

## Disclosure Speed: Evidence from Nonpublic SEC Investigations

Terrence P. Blackburne  
Oregon State University  
[terrence.blackburne@oregonstate.edu](mailto:terrence.blackburne@oregonstate.edu)

Phillip J. Quinn  
University of Washington  
[philq@uw.edu](mailto:philq@uw.edu)

October 2020

**ABSTRACT:** We examine cross-sectional variation in how quickly managers disclose private information. We use novel data on SEC investigations that allow us to measure a shock to managers' private information sets and the time lag until subsequent disclosures. We document that the degree of analyst coverage, the engagement of a large auditor, and litigation risk are associated with faster disclosure. For firms that are relatively slow to disclose investigations, we find an increase in bid-ask spreads and an increase in auditor resignations, and we find no such evidence for relatively fast disclosers. Our results are consistent with firms balancing the costs of fast disclosure, including immediate stock price declines and potential reputational costs, with the costs of delaying disclosure. Our findings generate insights on the relation between firm characteristics and the timely disclosure of private information.

We thank Stephen Baginski, Joy Begley, Beth Blankespoor, Brad Badertscher, Dave Burgstahler, Anne Christensen, Dan Collins, Patty Dechow, Ed deHaan, Brian Gale, Ian Gow, Wayne Guay, Brad Hepfer, Clive Lennox, Dawn Matsumoto, Sarah McVay, Jeremy Michels, Pinky Rusli, Stefan Schantl, Doug Skinner, Richard Sloan, Katie Spangenberg, Logan Steele, and workshop participants at the University of Southern California, the University of Kansas, HEC Lausanne, the University of Melbourne, Montana State University, Oregon State University, and the 2018 UBCOW Conference for their helpful comments. In addition, we thank Owen Albert, Jarrah Allaila, Josephine Athappilly, Cameron Barnett, Neil Benadjaoud, Mikaela Cagampan, Yun Cai, Audrey Chang, Daniel Chen, Max Cooper, Zoie Decker, Ivy Ding, Brittany Do, Nathan Ellisen, Samuel Erichsen, Devlin Gani, Alex Gardner, Mia Hyatt, Ashton Hyman, Luotong Kang, Nikita Kuna, Misa Le, Siying Li, Daisy Liu, Jenny Lu, Rand Mattis, Ivanna Maxwell, Mitchell Moos, Serina Nguyen, Thao Nguyen, Miles Noreus, Caleb Olson, Ramsay Qutob, Gabrielle Rackner, Seiichi Sakagami, Ian Slater, Rosalyn Slater, Truman Sulewski, Andrew Urrutia, Marilena Vassalli, Francesca Wang, Mandi Wang, John Wertz, Zachary Gee-Kai Wong, Tony Xie, and Wenxi Yang for their research assistance. We acknowledge Oregon State University and the University of Washington for financial support.

## I. INTRODUCTION

On November 4, 2019, Under Armour confirmed that for over two years it had been under investigation by the Securities and Exchange Commission (SEC) for potential accounting irregularities (Mirabella 2019). That day its stock price decreased by 18%. Several years earlier, on July 11, 2005, Dreamworks Animation SKG announced in a press release that it was subject to an SEC investigation that had been opened that same day, and its stock price decreased by 13%. A natural question is why managers of some firms, like Under Armour, wait to disclose SEC investigations while managers of others, such as Dreamworks, disclose so promptly. In this study, we use SEC investigations as a setting to examine the determinants of disclosure speed.

The time it takes a firm to disclose information—disclosure speed—is an important and underexamined construct. Slow disclosure provides informed investors with an opportunity to engage in activities that are costly to firms' shareholders (e.g., Jensen and Meckling 1976). Likewise, market microstructure theory suggests that the longer private information is withheld from the public, regardless of whether it is good or bad, the more opportunity informed traders have to take advantage of uninformed traders (e.g., Kyle 1985).<sup>1</sup> Studies that examine the *relative* speed of disclosure do not tell us how quickly private information is revealed. For companies that reveal both good and bad news quickly, tests of relative disclosure speed will show that the company does not disclose bad news quickly on a relative basis. Alternatively, for companies that reveal bad news slowly and good news even more slowly, tests of relative speed will show that the company discloses bad news quickly on a relative basis. Therefore, studies of relative disclosure speed can provide insights that incentives, such as litigation, induce disclosure

---

<sup>1</sup> For example, Blackburne, Kepler, Quinn, and Taylor (2020) document evidence consistent with insiders opportunistically selling their shares on private information about undisclosed SEC investigations but exploiting private information matters for good and bad news alike.

of bad news, but they cannot tell us which firm characteristics are associated with faster disclosure. We advance the literature by examining disclosure speed for a specific type of disclosure—disclosure of an ongoing investigation by the SEC.

To examine disclosure speed, we use novel data that contain the opening and closing dates of nonpublic SEC Division of Enforcement investigations, as well as the primary reason for the investigation. These data allow us to (1) measure approximately when managers receive a type of confidential news and (2) examine sources of cross-sectional variation in how quickly they disclose whether their firm is under investigation.<sup>2</sup> Managers in our sample disclose the existence of 43.9% of SEC investigations. Among the disclosed investigations, the mean time lags between the opening of an investigation and its disclosure is 141 days. This evidence is consistent with studies that find that managers tend to withhold or delay the disclosure of bad news (e.g., Kothari, Shu, and Wysocki 2009; Baginski, Campbell, Hinson, and Koo 2018).

Empirical research suggests that SEC investigations matter to managers and investors. For investigations that lead to enforcement actions, firms and managers bear substantial legal and reputational costs (e.g., Karpoff, Lee, and Martin 2008a; Karpoff, Lee, and Martin 2008b). Further, even if managers are certain no violations occurred, responding to subpoenas and testifying can consume significant resources, and the risk of spurious prosecution is non-zero. Hawke (2018) notes: “There are few things that are as unpleasant, expensive and fear-inducing as a U.S. Securities and Exchange Commission investigation. Companies and individuals often find themselves in a state of high anxiety over the possibility of an enforcement action and its implications.” Coleman, Merkley, Miller, and Pacelli (2020) and Blackburne et al. (2020)

---

<sup>2</sup> Because the SEC typically begins acquiring testimony and documentation from firms at the beginning of the investigation (McLucas, Taylor, and Matthews 1997), the opening date represents a close approximation of the shock to managers’ private information sets.

document that firms under investigation by the SEC tend to earn significant negative future abnormal returns.

Theory predicts that, in the presence of disclosure costs, managers who have discretion over disclosure tend to withhold information, and therefore rational market participants discount the value of the firm (e.g., Verrecchia 2001). Managers can reduce the costs from this adverse selection problem by committing to promptly disclose adverse information (Diamond and Verrecchia 1991). However, little is known about how, in practice, they do so. We examine three theoretical mechanisms that research suggests are associated with disclosure speed—analyst coverage, the engagement of a large (i.e., Big N) auditor, and litigation risk.

We begin by investigating the determinants of disclosure speed for a broad sample of firms under investigation by the SEC. We use accelerated failure time models to estimate disclosure speed for the *population* of investigated firms, rather than just for the subsample of firms that disclosed an investigation. Consistent with managers getting in front of investigation news before it is discovered by analysts (Dyck, Morse, and Zingales 2010) and analyst coverage being associated with more forthcoming disclosures (e.g., Armstrong, Guay, and Weber 2010; Irani and Oesch 2013), we find a one standard deviation increase in analyst coverage is associated with 63% faster disclosure. We also find evidence that the engagement of a Big N auditor is associated with 91% faster disclosure, which is consistent with research that large auditors commit firms to timely disclosure (DeFond and Zhang 2014). We find that high litigation risk is associated with 57% faster disclosure, which is consistent with Skinner's (1994) hypothesis that litigation risk commits managers to faster disclosures, because timely disclosure hinders potential litigants' arguments that managers withheld information and limits potential class periods.

We also examine disclosure speed for the subset of investigations into financial fraud and issuer disclosure (i.e., accounting and disclosure matters). For these investigations, we again find that analyst coverage, the engagement of a Big N auditor, and high litigation risk are associated with faster disclosure. By focusing on disclosure speed for a specific type of investigation, we mitigate concerns that heterogeneity in investigation type drives our findings.

Next, we examine some of the consequences of disclosing an SEC investigation. Like Solomon and Soltes (2020), we document significant negative short-window stock returns following the announcement of an SEC investigation. The magnitude of the reaction is similar for both fast and slow disclosures, which is consistent with the confidential nature of the investigations. The negative market reaction to managers' disclosures is inconsistent with traditional firm-price motivations for disclosure (e.g., Verrecchia 1983; Dye 1985; Jung and Kwon 1988) but consistent with these firms' having committed to disclosure (e.g., Diamond and Verrecchia 1991).

We then test whether post-disclosure outcomes are consistent with the hypothesized channels through which commitment operates. First, we observe a significant increase in bid-ask spreads for disclosing firms during the year following the disclosure. For firms that disclose quickly, however, we find no significant effect, consistent with the liquidity motive for timely disclosure. Furthermore, we find no significant negative liquidity consequences for firms with high analyst following. These findings are consistent with the argument that analyst following commits managers to timely disclosure.

Finally, we examine how auditors may influence managers disclosure timeliness by documenting the relation between disclosure speed and auditor resignations following the commencement of an SEC investigation. Consistent with the notion that auditors impose

reputational costs on managers for withholding material information, we find that slow disclosing firms are more likely than fast disclosing ones to see their auditors resign. We only find this relation in firms with Big N auditors, however, which explains why the engagement of a Big N auditor is associated with more timely disclosures.

Our study makes several contributions. First, it is one of a handful of archival studies in which researchers can observe the private information that managers choose to disclose (e.g., Berger and Hann 2003; Dedman and Lennox 2009; Bens, Berger, and Monahan 2011; Gow, Wahid, and Yu 2018; Solomon and Soltes 2020). To our knowledge, ours is the first paper where researchers have been able to measure approximately when managers receive private information and whether and when they disclose it. Thus our setting allows examination of the determinants and consequences of disclosure speed in a setting where both disclosers and non-disclosers are observable.

Second, we contribute to the literature that examines disclosure incentives. An ex ante commitment to disclose is critical to obtaining many hypothesized benefits of disclosure (Guay and Verrecchia 2018). Most studies that investigate voluntary disclosure rely on settings (such as earnings announcements, earnings guidance, and dividend announcements) where the eventual disclosure of managers' information is inevitable. SEC investigations are non-routine, and—absent an enforcement action or voluntary disclosure—market participants may have no reason to suspect one happened. Thus, managers may reasonably expect that a decision to withhold adverse information will not be revealed through subsequent mandatory disclosures. Given this feature, our finding that 71% of disclosed investigations result in no subsequent enforcement actions makes ours a particularly powerful setting to examine disclosure commitment mechanisms.

Third, we contribute a novel measure of industry litigation risk. Research typically measures litigation risk either using time-invariant indicators of membership in industries with a high frequency of litigation (e.g., Francis, Philbrick, and Schipper 1994) or fitted values from regressions of securities class actions on Compustat and CRSP variables (Kim and Skinner 2012). Using textual analysis, we provide a time-varying measure of litigation risk that reflects how frequently management discusses litigation in the 10-K. Our study also complements the work of Li, Lundholm, and Minnis (2013), who use textual analysis of Form 10-Ks to measure competition, and builds on the growing literature on textual analysis of financial statements (e.g., Li 2008; Miller 2010; Lehavy, Li, and Merkley 2011; Loughran and McDonald 2014).

Finally, our study contributes to the literature on SEC investigations. The SEC's Division of Enforcement is of broad and ongoing interest to investors, firms, policymakers, and researchers alike. Dechow, Sloan, and Sweeney (1996) examine consequences to firms that receive enforcement actions, and Stice-Lawrence (2020) uses EDGAR downloads by SEC employees to study the agency's monitoring. Coleman et al. (2020) document that the SEC's FOIA logs can be used to infer the existence of SEC investigations. To the best of our knowledge, our study is the first to contain data that include not only the opening and closing dates of investigations, but also primary reasons for these investigations (e.g., Foreign Corrupt Practices Act, market manipulation, insider trading).

Our study is subject to limitations. Data limitations preclude us from observing the seriousness of potential securities law violations or the strength of evidence the SEC has about whether a violation occurred. Given that the SEC's decision to pursue enforcement actions depends on the seriousness of the potential violation and the strength of the SEC's evidence (SEC 2017), the decision to voluntarily disclose an investigation may vary with managers'

assessment of the likelihood of an eventual enforcement action. To mitigate concerns about the severity of the potential violation and the strength of the SEC’s evidence, we control for subsequent SEC enforcement actions and a variety of variables that the legal literature suggests are associated with the merits of litigation. In addition, our analyses focus on the speed of disclosure of private information about SEC investigations, and thus our results may not generalize to other disclosure settings. Nonetheless, the disclosure of an SEC investigation is an important economic event that merits study in its own right.

## **II. SETTING AND HYPOTHESIS DEVELOPMENT**

### **The SEC Enforcement Process**

The SEC’s enforcement process begins when SEC staff members have a credible reason to believe that someone violated federal securities law (i.e., a “lead”). They may determine this from regular surveillance, referrals from other regulatory agencies, or tips from concerned investors or whistleblowers. The SEC receives hundreds of thousands of tips per year, which its Office of Market Intelligence sorts through and refers to the appropriate Division of Enforcement staffers for further review (SEC 2016). If staffers believe that a lead suggests a securities law violation, the agency will open a matter under inquiry (MUI) after receiving approval from a Division of Enforcement Associate Director (SEC 2017).

MUIs serve to notify other staff in the Division of Enforcement that an inquiry is in progress, which prevents duplicated efforts. Under SEC policy, during a MUI, staffers should restrict effort to no more than 40 hours of labor and review “readily available information, in order to determine whether an investigation should be opened” (SEC 2011, p. 11).<sup>3</sup> If staffers

---

<sup>3</sup> Stice-Lawrence (2020) and Holzman, Marshall, and Schmidt (2020) collect IP address blocks that the SEC owns, and present evidence that SEC staffers monitor firms by downloading their financial disclosures from EDGAR.



believe that the facts and circumstances justify the use of Division of Enforcement resources, then they will request approval to convert the MUI to an investigation. To incentivize the expeditious closure of MUIs, the SEC has a policy of automatically converting them to investigations after 60 days.

Research and institutional features of the SEC’s investigation process suggest that investigations are not generally frivolous. First, the SEC culls frivolous leads when determining whether to open a MUI. Second, the SEC further culls frivolous matters when determining whether to convert a MUI to an investigation. This occurs, in part, because the process for closing a MUI involves a small amount of paperwork, whereas the process for closing an investigation can be burdensome (GAO 2009). Between 1992 and 2010 the SEC closed roughly 45% of MUIs without opening an investigation (SEC 2011).<sup>4</sup> Third, Blackburne et al. (2020) document that firms under investigation by the SEC tend to earn significant negative returns. Finally, among firms that disclose an investigation, we document a significant negative short-window market reaction to news of an SEC investigation.<sup>5</sup>

SEC investigations are confidential “to preserve the integrity of its investigative process as well as to protect persons against whom unfounded charges may be made or where the SEC determines that enforcement action is not necessary or appropriate” (SEC 2020), and law enforcement exemptions in the Freedom of Information Act (FOIA) allow the SEC to withhold information about them.<sup>6</sup> At the outset of the investigation the only parties that are presumably aware of their existence with certainty are SEC staff, the subjects of the inquiries, and their legal

---

<sup>4</sup> Division of Enforcement staffers may also open an investigation without creating a MUI if the circumstances justify it (SEC 2017). Our data do not include whether the investigation stemmed from an automatically converted MUI, a MUI converted to an investigation by SEC staff, or an investigation opened without any prior MUI.

