The SEC's Use of Voluntary Disclosure for the Oversight of Mandatory Disclosure[*]

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Abstract

One key challenge of regulatory oversight is information asymmetry between the regulator and the regulated. We investigate this issue through a unique setting in which the SEC uses firms' voluntary disclosures to bridge the information gap during their periodic reviews of mandatory disclosures. We first document that over the sample period 2004-2019, reviewers increasingly quote information from conference calls in their comment letters on annual reports, requesting clarifications or future improvements (averaging over 5% during our sample period). We then develop a conceptual framework of key tradeoffs faced by the regulator to guide our empirical investigation of the determinants and consequences of such regulatory behavior. Consistent with our framework, we find that reviewers are more likely to cross-check conference call disclosures when a firm's annual report disclosures suggest higher uncertainty or gloomy prospects, when a firm's review process triggers concerns about potential disclosure issues, when a firm has high media coverage or more corporate events, when a firm has an eventful earnings season, or when reviewers themselves are not busy. Finally, we show that such regulatory behavior leads to some unintended consequences of firms reducing future conference call disclosures, which slows down price discovery during earnings announcements. Overall, our findings shed light on the inner workings of regulatory oversight, highlighting that referencing voluntary disclosures during regulatory scrutiny of mandatory disclosures may amplify firms' concern about regulatory risks associated with voluntary disclosures and reduce future voluntary disclosures.

Keywords: SEC, information asymmetry, voluntary disclosure, mandatory disclosure, comment letters, earnings conference calls, computational linguistic methods

JEL Classifications: G38; M41; M48

"Please revise this section to include substantive disclosure on prospective developments and strategies that may affect your company. Your current disclosure on pages 24 and 25 lists factors that broadly affect your segments, but there is an absence of disclosure addressing management's views about the trends and uncertainties that you reasonably expect will have material impacts on your operations. We note that management expressed opinions regarding specific expectations for organic revenue growth, foreign exchange impacts, operating margin outlook, seasonality and pension expense, in your earnings call on February 20, 2015."

SEC Comment Letter to BARNES GROUP INC filed on April 1, 2015

1. Introduction

To fulfill its core mission of investor protection, the Securities and Exchange Commission (SEC) in the U.S. requires mandatory disclosures (e.g., annual reports and quarterly reports) from their registrants. In addition, the SEC's Division of Corporate Finance (DCF) conducts periodic reviews of these mandatory filings. According to the DCF, its reviewers will focus on disclosures "that appear to conflict with Commission rules or applicable accounting standards and on disclosure that appears to be materially deficient in explanation or clarity."[1] When conducting these reviews, the DCF reviewers suffer from a classic asymmetric information problem – they do not have access to the same information as corporate managers. This information gap is exacerbated when a review entails determining the accuracy and completeness of mandatory disclosures that rely heavily on managers' own perspectives (e.g., the management's discussion and analysis (MD&A) or other disclosures involving managerial discretions). Our paper fills a gap in the literature by first providing evidence that the SEC leverages information from firms' voluntary disclosures to narrow their information gap during the oversight of mandatory disclosures (i.e., annual reports). Furthermore, we investigate the factors influencing the SEC's utilization of voluntary disclosures to monitor mandatory disclosures and explore the related consequences.

[1] https://www.sec.gov/divisions/corpfin/cffilingreview.

To conduct our investigation, we focus on earnings conference calls, a key form of voluntary disclosures, whereby corporate managers discuss business operations, justify earnings performance, and answer questions from call participants. Compared to other forms of voluntary disclosures (e.g., press releases), earnings conference calls have a high informational value that is relevant to the monitoring of annual reports.[2] Specifically, we ask the following research questions: 1) Does the SEC use earnings conference calls to monitor annual reports? 2) Under what circumstances is the SEC more or less likely to use earnings conference calls to monitor annual reports? and 3) How do comment letters in which the reviewers make reference to earnings conference calls affect firms' voluntary disclosures in future calls and the price discovery of associated earnings announcements?

To guide our empirical investigation, we first develop a conceptual framework of key tradeoffs faced by the regulator when using information from voluntary disclosures to facilitate their monitoring of mandatory disclosures. On the benefit side, voluntary disclosures can help reduce information asymmetry between the regulator and the regulated, and thus enable the regulator to do a good job. Like other government officials, the DCF reviewers are committed to serving the public. They take pride in their work and are intrinsically motivated to do a good job (Office of Personnel Management 2014; Kubic 2021). On the cost side, the regulator is resource-constrained, and there might be unintended consequences for the regulator using voluntary disclosures to enforce mandatory disclosures. Although the DCF reviewers are motivated to do a

[2] Among various voluntary disclosures, earnings conference calls possess three key features that make them the ideal candidate for the reviewers to check for more information while reviewing annual reports. First, conference calls are one of the most widely used voluntary disclosure channels that occur regularly with or right after earnings announcements. Information delivered during conference calls has high relevance to financial reporting. Second, information delivered during conference calls has high credibility in the presence of sophisticated capital market participants. Third, the interactive component of conference calls may lead managers to offer more information than initially planned.

good job, their economic incentives are not well linked to job performance (Office of Personnel Management 2014; Kubic 2021). When the reviewers are overwhelmed with workload, they might not examine voluntary disclosures while reviewing mandatory disclosures. Moreover, the use of voluntary disclosures in regulatory oversight blurs the boundary between mandatory and voluntary disclosures, which might change firms' estimates of voluntary disclosure costs and their future disclosure behaviors. Ultimately, it is an empirical question whether and how the regulator will use voluntary disclosures to monitor mandatory disclosures.

To answer the first research question, we search the entire sample of annual-report comment letters from 2004-2019 for references to voluntary disclosures. We identify and hand-collect all comment letters that refer to earnings conference calls and end up with over 700 comment letter conversions with data available for our main tests. Our descriptive statistics show that the regulator has been making reference to conference calls in comment letters during our entire sample period. In 2004, around 0.4% of firms receive comment letters with questions from the regulator referring to conference calls. This percentage starts to increase around 2007-2008 and reaches its peak of 11.6% in 2014. In terms of the industry distribution of firms receiving comment letters with reference to calls, we show that there are no dominant industries with disproportionate shares of those letters. Moreover, close to 90% of those letters reference calls in the first round of the review process, and about 80% of those letters reference the management presentation section of calls. In terms of the topics raised by the reviewers making reference to calls, we show that over 60% of those questions are under the heading of MD&A, and about 20% are under the heading of financial statements and supplementary data. The prevalence of MD&A topics is in line with the motivation of our study, given that this section relies heavily on

managers' own perspectives. Overall, the descriptive statistics confirm that conference calls are used as a source of information when the reviewers monitor firms' annual reports.

Next, we investigate what factors prompt the reviewers to reference voluntary disclosures in their oversight of mandatory disclosures conditional on comment letter issuance. Grounded in an economic framework, we posit that the DCF reviewers will resort to conference calls to monitor annual report disclosures when the costs of doing so (to themselves) are low and/or the expected benefits to investors are high. This cost-benefit analysis leads us to the following factors. First, from an ex-ante perspective, the reviewers are likely more concerned about the accuracy and completeness of annual reports when a firm's annual report disclosures signal uncertain or negative prospects. Additionally, the reviewers are more likely to utilize voluntary disclosures if warning signs arise during the review process, giving them the impression that a firm might have some serious disclosure deficiencies or underlying issues. Furthermore, the reviewers might be particularly concerned about their information blind spots when a firm goes through a high volume of corporate events during its earnings season. As such, the reviewers might feel a greater need to cross-check voluntary disclosures to ensure mandatory disclosures are accurate and complete to protect investors. Finally, it is well known that the SEC faces resource constraints. We expect that when the reviewers are constrained by time, they are less likely to cross-check voluntary disclosures when monitoring mandatory disclosures.

Consistent with our economic framework, we find that conditional on a comment letter being issued, more uncertain words and negative tone in annual reports are positively associated with the likelihood of the reviewers referencing conference calls in a comment letter. We further find that the reviewers' initial perception of firms' disclosure quality, as captured by the length of and the number of topics in the first letter, is positively associated with the likelihood of the

reviewers referencing calls in a comment letter. In addition, the reviewers' perception of their interaction with a targeted firm, as captured by the number of rounds in a review process, the number of days to complete a review process, as well as the fact that the firm asks for an extension to respond to the first letter, are all positively associated with the likelihood of the reviewers referencing calls in their subsequent letters.

Furthermore, we find that the number of news articles and the number of firms' 8-K filings are positively associated with the likelihood of the reviewers referencing conference calls in a comment letter. We further find that abnormal returns and trading volumes around earnings announcements are positively associated with the likelihood of the reviewers referencing conference calls in a comment letter. These results indicate that the reviewers are more likely to cross-check conference calls when signs of ongoing important corporate events are revealed from media coverage, regulatory filings, or capital market activities, making it more important to ensure accurate and complete disclosure in mandated reports. Finally, using two proxies to capture the busyness of the reviewers – when a firm has a December fiscal year-end, or its review takes place when the director in charge (i.e., the one who signs the letter) has a large amount of review assignments, we find that there is a negative association between busy reviewers and the likelihood of these reviewers referencing calls in a comment letter.

The consequences of such regulatory behavior can be multifaceted. On the one hand, from the regulator's perspective, the regulatory outreach to voluntary disclosures enhances mandatory disclosures to protect investors. On the other hand, such regulatory overreach obscures the distinction between voluntary and mandatory disclosures, which may trigger firms to update the odds of their future voluntary disclosures becoming a commitment to mandatory disclosures. In other words, this can increase firms' assessment of the regulatory risk of their

future voluntary disclosures. As such, we conjecture that using voluntary disclosures to facilitate the monitoring of mandatory disclosures can deter firms' future voluntary disclosures. Using a treatment sample of firms receiving comment letters that refer to conference calls and a control sample of firms receiving comment letters without referencing conference calls matched by industry, year, firm size, and number of comment letter receipts in the past, and a difference-in-differences specification, we examine the impact on conference-call related disclosures and on the overall informativeness of earnings announcements. We document a significant drop in the overall content spoken by firms' executives in future calls as well as in the number of topics covered in those calls compared to those by control firms' executives. Further analyses show that the significant reduction in conference call disclosures occurs only after targeted firms receive comment letters with reference to conference calls. Lastly, results from path analyses suggest that receiving a comment letter referencing calls reduces the informativeness of future calls (i.e., slower price discovery around associated earnings announcements) through its impact on these future call disclosures. Overall, our findings suggest that utilizing voluntary disclosures to facilitate regulatory enforcement can deter future voluntary disclosures, negatively affecting price discovery – a potential unintended consequence of regulators' use of voluntary disclosures.

Our paper contributes to the existing body of research in a number of ways. To preserve the integrity and effectiveness of the enforcement process, the SEC does not disclose the guideline or roadmaps for how reviews are conducted.[3] Existing studies have examined various determinants of the SEC's monitoring and enforcement activities (e.g., Kedia and Rajgopal 2011; Cassell, Dreher, and Myers 2013; Iselin, Johnson, Ott, and Raleigh 2022). Our study makes an important contribution to our understanding of the review process by examining a

[3] We reached out to the DCF reviewers who made use of conference calls in their comments for three different companies. Unfortunately, we were told that they cannot disclose anything related to the review process.

unique setting in which we can observe the reviewers use the information they learned from voluntary disclosures to facilitate their monitoring of firms' mandatory disclosures. Our findings indicate that the reviewers are more likely to use conference calls when they believe the economic benefits to investors are likely high. This echoes the findings from deHaan, Kedia, Koh, and Rajgopal (2015) and highlights that the reviewers' use of voluntary disclosures in assisting their monitoring of mandatory disclosures is likely well-intended in protecting investors.

In terms of the consequences of comment letters, existing literature generally finds that targeted firms and their industry peers modify their mandated disclosures upon the former receiving comment letters from the SEC. In general, comment letters have positive effects on firms' disclosures and information environments (e.g., Bens, Cheng, and Neamtiu 2016; Bozanic, Dietrich, and Johnson 2017; Johnston and Petacchi 2017). However, a couple of studies also find that comment letters might have unintended consequences. For instance, Cunningham, Johnson, Johnson, and Lisic (2020) find that firms reduce their use of accrual earnings management but increase real-activity earnings management upon receiving comment letters, while total earnings management has no significant change. Gomez, Heflin, and Wang (2022) find that firms' information environments worsen after the DCF reviewers require firms to exclude full non-GAAP income statements. Our findings suggest another unintended consequence – the reviewers' use of voluntary disclosures in comment letters can have a deterrent effect on these firms' voluntary disclosures going forward.

Lastly, our study provides findings that can be informative to the SEC. The SEC is keenly aware of firms' disclosure costs. In fact, the concern about such costs has led to the 2012 Jumpstart Our Business Startups (JOBS) Act, and an ongoing review of the disclosure

requirements in Regulation S-K. As we discussed above, our study highlights that using voluntary disclosures in regulatory oversight can raise firms' assessment of costs relating to voluntary disclosures. As a result, firms reduce future voluntary disclosures. On the one hand, one key challenge of regulatory oversight is information asymmetry between the regulator and the regulated. Utilizing voluntary disclosures might improve mandatory disclosures. On the other hand, our findings in this paper capture a potential cost of using voluntary disclosures in regulatory oversight – firms reduce their voluntary disclosures going forward. Taken together, regulators might want to consider the above tradeoff when exercising discretion to utilize voluntary disclosures while overseeing mandatory filings.

2. Literature review and hypothesis development

2.1. Institutional background and literature review

To fulfill its core mission of investor protection, the SEC requires mandatory disclosures from publicly listed firms, and its DCF conducts periodic reviews of those mandatory filings (e.g., annual reports and quarterly reports). The Sarbanes-Oxley Act of 2002 (SOX) requires a firm to be reviewed at least once every three years.[4] During a review, if questions arise, the DCF reviewers will send a comment letter to the firm. The firm generally responds to each question in a letter. The same reviewers will check the firm's responses and ask additional questions should any arise. This exchange continues until all comments from the reviewers are addressed.

