			***		***			***		***	***	***			***		***	***	***	***	***		***	***	***
NYSE firm	0.02	(0.25)	0.19	(0.08)	(0.23)	0.11	0.06	0.53	0.16	0.12	(0.20)	0.35	0.04	0.13	(0.32)	0.44		0.03	(0.32)	0.14	0.07	0.02	0.31	0.33	0.21
		***	***		***	**		***	***	**	***	***		**	***	***			***	**			***	***	***
USA firm	(0.03)	0.23	0.06	(0.05)	0.07	0.02	(0.08)	0.09	(0.28)	0.04	0.05	0.04	0.09	0.10	0.01	0.26	0.03		0.09	0.17	0.17	0.04	0.17	0.19	0.13
		***							***					*		***				***	***		***	***	**
Litigation	(0.03)	0.26	(0.23)	(0.00)	0.14	(0.11)	0.07	(0.10)	(0.31)	0.09	0.15	(0.29)	0.10	(0.00)	0.26	(0.22)	(0.32)	0.09		0.20	(0.13)	(0.03)	0.00	0.03	(0.11)
		***	***		**	**		*	***		***	***	*		***	***	***			***	**				**
Guidance	0.01	(0.07)	(0.01)	(0.09)	0.15	(0.01)	(0.00)	0.24	(0.17)	0.22	(0.12)	0.13	0.11	0.01	0.09	0.20	0.14	0.16	0.18		0.04	(0.07)	0.26	0.38	0.04
					***			***	***	***	**	**	*			***	***	***	***				***	***	
Herfindahl index	(0.04)	(0.20)	(0.05)	(0.00)	0.02	(0.04)	0.03	0.05	(0.13)	0.09	(0.03)	0.21	0.15	0.09	0.13	0.15	0.22	0.15	(0.21)	0.05		0.02	0.11	0.05	(0.00)
		**							**			***	***		**	***	***	***	***				**		
Insider ownership	0.04	0.11	(0.06)	(0.03)	0.17	(0.05)	(0.13)	(0.31)	(0.26)	(0.03)	0.16	(0.15)	0.07	0.04	0.24	(0.20)	(0.30)	0.51	0.21	0.02	0.09		(0.02)	(0.09)	0.09
					***		**	***	***		***	***			***	***	***	***	***		*				
Institutional investor	(0.07)	(0.17)	0.09	(0.06)	(0.01)	0.04	(0.02)	0.24	(0.11)	0.26	(0.20)	0.15	0.04	0.11	(0.04)	0.21	0.29	0.17	0.03	0.26	0.19	0.07		0.72	0.04
		*						***	*	***	***	***		**		***	***	***		***	***			***	
Analyst following	(0.01)	(0.18)	0.14	(0.09)	(0.08)	0.03	0.03	0.63	(0.18)	0.38	(0.26)	0.15	0.09	0.12	(0.24)	0.34	0.36	0.20	0.04	0.36	0.03	(0.05)	0.59		0.17
		**	**					***	***	***	***	***		**	***	***	***	***		***			***		***
Public debt issuance	0.01	(0.18)	0.08	(0.08)	(0.11)	(0.01)	(0.01)	0.37	0.01	0.02	(0.14)	0.25	(0.06)	0.02	(0.23)	0.24	0.24	0.16	(0.14)	0.15	0.05	(0.04)	0.03	0.25	
		**			**			***			**	***			***	***	***	***	**	***				***	

TABLE 5
Dismissed and non-dismissed cases

This table presents results from logistic regressions. The dependent variable is *Whether to disclose*, an indicator variable for firms providing any disclosure regarding a specific crisis event within the month following the event. The sample includes 99 investor class action lawsuits claiming only overly optimistic performance guidance. *Dismiss* equals one for dismissed cases, and zero for non-dismissed cases. *Materiality 1* is the absolute value of the cumulative market-adjusted return during [0,+2] around the event, and *Materiality 2* is the change in implied volatility derived from option prices [-3,+3] around the event. *Media* is the natural logarithm of the number of news articles on the event day to the average daily news articles from the prior year. All firm-level variables are from the previous year. Please refer to Appendix A for other variable definitions. * Two-tailed p<0.10; ** p<0.05; *** p<0.01.