<sup>5</sup> Nevertheless, a portion of SEC investigations may be frivolous. We use investigations that close within 30 days of opening to proxy for frivolous ones, and our inferences are unaffected by excluding them.

<sup>6</sup> The SEC provides its rationale for keeping investigations confidential at <https://www.sec.gov/complaint/info> (accessed 10 July 2020). A cached version of this webpage is available from the authors upon request.

counsel.<sup>7</sup> Therefore the opening of an investigation represents a shock to managers' private information sets.

At the beginning of an investigation, the Division of Enforcement typically requests the firm under investigation to voluntarily provide documents, such as internal emails or auditor work papers; it may also request interviews with witnesses (McLucas et al. 1997). If the SEC needs to issue subpoenas (e.g., to acquire evidence from banks, telephone companies, business partners, or if the firm is not cooperative) or to compel testimony, then its staffers will request a formal order of investigation (SEC 2017). The SEC does not require a formal order of investigation to pursue enforcement proceedings (McLucas et al. 1997). Therefore the distinction between formal and informal investigations largely rests on the evidentiary requirements of the specific matter and the degree of cooperation by the subject firm.<sup>8</sup>

When the investigation is substantially complete, the SEC's Enforcement staffers determine whether they intend to recommend to the five Commissioners ("the Commission") that the agency pursue an enforcement action (Nelson, Gilley, and Trombly 2009). Then the SEC typically provides the firm under investigation with a Wells notice, which outlines why it intends to pursue an enforcement action.<sup>9</sup> The firm under investigation can then respond to the Wells notice via a "Wells submission." Figure 1 shows that, for a sample of firms that disclosed when

---

<sup>7</sup> Some of the SEC's leads come from whistleblowers, who may suspect that firms are under investigation. Call, Martin, Sharp, and Wilde (2018) note, however, that the SEC may neglect credible whistleblowers, such as when it failed to uncover Bernard Madoff's Ponzi scheme despite receiving evidence from a whistleblower (SEC 2009). Thus even whistleblowers have imperfect information regarding the existence and timing of SEC investigations.

<sup>8</sup> Researchers use various terms to describe the stages of the enforcement process. For example, Karpoff, Koester, Lee, and Martin (2017) note that "[a] typical enforcement action begins with an informal inquiry that leads to a formal investigation." We refer to stages of the enforcement process following the language in the SEC's (2017) enforcement manual.

<sup>9</sup> Per discussions with SEC staff, the SEC issues most Wells notices over a year after an investigation is opened. Consistent with this, Nelson et al. (2009) find that 74% of firms that disclose the receipt of a Wells notice had disclosed the existence of the investigation prior to receipt of the notice. On average they find that the time between the initial disclosure and the disclosure of the Wells notice is longer than one year.

they received a Wells notice, the mean (median) time between the opening of the investigation and the issuance of a Wells notice is 36 (27) months. We find that among firms that disclose an SEC investigation, the mean (median) time from the opening date of the investigation to the disclosure is 141 (35) days. This suggests that most firms do not wait until receiving a Wells notice to disclose an investigation.

Next, Division of Enforcement staffers present their evidence to the SEC's Commissioners, who vote in a closed meeting whether to pursue enforcement actions.<sup>10</sup> In fiscal years 2011 and 2012, the Commissioners voted to pursue enforcement actions for 80% of the recommendations (Eaglesham 2013). The Commission can pursue enforcement actions via civil action in federal courts or internally through administrative proceedings. We find that approximately 15% of investigations in our study lead to an enforcement action, and SEC (2016) documents that the agency has historically obtained relief for over 90% of the cases in which it has pursued an enforcement action. In Figure 2, we summarize the enforcement process.

## **Literature review and hypothesis development**

### ***The role of analysts***

Research documents that analysts facilitate the dissemination of corporate information to equity market participants and that the number of analysts following a firm reduces its cost of capital by increasing its liquidity (e.g., Kelly and Ljungqvist 2012). This creates incentives for managers to take actions that increase their firms' analyst following. Bhushan (1989) hypothesizes that the number of analysts following a firm is determined by the supply of and demand for their services. Lang and Lundholm (1996) argue that a higher supply of firm-

---

<sup>10</sup> In 2009, SEC Chairwoman Mary Schapiro began allowing SEC staffers to pursue enforcement actions without a vote from the Commission (Goldfarb 2009).

provided information increases both the supply and demand for analyst services. Consistent with this, Irani and Oesch (2013) find evidence that managers of firms with more analyst coverage make more forthcoming disclosures. Further, Balakrishnan, Billings, Kelly, and Ljungqvist (2014) document that managers respond to an exogenous reduction in analyst coverage by providing more informative disclosures. These studies suggest that analysts motivate managers to obtain a reputation for forthright disclosure.

Theory suggests that managers of firms that have established reputations for transparency face severe consequences for nondisclosure (Einhorn and Ziv 2008). If analysts discover that managers are not forthcoming with information regarding an SEC investigation, either through leaks or slow disclosure, then analysts may be less inclined to follow a firm. Given that Dyck et al. (2010) find that analysts often discover corporate misconduct, we expect managers' incentives to get in front of bad news to be particularly salient in our setting.<sup>11</sup> These arguments lead to the following hypothesis.

**H1.** Analyst coverage is associated with faster speed of disclosing of SEC investigations.

### *The Role of External Auditors*

An extensive literature suggests that auditors help ensure timely and accurate disclosures to external stakeholders. To the extent that auditors perceive clients under investigation by the SEC to be high risk, we expect this to increase the likelihood of auditor resignation (Bockus and Gigler 1998). Prior literature finds that auditor resignations can lead to significant declines in firm value and increased likelihood of both CEO and CFO turnover (DeFond, Ettredge, and

---

<sup>11</sup> On the other hand, because the eventual disclosure of information in our setting is uncertain, increased dissemination by analysts could exacerbate the capital market penalties of bad news disclosures. If managers wait for an investigation to resolve favorably, they may face little to no reputational damage from its nondisclosure. This creates incentives for managers to delay disclosure of SEC investigations.

Smith 1997; Griffin and Lont 2010; Menon and Williams 2010). This channel might impose sufficient costs on managers to ensure that firms provide timely disclosures related to events, such as open investigations by the SEC.

The audit literature generally finds that the quality of an auditor's assurance will vary with its characteristics (DeFond and Zhang 2014). Dye (1993) demonstrates that an auditor's bond is effectively its wealth; auditors can face litigation if their assurance is faulty. However, dependence on clients for fee revenue can compromise an auditor's independence. Big N auditors are less likely to have individual clients that comprise a major portion of their business (DeAngelo 1981). Studies generally find that large auditors provide better assurance and more transparent financial reporting (e.g., Dunn and Mayhew 2004; Lennox and Pittman 2010; DeFond and Zhang 2014). In general, these studies suggest that Big N auditors will be associated with faster disclosure, which leads to our second hypothesis.

**H2.** Engagement of a Big N auditor is associated with faster disclosure of SEC investigations.

### ***The Role of Litigation Risk***

The literature on litigation and voluntary disclosure explicitly links absolute disclosure speed and litigation risk (Skinner 1994). This literature argues that fast disclosure limits the ability of plaintiff attorneys to assert that management withheld information, and research provides evidence that disclosure reduces the likelihood of a litigation (e.g., Lev 1992; Skinner 1994; Billings and Cedergren 2015). Marinovic and Varas (2016) provide theoretical support for the litigation reduction hypothesis.<sup>12</sup> Our setting allows for a more direct test of the Skinner

---

<sup>12</sup> Other studies, however, suggest that slow disclosure (or, in the extreme, no disclosure) limits plaintiffs' attorneys from identifying firms with declines in stock price and reevaluating those firms' disclosures with the luxury of hindsight (Rogers and Van Buskirk 2009). See Beyer, Cohen, Dey, and Lys (2010) for a summary of this literature.

(1994) hypothesis, because we can measure the relation between litigation risk and the *speed* of disclosure, rather than rely on a binary disclosure outcome or an estimate of relative timeliness.

We state Skinner's (1994) litigation reduction hypothesis as follows.

**H3.** Litigation risk is associated with faster disclosure of SEC investigations.

### III. SAMPLE

Our data include all investigations closed by the Division of Enforcement between January 1, 2000, and August 2, 2017. The data include the beginning and ending dates of each investigation, the SEC Regional Office in charge of the investigation, and the primary reason for the investigation (e.g., insider trading or financial fraud). Discussions with SEC staffers and assessment of subsequent disclosures suggest the opening dates of investigations coincide closely with when managers are contacted. SEC staffers informed us that they do not track when they first contact management but that the opening date of the investigation is a close approximation.<sup>13</sup>

We locate a Compustat and CRSP identifier for 3,948 Division of Enforcement investigations that close during our sample period. We exclude investigations into insider trading for two reasons. First, they do not necessarily relate to the firm or individuals at the firm, and, in

---

<sup>13</sup> In Appendix A, we provide two examples in which we have additional information regarding the date when the SEC notified managers of an open investigation. In the first example, the SEC communicated with Kinder Morgan on March 29, 2012, which was one day after the investigation open date. In the second example, EBIX disclosed: "On August 11, 2000, the Company was advised that the SEC has issued a formal Order of Investigation." The SEC opened an investigation of EBIX on August 2, 2000, which means that there was no more than a nine-day delay between when the opening and the notification. Note that EBIX disclosed the date that the SEC opened a *formal* investigation, rather than when the SEC opened an informal investigation.

these cases, it is unclear whether the SEC would notify the firm about the investigation. Second, the SEC may keep some investigations into insider trading covert.<sup>14</sup>

When firms face concurrent Division of Enforcement investigations, we consolidate the investigations into a single continuous period of investigation. Because disclosure data are difficult to obtain prior to 2000, we eliminate investigations that open prior to January 1, 2000. We consider firms to be “at risk” during the period from the opening of the investigation until the earlier of its disclosure or closing date. During each firm-investigation, we create firm periods-at-risk to account for changes in disclosure incentives that occur after the investigation opens. The beginning date for the first period-at-risk is the opening date of the investigation, and we exclude firms with insufficient data to calculate covariates as of the investigation open date. For investigations that span multiple fiscal years, we update our time-varying covariates each fiscal year-end during the investigation. The ending date for each period-at-risk is the earliest of the disclosure date, closing date, or the firm’s next fiscal year-end. Table 1 details the effects of these requirements on our overall sample size. Our main sample consists of 1,936 investigations and 4,061 periods-at-risk.<sup>15</sup>

To collect disclosure dates for each firm-investigation, we search news articles and press releases on Factiva and SEC filings on EDGAR. We are interested in examining firms’ disclosure speed of private information about SEC investigations, and a competing risk is that an external party discloses the investigation before the firm. Thus we collect data on who discloses the investigation first (i.e., the firm or an external party). SEC staffers revealed that they

---

<sup>14</sup> Consistent with these investigations often being unrelated or unknown to the firm, we find analysts, large auditors, and litigation risk are not significantly associated with disclosure speed in a sample of investigations into insider trading.

<sup>15</sup> Some investigations are comprised of multiple observations, sometimes called “periods at risk” or “multiple observations per subject.” The details for variable constructions are in Appendix B.

sometimes contact firms during the matter under inquiry phase, and, because MUIs are automatically converted to investigations after 60 days (SEC 2017), our disclosure search starts 60 days before the investigation open date and ends on the close date. For firms that disclose receiving inquiries from the SEC before the start of the investigation (i.e., during the MUI phase), we classify the firm as having disclosed the investigation on day 1.<sup>16</sup>

Table 2, Panel A, shows descriptive statistics. Firms under investigation by the SEC often exhibit poor stock price and accounting performance prior to investigations. In 15.5% of investigations, the firm receives an enforcement action, and 24.2% of firms under investigation restate their financial statements. In 43.9% of investigations, firms disclose the investigation before either an external party (e.g., newspaper) discloses the investigation or the investigation closes (*Disclosure Ind.*). In Figure 3, we plot market-adjusted returns for the three years following the opening of an accounting investigation. The median return three years after the opening of an accounting investigation is -14% (-34%), relative to a value-weighted (equal-weighted) CRSP benchmark. The economically meaningful negative return is consistent with accounting investigations coinciding with severe negative performance for most firms.

In Table 2, Panel B, we present univariate differences for firms with *Disclosure Ind.* equal to 0 and 1. Disclosers tend to have greater analyst following and are more likely to use a Big N auditor. Consistent with firms being more likely to disclose more serious investigations, we find that disclosers are also more likely to have a subsequent enforcement action (28.4% versus 5.4%), restatement (33.5% versus 16.9%), concurrent investigation (16.6% versus 9.1%),

---

<sup>16</sup> In our main analysis, we use the open date of the SEC investigation to measure when managers learned of the SEC investigation. An alternative assumption is that managers learn of the investigation during the MUI phase, which starts no earlier than 60 days before the open date. Our inferences are unchanged when we measure disclosure starting 60 days before the open date. Our data do not indicate which investigations were started because of a MUI being open for 60 days. Appendix C provides a thorough description of our disclosure collection procedures.



and private litigation (10.4% versus 3.9%). We also find the disclosing firms are more likely to be investigated for potential violations of accounting and disclosure rules. Overall, the statistics in Panel B suggest that important differences exist between disclosers and non-disclosers, and we control for these differences in our analysis.

We next discuss the manner and timing of disclosures of SEC investigations. The most common form of disclosure is a Form 8-K or a press release, which collectively represent 52% of disclosures.<sup>17</sup> The next most common means of disclosure are Forms 10-Q and 10-K, with 24% and 17% of disclosures, respectively. In additional analysis, we find that most Form 8-K disclosures of SEC investigations are bundled with other information. The tendency of managers to bundle bad news is consistent with strategic disclosure by managers to mitigate securities litigation. In securities litigation, plaintiffs often rely on event studies to establish loss causation. When managers bundle news, plaintiffs cannot simply conduct an event study but instead must parse each element of news to persuasively show that a particular piece of news caused harm (e.g., Fisch, Gelbach, and Klick 2018).

In Figure 4, we present descriptive statistics for firms that disclose an SEC investigation. Specifically, we present the delay, in months, between the opening of the SEC investigation and the first disclosure. We find that for 49% of investigations, managers disclose the existence of an SEC investigation in the first 30 days, and, for 8% of investigations, managers disclose the existence of an SEC investigation in the second 30 days. For 2% of investigations, managers wait at least three years before disclosing that an investigation is ongoing. The fact that 57% of disclosures occur in the first two months suggests that most disclosing managers do not wait for subsequent developments, such as the receipt of a Wells notice, before making their disclosure

---

<sup>17</sup> Firms often disclose a press release within a Form 8-K, but, in other instances, the press release is not part of a Form 8-K.

choice. It is also consistent with empirical findings that roughly 75% of Wells notice disclosures are preceded by a disclosure of an open investigation, and that the investigation disclosure occurs on average 12 to 19 months prior to the receipt of the Wells notice (Nelson et al. 2009).

## IV. METHODS AND RESULTS

### Survival analysis

Our study differs from most research on voluntary disclosure in that we examine disclosure speed rather than a binary disclosure decision. We measure disclosure speed as the time, in days, between the opening of an SEC investigation related to a firm and the firm's disclosure, if any, of an ongoing SEC investigation. We use survival analysis to analyze relations between our variables of interest and the voluntary disclosure of ongoing investigations.