In 2004, the SEC announced that it will publicly release comment letter correspondences between the DCF and registrant firms for annual reports filed after August 1, 2004. Since then, a large number of studies have examined the determinants and consequences of firms receiving

[4] In addition to this regular review of firms' periodic filings, the DCF also selectively reviews firms' transactional filings (e.g., filings relating to initial public offerings (IPOs) or mergers and acquisitions (M&As)).

comment letters (see Cunningham and Leidner (2022) for a review). In terms of the determinants of comment letter issuance, Cassell, Dreher, and Myers (2013) find that, in addition to the factors specified in the SOX that the reviewers should consider in selecting firms to review, low profitability, high operational complexity, weak governance, and hiring a less reputable auditor, are also associated with a higher likelihood of firms' receiving comment letters. Heese, Khan, and Ramanna (2017) find that politically connected firms are more likely to receive comment letters and more substantive letters. Recent studies further show that, reviewer style, accounting knowledge, team size, time constraints, and prior experience are significantly associated with the likelihood of comment letter issuance and comment letter characteristics (e.g., Ege, Glenn, and Robinson 2020; Gunny and Hermis 2020; Kubic 2021; Baugh, Kim, and Lee 2022; Do and Zhang 2022; Kubic and Toynbee 2022).

In terms of the consequences of comment letter issuance, Bens, Cheng, and Neamtiu (2016) show that the issuance of fair value comment letters to registrant firms is followed by significant reductions in uncertainty about these firms' fair value estimates. Dechow, Lawrence, and Ryans (2016) find that comment letters can influence executives' insider trading. Bozanic, Dietrich, and Johnson (2017) and Johnston and Petacchi (2017) show that the review process generally enhances firms' disclosures and improves informational transparency for investors.[5] Kubick, Lynch, Mayberry, and Omer (2016) and Brown, Tian, and Tucker (2018) further show that changes to future disclosures or tax avoidance behavior are not limited to firms receiving comment letters but also to industry peers. Duro, Heese, and Ormazabal (2019) and Duan, Li, Rogo, and Zhang (2022) find that the issuance of comment letters can also have capital market effects.

[5] Using management earnings forecasts to measure voluntary disclosure, Johnston and Petacchi (2017) find that comment letter recipient firms do not increase the quantity of their voluntary disclosures.

Two recent papers document some unintended consequences of the review process. Cunningham, Johnson, Johnson, and Lisic (2020) find that the comment letter process effectively reduces accrual-based earnings management, but targeted firms switch to real-activities-based earnings management compared to control firms not receiving comment letters. The latter is not a main focus of the SEC. Gomez, Heflin, and Wang (2022) study the determinants of firms disclosing non-GAAP income statements and the information environment consequences when firms stop such disclosure. The authors find that after firms stop disclosing full non-GAAP income statements in response to the SEC's comment letter, their information environments worsen. Moreover, such deterrent effects also spillover to industry peers. They conclude that an unintended outcome of the review process is firms' decision to remove voluntary information desired by market participants in an effort to avoid future comments. Our study differs from Gomez, Heflin, and Wang (2022) in at least two aspects. First, Gomez et al. (2022) focus on understanding the determinants of firms' choice to disclose voluntarily – the disclosure of non-GAAP information. In contrast, we seek to understand the determinants of the regulator's behavior – the reviewers' use of voluntary disclosures in their regulatory oversight process. Second, Gomez et al. (2022) study the consequence of the SEC's review of mandated reconciliation disclosure and what happens when the SEC requests firms to remove a wrong format of the mandated disclosure, i.e., using a full non-GAAP income statement. In our setting, the reviewers are consumers of a firm's voluntary disclosures and use those disclosures to inform their review of the same firm's mandatory disclosures.

2.2. Hypothesis development

The inherent information asymmetry between the DCF reviewers and registrant firms creates a challenge for the former to determine whether a mandated disclosure by the latter is

accurate and complete. The challenge increases when the reviewers have to determine the accuracy and completeness of mandatory disclosures that require corporate managers to provide a narrative from their own perspective (e.g., MD&A). After all, managers' views and intentions are unobservable and are subject to greater managerial discretions than mandatory disclosures. In this section, we develop a conceptual framework of key tradeoffs faced by the regulator when using information outside of mandatory disclosures to monitor mandatory disclosures.

On the benefit and incentive side, there are at least three reasons for the DCF reviewers to use voluntary disclosures in earnings conference calls to help assess firms' mandatory disclosures in annual reports. First, the DCF reviewers are public sector employees who take pride in their work and are intrinsically motivated to do a good job. For instance, the SEC's survey of employees in 2014 shows that over 83% of the DCF staff like their job, and 86% believe that their job is important. Over 97% of the DCF staff indicate that they are willing to "put in the extra effort to get a job done." (Office of Personnel Management 2014).

Second, assessing annual report accuracy and completeness is an expansive task and calls for extraordinary effort.[6] Firms are known to issue voluntary disclosures to complement and provide information outside of mandatory disclosures (e.g., Matsumoto, Pronk, and Roelofsen 2011; He and Plumlee 2020). Other capital market participants, such as equity analysts and institutional investors, have used firms' voluntary disclosures to gain insights. To reduce information asymmetry between the regulator and registrant firms, the DCF reviewers may check voluntary disclosures for additional information.

[6] Using annual reports filed with the SEC over the period 1996 to 2013, Dyer, Lang, and Stice-Lawrence (2017) show that the median firm has 37,370 words in its annual report, and the number of words for the median firm increases from 23,000 words in 1996 to 50,000 words in 2013. Their topic modeling identifies 150 annual report topics.

Third, compared to other forms of voluntary disclosure (e.g., press releases), earnings conference calls have a high informational value that is relevant to the monitoring of annual reports. Matsumoto, Pronk, and Roelofsen (2011) show that firms' disclosures in conference calls are incrementally more informative relative to earnings releases. Larcker and Zakolyukina (2012) find that executives' deceptive discussions in conference calls identified using a linguistic-based classification model predict subsequent financial restatements. Earnings conference calls involve corporate managers discussing business operations, justifying earnings performance, and answering questions from call participants. They almost always take place right after earnings releases to help the external investment community better understand firms' current and future earnings prospects. As a result, earnings conference calls provide one of the best avenues to help the reviewers to gain a good understanding of managers' views and intentions that are not available through reading annual reports.

On the cost side, there are at least two reasons for the DCF reviewers not to use voluntary disclosures to help assess firms' mandatory disclosures. First, it is well known that the DCF is resource-constrained (Kedia and Rajgopal 2011; Ege, Glenn, and Robinson 2020; Gunny and Hermis 2020). Time and effort spent on poring through voluntary disclosures could be better spent on monitoring mandatory disclosures directly (unless the examiners believe checking out voluntary disclosures will likely benefit investors). Moreover, the DCF reviewers are federal employees who are paid on a fixed scale. According to the SEC's survey of employees in 2014, over 80% of the DCF staff are not positive that their "differences in performance are recognized in a meaningful way." Less than one-tenth of the DCF staff are positive that their "pay raises depend on how well employees perform their jobs" (Office of Personnel Management 2014). Consistent with these survey results, Kubic (2021) finds no significant association between

individual examiner performance and economic or career incentives. The lack of a direct link between reviewers' job performance and their economic incentives will exacerbate the moral hazard problem discussed above, and may prevent reviewers from seeking out firms' voluntary disclosures to assist their assessment of mandatory disclosures.

Second, the use of voluntary disclosures in regulatory enforcement can blur the boundary between mandatory and voluntary disclosures, and change firms' estimates of voluntary disclosure costs to be more in line with those of mandatory disclosure costs. By construction, mandatory disclosures serve as a credible commitment mechanism on an ex-ante basis, while voluntary disclosures provide corporate managers the discretion to make disclosure decisions after the occurrence of corporate events. Moreover, mandatory disclosures are governed by various securities regulations and disclosure standards, and thus carry higher litigation costs compared to voluntary disclosures (Rock 2002; Bushee and Leuz 2005; Stulz 2009; Cheng, Liao, and Zhang 2013). These costs are shown to reduce firms' incentive to be publicly listed (e.g., Bushee and Leuz 2005; Engel, Hayes, and Wang 2007). If the reviewers are concerned about the costs borne by registrant firms, they might refrain from using voluntary disclosures in their monitoring of mandatory disclosures. In summary, to answer our first research question: Does the SEC use earnings conference calls to monitor annual reports? The discussions above regarding the key tradeoffs faced by the regulator lead to hypothesis 1, stated in the null form:

> *H1: The DCF reviewers do not use voluntary disclosures from conference calls to assist in their monitoring of mandatory disclosures.*

To answer our second research question: Under what circumstances is the SEC more or less likely to use earnings conference calls to monitor annual reports? Again, grounded in an economic framework, we posit that the DCF reviewers employ a risk-based approach to reviews and will resort to conference calls to facilitate the monitoring of annual reports when the costs of

doing so (to themselves) are likely lower and/or the expected benefits to investors are likely higher. We propose there are a number of factors that are part of the reviewers' cost-benefit analysis.

First, from an ex-ante perspective, the reviewers' concern about the accuracy and completeness of mandatory disclosures will likely be more serious when a firm's mandatory disclosures signal uncertain or negative prospects. Under such a scenario, the reviewers will face greater pressure to protect investors from downside risks, and have a stronger desire to ensure that mandatory disclosures are accurate and complete. Consequently, they will be more likely to cross-check voluntary disclosures for additional information. Existing literature shows that firms are more likely to issue voluntary disclosures to preempt bad news (Skinner 1994; Baginski, Hassell, and Kimbrough 2002; Tse and Tucker 2010). In the conference call setting, Matsumoto, Pronk, and Roelofsen (2011) further show that firms' disclosures in conference calls are incrementally more informative when firms experience worse performance. The discussions above lead to hypothesis 2a, stated in the null form:

> *H2a: Great uncertainty and negative tone in mandatory disclosures will not prompt the DCF reviewers to use voluntary disclosures from conference calls to assist in their monitoring of mandatory disclosures.*

Second, from an ex-post perspective, the reviewers' concern about the accuracy and completeness of mandatory disclosures will likely be more serious when during a review process, there are red flags of disclosure deficiencies. When the reviewers first start to go over a mandatory filing, they will form an initial impression of how deficient the mandated disclosure is. The more deficient they perceive the mandated disclosure is, the more likely the reviewers are concerned about information asymmetry between themselves and corporate managers, which may prevent them from discovering critical disclosure problems in the mandated reports.

Consequently, they will be more likely to examine voluntary disclosures for additional information. Using the number of questions and the length of a firm's first comment letter to capture reviewers' initial perception of the targeted firm's annual report disclosure, we posit that the reviewers will likely cross-check voluntary disclosures for additional information the worse their initial impression is.

Once a firm receives a comment letter from the SEC in an initial round, it generally responds to the questions in a written letter back to the SEC, and the SEC will ask additional questions in another comment letter should any arise. This iterative process continues until all questions are resolved. During subsequent rounds of a review, if a firm' responses cannot fully address the reviewers' questions or if a firm is not responsive in a timely manner, the reviewers might form an opinion that the firm has some serious problems. These concerns increase the potential benefits to investors of seeking additional information from voluntary disclosures during later rounds of review. Anecdotally, we do observe that when issues arising during a review process become so severe, the SEC reviewers reach out to voluntary disclosures. For instance, in their comment letter to Brown Forman Corp. filed on October 26, 2011, the reviewers stated, "*We note your response to comment four that you do not prepare detailed financial statements that would reveal the profitability of the Company's brands and/or geographic regions. However, we also note that your CODM discussed the net sale growth of your international business with developed market and emerging markets in your fourth quarter earning conference call. [...] Therefore, it appears that your CODM does receive profitability information by geography. Please provide us with a copy of reports that your CODM uses to prepare for such earnings calls*." The discussions above lead to hypothesis 2b, stated in the null form:

H2b: The DCF reviewers' initial perception of a firm's mandatory disclosure quality or their perception of their interaction with a firm during the review process will not prompt them to use voluntary disclosures from conference calls to assist in their monitoring of mandatory disclosures.

Third, outside of the review process, the reviewers' concern about the accuracy and completeness of mandatory disclosures will likely be more serious when a firm is going through many corporate events or changes. After all, major corporate events and structural changes can raise challenges for management to report accurately and completely. Under such a scenario, the reviewers are likely more cautious and, thus, more likely to refer to voluntary disclosures to assist with the monitoring of mandated disclosures. To capture the scope and intensity of corporate events or changes that a firm is going through, we use its media coverage and number of 8-K filings. In addition, we use abnormal returns and trading volumes to capture whether a firm is having an eventful earnings season. We hypothesize that when a firm receives more media attention, experiences more corporate events, or attracts more investor attention during its earnings season, the reviewers might see greater benefits to investors by reaching out to voluntary disclosures to ensure that all key information is included in mandatory disclosures and that such disclosures are accurate. The discussions above lead to hypothesis 2c, stated in the null form:

H2c: High media attention, more corporate events, and abnormal return and trading volume around earnings announcements will not prompt the DCF reviewers to use voluntary disclosures from conference calls to assist in their monitoring of mandatory disclosures.

Finally, the SEC faces resource constraints. On various occasions, the top officials at the SEC have expressed concerns that resource constraints may harm their job performance (Thomsen 2009; Schapiro 2011; Katz 2017), which are confirmed by a number of studies (e.g., Kedia and Rajgopal 2011; Ege, Glenn, and Robinson 2020; Gunny and Hermis 2020). Given

these resource constraints, the reviewers might not have the capacity to examine voluntary disclosures when reviewing mandatory disclosures. After all, they are not required to use firms' voluntary disclosures to facilitate their assessment of mandatory disclosures. The discussions above lead to hypothesis 2d, stated in the null form:

> *H2d: Resource constraints will not reduce the DCF reviewers' incentives to use voluntary disclosures from conference calls to assist in their monitoring of mandatory disclosures.*

To answer our third and final research question: How do comment letters in which the reviewers make reference to earnings conference calls affect firms' voluntary disclosures in future conference calls and the informativeness of those calls? We posit that when the reviewers use conference calls to gauge the accuracy and completeness of annual reports, such regulatory oversight blurs the boundary between voluntary and mandatory disclosures. Firms will update the likelihood that they will be making an implicit commitment to provide similar disclosures in the future. As a result, firms might scale back their future voluntary disclosures. The descriptive evidence in our sample supports this conjecture that using voluntary disclosures to monitor voluntary disclosures blurs their boundaries. In our sample, 36% of the firms respond to the SEC's inquiry referring to information from their earnings conference calls by explaining their disclosure choices, while 61% of the firms make a commitment to revise their future filings. For instance, on May 14, 2009, the reviewers sent a letter to LoJack Corp. questioning why the reduction of customers and loss of revenues were provided in its earnings call but not in its annual report (note the comment letter was filed on the Electronic Data Gathering, Analysis, and Retrieval (EDGAR) on September 10, 2009). LoJack responded with an explanation and promised to revise future disclosures (see Appendix A for details). In summary, the majority of firms commit to revising their mandatory filings after the SEC questions their mandatory

disclosure practices by citing information from their conference calls. After all, firms do not want to be perceived as non-cooperative or caught red-handed by the reviewers, which might risk their disclosures being transferred to the Division of Enforcement for further investigations. We conjecture this can raise managers' concern about the regulatory risk of their future voluntary disclosures. This concern may lead managers to reduce future voluntary disclosures in conference calls. The discussions above lead to hypothesis 3a, stated in the null form:

H3a: The DCF reviewers' use of voluntary disclosures from conference calls to assist in their monitoring of mandatory disclosures in annual reports has no effect on firms' future voluntary disclosures.