	Model (1)		**Model (2)**		**Model (3)**	
Dismiss					**5.15**	*******
Materiality 1			10.50		16.50	
Materiality 2			-22.70	*	-35.87	**
Media			0.90		0.74	
Size	0.19		0.41		0.86	
Market-to-book	-0.40		-0.41		-0.19	
Return-on-assets	12.72	*	14.83		20.19	*
Loss firm	4.12	**	4.21		9.21	**
Leverage	-8.06	**	-12.77	**	-25.07	***
Investment cycle	6.33	*	9.27	*	17.28	**
Return momentum	0.31		0.05		1.53	
Return volatility	9.38		13.73	*	11.66	
Firm age	-0.09		0.03		-0.49	
NYSE firm	-0.44		-1.05		0.00	
USA firm	-3.52	**	-4.25	**	-7.51	**
Litigation	-0.17		-0.87		-0.19	
Guidance	1.57	***	2.57	**	4.66	***
Herfindahl index	6.62	***	8.77	**	17.05	**
Insider ownership	-0.73		0.79		-3.29	
Institutional investor	2.17		2.19		3.33	
Analyst following	-1.50	**	-2.09	**	-3.44	***
Public debt issuance	8.10	**	13.88	**	22.01	***
Fixed effects	year, industry		year, industry		year, industry	
Std. error clustered on	firm		firm		firm	
N	99		99		99	
Pseudo R-squared	0.48		0.56		0.65	

TABLE 6
Externally-caused and internally-caused sudden events

This table presents results from logistic regressions. The dependent variable is *Whether to disclose*, an indicator variable for firms providing any disclosure regarding a specific crisis event within the month following the event. The sample includes 126 sudden events (catastrophes, casualty accidents and environmental damages). *External* equals one for sudden events caused by external forces, and zero for sudden events caused by internal forces. *Materiality 1* is the absolute value of the cumulative market-adjusted return during [0,+2] around the event, and *Materiality 2* is the change in implied volatility derived from option prices [-3,+3] around the event. *Media* is the natural logarithm of the number of news articles on the event day to the average daily news articles from the prior year. All firm-level variables are from the previous year. Please refer to Appendix A for other variable definitions. * Two-tailed p<0.10; ** p<0.05; *** p<0.01.

	Model (1)		**Model (2)**		**Model (3)**	
External					**2.30**	***
Materiality 1			-26.84		-34.99	
Materiality 2			15.27	**	10.75	**
Media			1.07	*	0.99	
Size	0.06		0.10		0.06	
Market-to-book	0.03		0.05		0.13	
Return-on-assets	-11.48	*	-15.60	**	-18.91	**
Loss firm	-2.28		-1.81		-2.80	
Leverage	-0.25		-0.35		-1.75	
Investment cycle	0.55		3.55		-0.24	
Return momentum	-1.32		-1.04		-0.12	
Return volatility	8.41		12.81		28.20	*
Firm age	0.32		0.09		0.29	
NYSE firm	-1.24		-2.11		-2.22	
USA firm	1.31		1.73		1.25	
Litigation	-1.06		-1.44		-2.52	*
Guidance	-0.67		-1.05	**	-1.08	**
Herfindahl index	-4.74	*	-3.16		-3.82	
Insider ownership	-10.82		-7.30		-6.19	
Institutional investor	0.50		1.07		1.66	
Analyst following	0.32		0.37		0.53	
Public debt issuance	-1.13		-1.19		-0.55	
Fixed effects	year, industry		year, industry		year, industry	
Std. error clustered on	firm		firm		firm	
N	126		126		126	
Pseudo R-squared	0.31		0.41		0.46	

TABLE 7
Sudden and smoldering events

This table presents results from logistic regressions. The dependent variable is *Whether to disclose*, an indicator variable for firms providing any disclosure regarding a specific crisis event within the month following the event. The sample includes 139 influential negative events, such as 49 internally-caused sudden events, 36 non-dismissed investor class action lawsuits, 41 white collar crime cases, and 13 consumer activism events. *Sudden* equals one for catastrophes, casualty accidents and environmental damages, and zero for investor class actions, white collar crimes, and consumer activism. *Materiality 1* is the absolute value of the cumulative market-adjusted return during [0,+2] around the event, and *Materiality 2* is the change in implied volatility derived from option prices [-3,+3] around the event. *Media* is the natural logarithm of the number of news articles on the event day to the average daily news articles from the prior year. All firm-level variables are from the previous year. Please refer to Appendix A for other variable definitions. * Two-tailed p<0.10; ** p<0.05; *** p<0.01.