The empirical methods we employ assume that each firm in our sample has an expected time to disclosure,  $T$ . We then define a cause-specific hazard function,  $\lambda(t|\mathbf{X})$ , as the instantaneous rate of disclosure for firms that have not previously disclosed the existence of an ongoing SEC investigation, at time  $t$  given a set of covariates  $\mathbf{X}$ . Cause-specific hazard functions allow us to examine disclosure speed and account for the existence of competing risks (Cleves, Gould, and Marchenko 2016).<sup>18</sup> In our main analyses, we use accelerated failure time models, where the expected time to disclose is modeled in a log-linear model:

$$\log(T) = \mathbf{X}'\beta + \varepsilon ,$$

where  $\varepsilon$  is an error term that, upon exponentiation, enters the baseline hazard function (Kalbfleisch and Prentice 2002). The hazard function that we estimate thus takes the form:

---

<sup>18</sup> For firms that do not disclose the investigation before an external party or before the investigation closes (i.e., the competing risks), we right censor the observation on the earlier of the disclosure by an external party and the close date of the investigation (Cleves et al. 2016).

$$\lambda(t | \mathbf{X}) = \exp(-\mathbf{X}'\boldsymbol{\beta}) \lambda_0(t e^{-\mathbf{X}'\boldsymbol{\beta}}),$$

where  $\lambda_0$  is an arbitrary baseline hazard rate. In this specification, the covariates of interest act multiplicatively on the disclosure time. Therefore the coefficients we estimate using accelerated failure time models have a *direct* interpretation with the speed of disclosure, as they result in a shift to the hazard function along the time axis (Kalbfleisch and Prentice 2002).<sup>19</sup>

To test our hypotheses, we include time-varying covariates that measure our constructs of interest. To measure analyst coverage (H1), we calculate the natural log of analyst following. To measure the engagement of a large auditor (H2), we use an indicator for whether the firm engages a Big N auditor.<sup>20</sup> To measure litigation risk (H3), we use the frequency of litigation-related words in 10-K filings of firms in the same Fama and French (1997) 48 industry  $\times$  year. This text-based approach is similar in spirit to Li, Lundholm, and Minnis (2013), who use a text-based approach to measuring competition.

Our accelerated failure time models include controls for other potential determinants of disclosure speed. We control for firm characteristics, including firm size (e.g., Firth 1979), market-to-book ratio, and return on assets (e.g., Lang and Lundholm 1993). Prior literature argues that firms enter contracts with creditors to resolve agency conflicts (e.g., Smith and Warner 1979), and we include controls for *Short-Term Debt* and *Long-Term Debt*. The large ownership stake of concentrated owners creates an incentive to monitor managerial behavior (e.g., Jensen and Meckling 1976). Following Demsetz and Lehn (1985), we use a Herfindahl-

---

<sup>19</sup> Accelerated failure time models require us to select a distribution of the baseline hazard,  $\lambda_0$ . Following standard practice, we use the Akaike information criterion (AIC) to select the most appropriate model (Akaike 1974). In addition, research suggests that coefficient estimates in survival analyses are generally insensitive to the parametric form of the baseline hazard function (e.g., Cox and Oaks 1980).

<sup>20</sup> Theory provides mixed predictions on whether auditor tenure will be associated with faster or slower disclosure (e.g., Magee and Tseng 1990, Patterson, Smith, and Tiras 2019). Thus we control for auditor tenure but do not make a formal prediction.

based measure of ownership concentration. The decisions of (i) whether to disclose an investigation and (ii) when to disclose the investigation relate to the decision of whether to bundle the disclosure with other firm news. Further, insofar as management decides to bundle the disclosure of the SEC investigation with a 10-K or 10-Q, the speed of the disclosure will be affected by the number of days between when the SEC investigation opened and the next scheduled Form 10-K or 10-Q report date. As such, we include controls for the number of days until the next quarterly report date and for the number of days until the next annual report date.

Some companies may base their disclosure decision on the perceived severity of the investigation. Because some companies may wait until a scheduled periodic filing, such as a Form 10-K or 10-Q, to disclose SEC investigations, and investigations that are less serious (and therefore less likely to be of interest to investors) are likely to have shorter durations, this may violate the noninformative censoring assumption. To account for the severity of the investigation in our primary tests, we include controls for the severity of the investigation. We include an indicator equal to one when a firm had a securities class-action lawsuit brought against it in the 90 calendar days prior to the start of the investigation and zero otherwise. We include the stock market returns during the 90 calendar days before the investigation opens. Allegations of fraud require evidence of scienter, and we include a control for abnormal insider selling prior to the start of the investigation.

We also include ex post controls for the severity of the investigation, including whether the investigation resulted in an enforcement action, whether the firm announces an irregularity restatement during the investigation (e.g., Badertscher, Hribar, and Jenkins 2011), whether the SEC opens a second investigation before the first investigation closed, and whether the

investigation relates to accounting or disclosure. We measure these outcomes ex post, rather than in event time.<sup>21</sup>

## Results of Disclosure Speed Tests

Table 4 presents the results of estimating our accelerated failure time models. To aid interpretation, we report time ratios, rather than coefficients. In column 1 of Table 4, we find 11 times faster disclosure of investigations that result in enforcement actions (i.e.,  $1/0.083 - 1$ ), as well as faster disclosure of investigations that are associated with accounting restatements and private litigation. These results are consistent with firms disclosing more severe investigations faster. In column 2 of Table 4, we document that a one standard deviation increase in analyst coverage is associated with 76% faster disclosure ( $1/0.591^{1.071} - 1$ ).

In column 3 of Table 4, we find that Big N auditors are associated with 139% faster disclosure ( $1/0.418 - 1$ ). This is consistent with auditors seeking to preempt external release of bad news about the firm. In column 4 of Table 4, we find high litigation risk is associated with 58% faster disclosure (i.e.,  $1/0.631 - 1$ ). Finally, the results in column 5 of Table 4 are consistent with earlier results. We find analyst coverage, Big N auditors, and litigation risk are associated with 63%, 91%, and 57% faster disclosure, respectively.<sup>22</sup>

---

<sup>21</sup> The inclusion of these outcomes can be interpreted in two ways. One interpretation is that managers have perfect private information about the eventual outcomes of the investigation. A less restrictive interpretation is that at the outset of an investigation, managers possess private (i.e., unobservable) information about the matter under investigation, and including ex post outcomes mitigates the likelihood that differences in unobservable variables confound our analysis. In later tests, we examine these associations in a subsample that excludes investigations that result in subsequent enforcement actions.

<sup>22</sup> We also estimate the absolute probability of disclosure using a linear probability model. We find that a one standard deviation increase in analyst coverage is associated with a 3.7 percentage point increase in the absolute probability of disclosure ( $p$ -value = 0.015), which represents an 8.4% increase, relative to the sample mean (i.e., 0.037/0.439). We find coefficients of 0.011 and 0.016 on *Big N* and *Litigation Risk Ind.*, respectively, but neither is statistically significant at traditional levels. Statistical power is a concern in tests that discard time-to-event information in lieu of binary outcomes. Indeed, George, Seals, and Aban (2014) note: “There is much more statistical information as well, as survival analyses tend to have greater statistical power to detect a significant

Our sample in Table 4 includes investigations for various potential violations of securities law, including potential violations of the Foreign Corrupt Practices Act, market manipulation, and accounting matters. In our next test, we test our hypotheses using a subsample of investigations that we expect to be of particular interest to analysts, auditors, and plaintiff attorneys—accounting investigations.

In Table 5, we examine the determinants of disclosure speed for the subset of investigations relating primarily to accounting and disclosure investigations. The results in Table 5 are consistent with the results in Table 4. By introducing a setting where we can measure the absolute speed of disclosure, without excluding firms that never disclose the event of interest, our study provides direct evidence of the relation between litigation risk and faster voluntary disclosure. Overall, the results in Table 5 suggest that analysts, auditors, and litigation risk accelerate disclosure, consistent with H1, H2, and H3, respectively.

## V. OUTCOMES

### **Equity market outcomes**

#### *Market reaction*

We expect that knowledge of investigations is valuable to investors. Given that these investigations are typically private and thus difficult to observe, public disclosure is likely to revise investors' expectations about the firm's performance and risk. If the disclosures convey new information, then returns around a disclosure should be negative if investors revise expectations of cash flows downward, increase their perceptions of risk, or both. Consistent with this logic, in column 1 of Table 6, we document significant negative abnormal event returns on

---

treatment or exposure effect than methods for binary outcomes such as logistic regression.” As such, we focus our analysis on survival analysis methods.

the trading day of and immediately following the disclosure date. The coefficient of  $-1.590$  on  $Event * Disclose$  equals the incremental negative abnormal daily event return for disclosing firms over non-disclosers, where we use the investigation open start as a pseudo disclosure date for non-disclosers. The coefficient represents an average 3.2% decrease in market value for disclosers (i.e., negative 1.59% compounded over two days). In contrast, we find no significant event return for non-disclosers. This latter result is consistent with the confidential nature of ongoing SEC investigations.

Next, we partition disclosers into slow and fast disclosures based on the median time to disclosure (35 days) and examine the market reaction to slow and fast disclosures. In column 2 of Table 6, we document similar negative returns to slow and fast disclosures of investigations. These results mitigate concerns that slow disclosures are stale (i.e., the news of the SEC investigation has already been fully incorporated into price).<sup>23</sup> Finally, in column 3, we partition disclosers according to the extent to which they bundle other information with the disclosure of SEC investigations. We set *Low Bundling* equal to one when a firm discloses an SEC investigation in a Form 8-K, Form 6-K, or a press release and zero otherwise. For firms that disclose investigations via other means (e.g., Form 10-K), we set *High Bundling* equal to one. The coefficient of  $-2.222$  on  $Event * Low Bundling$  is economically and statistically more negative than the coefficient of  $-1.008$  on  $Event * High Bundling$ , consistent with some managers bundling disclosures to obscure news of a SEC investigation.<sup>24</sup>

---

<sup>23</sup> Our inferences are similar when we control for subsequent enforcement actions (i.e., a control for the severity of the investigation), as well as a control for whether the disclosure is bundled in a Form 10-K or 10-Q.

<sup>24</sup> The decision to disclose slowly, quickly, bundled, or not at all is endogenous, and, as a result, it is difficult to draw inferences about the differential coefficients for high versus low bundling. An alternative explanation for the less negative coefficient on  $Event * High Bundling$ , for example, is that firms with less severe investigations are more likely to bundle the disclosure. Including an indicator that equals one if the SEC pursues an enforcement action produces similar results, which casts doubt on this alternative explanation.

## *Information asymmetry*

To the extent that there is heterogeneity in the ability of investors to process and understand the ramifications of the investigation, information asymmetry will also likely increase. In our setting, sophisticated investors likely have better knowledge of the issues under investigation from experiences or expertise. Meanwhile, unsophisticated investors are likely aware that the investigation could lead to difficulties, but they will be less likely than sophisticated investors to correctly estimate the likelihood or magnitude of outcomes (e.g., settlements or legal fees). Bid-ask spreads are commonly used as a measure of information asymmetry (e.g., Lee, Mucklow, and Ready 1993), and we predict that bid-ask spreads increase immediately following disclosure of an SEC investigation and remain elevated in the months after the disclosure.<sup>25</sup> Specifically, we calculate *BA Spread* as the difference between the closing bid and closing ask price, scaled by price. We include both disclosing and non-disclosing firms in our sample, and we estimate the following:

$$BA\ Spread_{i,d} = \beta_1 PostEvent_{i,d} + \beta_2 (PostEvent \times Disclose)_{i,d} + \alpha_i + \tau_{ym} + \varepsilon_{i,d},$$

where *PostEvent* is an indicator equal to one for trading days [0, +X], relative to the disclosure (investigation opening for non-disclosing firms), and zero otherwise. *Disclose* equals one for firms that disclose and zero otherwise.  $\alpha_i$  are firm-investigation fixed effects to control for latent differences across firms.  $\tau_{ym}$  are year-month fixed effects to control for time-varying differences

---

<sup>25</sup> In classic asset pricing models, uninformed market makers increase bid-ask spreads when they perceive other investors as possessing private information above and beyond what is publicly available to price protect themselves from adverse selection (e.g., Kyle 1985; Glosten and Milgrom 1985). This is likely the case for SEC investigations, because the value implications of the investigation are often not immediately apparent from the public disclosure and sophisticated (informed) investors are likely to generate private information from the public disclosure (e.g., Kim and Verrecchia 1994).



in spreads. This specification is a difference-in-differences, where  $\beta_1$  estimates the change in *BA Spread* for non-disclosers and  $\beta_2$  estimates the incremental change for disclosers.

Table 7 contains the results of estimating bid-ask spreads as a function of disclosure. Consistent with our prediction, we find that *BA Spread* increases during the post window and that these increases are only observed for disclosing firms.<sup>26</sup> In Panel A, we document a significant increase in bid-ask spreads for disclosers after disclosure, relative to the bid-ask spreads after investigations open for the non-disclosers. In column 4, we document that the increase is present during the 30 trading days after the disclosure (coeff. = 0.092, t-stat = 2.70), and, in column 1, we document that the increase persists for at least a year following the disclosure (coeff. = 0.101, t-stat = 2.75). Given that the mean *BA Spread* is 0.763, the latter estimate represents a 13% increase in bid-ask spreads.

In Panel B, we find a statistically significant increase in bid-ask spreads following disclosure for slow disclosers but no significant increase for fast disclosers. The increase for slow disclosers is economically meaningful, as it represents a 16.8% increase over the average bid-ask spread. Overall, the results in Panels A and B of Table 7 are consistent with increased information asymmetry following disclosures of SEC investigations.

### **Analyst outcomes**

Our hypothesis is that analysts act as a mechanism that commits managers to timely disclosure. One way this might work is through managers' incentives to maintain analyst following. To test this, we examine the change in bid-ask spreads for disclosing firms that have

---

<sup>26</sup> Inferences are similar when using alternative design choices, such as only including disclosing firms (in which case the main estimates are not interpreted as a difference-in-differences but rather a single difference) or performing the estimation at the firm-investigation level using abnormal bid-ask spreads.

above median analyst following (*Hi Analyst*) and conduct a difference-in-difference-in-difference analysis. The results are presented in Table 7, Panel C. We find that disclosure increases bid ask spreads but that this relation is not significant for disclosing firms that have high analyst following. This suggests that the effect of analyst coverage on liquidity provides incentives for managers to disclose the existence of SEC investigations.

### **Auditor outcomes**

We also proposed that a channel through which auditors can commit managers to timely disclosures is via the threat of resignation. To test this, we create an indicator set to one for auditor resignations that occur *after* the opening of an SEC investigation. We also create an indicator variable *Slow* set to one for firms that disclose later than the sample median disclosure time and an indicator *Fast* set to one for firms that disclose the investigation faster than the median. We then conduct logistic regressions with the firms in our sample for the year of the investigation and the following two years.<sup>27</sup> We include controls for variables commonly used in the audit literature (e.g., Barua, Lennox, and Raghunandan 2020). The results of this analysis are presented in Table 8. We partition the sample by firms with Big N auditors and firms without Big N Auditors. The coefficient on *Slow* is positive and significant in the Big N samples but not in the non-Big N samples. The coefficients on *Fast* are negative, but not significant for the Big N samples, and the coefficients on *Leaked* are positive but not significant. This suggest that firms that wait to disclose the existence of an investigation experience a significantly increased risk of an auditor resignation while those that disclose quickly do not. This suggests that the threat of auditor resignation is a particularly acute risk for firms with large auditors and provides a mechanism for how large auditors can commit managers to timely disclosure.

---

<sup>27</sup> We code auditor resignations that occur the year of the investigation, but before the investigation begins as zero.