Reducing future conference call disclosures can result in a significant cost to investors, as existing literature shows that various investors, including prospective investors, benefit from conference call disclosures (e.g., Heinrichs, Park, and Soltes 2019). Furthermore, as discussed in Matsumoto et al. (2011), the fact that information in conference calls is provided in a less constrained manner than in other disclosures is one of the key determinants of the informativeness of earnings calls. If firms raise their assessment of regulatory risks after being asked about conference calls in comment letters, they may withhold information that can significantly impact the overall informativeness of conference calls, negatively impacting the price discovery around earnings announcements. After all, conference calls typically occur on the same day or a day after earnings announcements.

On the other hand, the reduction in conference call content may be restricted to information that is not material for the analysis and interpretation of a firm's performance. For instance, in an attempt to avoid future commitments to disclosing detailed information on sales for all industries a firm serves, the management team of Applied Industrial Technologies Inc provided the following response to the SEC staff, "*Management views this information as anecdotal. This data is not material to our analysis of the company's results of operations, nor*

is it used to forecast sales. We have provided it to respond to analyst inquiries, adding color to the discussion of quarterly sales." In this case, instead of committing to future disclosures, the management team ended up explicitly reducing disclosures. The team further added in their response letter to the SEC that they planned "*to remove the discussion of top 30 industries from our prepared remarks in future earnings conference calls"*. If the drop in conference call content has little information value, as implied in the example above, then changes in conference call disclosures resulting from the SEC reviewers' use of conference call disclosures should not affect the price discovery around the associated earnings announcements. The discussions above lead to hypothesis 3b, stated in the null form:

H3b: The DCF reviewers' use of voluntary disclosures from conference calls to assist in their monitoring of mandatory disclosures in annual reports has no effect on price discovery around associated earnings announcements.

3. Sample and descriptive statistics

3.1. Data sources and sample formation

In June 2004, the SEC announced that it will publicly release comment letter correspondences on annual reports filed after August 1, 2004 on EDGAR.[7] Our sample period begins in August 2004, when comment letters on annual reports first became publicly available, and ends in 2019, as we require a four-quarter post-comment letter period that ended before the COVID-19 pandemic took hold of the U.S. economy to conduct our consequence analysis.

We first identify all comment letters in Audit Analytics. We then limit our sample to comment letters issued for annual reports for three reasons. First, reviews of annual reports

[7] https://www.sec.gov/news/press/2004-89.htm.

represent one of the most frequently occurring non-topic-specific reviews.[8] Second, most firms' annual reports are preceded by earnings announcements and earnings conference calls. Conference calls become a natural choice of voluntary disclosures for the reviewers to access voluntary disclosures when they review firms' annual reports. In other words, there is a close connection between annual reports and the voluntary disclosure channel – earnings conference calls. Third, annual reports are audited and include all accounting topics that firms should cover and update (e.g., asset impairment must be tested annually).

Table 1 Panel A lists the sample formation steps for our study. During our sample period 2004-2019, there are a total of 30, 087 comment letters for annual reports (including 10K, 20F, and 40F filings) based on data from Audit Analytics. We next collect information from comment letters that contain questions related to conference calls in three steps: 1) identify letters with "Other Disclosure Matters" followed by "issues" that are "earnings call review by SEC" in Audit Analytics;[9] 2) manually check each identified letter to confirm whether it has at least one question making reference to earnings conference calls; 3) manually collect additional letters with reference to conference calls on EDGAR; and 4) manually collect additional information from all correspondence involved in the same comment letter conversation (e.g., the heading under which the reviewers raise questions about calls, firms' replies to such questions). Because we focus on the determinants and consequences of the SEC commenting on earnings calls while monitoring annual reports, we further require our sample to be firm-year observations that receive annual report comment letters and hold earnings conference calls in the same fiscal year.

[8] In addition to these non-topic-specific reviews, the DCF reviewers also examine firms' filings to check for compliance on a specific topic, see https://www.sec.gov/divisions/corpfin/cffilingreview.
[9] We also find comment letters referring to other voluntary disclosures (e.g., press releases and websites). As discussed above, we limit our sample to those that refer to earnings conference calls to have a more focused sample that is better aligned with our conceptual framework.

We determine whether firms hold earnings conference calls from Capital IQ's Key Development database. The above procedures generate 1,003 comment letters for annual reports with a reference to conference calls.

In addition to the SEC Comment Letter module and the Auditor module from Audit Analytics, we use Compustat for firm financial information, CRSP for stock price, conference call informativeness measure, stock return, and trading volume, 13F for institutional ownership, SeekEdgar for call transcripts filed on EDGAR, SEC Analytics to obtain textual measures related to annual reports, to construct explanatory variables used in determinant analysis beyond those employed by prior work (e.g., Cassell, Dreher, and Myers 2013). All key variables are defined in Appendix B. Our final sample comprises 14,562 unique comment letter conversations, out of which 761 make reference to earnings calls.

3.2. Descriptive statistics

Table 1 Panel B presents the temporal distribution of annual report comment letters that contain questions about conference calls. We show that the DCF reviewers have been checking conference calls throughout our sample period 2004-2019. The reference is occasional at the start of the sample period – less than 1% of the comment letters make reference to earnings conference calls. The rate of reference to conference calls shows an increasing trend until it reaches a peak of 11.6% in 2014. In 2004, the SEC announced that all comment letters for mandatory reports filed after August of 2004 will be publicly disclosed. The rate of reference fluctuates after 2014, but it never drops below 4%. On average, 5.2% of annual report comment letters make reference to conference calls over the sample period.[10]

[10] In unreported analysis, we note that over our sample period, the share of comment letters that make reference to company websites is 3.5%.

Panel C presents the industry distribution of firms receiving comment letters with reference to calls, using Fama-French 17 industry classification. We show that there are no dominant industries with disproportionate shares of those letters.

Panel D provides the descriptive characteristics using hand-collected data to gain a better understanding of the DCF reviewers' reference to conference calls. We show that in close to 90% of the comment letter conversations, the reviewers make reference to conference calls in the first round of the review process. Referencing conference calls while resolving issues with firms during later rounds of the review process does occur, but they occur with a much lower frequency. On average, it takes about one round of conversations for firms to address letters with reference to conference calls.

In terms of the scope of topics raised by the reviewers making reference to calls, using hand-collected information on the comment letter heading under which the reviewers mention calls, we show that over 60% of those questions are under the heading of MD&A, and about 20% are under the heading of financial statements and supplementary data. Annual reports include both forward-looking and backward-looking information. Backward-looking information simply reports transactions that have taken place. Forward-looking information, by construction, provides discussions about firms' future prospects, summarized in MD&A. In compiling MD&A, managers are expected to provide a narrative from their own perspectives on how their firms' financial condition, results of operations, liquidity, and other key factors that may affect future results. Specifically, Regulation S-K (303) states that management's discussion should focus "*specifically on material events and uncertainties known to management that are reasonably likely to cause reported financial information not to be necessarily indicative of future operating results or future financial condition.*" The results discussed above indicate that

the most frequent item that the reviewers require help from voluntary disclosures comes from the MD&A section of the annual reports. This suggests that, to improve the quality of mandatory disclosures that benefits investors, the reviewers have the greatest incentives to reduce information asymmetry between themselves and managers when they review forward-looking statements. Overall, the descriptive statistics in Table 1 confirm that conference calls are used as a source of information when the reviewers monitor firms' annual reports.

[Insert Table 1 Here]

Table 2 Panel A presents the descriptive statistics for the sample used in the determinant analysis. In terms of the dependent variables, over our sample period, the share of firm-year observations with comment letters (CLs) that make reference to conference calls, *CL_CC*, is 5.2%; and the share of firm-year observations with comment letters that make reference to a conference call in the second or higher round of a CL conversation, *CL_CC_subsequent*, is 0.7%. In terms of the variables of interest, we show that the average share of uncertain words in annual reports is about 0.9%. Negative tone, measured by the difference between the share of negative words and the share of positive words, has a mean of 1.5%, suggesting that for our sample firm-year observations, the tone in annual reports is slightly negative. The average number of words in the first CL is 994 words, and the average number of CL topics in the first letter of a CL conversation classified by Audit Analytics is 8.8. On average, it takes about 1.6 rounds (65 days) to complete a review. Almost one-fifth of targeted firms ask for an extension to respond to the first letter. On average, our sample firms receive coverage from about 100 news articles, and have about 12 8-K filings. Finally, about three-quarters of the sample firm-year observations have a December fiscal year-end, and in about 60% of the cases, the director responsible for the focal review is busy (with an abnormally high workload).

Table 2 Panel B presents the descriptive statistics for the sample used in the consequence analysis. The dependent variables are different measures of conference call disclosures, and a measure of price discovery around earnings announcements – captured by informativeness of associated conference calls. Managers can modify their disclosure behavior for the next quarter's earnings call after receiving a comment letter from the SEC, which can affect the price discovery around the associated earnings announcements. Thus, unlike the determinant tests which are conducted at the annual level, the consequence tests are conducted at the quarterly level. The overall measure of conference call disclosures is *Ln(Length of earnings call)*. This variable captures the overall discussions by management in a conference call. Moreover, the variable, *# words (# numbers*), captures the qualitative (quantitative) aspect of a call. On average, each call has about 5,882 words and 183 numbers. The variable, *# topics*, captures the number of topics discussed by management in a call. The average number of topics per call is about 30. Appendix C provides detailed description of how we determine the number of topics in a call.

Following Roychowdhury and Sletten (2012), we measure informativeness using stock returns. Since news arrivals can lead to price increases or decreases, we define the incremental news released by conference calls as the absolute value of the market-adjusted buy-and-hold return over the five trading days from (-2, +2), where day 0 is the quarterly conference call date (*BHAR(-2, +2)*). We define *BHAR(-2, +21)* analogously. The variable, *CC_informativeness*, is defined as the ratio of BHAR(-2, +2) to BHAR(-2, +21), in percentage points. This variable captures the incremental information content of conference calls to that has reached the market from alternative sources around and after calls. The mean (median) of *CC_informativeness* is 29.5 (28.7), indicating that, on average, 29.5% (28.7%) of the price discovery for the window of (-2, 21) occurs around (-2, 2) centered on conference calls.

[Insert Table 2 Here]

4. Research design and result discussion

4.1. Determinants of comment letters referencing conference calls (CL_CCs)

We investigate what factors may lead the DCF reviewers to use earnings calls in their comment letters by using the following specification:

$$CL\_CC_{it} = \beta_0 + \beta_1 Determinants \ + \beta_2 FirmCharacteristics_{it} + Signing\ Director\ FE + Industry\ FE + Year\ FE + \ \varepsilon_{it}. \quad (1)$$

We control for firm attributes, such as market size, firm age, internal control weaknesses, and loss, auditor attributes - such as big four auditors and auditor tenure in the model following prior literature (e.g., Cassell et al. 2013). The full list of control variables is provided in Appendix B.

The coefficient of interest is β_1. It captures the effects of potential determinants on the likelihood of reviewers issuing a CL_CC as discussed in our hypothesis development. The first group of determinants capture ex-ante characteristics of a firm's annual report based on textual analysis using the dictionaries from Loughran and McDonald (2011): *Uncertainty* and *Negative tone*. Matsumoto, Pronk, and Roelofsen (2011) find that managers provide increased disclosures during earnings calls when their firm performance is poor. We conjecture that the reviewers are more likely to require additional information beyond annual reports when they find disclosures from annual reports signal uncertainty and negative prospects. Table 3 presents the results.

We find that when annual reports involve more disclosures indicating uncertainty or negative prospects, the reviewers are more likely to examine conference calls and inquire about information from conference calls in their letters. These findings suggest that the reviewers are trying to mitigate the downside risks for investors.

[Insert Table 3 Here]

The second group of determinants capture ex-post characteristics of a firm's review process. We conjecture that if a review process raises warning signs that a firm might have some serious disclosure issues, the reviewers will check conference calls for additional information. To capture reviewers' perception, we employ two sets of measures. In the first set, we focus on the first comment letter, which captures reviewers' initial impression of a firm's annual report disclosures. *Ln*(*# first CL words)* is the natural logarithm of the number of words in the first letter, and *# first CL topics* is the number of topics raised in the first letter from Audit Analytics. In the second set, we focus on reviewers' perception of their interaction with a targeted firm during the review process. *# CL rounds* is the number of rounds in a CL conversation. *Ln(# CL conversation days)* is the natural logarithm of the number of days it takes to complete a CL conversation. The variable, *First CL extension*, is an indicator variable that takes the value of one if a firm asks for an extension to respond to the first letter, and zero otherwise. Table 4 presents the results.

In Panel A, the dependent variable is *CL_CC*. Consistent with our conjecture, we show that both measures of the severity uncovered in the first letter are positively associated with the likelihood that the reviewers will refer to conference calls for additional information. These findings indicate that reviewers' first impression of firms' mandated disclosures is a key factor that drives reviewers to reach out for help from voluntary disclosures. In Panel B, the dependent variable is *CL_CC_subsequent*, an indicator variable that takes the value of one if the reviewers' reference to conference calls shows up in the second or later letters of a CL conversation, and zero otherwise. We show that both measures of the severity of the entire CL conversation, *# CL rounds* and *Ln(# CL conversation days)*, as well as the indicator variable for a firm to ask for an extension to respond to the first letter, *First CL extension*, are positively associated with the

likelihood that the reviewers will resort to conference calls. These findings suggest that warning signs can also occur during the review process, which triggers reviewers to reach out to voluntary disclosures for help with their monitoring of annual reports.

[Insert Table 4 Here]

The third group of determinants includes media coverage, 8-K filings, and abnormal return and trading volume around earnings announcements. Table 5 presents the results.

We find that the number of news articles and the number of 8-K filings are positively associated with the likelihood of the reviewers referencing conference calls in a comment letter. We further find that abnormal returns and trading volumes around earnings announcements are positively associated with the likelihood of the reviewers referencing conference calls in a comment letter. These results indicate that the DCF reviewers are more likely to review conference calls when issuers have active media coverage, more corporate events, or experience abnormal returns or trading volumes around earnings announcements, all are markers for "something is potentially off".