	Model (1)		**Model (2)**		**Model (3)**	
Sudden					**2.76**	*****
Materiality 1			-9.81		-13.64	
Materiality 2			7.92		9.88	
Media			0.58		0.71	
Size	-0.40		-0.43		-0.55	*
Market-to-book	0.73		0.83		0.62	
Return-on-assets	7.07		7.44		9.47	
Loss firm	2.90	*	3.41		3.74	
Leverage	2.89		1.61		2.49	
Investment cycle	20.41		24.96		33.79	
Return momentum	1.87	*	2.53	**	2.72	**
Return volatility	-2.91		-1.61		-3.01	
Firm age	0.89	*	0.87		0.73	
NYSE firm	-0.41		-0.61		-0.69	
USA firm	3.00	**	2.86	**	4.14	*
Litigation	1.81		2.44		3.60	*
Guidance	-0.48		-0.52		-0.79	
Herfindahl index	3.79		6.32	*	9.50	**
Insider ownership	-20.66	**	-20.44	*	-28.78	*
Institutional investor	-0.18		0.59		0.03	
Analyst following	0.25		0.37		0.48	
Public debt issuance	-12.94	***	-12.49	***	-12.62	**
Fixed effects	year, industry		year, industry		year, industry	
Std. error clustered on	firm		firm		firm	
N	139		139		139	
Pseudo R-squared	0.46		0.51		0.55	

TABLE 8
Frequency of public debt issuances

This table presents results from logistic regressions. The dependent variable is *Whether to disclose*, an indicator variable for firms providing any disclosure regarding a specific crisis event within the month following the event. When the sample includes 99 investor class action lawsuits claiming only overly optimistic performance guidance, *Blameless* equals one for dismissed cases, and zero for non-dismissed cases. When the sample includes 126 sudden events (catastrophes, casualty accidents and environmental damages), *Blameless* equals one for events caused by external forces, and zero for events caused by internal forces. *Debt issuance* is the natural logarithm of the number of public debt issuances in the previous year. Please refer to Appendix A for other variable definitions. * Two-tailed p<0.10; ** p<0.05; *** p<0.01.

	Model (1) Blameless= Dismiss		**Model (2) Blameless= External**	
Blameless × Debt issuance	**18.44**	*******	**12.82**	*******
Blameless	5.34	**	1.70	*
Materiality 1	21.24		-52.71	*
Materiality 2	-46.30	**	9.22	
Media	0.22		1.26	
Size	1.67	**	-0.01	
Market-to-book	-0.12		0.09	
Return-on-assets	22.03	**	-29.66	**
Loss firm	10.56	***	-4.02	*
Leverage	-41.03	**	-4.32	
Investment cycle	23.68	***	-0.45	
Return momentum	0.96		0.59	
Return volatility	21.68		40.34	**
Firm age	-0.64		0.51	
NYSE firm	-0.72		-3.04	
USA firm	-10.41	**	1.37	
Litigation	0.14		-3.23	*
Guidance	5.78	***	-1.10	*
Herfindahl index	22.25	**	-4.24	
Insider ownership	-2.87		-13.20	
Institutional investor	1.55		2.12	
Analyst following	-4.14	***	0.75	
Public debt issuance	19.85	*	-9.75	***
Fixed effects	year, industry		year, industry	
Std. error clustered on	firm		firm	
N	99		126	
Pseudo R-squared	0.67		0.54	

TABLE 9
NYSE listing

This table presents results from logistic regressions. The dependent variable is *Whether to disclose*, an indicator variable for firms providing any disclosure regarding a specific crisis event within the month following the event. When the sample includes 99 investor class action lawsuits, *Blameless* equals one for dismissed cases, and zero for non-dismissed cases. When the sample includes 126 sudden events, *Blameless* equals one for events caused by external forces, and zero for events caused by internal forces. *NYSE* is an indicator variable set to 1 if a firm is listed on NYSE. Please refer to Appendix A for other variable definitions. * Two-tailed p<0.10; ** p<0.05; *** p<0.01.