## VI. ADDITIONAL ANALYSIS

### Voluntary disclosure

In our primary analysis, we measure disclosure speed using accelerated failure time models. These models measure the “time to failure” as the dependent variable (Cleves et al. 2016). We measure “time to failure” as the time in days to disclose. This analysis assumes that, given a sufficient passage of time, disclosure is inevitable. This is akin to assuming that, as the time under investigation progresses, managers’ assessment of the severity of the investigation is increasing monotonically or their ability to keep the investigation private is decreasing monotonically. Consistent with this, we find in an untabulated analysis that the length of an investigation is highly predictive of whether it results in a subsequent enforcement action.

Our earlier analysis, however, includes firms that eventually faced SEC enforcement proceedings. For these firms, managers have limited influence over the timing of the disclosure, because the public nature of enforcement proceedings prevents managers from keeping the investigations private indefinitely. We examine our hypotheses for the subsample of firms where managers have greater discretion over disclosure speed. Consistent with our main results, we find that analyst coverage and litigation risk are associated with significantly faster disclosure. We also find that the engagement of a Big N is associated with 89% faster disclosure, but this is not statistically significant at traditional levels ( $p$ -value = 0.12 in a two-tailed test). Overall, these tests suggest that heterogeneity in the severity of investigations is unlikely to significantly affect our results.<sup>28</sup>

---

<sup>28</sup> When we further restrict our sample to only include accounting investigations, however, we find that the engagement of a Big N auditor is associated with 140% faster disclosure ( $p$ -value = 0.054 in a two-tailed test).

## Litigation risk

We conduct three split sample tests to support the text-based measure of litigation risk and test whether we observe cross-sectional variation consistent with the literature on litigation risk. First, we split our sample according to whether the firm has greater than median total cash holdings for our sample. Research consistently finds that cash holdings have a first-order effect on a firm's likelihood of shareholder litigation (e.g., Nguyen, Phan, and Sun 2018), and we expect the relation between litigation risk and disclosure speed to be concentrated among cash-rich firms. In column 1 of Table 9, we find for firms that are under investigation with *above* median cash holdings, litigation risk is associated with 120% faster disclosure, and the results are significant at the 5% level. In contrast, in column 2, we document that firms with *below* median cash holdings, litigation risk is associated with 1% *slower* disclosure, which is statistically insignificant.

Second, consistent with research that argues a firm's likelihood of being the subject of a class action lawsuit increases in its ability to pay (Nguyen et al. 2018), we expect the relation between litigation risk and disclosure speed to be pronounced among more profitable firms. In column 3 of Table 9, we document that a significant relation between litigation risk and disclosure speed for firms with above-median profitability. In contrast, in column 4, we find no significant evidence of a relation between litigation risk and disclosure speed for firms with below-median profitability.

Third, concentrated owners bear both the benefits and the costs of corporate behavior disproportionately to non-concentrated owners (Edmans and Holderness 2017). This suggests that concentrated ownership intensifies managers' litigation and reputational costs (Chen, Chen, and Cheng 2008). Further, research has documented evidence that large owners may use

shareholder litigation as a monitoring mechanism (Cheng, Huang, Li, and Lobo 2010), and we find in column 5 of Table 9 that the relation between litigation risk and faster disclosure is concentrated among firms with at least one blockholder. Overall, these results support our text-based measure of litigation risk as well as the notion that litigation risk accelerates disclosure.

### **Additional robustness tests**

One of the identifying assumptions of the time to event statistical methods that we use is that censoring is noninformative. In other words, conditional on the covariates we include, the disclosure rates for censored observations beyond the censoring time are the same that would have occurred in the absence of censoring (Kalbfleisch and Prentice 2002). This assumption is untestable. In our setting, a concern is that censoring relates to the disclosure decision. In our main analyses we try to ameliorate these concerns by including both ex ante and ex post controls for investigation severity. To the extent that these controls may not be adequate, we conduct an additional set of analyses to examine the robustness of our results to the noninformative censoring assumption. First, we conduct our accelerated failure time analysis solely on the subsample of firms for which we have complete information (i.e., where we observe company-initiated disclosure). In untabulated tests, we find significant coefficients on all our main variables of interest that are consistent with tables 4 and 5.

Next, we attempt to establish bounds for the extent of bias that could occur, given informative censoring through imputation of disclosure dates (Hsu and Taylor 2009; Jackson et al. 2014). Under this approach we alternately assume that disclosure happens immediately following censoring or that the time to disclosure for censored observations is equal to the maximum observed time. This approach creates a bound for estimated parameters if the

noninformative censoring assumption is violated. We first re-run all of our determinants tests where we set company-initiated disclosure to occur immediately following censoring. We then re-run all of our determinants tests in a sample where we set company-initiated disclosure to occur at a time consistent with the longest-duration observation in our sample. The coefficients on our main variable of interest remain statistically significant in the short-duration sample. In the long-duration sample,  $Ln(Analysts)$  remains statistically significant, while *Big N* and *Litigation Risk* are marginally insignificant (p values of 0.113 and 0.132, respectively) in the full investigation sample, and *Big N* is marginally insignificant in the accounting and disclosure investigation sample (p value of 0.101). These results, collectively, suggest that violation of the noninformative censoring assumption is unlikely to affect our results.

## VII. CONCLUSION

To the best of our knowledge, ours is the first archival study in which researchers have been able to measure both the arrival and subsequent disclosure of a subset of managers' private information. This allows us to examine the relation between a variety of commitment devices and disclosure speed as well as the consequences of the decision of whether to disclose fast, slowly, or not at all. We present evidence that analyst coverage, the engagement of a large auditor, and litigation risk are associated with faster disclosure. Changes in bid-ask spreads and auditor resignations following SEC investigations suggest viable channels for analysts and auditors to act as mechanisms that commit managers ex ante to disclosures that have negative ex post capital markets consequences. Our results suggest that economic incentives beyond litigation costs exist for managers to quickly disclose adverse private information.

## Appendix A – Sample Communications and Disclosures

*Sample of SEC communication with Kinder Morgan – Investigation open date of March 28, 2012*

(b)(7)(C)

---

**From:** (b)(7)(C)  
**Sent:** Thursday, March 29, 2012 4:05 PM  
**To:** joe\_listengart@kindermorgan.com  
**Cc:** (b)(7)(C)  
**Subject:** In the Matter of El Paso Corporation, FW-3793  
**Attachments:** SEC Form 1662.pdf; KMI Retention Letter 3.29.12.pdf

Dear Mr. Listengart:

Attached is the document retention letter that we spoke about this afternoon in the above-referenced matter. I have also attached an SEC Form 1662, which contains supplemental information, concerning, among other things, SEC requests for information.

*Sample of EBIX Inc disclosure provided in a DEF 14A filing dated October 19, 2000 – Investigation open date of August 2, 2000.*

“On August 11, 2000, the Company was advised that the SEC has issued a formal Order of Investigation and subpoenaed documents relating to the Company's financial reporting since April 1, 1997, including, in particular, revenue recognition, software development cost capitalization, royalty costs, and classification of cash receipts, which were affected by the restatement.”

## Appendix B – Variable Definitions (*sources*)

### Disclosure

*Disclosure Ind.* Indicator equal to one for SEC investigations that are eventually disclosed by management (*EDGAR, Factiva*)

### Analyst Coverage

$\ln(\text{Analysts})$  Natural log of the number of analysts (*I/B/E/S*)

### Auditor characteristics

*BigN Ind.* Indicator equal to one if the firm’s auditor is Arthur Andersen, Deloitte, Ernst & Young, KPMG, or PwC (*Audit Analytics*)

*Auditor Tenure* Number of consecutive years the firm has engaged its current auditor (*Audit Analytics*)

### Litigation Risk

*Litigation Risk Ind.* We count the number of times any of the following text strings appears in a firm’s 10-K: “lawsuit”, “litigat\*”, “class action”, “indict”, “summon”, “subpoena”, “criminal”, “settlement”, “defendant”, “court”, “proceedings”, “sue”, “sued”, and “suit” and scale by the total number of words in the the 10-K. We then take the average proportion of litigation words by Fama and French 48 industry  $\times$  year. Finally, we set industry-years with an above average (mean) proportion of litigation words equal to one, and zero otherwise (*EDGAR, SEC Analytics*)

### Firm Controls

$\ln(\text{Assets})$  Natural log of total assets (*Compustat*)

*Market to Book* Fiscal year-end closing share price times common shares outstanding divided by ending total assets (*Compustat*)

*ROA* Income before extraordinary items divided by ending total assets (*Compustat*)

*Short-Term Debt* Debt in current liabilities divided by ending total assets (*Compustat*)

*Long-Term Debt* Long-term debt divided by ending total assets (*Compustat*)

*Herf. Ownership Concentration* Sum of the squares of institutional ownership percentages (*Thomson Reuters*)

### Bundling Controls

*Days to next 10-K* Calendar days between the open date of the investigation and 365 days after the most recent annual earnings report (*Compustat*)

*Days to next 10-Q* Calendar days between the open date of the investigation and next expected quarterly earnings report. We estimate expected earnings report dates as occurring 365 days after the quarterly earnings report in the prior year (*Compustat*)



### **Ex Ante Investigation Merit Controls**

<i>Private Litigation Ind.</i>	Indicator equal to one if a class-action lawsuit is filed against the firm in the 90 days prior to the investigation open date ( <i>Stanford Class Action Clearinghouse</i> )
<i>Returns(-90,-1)</i>	Buy and hold market adjusted returns commencing 90 days prior to the investigation open date and ending one day prior to the investigation open date ( <i>CRSP</i> )
<i>Abnormal Insider Sales</i>	Arctangent of net insider sales in the 90 days prior to the investigation start less net insider trades in the previous 90 days ( <i>Thomson Reuters</i> )

### **Ex Post Investigation Merit Controls**

<i>Enforcement Ind.</i>	Indicator equal to one if the SEC commences regulatory proceedings against the firm during the investigation, zero otherwise ( <i>Call et al. (2018)</i> and <i>NYU SEED</i> )
<i>Restatement Ind.</i>	Indicator equal to one if the firm announced an irregularity restatement during the investigation, zero otherwise ( <i>Audit Analytics</i> )
<i>Concurrent Investigation Ind.</i>	Indicator equal to one if the firm is subject to multiple investigations by the SEC's Division of Enforcement during the investigation, zero otherwise
<i>Accounting Investigation Ind.</i>	Indicator equal to one if the primary reason for the investigation relates to accounting or disclosure, zero otherwise

### **Auditor Resignation Test**

<i>Auditor Resigned</i>	Indicator that equals one if the auditor engaged at the start of the SEC investigation resigns, zero otherwise ( <i>AuditAnalytics</i> )
<i>Slow</i>	Indicator that equals one when managers disclose the investigation before the investigation closes or is disclosed by a third party, and the time to disclosure is greater than the sample median, zero otherwise ( <i>Factiva, EDGAR</i> )
<i>Fast</i>	Indicator that equals one when managers disclose the investigation before the investigation closes or is disclosed by a third party, and the time to disclosure is less than the sample median, zero otherwise ( <i>Factiva, EDGAR</i> )
<i>Leaked</i>	Indicator that equals one when a third party discloses the investigation before the investigation closes and before the firm under investigation discloses the investigation, zero otherwise ( <i>Factiva, EDGAR</i> )
<i>Ln(Assets)</i>	Natural logarithm of total assets ( <i>Compustat</i> )
<i>Liquidity</i>	Current assets divided by current liabilities ( <i>Compustat</i> )
<i>ROA</i>	Net income divided by total assets ( <i>Compustat</i> )
<i>Loss</i>	Indicator that equals one if income from continuing operations is negative, zero otherwise. ( <i>Compustat</i> )
<i>Leverage</i>	Total liabilities to total assets ( <i>Compustat</i> )
<i>Rec &amp; Inv</i>	Percentage of total assets in receivables and inventories ( <i>Compustat</i> )
<i>Foreign</i>	Indicator that equals one if the company reports foreign taxes, zero otherwise ( <i>Compustat</i> )
<i>Going Concern</i>	Indicator that equals one if the audit report is modified for going concern issues, zero otherwise ( <i>AuditAnalytics</i> )
<i>IC Weak</i>	Indicator that equals one if there is a material weakness disclosure, zero otherwise ( <i>AuditAnalytics</i> )

*IC Audit*

Indicator that equals one if there is a SOX 404(b) audit opinion on internal controls, zero otherwise (*AuditAnalytics*)

*Enforcement Ind.*

Indicator equal to one if the SEC commences regulatory proceedings against the firm during the investigation, zero otherwise (*Call et al. (2018)* and *NYU SEED*)

## Appendix C

We use three approaches to collect disclosure data. First, following Solomon and Soltes (2020), we search Factiva for the first disclosure of each SEC investigation using the algorithm “[firm name] and (“Securities and Exchange Commission” or SEC) w/10 (investigat\* or inquir\* or wells notice or settlement or subpoena or probe or complaint or cooperat\*)”. We gather data from Factiva regarding the medium of disclosure (e.g., 10-K filing, press release, or newspaper article) and the source of disclosure (i.e., the firm or another party). Per discussion with SEC staff, the SEC sometimes contacts the firm before the opening of an investigation, and our search of Factiva starts sixty days before the beginning of the investigation. Our search ends on the investigation close date.

Second, we use a Python script to search the text of SEC Forms 10-Q, 10-K, 8-K, 20-F, 6-K, and DEF 14A on WRDS. The Python search window begins 60 days before the open date and ends on the close date, and the Python script reports when a word indicating the existence of an investigation (e.g., “investigation”, “inquiry”, “subpoena”) appears within 20 words of a word relating to the SEC or the Division of Enforcement (e.g. “sec”, “securities and exchange commission”, “division of enforcement”, “s.e.c.”, “d.o.e.”). Next, we sort the dataset and retain the earliest instance of a disclosure of an investigation. We manually examine the corresponding text from the Python script to assess whether the script picked up a false positive (i.e., originally coded as a disclosure when it is not a disclosure of an investigation).

Third, we check for false negatives (i.e., incorrectly classifying an investigation as never having been disclosed). For investigations where we found no disclosure in either the Factiva search or the Python script search, we manually searched all 10-K filings on EDGAR beginning 60 days before the open dates through one year after the close dates. For investigations where we find no disclosure of an SEC investigation in any of the 10-K filings, we classify the investigation as undisclosed. For investigations where we find a disclosure, we search the 8-K and 10-Q filings from the investigation window to identify the first disclosure.