[Insert Table 5 Here]

Lastly, the SEC is known for its resource constraints, and prior work shows that such constraints hurt enforcement and compliance activities (e.g., Kedia and Rajgopal 2011; Ege, Glenn, and Robinson 2020; Gunny and Hermis 2020). We are interested in exploring whether there is any link between the resource constraints at the SEC and its compliance activities involving the reviewers putting in extra effort – using information from voluntary disclosures to monitor mandatory disclosures. Table 6 presents the results.

We find that when the reviewers are busy due to either regular filing seasons or the director in charge (i.e., the one who signs the comment letter) is swamped with review tasks of other firms, they are less likely to check calls when reviewing annual reports.

In summary, grounded in an economic framework of cost-benefit analysis, we find that the reviewers are more likely to seek out voluntary disclosures when monitoring mandatory disclosures if the expected benefits to investors of doing so are likely higher while the costs to reviewers themselves are likely lower.

[Insert Table 6 Here]

4.2. The effects of CL_CCs on future conference call disclosures and price discovery around associated earnings announcements

While the DCF reviewers may find voluntary disclosures helpful during their review of mandatory disclosures, commenting on voluntary disclosures could have unintended consequences. Specifically, the reviewers' use of firms' voluntary disclosures in comment letters might change management's assessment of the regulatory risk for future voluntary disclosures. As such, it might have a deterrent effect on these firms' future voluntary disclosures.

To explore this issue, we employ a sample of treated firms (i.e., firms receiving CL_CCs) and a sample of control firms receiving CLs matched by industry, year, firm size, and the number of comment letters received in the prior two years (i.e., the two-year window is chosen because each review cycle is three years). The estimation window spans eight quarters, encompassing four quarters before and four quarters following the event quarter in which a sample firm receives a CL. We employ the following difference-in-differences (DID) specification:

$$Voluntary\ disclosure\ (CC\_informativeness)_{it} = \beta_0 + \beta_1 Post \times CL\_CC\ + \beta_2 Post_{it} + \beta_3 FirmCharacteristics_{it} + Firm\ FE + Year\ FE + \varepsilon_{it}. \quad (2)$$

The indicator variable, *Post*, takes the value of one in the four-quarter period after a sample firm receives a CL, and zero for the four-quarter period before. The indicator variable, *CL_CC*, takes the value of one for a treatment firm, and zero for a control firm. The key variable of interest is the coefficient on the interaction term *Post × CL_CC*. We test the effects on conference call disclosures using one measure for the overall content discussed by managers, *Ln (Length of earnings call)*, and three more granular measures capturing qualitative and quantitative disclosures in calls, *Ln(# words)*, *Ln (# numbers)*, and *Ln(# topics)*. In addition, we also use the principal component analysis to extract the primary factor from these three aspects of conference call disclosures and label it as a composite score *CC_composite*. If citing information from conference call raise managers' concern about regulatory risks for what they say during a conference call, then managers might hold back from disclosure during conference calls after receiving CL_CCs. Table 7 Panel A presents the results.

Column (1) of Panel A presents the results for conference call length. Consistent with our conjecture, we find that managers reduce overall disclosures during a conference call after receiving a CL-CC. The coefficient on *Post × CL_CC* is -0.042 (t-statistic of -4.07). This coefficient indicates that the length of conference calls reduces by around 4.1% (about 250 words and numbers) after a firm receives a CL_CC compared to that of a control firm receiving a CL.[11] This suggests that regulatory overreach makes managers hesitant to disclose information during subsequent conference calls.

[11] Exp (-0.042) is approximately 0.959, which means that for every unit increase in the interaction term, the dependent variable decreases by about 4.1% (= 0.959 – 1).

Columns (2) to (5) report the results when the dependent variables are different aspects of conference call disclosures. We find that managers withhold not only quantitative (a reduction of 4.2% or 247 words) and qualitative disclosures (a reduction of 3.2% or 6 numbers) but also the number of topics (reduction of 3.1% or 1 topic) discussed in subsequent calls. These results suggest that managers discuss fewer topics in conference calls and provide fewer details for the topics covered after being subject to regulatory oversight referencing conference call content.

To investigate when the treatment effect appears, we report the dynamic average treatment effects in Panel B and plot them in Figure 1. As shown in both Panel B and Figure 1, the negative effect of receiving a CC_CL on conference call disclosures does not show up before a CL_CC is received. However, the negative effect is significant in the quarters after receiving a CL_CC. These dynamic effects reinforce the main findings in Panel A and further support our conjecture that using voluntary disclosures to facilitate regulatory oversight can make managers hesitate in disclosing information in future voluntary disclosures. In other words, managers increase their estimates of voluntary disclosure costs when the DCF reviewers use voluntary disclosures to evaluate mandatory disclosures.

[Insert Table 7 Here]

We next explore whether the use of conference calls to bridge the information gap between the regulator and the regulated negatively affects price discovery during earnings calls and, more importantly, whether the effect on price discovery is through the reduction in conference call disclosures. Table 8 presents the results.

Panel A Column (1) indicates that conference call informativeness (*CC_informativeness*) reduces significantly more after a treated firm receives a CL_CL compared to a control firm receiving a CL. Specifically, the coefficient on *Post* $\times$ *CL_CC* is -0.887 (t-statistic of -2.12).

Given that the average of the measure *CC_informativeness* is 0.295, the effect corresponds to a 3% decrease in news arriving during earnings announcements after a firm's receipt of a CL_CC.

We further examine whether the change in disclosure behavior reported in Table 7 directly explains the deterioration in conference call informativeness by conducting a path analysis to explore whether receiving a *CL_CC* reduces conference call informativeness through the reduction in conference call disclosures. Table 8 Panel A Columns (2) and (3) further show that the two disclosure variables mediate this relationship as the treatment effect on conference call informativeness reduces after we add *Ln(Length of earnings call)* or *CC_composite*. This is consistent with our conjecture that receiving a *CL_CC* can reduce conference call informativeness through its impact on conference call disclosures. Overall, the path analysis suggests that the informativeness of conference calls decreases as a result of targeted firms' reduction in their future conference call disclosures.

Table 8 Panel B provides a detailed decomposition of the path analysis. The indirect effect of CL_CCs on conference call informativeness mediated by *Ln(Length of earnings call)* (*CC_composite*) is -0.122 (-0.134) and is highly significant (p-value < 0.01 using the Sobel (1982) test statistics). This suggests that about 14% (15%)[12] of the treatment effect on conference call informativeness is explained by the reduction in the length (CC_composite) measure triggered by the treatment. These results suggest that when reviewers reach out to voluntary disclosures to facilitate their enforcement, it can have a chilling effect on firms' voluntary disclosures, which negatively affects firms' informativeness of conference calls.

[Insert Table 8 Here]

[12] The calculation is based on the percentage of the indirect effect in relation to the total effect, so 14% = 0.122/0.887 for *Ln(Length of earnings call)* and 15% = 0.134/0.887 for *CC_composite*.

5. Conclusions

One key challenge of regulatory oversight is information asymmetry between the regulator and the regulated. In this paper, we utilize a unique setting whereby the SEC makes use of firms' voluntary disclosures to help narrow the information gap while monitoring firms' mandatory disclosures to shed light on the inner workings of regulatory oversight.

Using a hand-collected annual report comment letter sample over the period 2004-2019, we first document that in around 5% of annual report comment letters, reviewers make reference to content in conference calls to request improvements in annual report disclosures. We then develop a conceptual framework of key tradeoffs faced by the regulator to guide our empirical investigation of the determinants and consequences of such regulatory behavior. Consistent with our framework, we find that the reviewers are more likely to examine voluntary disclosures when a firm's annual report disclosures suggest higher uncertainty or gloomy prospects, when a firm's review process triggers concerns about potential disclosure issues, when a firm has high media coverage, when a firm experiences more corporate events, when a firm has an eventful earnings season, or when the reviewers themselves are not busy. Finally, we show that such regulatory behavior leads to some unintended consequences of firms reducing disclosures in future conference calls. The reduction in conference call disclosures also negatively affect the informativeness of conference calls (i.e., the price discovery of associated earnings announcement), highlighting a potential cost of referencing voluntary disclosures during the monitoring of mandatory disclosures.

The findings in our paper have important policy implications for regulators around the world as more and more countries try to emulate the success of the U.S. capital markets and its regulator – the SEC, by adopting similar review processes.

References:

Baugh, Matthew, Kyonghee Kim, and Kwang J. Lee, 2022. The effect of SEC reviewers on comment letters, *Contemporary Accounting Research* 39, 656-690.

Bens, Daniel A., Mei Cheng, and Monica Neamtiu, 2016. The impact of SEC disclosure monitoring on the uncertainty of fair value estimates, *The Accounting Review* 91, 349-375.

Bozanic, Zahn, J. Richard Dietrich, and Bret A. Johnson, 2017. SEC comment letters and firm disclosure, *Journal of Accounting and Public Policy* 36, 337-357.

Brown, Stephen V., Xiaoli Tian, and Jennifer W. Tucker, 2018. The spillover effect of SEC comment letters on qualitative corporate disclosure: Evidence from the risk factor disclosure, *Contemporary Accounting Research* 35, 622-656.

Bushee, Brian J., and Christian Leuz, 2005. Economic consequences of SEC disclosure regulation: Evidence from the OTC bulletin board, *Journal of Accounting and Economics* 39, 233-264.

Cassell, Cory A., Lauren M. Dreher, and Linda A. Myers, 2013. Reviewing the SEC's review process: 10-K comment letters and the cost of remediation, *The Accounting Review* 88, 1875-1908.

Cheng, Lin, Scott Liao, and Haiwen Zhang, 2013. The commitment effect versus information effect of disclosure—Evidence from smaller reporting companies, *The Accounting Review* 88, 1239-1263.

Cunningham, Lauren M., Bret A. Johnson, E. Scott Johnson, and Ling Lei Lisic, 2020. The switch‐up: An examination of changes in earnings management after receiving SEC comment letters, *Contemporary Accounting Review* 37, 917-944.

Cunningham, Lauren M., and Jacob J. Leidner, 2022. The SEC filing review process: A survey and future research opportunities, *Contemporary Accounting Research* 39, 1653-1688.

Dechow, Patricia M., Alastair Lawrence, and James P. Ryans, 2016. SEC comment letters and insider sales, *The Accounting Review* 91, 401-439.

Do, Truc (Peter) Thuc, and Huai Zhang, 2022. Styles of regulators: Evidence from the SEC's comment letters, *Contemporary Accounting Research* 39, 789-825.

Dyer, Travis, Mark Lang, and Lorien Stice-Lawrence, 2017. The evolution of 10-K textual disclosure: Evidence from Latent Dirichlet Allocation, *Journal of Accounting and Economics* 64, 221-245.

Duan, Tinghua, Kai Li, Rafael Rogo, and Ray Zhang, 2022. The regulatory and capital-market effects of a US approach to enforcement: Evidence from China, *Journal of Financial and Quantitative Analysis* forthcoming.

Duro, Miguel, Jonas Heese, and Gaizka Ormazabal, 2019. The effect of enforcement transparency: Evidence from SEC comment-letter reviews, *Review of Accounting Studies* 24, 780-823.

Ege, Matthew, Jennifer L. Glenn, and John R. Robinson, 2020. Unexpected SEC resource constraints and comment letter quality, *Contemporary Accounting Research* 37, 33-67.

Engel, Ellen, Rachel M. Hayes, and Xue Wang, 2007. The Sarbanes–Oxley Act and firms' going-private decisions, *Journal of Accounting and Economics* 44, 116-145.

Ettredge, Mike, Karla Johnstone, Mary Stone, and Qian Wang, 2011. The effects of firm size, corporate governance quality, and bad news on disclosure compliance, *Review of Accounting Studies* 16, 866-889.

Gomez, Enrique, Frank Heflin, and Jasmine Wang, 2022. SEC regulation and non-GAAP income statements, *The Accounting Review* in press.

Gunny, Katherine A., and Judith M. Hermis, 2020. How busyness influences SEC compliance activities: Evidence from the filing review process and comment letters, *Contemporary Accounting Research* 37, 7-32.

He, Jing, and Marlene A. Plumlee, 2020. Measuring disclosure using 8-K filings, *Review of Accounting Studies* 25, 903-962.

Heese, Jonas, Mozaffar Khan, and Karthik Ramanna, 2017. Is the SEC captured? Evidence from comment-letter reviews, *Journal of Accounting and Economics* 64, 98-122.

Heinrichs, Anne, Jihwon Park, and Eugene F. Soltes, 2019. Who consumes firm disclosures? Evidence from earnings conference calls, *The Accounting Review* 94, 205-231.

Heylighen, Francis, and Jean-Marc Dewaele, 2002. Variation in the contextuality of language: An empirical measure, *Foundations of Science* 7, 293-340.

Huang, Allen H., Reuven Lehavy, Amy Y. Zang, and Rong Zheng, 2018. Analyst information discovery and interpretation roles: A topic modeling approach, *Management Science* 64, 2833-2855.

Iselin, Michael, Bret Johnson, Jacob Ott, and Jacob Raleigh, 2022. Protecting Wall Street or Main Street: SEC monitoring and enforcement of retail-owned firms, University of Minnesota working paper.

Johnston, Rick, and Reining Petacchi, 2017. Regulatory oversight of financial reporting: Securities and Exchange Commission comment letters, *Contemporary Accounting Review* 34, 1128-1155.

Katz, David, 2017. SEC accountants voice resource constraints, *CFO Magazine*, December 5, 2017.

Kedia, Simi, and Shiva Rajgopal, 2011. Do the SEC's enforcement preferences affect corporate misconduct? *Journal of Accounting and Economics* 51, 259-278.

Kubic, Matthew, 2021. Examining the examiners: SEC error detection rates and human capital allocation, *The Accounting Review* 96, 313-341.

Kubic, Matthew, and Sara Toynbee, 2022. Regulator continuity and decision-making quality: Evidence from SEC comment letters, *The Accounting Review* in press.

Kubick, Thomas R., Daniel P. Lynch, Michael A. Mayberry, and Thomas C. Omer, 2016. The effects of regulatory scrutiny on tax avoidance: An examination of SEC comment letters, *The Accounting Review* 91, 1751-1780.

Larcker, David, and Anastasia Zakolyukina, 2012. Detecting deceptive discussions in conference calls, *Journal of Accounting Research* 50, 495-540.