	Model (1) Blameless= Dismiss		**Model (2) Blameless= External**	
Blameless × NYSE	**9.32**	*******	**4.97**	******
Blameless	4.97	**	-1.72	
Materiality 1	26.35	**	-45.54	
Materiality 2	-40.70	***	10.96	*
Media	1.63		1.00	
Size	1.16	*	-0.01	
Market-to-book	-0.37		0.08	
Return-on-assets	39.64	**	-20.14	**
Loss firm	17.16	*	-4.09	*
Leverage	-41.79	**	-4.13	
Investment cycle	24.25	**	-0.44	
Return momentum	1.28		0.54	
Return volatility	16.26		28.21	
Firm age	-0.74		0.34	
NYSE firm	-5.52	**	-6.33	**
USA firm	-12.94	***	1.88	
Litigation	-0.32		-3.03	*
Guidance	8.03	***	-0.94	**
Herfindahl index	31.30	**	-3.64	
Insider ownership	-1.23		-23.19	*
Institutional investor	3.85		0.93	
Analyst following	-5.17	***	0.56	
Public debt issuance	41.45	***	-0.15	
Fixed effects	year, industry		year, industry	
Std. error clustered on	firm		firm	
N	99		126	
Pseudo R-squared	0.71		0.49	

TABLE 10
Profitability

This table presents results from logistic regressions. The dependent variable is *Whether to disclose*, an indicator variable for firms providing any disclosure regarding a specific crisis event within the month following the event. When the sample includes 99 investor class action lawsuits, *Blameless* equals one for dismissed cases, and zero for non-dismissed cases. When the sample includes 126 sudden events, *Blameless* equals one for events caused by external forces, and zero for events caused by internal forces. *ROA* is income before extraordinary items divided by beginning total assets. *Loss* is an indicator variable set to 1 if actual earnings is negative. Please refer to Appendix A for other variable definitions. * Two-tailed p<0.10; ** p<0.05; *** p<0.01.

	Model (1) Blameless= Dismiss		**Model (2) Blameless= External**		**Model (3) Blameless= Dismiss**		**Model (4) Blameless= External**	
Blameless × ROA	**9.46**	*****	**9.34**					
Blameless × Loss					**-1.65**		**-6.36**	******
Blameless	4.49	***	1.92	*	5.60	***	2.90	***
Materiality 1	1.45		-37.54		16.52		-47.45	*
Materiality 2	-19.21	*	11.05	**	-36.63	**	12.18	**
Media	1.82	*	0.95		0.92		0.96	
Size	0.33		0.05		0.82		-0.01	
Market-to-book	-0.58		0.12		-0.29		0.00	
Return-on-assets	8.65		-26.67		20.13	**	-18.38	**
Loss firm	5.40	**	-3.08		9.78	***	1.25	
Leverage	-14.20	***	-2.00		-25.95	***	-2.78	
Investment cycle	5.31		0.04		17.07	***	-0.80	
Return momentum	0.07		0.04		1.30		0.18	
Return volatility	4.89		28.06	*	13.27		32.13	**
Firm age	-0.16		0.29		-0.35		0.43	
NYSE firm	0.62		-2.17		-0.02		-1.94	
USA firm	-4.77	**	1.14		-7.36	**	0.65	
Litigation	-2.29		-2.57	*	-0.60		-2.40	
Guidance	2.91	***	-1.10	**	4.61	***	-1.15	**
Herfindahl index	10.23	***	-3.88		16.75	***	-3.57	
Insider ownership	-2.95		-8.65		-4.16		-8.72	
Institutional investor	3.93		1.76		2.71		2.15	
Analyst following	-3.02	***	0.49		-3.36	***	0.35	
Public debt issuance	4.83	***	-0.56		22.05	***	-0.26	
Fixed effects	year, industry		year, industry		year, industry		year, industry	
Std. error clustered on	firm		firm		firm		firm	
N	99		126		99		126	
Pseudo R-squared	0.62		0.46		0.65		0.48	