## Bibliography

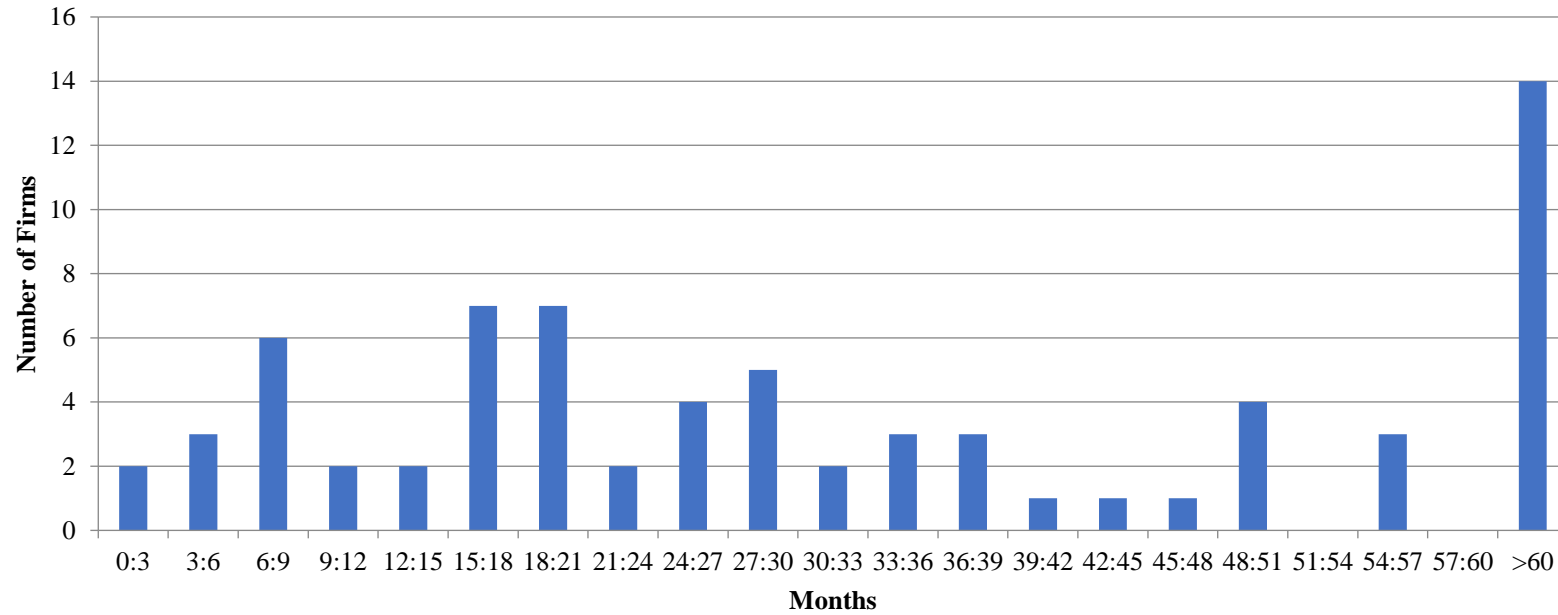
- Akaike, H., 1974. A new look at the statistical model identification. *IEEE Transactions on Automatic Control*, 19(6), 716-723.
- Armstrong, C., Guay, W., Weber, J. 2010. The role of information and financial reporting in corporate governance and debt contracting. *Journal of Accounting and Economics*. 50, 179-234.
- Badertscher, B.A., Hribar, S.P. and Jenkins, N.T., 2011. Informed trading and the market reaction to accounting restatements. *The Accounting Review*, 86(5), pp.1519-1547.
- Baginski, S., Campbell, J., Hinson, L., Koo, D. 2018. Do career concerns affect the delay of bad news disclosure? *Accounting Review*. 93(2), 61-95.
- Balakrishnan, K., Billings, M., Kelly, B., Ljungqvist, A. 2014. Shaping liquidity: On the causal effects of voluntary disclosure. *Journal of Finance*. 69, 2237-2278.
- Barua, A., Lennox, C., Raghunandan, A. 2020. Are audit fees discounted in initial year audit engagements? *Journal of Accounting and Economics* 69,
- Bens, D., Berger, P., Monahan, S., 2011. Discretionary disclosure in financial reporting: An examination comparing internal firm data to externally reported segment data. *Accounting Review*, 86(2), 417-449.
- Berger, P.G. and Hann, R., 2003. The impact of SFAS No. 131 on information and monitoring. *Journal of Accounting Research*, 41(2), 163-223.
- Beyer, A., Cohen, D.A., Lys, T.Z. and Walther, B.R., 2010. The financial reporting environment: Review of the recent literature. *Journal of Accounting and Economics*, 50(2), 296-343.
- Bhushan, R., 1989. Firm characteristics and analyst following. *Journal of Accounting and Economics*, 11(2-3), 255-274.
- Billings, M., Cedergren, M., 2015. Strategic silence, insider selling and litigation risk. *Journal of Accounting and Economics*, 59(2-3), 119-142.
- Blackburne, T., Kepler, J., Quinn, P., Taylor, D., 2020. Undisclosed SEC Investigations. *Management Science*, forthcoming.
- Blackburne, T., Bozanic, Z., Johnson, B., and Roulstone, D. 2020. The Regulatory Observer Effect: Large Sample Evidence from SEC Investigations. Working Paper.
- Bockus, K., and Gigler, F. 1998. A Theory of Auditor Resignation. *Journal of Accounting Research* 36(2): 191-208.
- Bowen, R.M., Chen, X. and Cheng, Q., 2008. Analyst coverage and the cost of raising equity capital: Evidence from underpricing of seasoned equity offerings. *Contemporary Accounting Research*, 25(3), 657-700.
- Call, A.C., Martin, G.S., Sharp, N.Y. and Wilde, J.H., 2018. Whistleblowers and outcomes of financial misrepresentation enforcement actions. *Journal of Accounting Research*, 56(1), 123-171.
- Chen, S., Chen, X.I.A. and Cheng, Q., 2008. Do family firms provide more or less voluntary disclosure?. *Journal of Accounting Research*, 46(3), 499-536.
- Cheng, C.A., Huang, H.H., Li, Y. and Lobo, G., 2010. Institutional monitoring through shareholder litigation. *Journal of Financial Economics*, 95(3), 356-383.
- Cleves, M., Gould, W., Marchenko, Y. 2016. An introduction to survival analysis using Stata. Stata Press: College Station.
- Coleman, B., Merkley, K.J., Miller, B.P., and Pacelli, J. 2020. Does FOIA Foil the SEC's Intent to Keep Investigations Confidential? *Management Science*, forthcoming.
- Cox, D. and D. Oakes. 1980. Analysis of Survival Data (Chapman & Hall/CRC Monographs on Statistics and Applied Probability)
- DeAngelo, L.E., 1981. Auditor size and audit quality. *Journal of Accounting and Economics*, 3(3), pp.183-199.
- Dechow, P.M., Sloan, R.G. and Sweeney, A.P., 1996. Causes and consequences of earnings manipulation: An analysis of firms subject to enforcement actions by the SEC. *Contemporary Accounting Research*, 13(1), 1-36.
- Dedman, E. and Lennox, C., 2009. Perceived competition, profitability and the withholding of information about sales and the cost of sales. *Journal of Accounting and Economics*, 48(2-3), 210-230.
- DeFond, M., Ettredge, M., Smith, D. 1997. An investigation of auditor resignations. *Research in Accounting Regulation* 11,25-46.
- DeFond, M. and Zhang, J., 2014. A review of archival auditing research. *Journal of Accounting and Economics*, 58(2-3), 275-326.
- Demsetz, H. and Lehn, K., 1985. The structure of corporate ownership: Causes and consequences. *Journal of Political Economy*, 93(6), 1155-1177.

- Diamond, D.W. and Verrecchia, R.E., 1991. Disclosure, liquidity, and the cost of capital. *Journal of Finance*, 46(4), 1325-1359.
- Dunn, K.A. and Mayhew, B.W., 2004. Audit firm industry specialization and client disclosure quality. *Review of Accounting Studies*, 9(1), 35-58.
- Dyck, A., Morse, A., and L. Zingales. 2010. Who blows the whistle on corporate fraud? *Journal of Finance*, 65(6), 2213-2253.
- Dye, R.A., 1985. Disclosure of nonproprietary information. *Journal of Accounting Research*, 23(1), 123-145.
- Dye, R.A., 1993. Auditing standards, legal liability, and auditor wealth. *Journal of Political Economy*, 101(5), 887-914.
- Eaglesham, J. 2013. Accounting fraud targeted. *The Wall Street Journal*. May 27, 2013.
- Edmans, A. and Holderness, C.G., 2017. Blockholders: A survey of theory and evidence. *The handbook of the economics of corporate governance* (Vol. 1, pp. 541-636). North-Holland.
- Einhorn, E. and Ziv, A., 2008. Intertemporal dynamics of corporate voluntary disclosures. *Journal of Accounting Research*, 46(3), 567-589.
- Fama, E.F. and French, K.R., 1997. Industry costs of equity. *Journal of Financial Economics*, 43(2), 153-193.
- Firth, M., 1979. The impact of size, stock market listing, and auditors on voluntary disclosure in corporate annual reports. *Accounting and Business Research*, 9(36), 273-280.
- Fisch, J.E., Gelbach, J.B., Klick, J., 2018. The Logic and Limits of Event Studies in Securities Fraud Litigation. *Texas Law Review*, Vol. 96, p. 553-621.
- Francis, J., Philbrick, D. and Schipper, K., 1994. Shareholder litigation and corporate disclosures. *Journal of Accounting Research*, 32(2), 137-164.
- GAO. 2007. Additional actions needed to ensure planned improvements address limitations in Enforcement Division operations. GAO-07-830. Washington DC.
- GAO. 2009. Greater attention needed to enhance communication and utilization of resources in the Division of Enforcement. GAO-09-358. Washington DC.
- George, B., Seals, S. and Aban, I., 2014. Survival analysis and regression models. *Journal of Nuclear Cardiology*, 21(4), 686-694.
- Glosten, L.R. and Milgrom, P.R., 1985. Bid, ask and transaction prices in a specialist market with heterogeneously informed traders. *Journal of Financial Economics*, 14(1), 71-100.
- Goldfarb, Z.A. 2009. New SEC Chief Moves To Toughen Enforcement. *Washington Post*, 7 February 2009.
- Gow, I., Wahid, A., Yu, G. 2018. Managing reputation: Evidence from biographies of corporate directors. *Journal of Accounting and Economics*, 66(2-3), 448-469.
- Griffin, P.A. and Lont, D.H., 2010. Do investors care about auditor dismissals and resignations? What drives the response?. *Auditing: A Journal of Practice & Theory*, 29(2), 189-214.
- Guay, W. and Verrecchia, R.E., 2018. Conservative disclosure. *Journal of Financial Reporting*, 3(1), 73-92.
- Hawke, D., 2018. 5 Common Misconceptions About SEC Investigations. Law 360. November 13, 2018.
- Holzman, E., Marshall, N., Schmidt, B. 2020. Who's on the hot seat for an SEC investigation? Implications for financial misreporting research. Ohio State University working paper.
- Hsu, C., Taylor, J. 2009. Nonparametric comparison of two survival function with dependent censoring via nonparametric multiple imputation. *Statistics in Medicine*. 28(3): 462-75.
- Irani, R., Oesch, D., 2013. Monitoring and corporate disclosure: Evidence from a natural experiment. *Journal of Financial Economics*, 109, 398-418.
- Jackson, D., White, I., Seaman, S., Evans, H., Baisley, K. Carpenter J. 2014. Relaxing the independent censoring assumption in the Cox proportional hazards model using multiple imputation. *Statistics in Medicine*. 33(27): 4681-94.
- Jensen, M.C. and Meckling, W.H., 1976. Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, 3(4), 305-360.
- Jung, W., Kwon, Y., 1988. Disclosure when the market is unsure of information endowment of managers. *Journal of Accounting Research*, 26(1), 146-153.
- Kalbfleisch, J., Prentice, R. 2002. *The Statistical Analysis of Failure Time Data*, 2nd Edition. John Wiley: New Jersey.
- Karpoff, J.M., Koester, A., Lee, D.S. and Martin, G.S., 2017. Proxies and databases in financial misconduct research. *Accounting Review*, 92(6), 129-163.
- Karpoff, J.M., Lee, D.S. and Martin, G.S., 2008. The consequences to managers for financial misrepresentation. *Journal of Financial Economics*, 88(2), 193-215.
- Karpoff, J.M., Lee, D.S. and Martin, G.S., 2008. The cost to firms of cooking the books. *Journal of Financial and*

- Quantitative Analysis*, 43(3), 581-611.
- Kelly, B. and Ljungqvist, A., 2012. Testing asymmetric-information asset pricing models. *Review of Financial Studies*, 25(5), 1366-1413.
- Kim, I. and Skinner, D. 2012. Measuring securities litigation risk. *Journal of Accounting and Economics*, 53, 290-310.
- Kothari, S.P, Shu, S. and Wysocki, P. 2009. Do managers withhold bad news? *Journal of Accounting Research* 47(1), 241-276.
- Kyle, A.S., 1985. Continuous auctions and insider trading. *Econometrica*, 53(6), 1315-1335.
- Lang, M. and Lundholm, R., 1993. Cross-sectional determinants of analyst ratings of corporate disclosures. *Journal of Accounting Research*, 246-271.
- Lang, M.H. and Lundholm, R.J., 1996. Corporate disclosure policy and analyst behavior. *Accounting Review*, 467-492.
- Lee, C.M., Mucklow, B. and Ready, M.J., 1993. Spreads, depths, and the impact of earnings information: An intraday analysis. *Review of Financial Studies*, 6(2), 345-374.
- Lehavy, R., Li, F. and Merkley, K., 2011. The effect of annual report readability on analyst following and the properties of their earnings forecasts. *Accounting Review*, 86(3), 1087-1115.
- Lennox, C. and Pittman, J.A., 2010. Big Five audits and accounting fraud. *Contemporary Accounting Research*, 27(1), 209-247.
- Lev, B., 1992. Information disclosure strategy. *California Management Review*, 34(4), 9-32.
- Li, F., 2008. Annual report readability, current earnings, and earnings persistence. *Journal of Accounting and Economics*, 45(2-3), 221-247.
- Li, F., Lundholm, R. and Minnis, M., 2013. A measure of competition based on 10-K filings. *Journal of Accounting Research*, 51(2), 399-436.
- Loughran, T. and McDonald, B., 2014. Measuring readability in financial disclosures. *Journal of Finance*, 69(4), 1643-1671.
- Magee, R.P. and Tseng, M.C., 1990. Audit pricing and independence. *Accounting Review*, 65(2), 315-336.
- Marinovic, I. and Varas, F., 2016. No news is good news: Voluntary disclosure in the face of litigation. *RAND Journal of Economics*, 47(4), 822-856.
- McLucas, W., Taylor, L., Matthews, S. 1997. A practitioner's guide to the SEC's investigative and enforcement process. *Temple Law Review*. 70, 53-116.
- Menon, K. and Williams, D.D., 2010. Investor reaction to going concern audit reports. *Accounting Review*, 85(6), 2075-2105.
- Mirabella, L. 2019. 'Under Armour shares plunge amid word of federal investigation into company's accounting'. The Baltimore Sun, 4 November. Available at: <https://www.baltimoresun.com/business/bs-bz-under-armour-earnings-investigation-20191104-p7v32pmgynedxoh575dsqnc4oq-story.html> (Accessed: 12 September 2020)
- Miller, B.P., 2010. The effects of reporting complexity on small and large investor trading. *Accounting Review*, 85(6), 2107-2143.
- Nelson, C., Gilley, S. and Trombley, G., 2009. Disclosures of SEC investigations resulting in Wells Notices. *Securities Litigation Journal*, 19(4), 19-21.
- Nguyen, H.T., Phan, H.V. and Sun, L.S., 2018. Shareholder litigation rights and corporate cash holdings: Evidence from universal demand laws. *Journal of Corporate Finance*, 52, 192-213.
- Patterson, E.R., Smith, J.R. and Tiras, S.L., 2019. The effects of auditor tenure on fraud and its detection. *Accounting Review*, 94(5), 297-318.
- Rogers, J.L. and Van Buskirk, A., 2009. Shareholder litigation and changes in disclosure behavior. *Journal of Accounting and Economics*, 47(1-2), 136-156.
- SEC, 2009. Investigation of Failure of the SEC to Uncover Bernard Madoff's Ponzi Scheme – Public Version. August 31, 2009.
- SEC, 2011. Destruction of records related to matters under inquiry and incomplete statements to the National Archives and Records Administration regarding that destruction by the Division of Enforcement. OIG-567.
- SEC, 2016. SEC fiscal year 2017 congressional budget justification report and annual performance plan. Washington, DC.
- SEC, 2017. Enforcement Manual. Washington, DC.
- SEC, 2020. Filing Guidance and Confidentiality. <https://www.sec.gov/complaint/info>.
- Skinner, D. 1994. Why firms voluntarily disclose bad news. *Journal of Accounting Research*, 32(1), 38-60.
- Smith Jr, C.W. and Warner, J.B., 1979. On financial contracting: An analysis of bond covenants. *Journal of*

- Financial Economics*, 7(2), 117-161.
- Solomon, D., and Soltes, E. 2020. Is “Not Guilty” the Same as “Innocent”? Evidence from SEC Financial Fraud Investigations. Working Paper.
- Stice-Lawrence, L. 2020. Regulatory spillover and monitoring frictions at the SEC. University of Southern California working paper.
- Verrecchia, R., 1983. Discretionary disclosure. *Journal of Accounting and Economics*, 5, 179-194.
- Verrecchia, R., 2001. Essays on disclosure. *Journal of Accounting and Economics*, 32(1-3), 97-180.