Loughran, Tim, and Bill McDonald, 2011. When is a liability not a liability? Textual analysis, dictionaries, and 10-Ks, *Journal of Finance* 66, 35-65.

Lowry, Michelle, Roni Michaely, and Ekaterina Volkova, 2020. Information revealed through the regulatory process: Interactions between the SEC and companies ahead of their IPO, *Review of Financial Studies* 33, 5510-5554.

Matsumoto, Dawn, Maarten Pronk, and Erik Roelofsen, 2011. What makes conference calls useful? The information content of managers' presentations and analysts' discussion sessions, *The Accounting Review* 86, 1383-1414.

Office of Personnel Management (OPM), 2014. Securities and Exchange Commission headquarters federal employee viewpoint survey — 2nd level subagency comparison report. Available at: https://www.sec.gov/files/sec-hq-federal-employee-viewpoint-survey-2014.pdf

Rock, Edward, 2002. Securities regulation as lobster trap: A credible commitment theory of mandatory disclosure, *Cardozo Law Review* 23, 675-704.

Ryans, James P., 2021. Textual classification of SEC comment letters, *Review of Accounting Studies* 26, 37-80.

Roychowdhury, Sugata, and Ewa Sletten, 2012. Voluntary disclosure incentives and earnings informativeness, *The Accounting Review* 87, 1679-1708.

Schapiro, Mary, 2011. Testimony on the President's FY 2012 budget request for the SEC, May 4, 2011.

Skinner, Douglas J., 1994. Why firms voluntarily disclose bad news, *Journal of Accounting Research* 32, 38-60.

Sobel, Michael E. 1982. Asymptotic intervals for indirect effects in structural equations models. In *Sociological Methodology* 1982, edited by Leinhardt, S., 290-312. Washington, DC: American Sociological Association.

Stulz, Rene M., 2009. Securities laws, disclosure, and national capital markets in the age of financial globalization, *Journal of Accounting Research* 47, 349-390.

Thomsen, Linda C., 2009. Testimony of Linda Chatman Thomsen before the United States Senate Committee on Banking, Housing and Urban Affairs concerning investigations and examinations by the Securities and Exchange Commission and issues raised by the Bernard L. Madoff Investment Securities matter, January 27, 2009.

Tse, Senyo, and Jennifer W. Tucker, 2010. Within-industry timing of earnings warnings: Do managers herd? *Review of Accounting Studies* 15, 879-914.

Appendix A
An example of CL_CC

From comment letter reply of LoJack Corporation on June 12, 2009 (full letter available at https://www.sec.gov/Archives/edgar/data/355777/000119312509130004/filename1.htm)

CORRESP 1 filename1.htm

June 12, 2009

Mr. Larry Spirgel, Assistant Director
Securities and Exchange Commission
Division of Corporation Finance – Mail Stop 3720
100 F Street, N.E.
Washington, D.C. 20549-7561

Re: LoJack Corporation
Form 10-K for the Fiscal Year ended December 31, 2008
And Document Incorporated by Reference
Filed March 13, 2009

Form 10-Q for the Quarterly Period ended March 31, 2009
File Number 1-08439

Dear Mr. Spirgel:

Set forth below are the Company's responses to the Staff's comments contained in its letter to the Company dated May 14, 2009. We respectfully request of the Staff that we incorporate the enclosed disclosures in our future filings. We have prefaced each response as to whether or not the response will be included as part of any prospective filing (and the proposed disclosure is italicized) or whether or not the response is for informational purposes.

In responding to your comments, the Company acknowledges:

- The Company is responsible for the adequacy and accuracy of the disclosure in the filings;
- Staff comments or changes to disclosure in response to staff comments do not foreclose the Commission from taking any action with respect to the filings; and
- The Company may not assert staff comments as a defense in any proceeding initiated by the Commission or any person under the federal securities laws of the United States.

1

Form 10-K for the Year Ended December 31, 2008

Management's Discussion and Analysis of Financial Condition and Results of Operations

General

Comment 1:

Given the current economic situation, please expand to provide comparison of the 4th quarter of 2008 with the 4th quarter of 2007. Please provide detailed information regarding losses of customers and reductions of revenues from various services provided. We note the information that has been provided in your quarterly earnings call transcripts. Please provide us with your proposed disclosures.

Response

The Company acknowledges the Staff's comment regarding the comparison of 4th quarter 2008 to the 4th quarter 2007 and is providing the following response for informational purposes. In the future should there be a significant change in our operating results in the 4th quarter we will make disclosures similar to that proposed below.

Our financial results for the quarter ended December 31, 2008 reflect the impact of the struggling domestic auto industry, partially offset by the strength of our international segment. For the quarter ended December 31, 2008, consolidated revenue decreased $7,101,000, or 13%, to $48,224,000 from $55,325,000 in the same period in 2007.

Our domestic segment revenue for the three months ended December 31, 2008 decreased by $9,812,000, or 31%, to $22,139,000 as compared to $31,951,000 in the same period in 2007. In the three months ended December 31, 2008, our domestic revenue continued to be adversely impacted by the financial crisis which has caused a widespread credit freeze, liquidity problems, decreased consumer confidence and a dramatic decline in the capital markets. All of these factors had a powerful impact on the performance of U.S. businesses, with the domestic auto industry and related aftermarket products like LoJack Units being particularly hard hit. In addition, our domestic revenue was negatively impacted by a decline in the average revenue per unit sold as a result of our decision to attempt to stimulate additional sales. Although there was approximately a 5% decline in the number of domestic auto dealers actively selling LoJack in 2008 as compared to 2007, no one dealer was significant enough to have been a major factor in the year over year decrease in LoJack Unit volume. All of our distribution channels were affected by the economic downturn in 2008 as our auto dealer, commercial and motorcycle channels saw revenue declines of 40%, 44% and 45%, respectively.

The decline in domestic segment revenue was primarily attributable to the following:

- A $10,506,000, or 40%, decrease in LoJack unit revenue caused by: (a) a 38% decrease in units sold from 114,000 units to 71,000 units and (b) a 4% decrease in the average revenue per unit sold;
- A decrease of $932,000, or 78%, in other revenue, primarily related to a $1,097,000 decrease in the fair value of stock warrants and royalties paid by Absolute Software; offset by
- An increase of $1,180,000 in revenue relating to our acquisitions of Locator Systems, $509,000, and SCIntegrity, or SCI, $671,000, which were acquired in April and July 2008, respectively, for which there was no comparable revenue in the same period in 2007; and

- An increase of $579,000, or 23%, in the service revenue element of our Early Warning product which is deferred at the time of sale and amortized over a 5 year period.

Despite the widening global economic crisis, our international business performed well in the fourth quarter of 2008. The growth was driven by several of our larger licensees in Latin America and Africa. For the three months ended December 31, 2008, revenue related to our international segment increased by $4,316,000, or 24%, to $22,373,000 from $18,057,000 in the same period in 2007.

The increase in international segment revenue was primarily attributable to the following:

- A $6,189,000, or 39%, increase in revenue from LoJack units sold to our international licensees primarily in Latin America and Africa as a result of: (a) a 64,000, or 28%, increase in the number of units sold from 232,000 to 296,000 units; and (b) a 9% increase in the average revenue per unit sold due to certain licensees exceeding their purchase commitment levels in the fourth quarter of 2007 and receiving a volume rebate which did not occur in 2008; offset by
- A decrease of $1,735,000, or 105%, in royalty income from one of our licensees in Latin America as a result of switching from a price structure that was significantly royalty based with a low price per unit in 2007, to a price structure with a higher per unit price but no royalty payment in 2008.

For the three months ended December 31, 2008, revenue at our Boomerang segment decreased by $1,605,000, or 30%, to $3,712,000 as compared to $5,317,000 in the same period in 2007. The decline in value of the Canadian dollar relative to the U.S. dollar negatively affected revenue by $766,000, or 14%. The remainder of the decrease was primarily due to the impact of the same economic challenges facing our domestic auto business, the continued shift in the Canadian auto market away from high-end vehicles, where Boomerang has historically had a high penetration rate, and the attrition of analog subscribers following the transition to digital technology during 2008.

For the three months ended December 31, 2008 gross profit dollars declined 17% as compared to the comparable period in 2007. For the fourth quarter our domestic segment gross profit dollars decreased 42% and gross profit as a percentage of revenue decreased to 47% compared to 54% for the comparable period in 2007. We were unable to fully offset the impact of the significant decline in the domestic dealer volumes with operational cost reductions (primarily in the areas of fulfillment and installation of LoJack and Boomerang Units) undertaken during the quarter. In addition, the decrease in Absolute Software's share price, which we use to calculate the fair value of Absolute Software warrants, produced a $1,206,000 year-over-year negative impact on both revenue and gross profit for the quarter. International segment gross profit dollars for the fourth quarter of 2008 increased 33% from prior year levels and gross profit as a percentage of revenue was 56% during the quarter compared to 52% for the fourth quarter of 2007. The mix by licensee and product contributed to the increase. Boomerang's gross profit dollars for the quarter decreased 35% when compared to the comparable period in 2007. Gross profit as a percentage of revenue was 41% for the quarter ended December 31, 2008 compared to 44% in the prior year. The decrease was primarily related to the segment's analog to digital conversion which was substantially completed during the fourth quarter of 2008.

Net income for the three months ended December 31, 2008 was negatively impacted by a number of non-operating items including: an other-than-temporary impairment charge of $1,958,000 relating to the devaluation of our investment in Traqueur, our French licensee, and a $869,000 devaluation of our holdings in Absolute Software. This was partially offset by the $3,298,000 write-down of Boomerang intangibles and goodwill in the three months ended December 31, 2007.

Appendix B
Variable definitions and data sources

All continuous variables are winzorized at the 1st and 99th percentiles.

Variable	Definition	Source
Comment letter-related variables		
CL_CC	An indicator variable that takes the value of one if a firm receives a CL about its annual report with reference to earnings conference calls in fiscal year t, and zero otherwise.	Hand-collected and Audit Analytics
CL_CC first round	An indicator variable that takes the value of one if a firm receives a CL about its annual report with reference to earnings conference calls in fiscal year t in the first round of the CL conversation, and zero otherwise.	Hand-collected
CL_CC subsequent	An indicator variable that takes the value of one if a firm receives a CL about its annual report with reference to earnings conference calls in fiscal year t in the second or later round of the CL conversation, and zero otherwise.	Hand-collected and Audit Analytics
CL_CC rounds	The number of CL review rounds it takes to address a CL with reference to a firm's earnings conference calls.	Hand-collected
Presentation	An indicator variable that takes the value of one if a CL makes reference to a firm's management presentation section of earnings conference calls, and zero otherwise.	Hand-collected
Q&A	An indicator variable that takes the value of one if a CL makes reference to a firm's questions and answers (Q&A) section of earnings conference calls, and zero otherwise.	Hand-collected
Variables of interest		
Uncertainty	The proportion of Loughran-McDonald uncertainty words in a firm's annual report in fiscal year t.	EDGAR
Negative tone	The difference between the share of Loughran-McDonald negative words and the share of Loughran-McDonald positive words in a firm's annual report in fiscal year t.	EDGAR
Ln(# first CL words)	The natural logarithm of the number of words in the first comment letter.	Audit Analytics
# first CL topics	The number of topics in the first comment letter.	Audit Analytics
# CL rounds	The number of rounds from the first letter to the ''no further comment'' letter.	Audit Analytics
Ln(# CL conversation days)	The natural log of conversation duration (in days) from the first letter to the ''no further comment'' letter.	Audit Analytics
First CL extension	An indicator variable that takes the value of one if a firm requests an extension to respond to the first comment letter in fiscal year t, and zero otherwise.	Audit Analytics

Ln(# news articles)	The natural logarithm of the number of news articles about a firm in fiscal year t.	RavenPack
Ln(# 8Ks)	The natural logarithm of the number of 8K filings made by a firm in fiscal year t.	EDGAR
Abnormal return	Value-weighted market-adjusted buy-and-hold return over the five-day window centered on the earnings announcement day for a firm. We scale the measure by the mean and standard deviation of daily market-adjusted returns of the same firm in the past year.	CRSP
Abnormal volume	Shares traded over the five-day window centered on the earnings announcement day for a firm, divided by its outstanding shares. We scale the measure by the mean and standard deviation of daily trading volumes of the same firm in the past year.	CRSP
Busyness	An indicator variable that takes the value of one if a firm has a December fiscal year-end, and zero otherwise.	Compustat
High CL period	An indicator variable that takes the value of one if the proportion of comment letters issued within the 45-day window prior to the focal firm's comment letter issuance relative to the total number of comment letters from the past 365 days is higher than 45/365 for the signing director who is in charge of the focal firm's comment letter, and zero otherwise.	Audit Analytics
Control variables		
Ln(Market cap)	The natural logarithm of market capitalization.	Compustat
Firm age	The number of years since the beginning year when a firm's data is first available on Compustat.	Compustat
Internal control weakness	An indicator variable that takes the value of one if the internal control opinion is qualified for a material weakness (as defined in SOX Sections 302 and 404), and zero otherwise.	Audit Analytics
Loss	An indicator variable that takes the value of one if a firm reports negative earnings (IB < 0) in fiscal year t, and zero otherwise.	Compustat
Bankruptcy score	Altman's Z-score following Altman (1968) and DeFond and Hung (2003) is equal to 1.2 * [net working capital (ACT-LCT)/total assets (AT)] + 1.4 * [retained earnings (RE)/total assets] + 3.3 * [earnings before interest and taxes (PI + XINT)/total assets] + 0.6 * [market value of equity (CSHO * PRCC_F)/book value of liabilities (LT)] + 1.0 * [sales (SALE)/total assets].	Compustat
Sales growth	The change in sales from the beginning of a year to the end of the same year.	Compustat