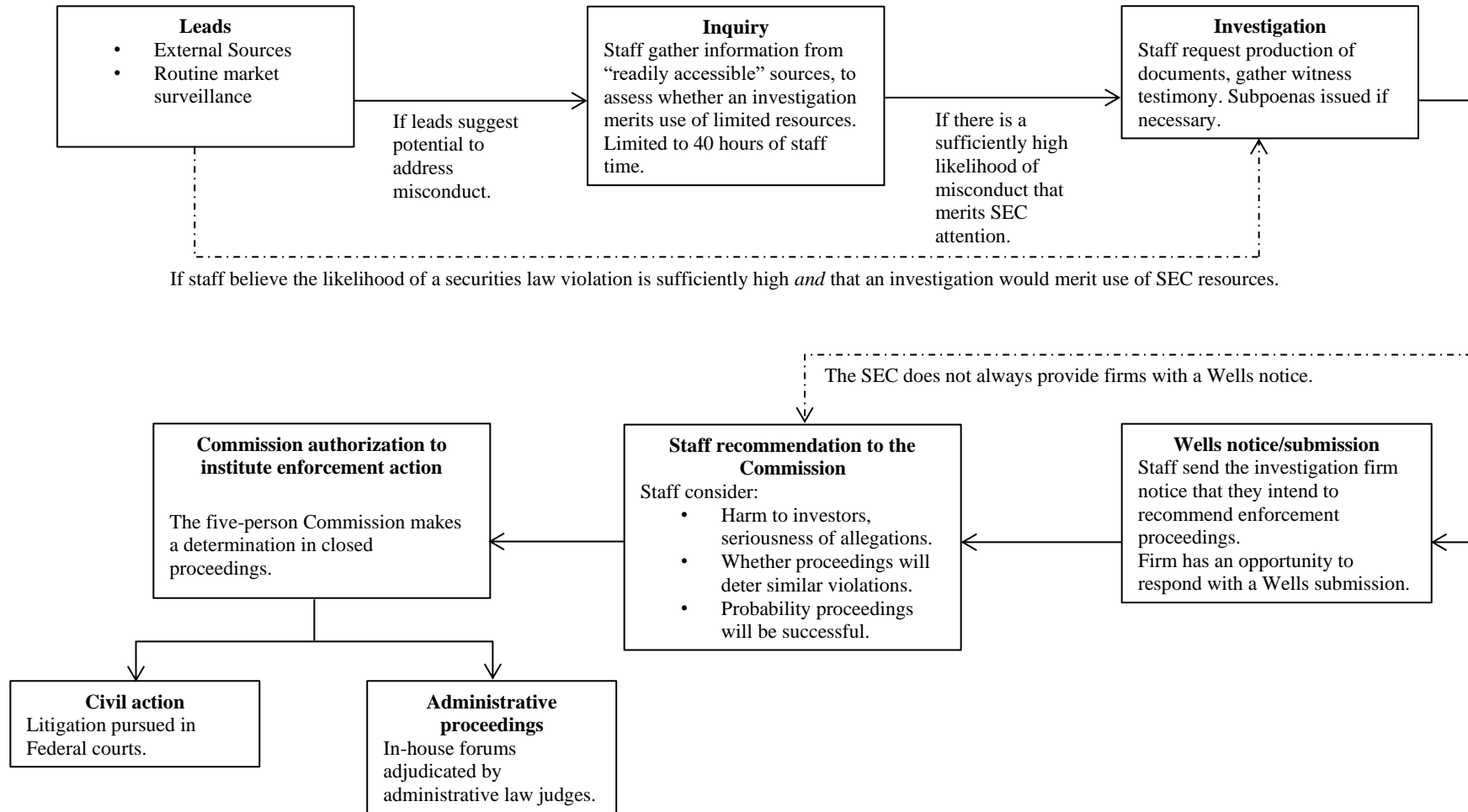
**Figure 1: Wells Notice Disclosures**



This figure shows the lag, in months, between when the SEC opens an investigation and when the SEC issues a Wells notice. The sample is comprised of 72 firms that disclosed the exact date when they received a Wells notice. The mean (median) lag between when the SEC opens an investigation and issues a Wells notice is 36 (27) months.

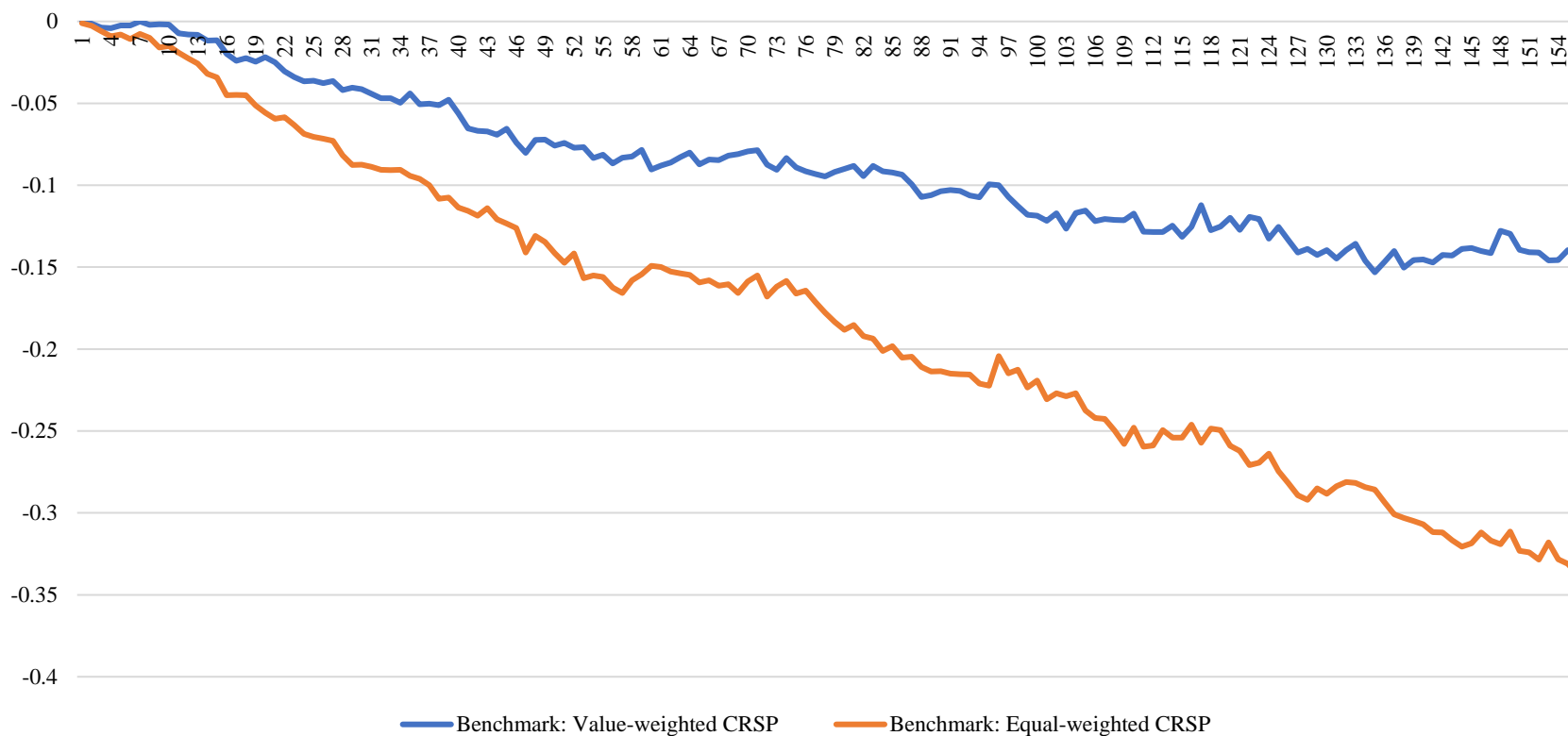


**Figure 2: SEC Enforcement Process**



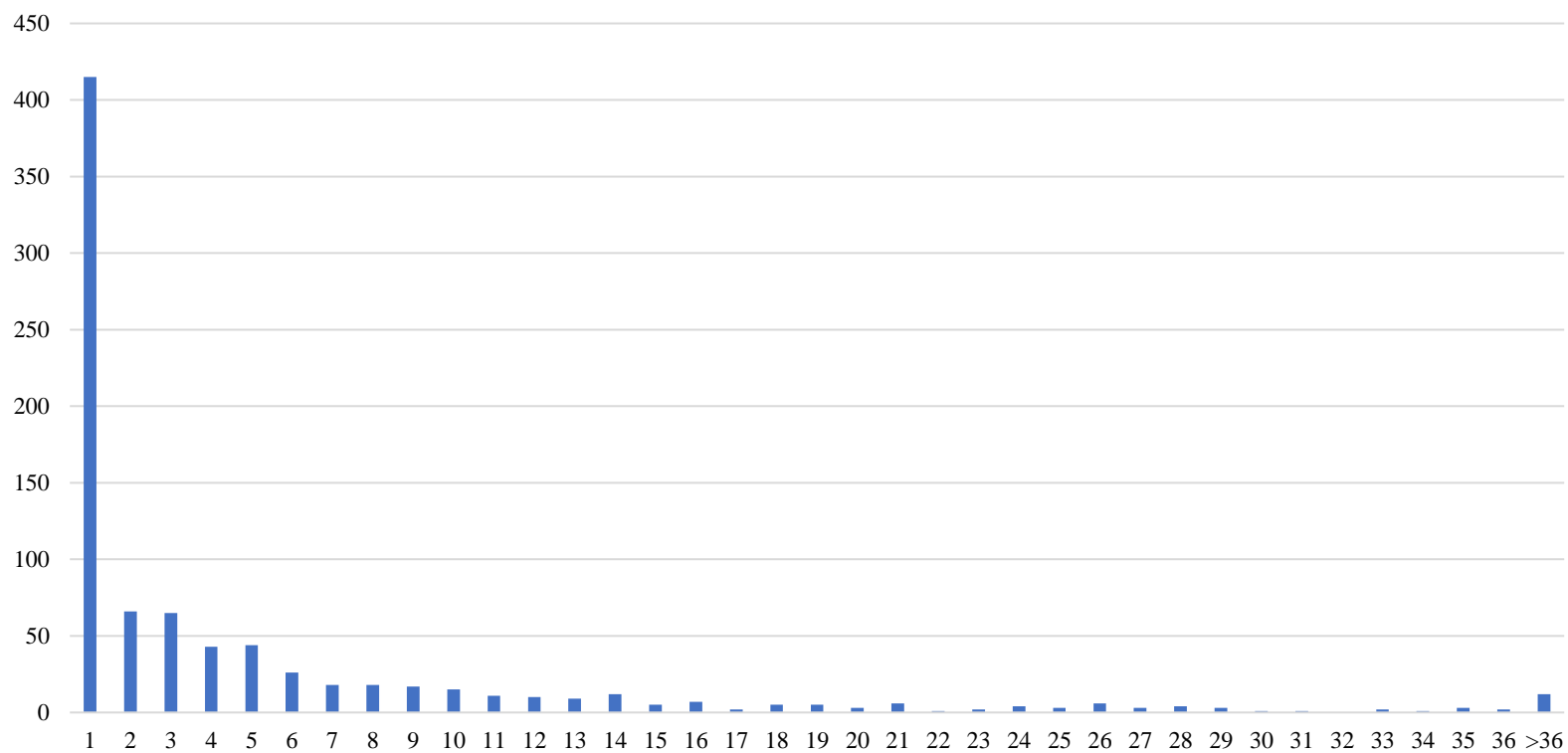
In this figure, we provide an overview of the enforcement process at the SEC’s Division of Enforcement (GAO 2007). The enforcement process can stop at any stage. When determining whether to stop the enforcement process, SEC staff consider “the seriousness of the conduct and potential violations, the staff resources available to pursue the investigation, the sufficiency and strength of the evidence, the extent of potential investor harm if an action is not commenced, [and] the age of the conduct underlying the potential violations” (SEC 2017).

**Figure 3: Stock Performance Following the Opening of an Accounting Investigation**



This figure plots the buy-and-hold returns for firms under investigation by the SEC's Division of Enforcement for potential violations of accounting or disclosure laws, minus buy-and-hold returns for either a value-weighted or equal-weighted CRSP benchmark. The x-axis plots the weeks since the opening of the investigations. When a firm's stock return is unavailable (e.g., the firm delists), we set the firm's stock return to equal the benchmark return.

**Figure 4: Month of First Disclosure**



In this figure, we provide frequency of the months in which firms first disclose that they are under an SEC investigation. Thus, the month 1 bin provides the number of firms that disclose that they are under investigation between zero and thirty days (inclusive) after the SEC opened an investigation.