M&A	An indicator variable that takes the value of one for non-zero mergers and acquisitions (M&A) as reported on a pre-tax basis (AQP) in fiscal year t, and zero otherwise.	Compustat
# segments	The number of business segments reported in the Compustat Segments database.	Compustat
Restructuring	An indicator variable that takes the value of one for non-zero restructuring costs as reported on a pre-tax basis (RCP) in fiscal year t, and zero otherwise.	Compustat
External financing	The sum of equity financing and debt financing scaled by total assets, measured in t+1, following Ettredge et al. (2011). This variable captures the need for future external financing. Equity financing equals the sales of common and preferred stock (SSTK) minus the purchases of common and preferred stock (PRSTKC) minus dividends (DV). Debt financing equals long-term debt issued (DLTIS) minus long-term debt reduction (DLTR) minus the change in current debt (DLCCH).	Compustat
Litigation risk	An indicator variable that takes the value of one if a firm is in a highly litigious industry (four-digit SIC industry codes 2833–2836, 3570–3577, 3600–3674, 5200-5961, or 7370–7374, and zero otherwise, following Francis et al. (1994).	Compustat
Institutional ownership	The share of institutional holdings of a firm's shares outstanding.	Thomson Reuters
Return volatility	The standard deviation of abnormal monthly stock returns (i.e., the monthly return minus the value-weighted market return) in fiscal year t.	CRSP
Big4	An indicator variable that takes the value of one if a firm is a client of one of the Big 4 auditors, and zero otherwise.	Audit Analytics
Second-tier auditor	An indicator variable that takes the value of one if a firm is a client of one of the second-tier audit firms (i.e., BDO, Crowe Horwath, Grant Thornton, or McGladrey & Pullen), and zero otherwise.	Audit Analytics
Auditor resignation	An indicator variable that takes the value of one if an auditor resigns in fiscal year t, and zero otherwise.	Audit Analytics
Auditor dismissal	An indicator variable that takes the value of one if an auditor is dismissed in fiscal year t, and zero otherwise.	Audit Analytics
Auditor tenure	The number of consecutive years during which the same auditor has audited a firm.	Audit Analytics
CC on EDGAR	An indicator variable that takes the value of one if at least a conference call transcript is filed on EDGAR in fiscal year t, and zero otherwise.	SeekEdgar

Consequence variables (at quarterly frequency)

Ln(Length of earnings call)	The natural logarithm of the number of words and numbers in a firm's management presentation and answers to questions on earnings calls in fiscal quarter q.	CapitalIQ
Ln(# words)	The natural logarithm of the number of words in a firm's management presentation and answers to questions in earnings calls in fiscal quarter q.	CapitalIQ
Ln(# numbers)	The natural logarithm of the number of numbers in a firm's management presentation and answers to questions in earnings calls in fiscal quarter q.	CapitalIQ
Ln(# topics)	The natural logarithm of the number of topics in a firm's management presentation and answers to questions in earnings calls in fiscal quarter q. The number of topics is determined by LDA analysis (see Appendix C for details).	CapitalIQ
CC_composite	The primary factor in a principal component analysis using Ln(# words), Ln(# numbers), and Ln(# topics) as inputs.	CapitalIQ
CC_informativeness	The ratio of the absolute value of the value-weighted market-adjusted buy-and-hold returns over the five trading days from (-2, +2) (BHAR(-2. +2)) to the absolute value of the value-weighted market-adjusted buy-and-hold returns over the period (-2, +21) (BHAR(-2, +21)), where day 0 is the quarterly conference call date. This measure is in percentage points.	CRSP

Control variables in consequence analysis (at quarterly frequency)

$Ln(Sales)_{q-1}$	The natural logarithm of total sales in the prior quarter.	Compustat
Net loss	An indicator variable that takes the value of one if a firm reports negative quarterly earnings (NIQ < 0) in fiscal quarter t, and zero otherwise.	Compustat
Ln(Total assets)	The natural logarithm of total assets in fiscal quarter t.	Compustat
ROA	Return on assets, quarterly earnings before extraordinary items scaled by the beginning of quarter total assets (IBQ/ATQ_{q-1}).	Compustat
ROA_{q+1}	ROA in the next quarter.	Compustat
ROA_{q+2}	ROA in two quarters ahead.	Compustat
ROA_{q+3}	ROA in three quarters ahead.	Compustat
ROA_{q+4}	ROA in four quarters ahead.	Compustat
MBE	An indicator variable that takes the value of one if a firm meets or beats consensus (mean) analyst forecast in fiscal quarter q. The consensus is based on the last consensus forecast for the quarter.	IBES
SURP	Earnings surprise, defined as the difference between quarterly EPS and consensus (mean) analyst forecast scaled by stock price at the beginning of fiscal quarter q.	IBES
Return	Value-weighted market-adjusted return in fiscal quarter t.	CRSP

SEO_{q+1}	An indicator variable that takes the value of one if a firm makes a seasoned equity offering (SEO) in the next quarter, and zero otherwise.	SDC
M&A $deal_{q+1}$	An indicator variable that takes the value of one if a firm announces a merger and acquisition (M&A) deal in the next quarter, and zero otherwise.	SDC

Appendix C
Determining the number of topics in conference calls

To determine the number of topics in a conference call, we employ Latent Dirichlet Allocation (LDA) analysis following Huang, Lehavy, Zang, and Zheng (2018), Lowry, Michaely, and Volkova (2020), and Ryans (2021), one of the most popular topic modeling techniques. Following Huang et al. (2018), we conduct the LDA analysis for each industry separately because many topics in conference calls are industry specific. Similar to Huang et al. (2018), we set the total number of topics for each industry to 60. LDA produces word clusters within each topic and their probability of association with the topic by constructing a matrix of word probabilities in each topic, which helps us determine the most probable topic for each sentence in conference call transcripts. We do so by calculating the probability of words in a sentence within each topic and assigning the sentence to the topic with the highest probability. We then count the unique number of topics in each conference call, as long as there are at least two sentences relating to a topic.

Below is a detailed description of steps involved in our LDA analysis:

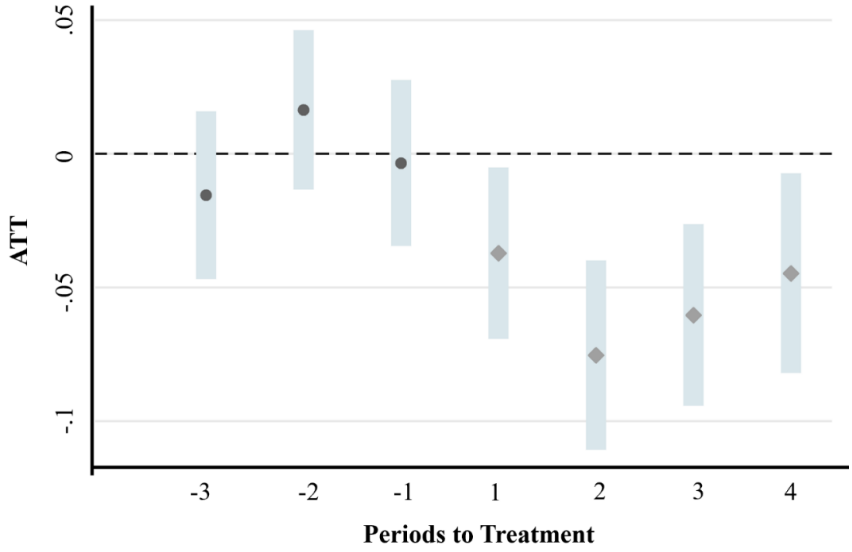
1. Import conference call transcripts into Python.
2. Convert all words into lowercase and remove stop words, such as "a," "of," and "the."
3. Delete contextual words, such as "very" and "basically," that distinguish oral and written languages following Heylighen and Dewaele (2002). Delete units of measure, such as "thousands" and "millions," following Duan et al. (2023).
4. Convert high-frequency phrases that constitute specific financial/technical terms into one word using the dictionary provided by Huang et al. (2018). For example, commonly used financial terms, such as "balance sheet" is converted into "balancesheet."
5. Apply the LDA model from *Gensim Library* in Python, setting the model parameter alpha to 0.1, and the number of topics to 60.
6. Output from the LDA model is a topic-word probability matrix ϕ, denoted as an M x V matrix, where M is the number of topics, V is the size of the vocabulary, and an element $P(w_{i,m})$ represents the probability of word w_i in topic m. Using this output, we can construct the topic vector of document d (i.e., a call), by taking the following steps:
    a. For each sentence s in document d, calculate the topic probabilities for the sentence by summing the probabilities of all the words in the sentence for each topic, which can be represented as $P(s, m) = \sum P(w_{i,m})$ for all words w_i in sentence s and for all topics m.
    b. After obtaining the topic probabilities for each sentence, assign the sentence to the topic with the highest probability. The process can be represented as $T(s) = \text{argmax}_m P(s, m)$.
    c. To ensure meaningful content, delete topics in a call that have fewer than two sentences.
    d. Create a set of unique topics assigned to sentences in document d. This set will be used to create the topic vector of document d: $U(d) = \{T(s) \mid s \in d\}$
    b. To obtain the topic vector of document d, we first initialize a vector of size M (number of topics) with zeros. Next, we count the number of sentences assigned to each topic, which can be represented as: $TV(d) = [\max(T1,0), \max(T2,0), ..., \max$

(*TM,0*)]. We then sum up TV to compute the number of unique topics: Total number of topics = [max(*T1,0*) + max (*T2,0*) + … + max (*TM,0*)]

Figure 1
Dynamic effects of CL_CCs on future voluntary disclosures

This figure plots the dynamic effects of a firm receiving a CL_CC on its future CC-related disclosures. The treatment sample consists of firms listed on the US major exchanges that receive a comment letter for their annual report referencing conference call content over the period 2004-2019. The control sample consists of matched firms that receive a comment letter for their annual report without referencing conference call content. Matching is based on industry, year, firm size, and number of CLs received in the prior two years, with no replacement. The estimation window spans a total of eight quarters, encompassing the four quarters prior to and four quarters following the event quarter in which a sample firm receives a comment letter. Panel A plots the dynamic effects when the dependent variable is *Ln(Length of earnings call)*. Panel B plots the dynamic effects when the dependent variable is *CC_composite*, the primary factor in a principal component analysis using *Ln(# words)*, *Ln(# numbers)*, and *Ln(# topics)* as inputs. Variable definitions are provided in Appendix B.

Panel A: Conference call length (*Ln(Length of earnings call)*)



Panel B: The composite measure of conference call disclosures (*CC_composite*)

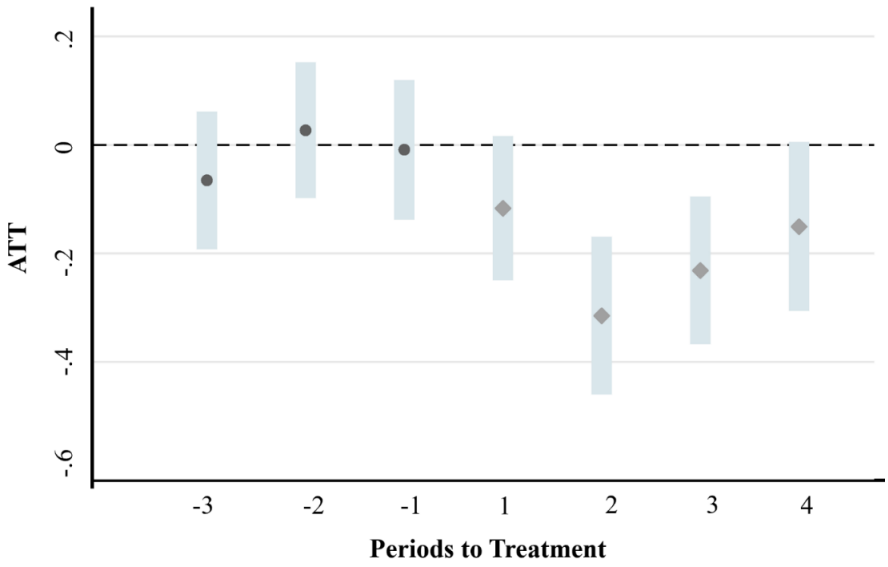


Table 1
Sample overview

This table provides an overview of our sample. The sample consists of firms listed on the US major exchanges that receive a comment letter for their annual report and also has conference call in year t over the period 2004-2019. Our primary data source is Audit Analytics. We supplement Audit Analytics with hand collections from EDGAR. Panel A lists the sample formation steps. To be in our sample, firms must have earnings conference calls and receive CLs in a year. Panel B provides the temporal distribution of our sample. Column (1) presents the number of firms that receive annual report CLs with reference to their earnings conference calls (CL_CC). Column (2) presents the number of unique firms per year in our sample, which captures the number of unique annual report comment letter conversations. Column (3) gives the fraction of firms that receive CLs with reference to their earnings conference calls (column (1) divide by column (2)). Panel C provides the industry distribution of our sample using Fama-French 17 industry classification. Panel D provides summary statistics of CL_CC characteristics. Variable definitions are provided in Appendix B.

Panel A: Sample formation

	CL_CCs (1)	CLs (2)
Initial sample of annual report CLs	1,003	30,087
Match with Compustat	947	24,304
Match with CRSP	924	21,194
Require available data for control variables	761	16,352
Final sample of CL_CCs	761	14,562

Panel B: CL_CCs over time

	CL_CCs (1)	CLs (2)	% firms receiving CL_CCs (3)
2004	3	809	0.371%
2005	3	1,069	0.281%
2006	3	986	0.304%
2007	14	1,165	1.202%
2008	47	1,314	3.577%
2009	61	1,332	4.580%
2010	59	1,073	5.499%
2011	102	1,187	8.593%
2012	87	1,097	7.931%
2013	90	881	10.216%
2014	100	865	11.561%
2015	82	857	9.568%
2016	46	730	6.301%
2017	19	481	3.950%
2018	18	340	5.294%
2019	27	376	7.181%
Total	761	14,562	5.226%

Panel C: CL_CCs across industries

	CL_CCs	CLs	% firms receiving CL_CCs
	(1)	(2)	(3)
Food	25	345	7.246%
Mining and Minerals	11	407	2.703%
Oil and Petroleum Products	19	736	2.582%
Textiles, Apparel & Footware	14	226	6.195%
Consumer Durables	9	220	4.091%
Chemicals	27	329	8.207%
Drugs, Soap, Prfums, Tobacco	34	628	5.414%
Construction and Construction Materials	35	494	7.085%
Steel Works Etc	14	237	5.907%
Fabricated Products	6	110	5.455%
Machinery and Business Equipment	114	1,891	6.029%
Automobiles	11	247	4.453%
Transportation	15	676	2.219%
Utilities	6	507	1.183%
Retail Stores	46	805	5.714%
Banks, Insurance Companies, and Other Financial institutions	45	1,779	2.530%
Other	330	4,925	6.701%
Total	761	14,562	5.226%

Panel D: Summary statistics of CL_CC characteristics

Variable	N	Mean	Std.Dev	p25	Median	p75
CL_CC first round	761	0.859	0.348	1.000	1.000	1.000
CL_CC rounds	761	1.243	0.583	1.000	1.000	1.000
Presentation	761	0.808	0.394	1.000	1.000	1.000
Q&A	761	0.183	0.386	0.000	0.000	0.000
Business	761	0.097	0.296	0.000	0.000	0.000
Risk Factors	761	0.034	0.182	0.000	0.000	0.000
Properties	761	0.005	0.072	0.000	0.000	0.000
Legal Proceedings	761	0.001	0.036	0.000	0.000	0.000
Market for Registrant's Common Equity	761	0.004	0.063	0.000	0.000	0.000
MDA	761	0.633	0.482	0.000	1.000	1.000
Financial Statements and Supplementary Data	761	0.216	0.411	0.000	0.000	0.000
Changes in and Disagreements with Accountants	761	0.001	0.036	0.000	0.000	0.000
Controls and Procedures	761	0.001	0.036	0.000	0.000	0.000
Executive Compensation	761	0.003	0.051	0.000	0.000	0.000
Exhibit and Financial Statement Schedules	761	0.007	0.081	0.000	0.000	0.000
Other	761	0.016	0.125	0.000	0.000	0.000

Table 2
Summary statistics

Panel A provides summary statistics of our sample used in the determinant analysis. The sample consists of firms listed on the US major exchanges that receive a comment letter for their annual report and also has conference call in year t over the period 2004-2019. Panel B provides summary statistics of our sample used in the consequence analysis. The treatment sample consists of firms listed on the US major exchanges that receive a comment letter for their annual report referencing conference call content over the period 2004-2019. The control sample consists of matched firms that receive a comment letter for their annual report without referencing conference call content. Matching is based on industry, year, firm size, and number of CLs received in the prior two years, with no replacement. Variable definitions are provided in Appendix B.

Panel A: Summary statistics of the sample used in the determinant analysis

Variable	N	Mean	Std.Dev	p25	Median	p75
Dependent variables						
CL_CC	14,593	0.052	0.222	0.000	0.000	0.000
CL_CC_subsequent	14,593	0.007	0.085	0.000	0.000	0.000
Variables of interest						
Uncertainty	14,394	0.009	0.005	0.006	0.009	0.012
Negative tone	14,394	0.015	0.003	0.013	0.015	0.017
# first CL words	14,561	994.349	565.637	609.000	851.000	1218.000
Ln(# first CL words)	14,561	6.759	0.542	6.413	6.748	7.106
# first CL topics	14,562	8.767	7.488	3.000	7.000	12.000
# CL rounds	14,541	1.605	0.878	1.000	1.000	2.000
# CL conversation days	13,887	65.208	62.930	25.000	44.000	82.000
Ln(# CL conversation days)	13,887	3.793	0.989	3.258	3.807	4.419
First CL extension	14,562	0.180	0.384	0.000	0.000	0.000
# news article	14,562	102.200	121.296	29.000	73.000	136.000
Ln(# news article)	14,562	3.686	1.882	3.401	4.304	4.920
# 8Ks	14,562	11.778	9.194	7.000	11.000	16.000
Ln(# 8Ks)	14,562	2.171	1.054	2.079	2.485	2.833
Abnormal return	14,536	0.596	0.542	0.200	0.440	0.829
Abnormal volume	14,537	0.752	1.133	-0.029	0.451	1.202
Busyness	14,562	0.756	0.429	1.000	1.000	1.000
High CL period	14,562	0.632	0.482	-	1.000	1.000
Control variables						
Ln(Market cap)	14,562	7.280	1.941	5.919	7.289	8.551
Firm age	14,562	20.524	14.396	9.000	16.000	27.000
Internal control weakness	14,562	0.067	0.250	0.000	0.000	0.000
Loss	14,562	0.271	0.444	0.000	0.000	1.000
Bankruptcy score	14,562	5.550	2.616	3.000	6.000	8.000
Sales growth	14,562	0.148	0.402	-0.018	0.075	0.213

M&A	14,562	0.232	0.422	0.000	0.000	0.000
# segments	14,562	2.369	1.764	1.000	1.000	4.000
Restructuring	14,562	0.340	0.474	0.000	0.000	1.000
External financing	14,562	0.007	0.166	-0.052	-0.007	0.032
Litigation risk	14,562	0.297	0.457	0.000	0.000	1.000
Institutional ownership	14,562	0.468	0.397	0.000	0.529	0.846
Return Volatility	14,562	0.109	0.079	0.061	0.090	0.134
Big4	14,562	0.855	0.352	1.000	1.000	1.000
Second tier auditors	14,562	0.062	0.241	0.000	0.000	0.000
Auditor dismissal	14,562	0.048	0.215	0.000	0.000	0.000
Auditor resignation	14,562	0.010	0.099	0.000	0.000	0.000
Auditor tenure	14,562	9.490	7.010	4.000	8.000	13.000
CC on EDGAR	14,562	0.044	0.205	0.000	0.000	0.000

Panel B: Summary statistics of the sample used in the consequence analysis

Variable	N	Mean	Std.Dev	p25	Median	p75
Dependent variables						
Length of earnings call	7,388	6064.2	1911.5	4670	6055	7337
Ln(Length of earnings call)	7,388	8.655	0.344	8,449	8.709	8.901
# words	7,388	5881.8	1868.6	4518	5875	7131
Ln(# words)	7,388	8,624	0.347	8.416	8,678	8.872
# numbers	7,388	182.5	70.9	133	174	222
Ln(# numbers)	7,388	5.129	0.408	4.890	5.159	5.403
# topics	7,388	30.145	8.573	24	31	37
Ln(# topics)	7,388	3.357	0.336	3.178	3.434	3.611
CC_informativeness	7,382	29.5	10.8	21.6	28.7	36.9
Control variables						
$Ln(Sales)_{q-1}$	7,388	7.397	8.372	4.876	5.906	7.028
Net loss	7,388	0.434	0.000	0.000	1.000	0.252
Sales growth	7,388	0.276	-0.134	-0.046	0.038	-0.014
Ln(Total assets)	7,388	9.163	10.209	6.463	7.555	8.650
ROA	7,388	0.035	0.000	0.010	0.021	0.006
ROA_{q+1}	7,388	0.034	-0.001	0.010	0.021	0.006
ROA_{q+2}	7,388	0.035	-0.001	0.010	0.020	0.005
ROA_{q+3}	7,388	0.035	-0.001	0.010	0.020	0.005
ROA_{q+4}	7,388	0.035	-0.001	0.009	0.020	0.005
MBE	7,388	0.357	0.000	0.000	0.000	0.150
SURP	7,388	0.005	0.000	0.000	0.000	0.000
Return	7,388	0.174	-0.102	-0.006	0.095	0.001
SEO_{q+1}	7,388	0.112	0.000	0.000	0.000	0.013
$M\&A\ deal_{q+1}$	7,388	0.387	0.000	0.000	0.000	0.183

Table 3
Determinants of CL_CCs – annual report characteristics

This table examines the determinants of a firm receiving a CL_CC, focusing on its annual report characteristics. The sample consists of firms listed on the US major exchanges that receive a comment letter for their annual report and also has conference call in year t over the period 2004-2019. Variable definitions are provided in Appendix B. Standard errors clustered at the firm level are reported in parentheses. ***, **, and * correspond to statistical significance at the 1%, 5%, and 10% levels, respectively.

Variable	(1)	(2)	(3)
Uncertainty	1.774***		1.419*
	(0.682)		(0.734)
Negative tone		0.948**	0.655
		(0.393)	(0.423)
Ln(Market cap)	0.004***	0.003**	0.004***
	(0.001)	(0.001)	(0.001)
Firm age	-0.000	-0.000	-0.000
	(0.000)	(0.000)	(0.000)
Internal control weakness	0.005	0.003	0.004
	(0.007)	(0.007)	(0.007)
Loss	-0.004	-0.005	-0.005
	(0.005)	(0.005)	(0.005)
Bankruptcy score	-0.001	-0.002*	-0.002*
	(0.001)	(0.001)	(0.001)
Sales growth	0.002	0.003	0.002
	(0.004)	(0.004)	(0.004)
M&A	0.008	0.009	0.008
	(0.006)	(0.006)	(0.006)
# segments	-0.003***	-0.003***	-0.003***
	(0.001)	(0.001)	(0.001)
Restructuring	0.005	0.004	0.004
	(0.005)	(0.005)	(0.005)
External financing	0.004	0.007	0.005
	(0.009)	(0.009)	(0.009)
Litigation risk	0.010	0.011*	0.010
	(0.006)	(0.006)	(0.006)
Institutional ownership	0.017***	0.018***	0.016***
	(0.005)	(0.005)	(0.005)
Return volatility	0.017	0.011	0.014
	(0.023)	(0.023)	(0.023)
Big4	0.006	0.006	0.006
	(0.007)	(0.007)	(0.007)
Second-tier auditor	0.004	0.004	0.004
	(0.010)	(0.010)	(0.010)
Auditor resignation	-0.005	-0.005	-0.005
	(0.008)	(0.008)	(0.008)

Auditor dismissal	-0.023*	-0.023*	-0.023*
	(0.012)	(0.012)	(0.012)
Auditor tenure	-0.000	-0.000	-0.000
	(0.000)	(0.000)	(0.000)
CC on EDGAR	-0.004	-0.004	-0.004
	(0.008)	(0.009)	(0.009)
Constant	-0.006	0.018	-0.004
	(0.016)	(0.012)	(0.016)
Observations	14,279	14,279	14,279
Signing director FE	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Adjusted R-squared	0.070	0.070	0.070

Table 4
Determinants of CL_CCs – CL conversation characteristics

This table examines the determinants of a firm receiving a CL_CC, focusing on the SEC's interactions with the firm. The sample consists of firms listed on the US major exchanges that receive a comment letter for their annual report and also has conference call in year t over the period 2004-2019. Panel A reports the results of receiving a CL_CC. Panel B reports the results of receiving a CL_CC only in subsequent rounds. Variable definitions are provided in Appendix B. Standard errors clustered at the firm level are reported in parentheses. ***, **, and * correspond to statistical significance at the 1%, 5%, and 10% levels, respectively.

Panel A: Severity measures of first CL

Variable	CL_CC (1)	CL_CC (2)	CL_CC (3)
Ln(# first CL words)	0.053***		0.039***
	(0.004)		(0.006)
# first CL topics		0.003***	0.001***
		(0.000)	(0.000)
Ln(Market cap)	0.003***	0.004***	0.004***
	(0.001)	(0.001)	(0.001)
Firm age	-0.000	-0.000	-0.000
	(0.000)	(0.000)	(0.000)
Internal control weakness	0.001	0.003	0.001
	(0.007)	(0.007)	(0.007)
Loss	-0.005	-0.005	-0.005
	(0.005)	(0.005)	(0.005)
Bankruptcy score	-0.002**	-0.002**	-0.002**
	(0.001)	(0.001)	(0.001)
Sales growth	0.002	0.002	0.002
	(0.004)	(0.004)	(0.004)
M&A	0.006	0.007	0.006
	(0.006)	(0.006)	(0.006)
# segments	-0.003***	-0.003***	-0.004***
	(0.001)	(0.001)	(0.001)
Restructuring	0.004	0.003	0.004
	(0.005)	(0.005)	(0.005)
External financing	0.007	0.005	0.006
	(0.009)	(0.009)	(0.009)
Litigation risk	0.013**	0.013**	0.013**
	(0.006)	(0.006)	(0.006)
Institutional ownership	0.019***	0.018***	0.019***
	(0.005)	(0.005)	(0.005)
Return volatility	0.011	0.015	0.011
	(0.023)	(0.023)	(0.023)
Big4	0.010	0.010	0.010
	(0.007)	(0.007)	(0.007)
Second-tier auditor	0.007	0.006	0.007

	(0.010)	(0.010)	(0.010)
Auditor resignation	-0.005	-0.005	-0.005
	(0.008)	(0.008)	(0.008)
Auditor dismissal	-0.026**	-0.025**	-0.026**
	(0.012)	(0.012)	(0.012)
Auditor tenure	-0.000	-0.000	-0.000
	(0.000)	(0.000)	(0.000)
CC on EDGAR	-0.004	-0.006	-0.005
	(0.009)	(0.008)	(0.008)
Constant	-0.334***	-0.008	-0.253***
	(0.032)	(0.012)	(0.039)
Observations	14,446	14,447	14,446
Signing director FE	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Adjusted R-squared	0.079	0.077	0.080

Panel B: The SEC's interaction with a firm during the review process

Variable	CL_CC subsequent (1)	CL_CC subsequent (2)	CL_CC subsequent (3)	CL_CC subsequent (4)
#CL rounds	0.014***			0.015***
	(0.002)			(0.002)
Ln (# CL conversation days)		0.006***		-0.001
		(0.001)		(0.001)
First CL extension			0.006**	0.005*
			(0.003)	(0.003)
Ln(Market cap)	0.001**	0.001***	0.002***	0.001**
	(0.000)	(0.000)	(0.000)	(0.000)
Firm age	0.000	0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)
Internal control weakness	-0.005***	-0.005**	-0.004**	-0.005***
	(0.002)	(0.002)	(0.002)	(0.002)
Loss	-0.000	-0.000	-0.000	-0.000
	(0.002)	(0.002)	(0.002)	(0.002)
Bankruptcy score	0.000	0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)
Sales growth	0.001	0.002	0.002	0.002
	(0.002)	(0.002)	(0.002)	(0.002)
M&A	0.001	0.001	0.002	0.001
	(0.002)	(0.002)	(0.002)	(0.002)
# segments	-0.001**	-0.001**	-0.001**	-0.001**
	(0.000)	(0.000)	(0.000)	(0.000)
Restructuring	0.001	0.001	0.001	0.002

	(0.002)	(0.002)	(0.002)	(0.002)
External financing	0.001	-0.000	0.001	-0.001
	(0.003)	(0.003)	(0.003)	(0.003)
Litigation risk	0.002	0.001	0.002	0.001
	(0.002)	(0.002)	(0.002)	(0.002)
Institutional ownership	0.004**	0.004**	0.004**	0.004**
	(0.002)	(0.002)	(0.002)	(0.002)
Return volatility	-0.003	-0.001	0.003	-0.005
	(0.008)	(0.008)	(0.008)	(0.008)
Big4	-0.001	-0.004	-0.004	-0.001
	(0.003)	(0.003)	(0.003)	(0.003)
Second-tier auditor	0.005	0.003	0.003	0.005
	(0.005)	(0.005)	(0.005)	(0.005)
Auditor resignation	0.000	0.001	0.001	0.000
	(0.003)	(0.004)	(0.003)	(0.004)
Auditor dismissal	-0.001	0.001	0.001	0.000
	(0.008)	(0.009)	(0.008)	(0.009)
Auditor tenure	0.000	0.000*	0.000*	0.000
	(0.000)	(0.000)	(0.000)	(0.000)
CC on EDGAR	0.004	0.005	0.004	0.005
	(0.004)	(0.005)	(0.004)	(0.004)
Constant	-0.026***	-0.028***	-0.008*	-0.022***
	(0.006)	(0.007)	(0.005)	(0.007)
Observations	14,447	13,791	14,447	13,791
Signing director FE	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Adjusted R-squared	0.019	0.006	0.002	0.020

Table 5
Determinants of CL_CCs – media, corporate events, and market measures

This table examines the determinants of a firm receiving a CL_CC, focusing on media coverage, corporate events, and capital market characteristics. The sample consists of firms listed on the US major exchanges that receive a comment letter for their annual report and also has conference call in year t over the period 2004-2019. Variable definitions are provided in Appendix B. Standard errors clustered at the firm level are reported in parentheses. ***, **, and * correspond to statistical significance at the 1%, 5%, and 10% levels, respectively.