**Table 1: Sample Selection**

<b>Data requirements</b>	<b>Number of investigations</b>
SEC investigations that closed between January 1, 2000 and August 2, 2017 of firms in the Compustat/CRSP universe	3948
Less:	
Insider trading investigations	(1377)
Overlapping investigations consolidated into a single continuous period of investigation	(294)
Investigations with an open date prior to January 1, 2000	(233)
Investigations with missing covariates	(108)
	1936

**Table 2: Sample Statistics**

<b>Panel A: Descriptive Statistics</b>					
VARIABLES	mean	sd	p25	p50	p75
<b>Disclosure</b>					
<i>Disclosure Ind.</i>	0.439	0.496	0	0	1
<b>Analyst Coverage</b>					
<i>Ln(Analysts)</i>	1.720	1.071	0.69	1.79	2.60
<b>Auditor Characteristics</b>					
<i>BigN Ind.</i>	0.806	0.395	1	1	1
<i>Ln(Auditor Tenure)</i>	1.926	1.199	1.099	2.079	2.773
<b>Litigation Risk</b>					
<i>Litigation Risk Ind.</i>	0.422	0.494	0	0	1
<b>Firm Controls</b>					
<i>Ln(Assets)</i>	7.020	2.503	5.29	6.83	8.63
<i>Short-Term Debt</i>	0.051	0.096	0.00	0.01	0.05
<i>Long-Term Debt</i>	0.177	0.198	0.00	0.12	0.29
<i>Market to Book</i>	1.616	2.169	0.41	0.93	1.91
<i>ROA</i>	-0.143	2.368	-0.04	0.02	0.06
<i>Herf. Ownership Concentration</i>	2.218	2.515	0.25	1.66	3.24
<b>Bundling Controls</b>					
<i>Days to next 10-K</i>	176.900	110.400	80	176	278
<i>Days to next 10-Q</i>	45.350	28.340	21	44	71
<b>Ex Ante Investigation Merit Controls</b>					
<i>Private Litigation Ind.</i>	0.067	0.250	0	0	0

<i>Returns(-90,-1)</i>	-0.033	0.322	-0.198	-0.035	0.104
<i>Abnormal Insider Sales</i>	-0.124	1.109	-1.571	0.000	0.000
<b><i>Ex Post Investigation Merit Controls</i></b>					
<i>Enforcement Ind.</i>	0.155	0.362	0	0	0
<i>Restatement Ind.</i>	0.242	0.429	0	0	0
<i>Concurrent Investigation Ind.</i>	0.124	0.330	0	0	0
<i>Accounting Investigation Ind.</i>	0.711	0.454	0	1	1

**Table 2: Sample Statistics**

<b>Panel B: Difference in Means (Full Sample)</b>				
VARIABLES	<i>Disclose = 0</i>	<i>Disclose = 1</i>	Difference	p-value
<b>Analyst Coverage</b>				
<i>Ln(Analysts)</i>	1.632	1.833	-0.201	0.000
<b>Auditor Characteristics</b>				
<i>BigN Ind.</i>	0.782	0.838	-0.056	0.002
<i>Ln(Auditor Tenure)</i>	1.930	1.922	0.009	0.874
<b>Litigation Risk</b>				
<i>Litigation Risk Ind.</i>	0.423	0.421	0.001	0.948
<b>Firm Controls</b>				
<i>Ln(Assets)</i>	6.896	7.179	-0.283	0.014
<i>Short-Term Debt</i>	0.049	0.053	-0.004	0.400
<i>Long-Term Debt</i>	0.174	0.182	-0.008	0.404
<i>Market to Book</i>	1.620	1.611	0.009	0.932
<i>ROA</i>	-0.208	-0.061	-0.148	0.174
<i>Herf. Ownership Concentration</i>	2.072	2.405	-0.333	0.004
<b>Bundling Controls</b>				
<i>Days to next 10-K</i>	175.308	178.942	-3.635	0.472
<i>Days to next 10-Q</i>	45.060	45.712	-0.652	0.616
<b>Ex Ante Investigation Merit Controls</b>				
<i>Private Litigation Ind.</i>	0.039	0.104	-0.065	0.000
<i>Returns(-90,-1)</i>	-0.014	-0.056	0.042	0.004
<i>Abnormal Insider Sales</i>	-0.088	-0.170	0.082	0.108
<b>Ex Post Investigation Merit Controls</b>				
<i>Enforcement Ind.</i>	0.054	0.284	-0.229	0.000
<i>Restatement Ind.</i>	0.169	0.335	-0.166	0.000
<i>Concurrent Investigation Ind.</i>	0.091	0.166	-0.075	0.000
<i>Accounting Investigation Ind.</i>	0.648	0.791	-0.142	0.000

This table presents descriptive statistics for our sample of investigations. For investigations with time-varying covariates, we use the covariate values as of the opening data. Panel A presents summary statistics for our main sample. Panel B presents differences in means between firms that eventually disclose the existence of the investigation (*Disclose=1*) and those that do not (*Disclose=0*). Variable definitions are in Appendix B.

**Table 3: Correlation Matrix**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
<i>Company Disclosure</i> (1)		0.09	0.07	0.00	0.00	0.06	0.02	0.02	0.00	0.03	0.07	0.02	0.01	0.13	-0.07	-0.04	0.31	0.19	0.11	0.16
<i>Ln(Analysts)</i> (2)	0.09		0.45	0.34	0.02	0.63	-0.15	0.08	-0.01	0.09	0.19	0.02	-0.11	0.06	-0.02	-0.07	0.02	-0.07	0.13	0.09
<i>BigN</i> (3)	0.07	0.44		0.32	0.00	0.43	-0.10	0.15	-0.10	0.09	0.15	-0.03	-0.08	0.04	0.05	-0.04	0.08	0.02	0.09	0.02
<i>Ln(Auditor Tenure)</i> (4)	0.00	0.34	0.33		-0.02	0.41	-0.03	0.04	-0.08	0.03	0.06	-0.01	-0.04	0.01	0.08	-0.01	-0.02	-0.05	0.05	0.00
<i>Litigation Risk Ind.</i> (5)	0.00	0.02	0.00	-0.02		-0.06	-0.08	0.03	0.09	-0.04	-0.01	-0.02	-0.01	0.03	0.03	-0.02	-0.08	-0.03	-0.01	0.06
<i>Ln(Assets)</i> (6)	0.05	0.65	0.43	0.40	-0.06		0.05	0.21	-0.35	0.14	0.08	0.00	-0.05	0.00	0.02	-0.02	0.06	-0.06	0.17	0.00
<i>Short-Term Debt</i> (7)	0.03	-0.07	-0.05	0.03	-0.08	0.21		0.00	-0.11	-0.14	-0.07	-0.01	0.00	-0.05	-0.03	0.02	0.07	0.07	0.04	-0.05
<i>Long-Term Debt</i> (8)	0.03	0.15	0.18	0.10	-0.01	0.37	0.26		-0.20	0.02	0.11	0.04	-0.03	0.02	0.01	0.00	0.00	0.09	0.02	0.02
<i>Market to Book</i> (9)	0.03	0.13	-0.01	-0.03	0.16	-0.37	-0.33	-0.33		-0.18	-0.03	0.02	0.04	0.04	-0.06	-0.07	-0.02	-0.03	0.03	-0.03
<i>ROA</i> (10)	0.04	0.36	0.19	0.22	0.01	0.31	-0.07	-0.02	0.26		0.05	0.03	-0.01	0.01	-0.04	-0.01	0.00	0.01	0.02	0.05
<i>Herf. Ownership Concentration</i> (11)	0.07	0.25	0.20	0.13	-0.02	0.13	-0.12	0.10	0.02	0.14		-0.03	-0.06	0.05	-0.06	-0.04	0.03	0.03	-0.01	0.11
<i>Days to next 10-K</i> (12)	0.02	0.01	-0.03	-0.01	-0.01	0.01	0.00	0.03	0.00	0.01	-0.01		0.06	-0.03	0.04	0.00	-0.04	-0.01	-0.02	-0.03
<i>Days to next 10-Q</i> (13)	0.01	-0.10	-0.08	-0.04	-0.01	-0.05	0.00	-0.03	-0.02	-0.04	-0.06	0.06		-0.02	-0.01	0.00	-0.03	0.02	-0.02	-0.02
<i>Private Litigation</i> (14)	0.13	0.06	0.04	0.01	0.03	-0.01	-0.04	0.03	0.06	0.01	0.07	-0.03	-0.02		-0.16	-0.10	0.10	0.02	0.04	0.09
<i>Returns(-90,-1)</i> (15)	-0.07	0.05	0.11	0.13	0.03	0.11	-0.01	0.03	-0.05	0.12	-0.03	0.02	-0.02	-0.18		0.09	-0.09	-0.02	0.05	-0.12
<i>Abnormal Insider Sales</i> (16)	-0.04	-0.08	-0.06	-0.02	-0.02	-0.04	0.02	0.00	-0.10	-0.07	-0.07	0.00	0.01	-0.10	0.12		0.01	0.01	0.00	-0.06
<i>Enforcement Ind.</i> (17)	0.31	0.02	0.08	-0.02	-0.08	0.04	0.07	0.01	-0.02	-0.01	0.02	-0.04	-0.03	0.10	-0.08	0.01		0.22	0.18	0.03
<i>Restatement Ind.</i> (18)	0.19	-0.07	0.02	-0.05	-0.03	-0.06	0.06	0.08	-0.04	-0.07	0.00	-0.01	0.02	0.02	-0.03	0.01	0.22		0.16	0.06
<i>Concurrent Ind.</i> (19)	0.11	0.14	0.09	0.05	-0.01	0.16	0.05	0.03	0.02	0.08	-0.02	-0.02	-0.02	0.04	0.05	0.00	0.18	0.16		0.02
<i>Accounting Investigation Ind.</i> (20)	0.16	0.08	0.02	0.00	0.06	0.00	-0.02	0.03	0.03	0.05	0.13	-0.03	-0.02	0.09	-0.10	-0.05	0.03	0.06	0.02	

This table provides Pearson and Spearman correlations between the variables used in our analysis of disclosure speed, and we measure correlations between variables as of the open date of each investigation. Pearson correlations are above the diagonal line, and Spearman correlation are below the line. Appendix B contains variable definitions.

**Table 4: Determinants of Disclosing an SEC Investigation**

	DV = Firm Disclosure				
	(1)	(2)	(3)	(4)	(5)
<b>Analyst Coverage</b>					
<i>Ln(Analysts)</i>		0.591*** (0.08)			0.632*** (0.10)
<b>Auditor Characteristics</b>					
<i>BigN Ind.</i>			0.418** (0.15)		0.524* (0.18)
<i>Auditor Tenure</i>			1.002 (0.11)		1.008 (0.11)
<b>Litigation Risk</b>					
<i>Litigation Risk</i>				0.631** (0.15)	0.636* (0.15)
<b>Firm Controls</b>					
<i>Ln(Assets)</i>	0.823*** (0.04)	0.965 (0.07)	0.915 (0.06)	0.830*** (0.04)	1.037 (0.08)
<i>Short-Term Debt</i>	0.592 (0.70)	0.254 (0.31)	0.430 (0.56)	0.619 (0.74)	0.194 (0.25)
<i>Long-Term Debt</i>	0.838 (0.47)	0.736 (0.41)	1.440 (0.89)	1.084 (0.62)	1.315 (0.82)
<i>Market to Book</i>	0.856** (0.05)	0.912 (0.06)	0.899 (0.06)	0.871** (0.06)	0.957 (0.07)
<i>ROA</i>	0.640 (0.22)	0.630 (0.22)	0.543 (0.21)	0.566 (0.20)	0.529* (0.20)
<i>Herf. Ownership Concentration</i>	0.947 (0.04)	0.973 (0.05)	0.927 (0.05)	0.949 (0.05)	0.942 (0.05)
<b>Bundling Controls</b>					
<i>Days to next 10-K</i>	0.999 (0.00)	0.999 (0.00)	1.000 (0.00)	0.999 (0.00)	1.000 (0.00)
<i>Days to next 10-Q</i>	0.997 (0.00)	0.996 (0.00)	0.997 (0.00)	0.998 (0.00)	0.996 (0.00)
<b>Ex Ante Investigation Merit Controls</b>					
<i>Private Litigation Ind.</i>	0.309*** (0.12)	0.330*** (0.12)	0.345*** (0.14)	0.333*** (0.13)	0.368** (0.15)
<i>Returns(-90,-1)</i>	1.886* (0.69)	1.824* (0.67)	2.381** (0.97)	1.976* (0.74)	2.321** (0.95)
<i>Abnormal Insider Sales</i>	1.080 (0.11)	1.065 (0.11)	1.012 (0.11)	1.068 (0.11)	1.004 (0.11)



**Table 4: Determinants of Disclosing an SEC Investigation (cont.)**

<i>Ex Post Investigation Merit Controls</i>					
<i>Enforcement Ind.</i>	0.083*** (0.02)	0.082*** (0.02)	0.176*** (0.05)	0.097*** (0.02)	0.166*** (0.05)
<i>Restatement Ind.</i>	0.407*** (0.10)	0.404*** (0.10)	0.528** (0.15)	0.460*** (0.11)	0.518** (0.14)
<i>Concurrent Investigation Ind.</i>	0.908 (0.28)	0.929 (0.29)	1.029 (0.38)	1.069 (0.35)	1.027 (0.37)
<i>Accounting Investigation Ind.</i>	0.202*** (0.05)	0.217*** (0.06)	0.206*** (0.06)	0.224*** (0.06)	0.231*** (0.07)
<b>Subjects</b>	1,936	1,936	1,936	1,936	1,936

This table reports results from an accelerated failure time model (lognormal distribution) that estimates the failure time (in days) until firms disclose the existence of an SEC investigation. The sample includes firms that are under investigation by the SEC for potentially violating securities laws. Variables are defined in Appendix B. All continuous variables are winsorized at the 1<sup>st</sup> and 99<sup>th</sup> percentile. We report time ratios and robust standard errors, which are clustered by investigation. \*, \*\*, \*\*\* represent significance at the 0.1, 0.05, and 0.01 levels, respectively.

**Table 5: Determinants of Disclosing an Accounting Investigation**

	<b>DV = Firm Disclosure</b>				
	(1)	(2)	(3)	(4)	(5)
<b>Analyst Coverage</b>					
<i>Ln(Analysts)</i>		0.627*** (0.11)			0.680** (0.12)
<b>Auditor Characteristics</b>					
<i>BigN Ind.</i>			0.417** (0.16)		0.503* (0.19)
<i>Auditor Tenure</i>			1.064 (0.12)		1.065 (0.12)
<b>Litigation Risk</b>					
<i>Litigation Risk Ind.</i>				0.481*** (0.13)	0.497*** (0.13)
<b>Firm Controls</b>					
<i>Ln(Assets)</i>	0.842*** (0.06)	0.975 (0.09)	0.878* (0.06)	0.838*** (0.06)	0.975 (0.09)
<i>Short-Term Debt</i>	2.576 (3.95)	0.998 (1.55)	1.717 (2.63)	2.356 (3.56)	0.796 (1.21)
<i>Long-Term Debt</i>	1.003 (0.69)	0.861 (0.59)	1.145 (0.79)	1.118 (0.78)	1.090 (0.75)
<i>Market to Book</i>	0.885 (0.07)	0.940 (0.08)	0.891 (0.07)	0.907 (0.07)	0.956 (0.08)
<i>ROA</i>	0.907 (0.36)	0.852 (0.34)	0.887 (0.35)	0.940 (0.38)	0.876 (0.35)
<i>Herf. Ownership Concentration</i>	0.961 (0.05)	0.984 (0.05)	0.972 (0.05)	0.956 (0.05)	0.982 (0.05)
<b>Bundling Controls</b>					
<i>Days to next 10-K</i>	1.000 (0.00)	1.000 (0.00)	1.000 (0.00)	1.000 (0.00)	1.000 (0.00)
<i>Days to next 10-Q</i>	0.998 (0.00)	0.997 (0.00)	0.998 (0.00)	0.998 (0.00)	0.996 (0.00)
<b>Ex Ante Investigation Merit Controls</b>					
<i>Private Litigation Ind.</i>	0.349** (0.15)	0.366** (0.15)	0.361** (0.15)	0.363** (0.15)	0.387** (0.16)
<i>Returns(-90,-1)</i>	1.823 (0.85)	1.750 (0.82)	1.911 (0.89)	1.872 (0.88)	1.867 (0.88)
<i>Abnormal Insider Sales</i>	1.161 (0.14)	1.142 (0.14)	1.155 (0.14)	1.164 (0.14)	1.144 (0.14)

**Table 5: Determinants of Disclosing an Accounting Investigation (cont.)**

<i>Ex Post Investigation Merit Controls</i>					
<i>Enforcement Ind.</i>	0.143***	0.145***	0.156***	0.135***	0.146***
	(0.05)	(0.05)	(0.05)	(0.04)	(0.05)
<i>Restatement Ind.</i>	0.610*	0.588*	0.624	0.604*	0.599*
	(0.18)	(0.17)	(0.19)	(0.18)	(0.18)
<i>Concurrent Investigation Ind.</i>	1.281	1.271	1.253	1.289	1.259
	(0.51)	(0.50)	(0.49)	(0.51)	(0.49)
Subjects	1,376	1,376	1,376	1,376	1,376

This table reports results from an accelerated failure time model (lognormal distribution) that estimates the failure time (in days) until firms disclose the existence of an SEC investigation. The sample includes firms that are under investigation by the SEC for potentially violating securities laws that relate to accounting and disclosure. Variables are defined in Appendix B. All continuous variables are winsorized at the 1<sup>st</sup> and 99<sup>th</sup> percentile. We report time ratios and robust standard errors, which are clustered by investigation. \*, \*\*, \*\*\* represent significance at the 0.1, 0.05, and 0.01 levels, respectively.