Variable	(1)	(2)	(3)	(4)	(5)
Ln(# news articles)	0.004***				0.003**
	(0.001)				(0.001)
Ln(# 8Ks)		0.007***			0.005**
		(0.002)			(0.002)
Abnormal return			0.012***		0.007*
			(0.004)		(0.004)
Abnormal volume				0.006***	0.004*
				(0.002)	(0.002)
Ln(Market cap)	0.003**	0.004***	0.003**	0.004***	0.004***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Firm age	-0.000	-0.000	-0.000	-0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Internal control weakness	0.006	0.004	0.004	0.004	0.005
	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)
Loss	-0.005	-0.005	-0.004	-0.004	-0.005
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
Bankruptcy score	-0.001	-0.002*	-0.001	-0.001	-0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Sales growth	0.002	0.003	0.002	0.002	0.002
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
M&A	0.007	0.006	0.008	0.008	0.006
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)
# segments	-0.003***	-0.003***	-0.003***	-0.003***	-0.003***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Restructuring	0.004	0.003	0.004	0.004	0.003
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
External financing	0.004	0.003	0.005	0.005	0.004
	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)
Litigation risk	0.013**	0.013**	0.013**	0.013**	0.013**
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)
Institutional ownership	0.014***	0.013**	0.017***	0.018***	0.011*
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
Return volatility	0.014	0.015	0.021	0.023	0.019
	(0.023)	(0.024)	(0.024)	(0.024)	(0.024)
Big4	0.005	0.007	0.006	0.006	0.006
	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)

Second-tier auditor	0.003	0.004	0.004	0.004	0.003
	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)
Auditor resignation	-0.005	-0.006	-0.006	-0.005	-0.006
	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)
Auditor dismissal	-0.023*	-0.024**	-0.024**	-0.025**	-0.025**
	(0.012)	(0.012)	(0.012)	(0.012)	(0.012)
Auditor tenure	-0.000	-0.000	-0.000	-0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
CC on EDGAR	-0.004	-0.006	-0.003	-0.003	-0.005
	(0.008)	(0.009)	(0.009)	(0.009)	(0.009)
Constant	0.013	0.009	0.019	0.015	0.001
	(0.012)	(0.012)	(0.012)	(0.012)	(0.012)
Observations	14,469	14,469	14,441	14,440	14,440
Signing director FE	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
Adjusted R-squared	0.070	0.070	0.070	0.070	0.071

Table 6
Determinants of CL_CCs – regulator busyness

This table examines the determinants of a firm receiving a CL_CC, focusing on regulator characteristics. The sample consists of firms listed on the US major exchanges that receive a comment letter for their annual report and also has conference call in year t over the period 2004-2019. Variable definitions are provided in Appendix B. Standard errors clustered at the firm level are reported in parentheses. ***, **, and * correspond to statistical significance at the 1%, 5%, and 10% levels, respectively.

Variable	(1)	(2)	(3)
Busyness	-0.016***		-0.016***
	(0.005)		(0.005)
High CL period		-0.012***	-0.011***
		(0.004)	(0.004)
Ln(Market cap)	0.004***	0.004***	0.004***
	(0.001)	(0.001)	(0.001)
Firm age	-0.000	-0.000	-0.000
	(0.000)	(0.000)	(0.000)
Internal control weakness	0.005	0.005	0.005
	(0.007)	(0.007)	(0.007)
Loss	-0.004	-0.004	-0.004
	(0.005)	(0.005)	(0.005)
Bankruptcy score	-0.001	-0.002*	-0.001
	(0.001)	(0.001)	(0.001)
Sales growth	0.003	0.003	0.003
	(0.004)	(0.004)	(0.004)
M&A	0.008	0.008	0.008
	(0.006)	(0.006)	(0.006)
# segments	-0.003***	-0.003***	-0.003***
	(0.001)	(0.001)	(0.001)
Restructuring	0.004	0.004	0.004
	(0.005)	(0.005)	(0.005)
External financing	0.005	0.005	0.005
	(0.009)	(0.009)	(0.009)
Litigation risk	0.012**	0.013**	0.012**
	(0.006)	(0.006)	(0.006)
Institutional ownership	0.023***	0.018***	0.023***
	(0.005)	(0.005)	(0.005)
Return volatility	0.021	0.017	0.020
	(0.024)	(0.023)	(0.024)
Big4	0.007	0.007	0.007
	(0.007)	(0.007)	(0.007)
Second-tier auditor	0.004	0.005	0.004
	(0.010)	(0.010)	(0.010)
Auditor resignation	-0.005	-0.005	-0.005
	(0.008)	(0.008)	(0.008)

Auditor dismissal	-0.023*	-0.024**	-0.024*
	(0.012)	(0.012)	(0.012)
Auditor tenure	-0.000	-0.000	-0.000
	(0.000)	(0.000)	(0.000)
CC on EDGAR	-0.004	-0.003	-0.004
	(0.009)	(0.008)	(0.009)
Constant	0.031***	0.029**	0.038***
	(0.012)	(0.012)	(0.012)
Observations	14,447	14,447	14,447
Signing director FE	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Adjusted R-squared	0.070	0.070	0.070

Table 7
Voluntary disclosure consequence of CL_CCs

This table examines the impact of CL_CCs on firms' future CC-related disclosures. The treatment sample consists of firms listed on the US major exchanges that receive a comment letter for their annual report referencing conference call content over the period 2004-2019. The control sample consists of matched firms that receive a comment letter for their annual report without referencing conference call content. Matching is based on industry, year, firm size, and number of CLs received in the prior two years, with no replacement. The estimation window spans a total of eight quarters, encompassing the four quarters prior to and the four quarters following the event quarter in which a sample firm receives a comment letter. Panel A reports the results from the DID specification in Equation (2). Panel B reports the average treatment effects on treated (ATT) quarter by quarter from the periods before to the periods after the treatment. Variable definitions are provided in Appendix B. Standard errors clustered at the firm level are reported in parentheses. ***, **, and * correspond to statistical significance at the 1%, 5%, and 10% levels, respectively.

Panel A: Receiving CL_CCs on firms' future CC-related disclosures

Variable	Ln(Length of earnings call)	Ln(# words)	Ln(# numbers)	Ln(# topics)	CC_composite
	(1)	(2)	(3)	(4)	(5)
Post * CL_CC	-0.042***	-0.043***	-0.033***	-0.032***	-0.175***
	(0.010)	(0.010)	(0.009)	(0.010)	(0.040)
Post	0.011	0.011	0.004	0.012	0.045
	(0.011)	(0.011)	(0.010)	(0.009)	(0.045)
$Ln(Sales)_{q-1}$	0.050**	0.049**	0.091**	0.034***	0.266***
	(0.017)	(0.017)	(0.031)	(0.007)	(0.074)
Net loss	0.012	0.012	0.002	-0.003	0.021
	(0.009)	(0.009)	(0.011)	(0.011)	(0.042)
Sales growth	0.008	0.008	0.014	0.016*	0.060
	(0.015)	(0.015)	(0.021)	(0.008)	(0.064)
Ln(Total assets)	0.060**	0.060**	0.068***	0.020	0.234**
	(0.025)	(0.026)	(0.019)	(0.013)	(0.083)
ROA_q	-0.138	-0.138	-0.129	-0.150	-0.668
	(0.138)	(0.138)	(0.148)	(0.114)	(0.545)
ROA_{q+1}	-0.193*	-0.197*	-0.080	-0.209*	-0.804**
	(0.104)	(0.107)	(0.110)	(0.105)	(0.364)
ROA_{q+2}	-0.118	-0.117	-0.122	-0.025	-0.420
	(0.143)	(0.144)	(0.125)	(0.094)	(0.494)
ROA_{q+3}	0.113	0.110	0.244**	0.012	0.551
	(0.112)	(0.113)	(0.103)	(0.109)	(0.451)
ROA_{q+4}	0.075	0.087	-0.241**	0.179*	0.122
	(0.107)	(0.109)	(0.109)	(0.088)	(0.395)
MBE	0.077***	0.072***	0.248***	0.023***	0.504***
	(0.007)	(0.007)	(0.010)	(0.007)	(0.034)
SURP	-2.921***	-2.785***	-7.308***	-1.795***	-17.844***

	(0.496)	(0.489)	(0.875)	(0.517)	(2.496)
Return	-0.034**	-0.035**	-0.007	0.005	-0.066
	(0.012)	(0.012)	(0.015)	(0.012)	(0.050)
SEO_{q+1}	-0.006	-0.006	-0.007	-0.002	-0.024
	(0.022)	(0.021)	(0.027)	(0.013)	(0.085)
$M\&A\ deal_{q+1}$	-0.007	-0.007	0.002	-0.003	-0.015
	(0.008)	(0.009)	(0.009)	(0.007)	(0.033)
Constant	7.896***	7.871***	4.045***	3.003***	-3.412***
	(0.201)	(0.204)	(0.174)	(0.112)	(0.705)
Observations	7,366	7,366	7,366	7,366	7,366
Firm FE	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes
Adjusted R-squared	0.726	0.726	0.718	0.774	0.732

Panel B: Average treatment effects on treated (ATT) before and after the treatment

Variable	Ln(Length of earnings call)	CC_composite
	(1)	(2)
Pre-treatment_avg	-0.001	-0.016
	(0.006)	(0.025)
Post-treatment_avg	-0.054***	-0.203***
	(0.014)	(0.058)
q - 3	-0.015	-0.065
	(0.016)	(0.065)
q - 2	0.016	0.027
	(0.015)	(0.064)
q - 1	-0.003	-0.009
	(0.016)	(0.066)
q + 1	-0.037**	-0.117*
	(0.016)	(0.068)
q + 2	-0.075***	-0.314***
	(0.018)	(0.074)
q + 3	-0.06***	-0.231***
	(0.017)	(0.069)
q + 4	-0.045**	-0.150**
	(0.019)	(0.080)
Controls	Yes	Yes

Firm FEs	Yes	Yes
Year FEs	Yes	Yes

Table 8
Conference call informativeness consequence of CL_CCs

This table examines the impact of CL_CCs on firms' earnings announcement informativeness and the role of *Ln(Length of earnings call)* and *CC_composite* as the mediating variables for such impact. The treatment sample consists of firms listed on the US major exchanges that receive a comment letter for their annual report referencing conference call content over the period 2004-2019. The control sample consists of matched firms that receive a comment letter for their annual report without referencing conference call content. Matching is based on industry, year, firm size, and number of CLs received in the prior two years, with no replacement. The estimation window spans a total of eight quarters, encompassing the four quarters prior to and the four quarters following the event quarter in which a sample firm receives a comment letter. Panel A reports the results from the DID specification in Equation (2). Panel B reports the path analysis. The significance of the indirect effect is estimated using the Sobel (1982) test statistics. Variable definitions are provided in Appendix B. Standard errors clustered at the firm level are reported in parentheses. ***, **, and * correspond to statistical significance at the 1%, 5%, and 10% levels, respectively.

Panel A: Receiving CL_CCs on firms' conference call informativeness

Variable	CC_informativeness		
	(1)	(2)	(3)
Ln(Length of earnings call)		2.904***	
		(0.506)	
CC_composite			0.764***
			(0.162)
Post * CL_CC	-0.887*	-0.763*	-0.753*
	(0.419)	(0.413)	(0.407)
Post	0.985*	0.953*	0.951*
	(0.475)	(0.469)	(0.468)
$Ln(Sales)_{q-1}$	0.556	0.410	0.354
	(0.499)	(0.495)	(0.482)
Net loss	-0.640**	-0.675**	-0.657**
	(0.274)	(0.267)	(0.267)
Sales growth	-0.619	-0.642	-0.664
	(0.510)	(0.508)	(0.504)
Ln(Total assets)	0.854	0.681	0.674
	(0.875)	(0.890)	(0.889)
ROA_q	4.031	4.411	4.509
	(3.624)	(3.622)	(3.645)
ROA_{q+1}	7.533*	8.088*	8.153*
	(4.067)	(4.133)	(4.096)
ROA_{q+2}	7.134	7.468	7.451
	(5.866)	(5.816)	(5.786)
ROA_{q+3}	-0.668	-1.000	-1.081
	(4.432)	(4.263)	(4.235)

ROA_{q+4}	3.265	3.044	3.176
	(4.538)	(4.507)	(4.503)
MBE	-0.373	-0.597	-0.758
	(0.424)	(0.451)	(0.488)
SURP	29.163	37.622	42.732
	(25.272)	(24.595)	(24.995)
Return	-0.761	-0.661	-0.710
	(0.626)	(0.626)	(0.617)
SEO_{q+1}	-0.607	-0.588	-0.589
	(1.411)	(1.418)	(1.413)
M&A $deal_{q+1}$	-0.074	-0.055	-0.063
	(0.343)	(0.341)	(0.342)
Constant	19.568***	-3.372	22.168***
	(6.042)	(6.616)	(6.153)
Observations	7,360	7,360	7,360
Firm FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Adjusted R-squared	0.170	0.172	0.172

Panel B: The path analysis

Variable	Ln(Length of earnings call)	CC_composite
	(1)	(2)
Total effect *c*		
p[CL_CC effect, CC_informativeness]	-0.887*	-0.887*
	(0.419)	(0.419)
Direct effect *c'*		
p[CL_CC effect, CC_informativeness]	-0.763*	-0.753*
	(0.413)	(0.407)
Mediated path		
a. p[CL_CC effect, Mediating variable]	-0.042***	-0.175***
	(0.010)	(0.040)
b. p[Mediating variable, CC_informativeness]	2.904***	0.764***
	(0.506)	(0.162)
Indirect effect (a × b)	-0.122***	-0.134***
	(0.046)	(0.049)