**Table 6: Market Response**

	<b>DV = Abnormal Stock Return</b>		
	<b>Event Period</b>		
	<b>[0, +1]</b> (1)	<b>[0, +1]</b> (2)	<b>[0, +1]</b> (3)
<i>Event</i>	-0.048 (-0.46)	-0.048 (-0.46)	-0.048 (-0.46)
<i>Event * Disclose</i>	-1.590*** (-6.74)		
<i>Event * Slow</i>		-1.467*** (-5.45)	
<i>Event * Fast</i>		-1.804*** (-4.57)	
<i>Event * High Bundling</i>			-1.008*** (-3.43)
<i>Event * Low Bundling</i>			-2.222*** (-6.57)
Observations	481,113	481,113	481,113
Adjusted R-squared	0.000	0.000	0.000
Investigation FEs	Yes	Yes	Yes
Year-Quarter FEs	Yes	Yes	Yes
SE Cluster	Investigation, Date	Investigation, Date	Investigation, Date

This table reports results of regressing daily abnormal returns on indicators, as well as investigation and year  $\times$  quarter fixed effects. Abnormal returns are calculated as raw returns less value-weighted returns from CRSP, multiplied by 100. For disclosers, *Event* equals one on the trading day of and the trading day immediately after the disclosure, and zero otherwise. For non-disclosers, *Event* equals one on the trading day of and the trading day immediately after the start of the investigation, and zero otherwise. For firms that disclose the investigation before either the investigation closes or a third party discloses the investigation (i.e., disclosers), *Disclose* equals one, and zero otherwise. *Slow* and *Fast* are indicators that equal one when the days from the start of the investigation to the disclosure date is above and below the sample median, respectively. The sample contains disclosers and non-disclosers of SEC investigations, and the sample begins 252 trading days before the investigation open for non-disclosers and 252 trading days before the disclosure date for disclosers. \*, \*\*, \*\*\* represent significance at the 0.1, 0.05, and 0.01 levels, respectively.

**Table 7: Information Asymmetry**

<b>Panel A: Disclosers and Non-Disclosers</b>				
<b>DV = Price-Scaled Bid-Ask spreads</b>				
<b>Post Periods</b>				
	<b>[0, +252]</b>	<b>[0, +120]</b>	<b>[0, +60]</b>	<b>[0, +30]</b>
	(1)	(2)	(3)	(4)
<i>Post Event</i>	0.009 (0.39)	-0.010 (-0.46)	-0.010 (-0.51)	-0.016 (-0.84)
<i>Post Event * Disclose</i>	0.101*** (2.75)	0.118*** (3.35)	0.111*** (3.21)	0.092*** (2.70)
Observations	919,600	693,105	585,824	530,990
Adjusted R-squared	0.612	0.629	0.639	0.646
Investigation FEs	Yes	Yes	Yes	Yes
Year-Quarter FEs	Yes	Yes	Yes	Yes
SE Cluster	Investigation, Date	Investigation, Date	Investigation, Date	Investigation, Date

<b>Panel B: Slow Disclosers, Fast Disclosers, and Non-Disclosers</b>				
<b>DV = Price-Scaled Bid-Ask Spreads</b>				
<b>Post Periods</b>				
	<b>[0, +252]</b>	<b>[0, +120]</b>	<b>[0, +60]</b>	<b>[0, +30]</b>
	(1)	(2)	(3)	(4)
<i>Post Event</i>	0.009 (0.40)	-0.010 (-0.44)	-0.010 (-0.49)	-0.016 (-0.83)
<i>Post Event * Slow</i>	0.133*** (3.07)	0.151*** (3.65)	0.143*** (3.43)	0.128*** (3.14)
<i>Post Event * Fast</i>	0.044 (0.98)	0.061 (1.36)	0.055 (1.31)	0.031 (0.72)
Observations	919,600	693,105	585,824	530,990
Adjusted R-squared	0.612	0.629	0.639	0.646
Investigation FEs	Yes	Yes	Yes	Yes
Year-Quarter FEs	Yes	Yes	Yes	Yes
SE Cluster	Investigation, Date	Investigation, Date	Investigation, Date	Investigation, Date

**Panel C: Do Analysts Mitigate Information Asymmetry?**

	DV = Price-Scaled Bid-Ask Spreads			
	Post Periods			
	[0, +252]	[0, +120]	[0, +60]	[0, +30]
	(1)	(2)	(3)	(4)
$\beta_1$ <i>Post Event</i>	0.005	-0.015	-0.017	-0.027
	(0.13)	(-0.39)	(-0.47)	(-0.73)
$\beta_2$ <i>Post Event</i> * <i>Hi Analyst</i>	0.007	0.011	0.015	0.022
	(0.14)	(0.23)	(0.33)	(0.50)
$\beta_3$ <i>Post Event</i> * <i>Disclose</i>	0.169**	0.190***	0.163**	0.119*
	(2.43)	(2.93)	(2.50)	(1.86)
$\beta_4$ <i>Post Event</i> * <i>Hi Analyst</i> * <i>Disclose</i>	-0.116	-0.124*	-0.091	-0.050
	(-1.58)	(-1.75)	(-1.28)	(-0.71)
Observations	919,600	693,105	585,824	530,990
Adjusted R-squared	0.612	0.629	0.639	0.646
Investigation FEs	Yes	Yes	Yes	Yes
Year-Quarter FEs	Yes	Yes	Yes	Yes
SE Cluster	Investigation, Date	Investigation, Date	Investigation, Date	Investigation, Date

This table reports results of regressing daily price-scaled bid-ask spreads on indicators for *Post Event* and *Post Event* \* *Disclose*, as well as investigation and year  $\times$  quarter fixed effects. Bid-ask spreads are the difference between the closing bid and closing ask prices from CRSP, scaled by price and multiplied by 100. For disclosers, *Post Event* equals one starting on the disclosure date and extending through the end of the sample period, and zero otherwise. For non-disclosers, *Post Event* equals one starting on open date of the investigation and extending through the end of the sample period, and zero otherwise. For firms that disclose the investigation before either the investigation closes or a third party discloses the investigation, *Disclose* equals one, and zero otherwise. The sample in Panel A contains disclosers and non-disclosers of SEC investigations, and the sample in Panel B contains only disclosers. The samples begin 252 trading days before the investigation open for non-disclosers and 252 trading days before the disclosure date for disclosers. The sample periods end 252, 120, 60, and 30 trading days after the open date for non-disclosers and disclosure date for disclosers in columns (1), (2), (3), and (4), respectively. Variables are defined in Appendix B. Bid-ask spreads are winsorized at the 0.5<sup>th</sup> and 99.5<sup>th</sup> percentiles by trading day. \*, \*\*, \*\*\* represent significance at the 0.1, 0.05, and 0.01 levels, respectively.

**Table 8: Disclosure Speed and Auditor Resignations**

	DV = Auditor Resigned			
	Full Sample		Accounting Investigations Sample	
	Big N Auditor		Big N Auditor	
	Yes (1)	No (2)	Yes (3)	No (4)
<i>Slow</i>	0.962* (0.502)	-0.352 (0.717)	1.274** (0.553)	-0.126 (0.800)
<i>Fast</i>	-1.354 (1.090)	0.272 (0.652)	-0.951 (1.100)	0.749 (0.700)
<i>Leaked</i>	0.804 (1.151)	0.613 (1.368)	1.011 (1.164)	1.68 (1.241)
<i>Ln(Assets)</i>	-0.729*** (0.141)	-0.099 (0.277)	-0.792*** (0.165)	-0.289 (0.305)
<i>Liquidity</i>	0.077 (0.136)	0.017 (0.102)	0.142 (0.158)	0.068 (0.096)
<i>ROA</i>	1.166 (0.824)	0.349 (0.913)	1.436 (1.114)	0.555 (1.268)
<i>Loss</i>	0.181 (0.559)	-0.475 (0.696)	-0.043 (0.641)	-0.919 (0.819)
<i>Leverage</i>	-0.333 (0.844)	0.653 (0.690)	-0.313 (0.985)	0.745 (0.852)
<i>Rec &amp; Inv</i>	2.910** (1.286)	0.347 (1.262)	3.357** (1.495)	-1.216 (1.418)
<i>Foreign</i>	0.213 (0.500)	0.494 (0.581)	0.642 (0.567)	0.706 (0.677)
<i>Going Concern</i>	1.234 (0.753)	0.309 (1.099)	1.247 (1.073)	1.191 (1.152)
<i>IC Weak</i>	1.425*** (0.484)	1.172** (0.501)	1.051** (0.504)	1.066* (0.570)
<i>IC Audit</i>	-0.102 (0.599)	-0.508 (0.824)	-0.322 (0.614)	-0.228 (1.083)
<i>Enforcement Ind.</i>	-0.397 (0.737)	0.120 (1.023)	-0.886 (0.888)	0.015 (0.845)
Observations	1,625	418	1,210	292
Industry Effects	No	No	No	No
Year Effects	No	No	No	No

This table reports results from a logit regression of the likelihood of an auditor resignation as a function of disclosure speed. The sample consists of the two years following the opening of an SEC investigation for which control variables are not missing. Columns 1 and 2 consist of all SEC investigations. Column 1 is limited to investigations of firms that had a *BigN* auditor at the opening of the investigation. Column 2 is limited to investigations that did not have a *BigN* auditor at the opening of the investigation. Columns 3 and 4 consist of investigations that are related to accounting or disclosure fraud. Column 3 consists of investigations that are related to accounting or disclosure fraud for which the firms' auditor is a *BigN* firm. Column 4 consists of investigations that are related to accounting or disclosure fraud for which the firms' auditor is a non-*BigN* firm. Variables are defined in Appendix B. All continuous variables are winsorized at the 1<sup>st</sup> and 99<sup>th</sup> percentile. Standard errors are clustered by firm and reported in parentheses. \*, \*\*, \*\*\* represent significance at the 0.1, 0.05, and 0.01 levels respectively.

**Table 9: Litigation Risk and Disclosure**

	DV = Firm Disclosure					
	Cash Holdings		ROA		Blockholder	
	High	Low	High	Low	Yes	No
	(1)	(2)	(3)	(4)	(5)	(6)
<b>Analysts Coverage</b>						
<i>Ln(Analysts)</i>	0.787 (0.17)	0.623* (0.15)	0.729 (0.18)	0.592** (0.13)	0.633** (0.13)	0.634* (0.16)
<b>Auditor Characteristics</b>						
<i>BigN Ind.</i>	0.112*** (0.10)	0.992 (0.39)	0.725 (0.40)	0.407** (0.18)	0.439* (0.20)	0.659 (0.37)
<i>Auditor Tenure</i>	1.062 (0.15)	0.957 (0.15)	1.071 (0.16)	0.971 (0.14)	0.866 (0.11)	1.385* (0.26)
<b>Litigation Risk</b>						
<i>Litigation Risk Ind.</i>	0.463** (0.16)	1.008 (0.33)	0.519* (0.18)	0.870 (0.30)	0.553** (0.17)	0.832 (0.34)
<b>Firm Controls</b>						
<i>Ln(Assets)</i>	1.172 (0.14)	0.888 (0.14)	0.879 (0.11)	1.157 (0.12)	1.054 (0.12)	1.012 (0.11)
<i>Short-Term Debt</i>	0.256 (0.59)	0.119 (0.19)	1.219 (3.00)	0.100 (0.15)	0.569 (0.98)	0.085 (0.17)
<i>Long-Term Debt</i>	0.740 (0.74)	2.992 (2.49)	3.170 (3.47)	0.915 (0.68)	2.969 (2.27)	0.207 (0.22)
<i>Market to Book</i>	0.947 (0.12)	0.946 (0.09)	0.960 (0.13)	0.957 (0.09)	1.020 (0.12)	0.896 (0.08)
<i>ROA</i>	0.801 (0.55)	0.598 (0.26)	0.126 (0.44)	0.441* (0.19)	0.827 (0.44)	0.389* (0.21)
<i>Herf. Ownership Concentration</i>	0.934 (0.07)	0.979 (0.07)	0.925 (0.07)	0.945 (0.07)	0.921 (0.06)	0.437 (0.26)
<b>Bundling Controls</b>						
<i>Days to next 10-K</i>	1.000 (0.00)	1.000 (0.00)	1.001 (0.00)	0.999 (0.00)	1.000 (0.00)	1.001 (0.00)
<i>Days to next 10-Q</i>	0.998 (0.01)	0.994 (0.01)	0.994 (0.01)	0.998 (0.01)	0.997 (0.01)	0.993 (0.01)
<b>Ex Ante Investigation Merit Controls</b>						
<i>Private Litigation Ind.</i>	0.522 (0.33)	0.266** (0.14)	0.161*** (0.09)	1.091 (0.65)	0.661 (0.33)	0.071*** (0.05)
<i>Returns(-90,-1)</i>	2.948 (1.97)	1.823 (0.91)	5.176** (4.06)	1.598 (0.75)	3.347** (1.89)	1.513 (0.91)
<i>Abnormal Insider Sales</i>	1.050 (0.16)	0.952 (0.15)	0.999 (0.15)	0.962 (0.16)	1.064 (0.13)	0.926 (0.20)



**Table 9: Litigation Risk and Disclosure (cont.)**

<b>Ex Post Investigation Merit Controls</b>						
<i>Enforcement Ind.</i>	0.220*** (0.10)	0.125*** (0.05)	0.126*** (0.05)	0.199*** (0.08)	0.110*** (0.04)	0.413* (0.21)
<i>Restatement Ind.</i>	0.432** (0.18)	0.596 (0.21)	0.597 (0.24)	0.500* (0.18)	0.746 (0.25)	0.253*** (0.11)
<i>Concurrent Investigation Ind.</i>	0.837 (0.39)	1.537 (0.93)	1.565 (0.80)	0.557 (0.29)	1.111 (0.51)	0.782 (0.47)
<i>Accounting Investigation Ind.</i>	0.225*** (0.09)	0.270*** (0.11)	0.302*** (0.13)	0.168*** (0.07)	0.252*** (0.10)	0.237*** (0.10)
<b>Subjects</b>	968	968	968	968	1278	658

This table reports results from an accelerated failure time model (lognormal distribution) that estimates the failure time (in days) until firms (i.e., subjects) disclose the existence of an SEC investigation. The sample includes firms that are under investigation by the SEC for potential violations of securities laws. In columns 1 and 2, we estimate the model for the subsamples of firms with above and below median cash holdings, respectively. We measure cash holdings as the total (i.e., unscaled) cash and cash equivalents as of the beginning of the investigation. In columns 3 and 3, we estimate the model for the subsamples of firms with above and below median ROA, respectively. In columns 5 and 6, we estimate the model for the subsamples of firms with and without an institutional blockholder, respectively. Other variables are defined in Appendix B. All continuous variables are winsorized at the 1<sup>st</sup> and 99<sup>th</sup> percentile. We report time ratios and standard errors. Robust standard errors are clustered by investigation. \*, \*\*, \*\*\* represent significance at the 0.1, 0.05, and 0.01 levels, respectively.