The Consequences of Writing Not So Readable Responses to SEC Comment Letters[*]

Cory A. Cassell
Department of Accounting
Sam M. Walton College of Business
University of Arkansas
ccassell@walton.uark.edu

Lauren M. Cunningham
Department of Accounting and Information Management
Haslam College of Business
University of Tennessee
lcunningham@utk.edu

Ling Lei Lisic
School of Business
George Mason University
llisic@gmu.edu

April 2015

The Consequences of Writing Not So Readable Responses to SEC Comment Letters

Abstract

An emerging literature shows that shareholders benefit from the Securities and Exchange Commission's (SEC) filing review process in terms of improved disclosures and reduced information asymmetry. However, SEC filing reviews also impose significant costs on companies because the comment letter remediation process diverts substantial time and resources away from normal operations. Using the Fog index to measure the readability of the company's response to an SEC comment letter, we find that more readable company responses are associated with shorter response times (i.e., the number of days it takes the SEC to respond to the company's initial response letter and the number of days it takes the SEC to close the filing review), a lower likelihood the SEC issues follow up comments, fewer rounds of comments, and a lower probability of a restatement stemming from the filing review. Thus, we identify a relatively easy and inexpensive way for companies to mitigate the costs of the comment letter remediation process. We expect that our results will be of interest to managers, boards of directors, audit committees, and other stakeholders involved in formulating responses to SEC comments because they suggest that response readability can have a significant effect on regulators' reaction to the disclosure.

Keywords: readability, remediation costs, SEC comment letters

JEL Classifications: M41, M48

1. Introduction

Section 408 of the Sarbanes-Oxley Act of 2002 (SOX) requires that the Securities and Exchange Commission (SEC) review registrant filings at least once every three years (large companies are typically reviewed annually). When the SEC identifies a disclosure deficiency or requires further clarification, it issues a letter to the company (i.e., a "comment letter") requesting additional information. The company is required to respond to the issues identified in the SEC's letter until the SEC is satisfied with the response.[1] An emerging literature on the SEC's filing review process documents that corporate disclosures and accounting policies improve subsequent to the resolution of an SEC comment letter (Bozanic et al. 2014; Brown et al. 2014; Hennes and Schenck 2014; Kubick et al. 2014) and that shareholders benefit from these changes in the form of reduced information asymmetry and improved analyst forecast accuracy (Johnston and Petacchi 2014).

Although shareholders benefit from the SEC filing review process, prior work also shows that the process imposes significant costs on companies. According to Johnson (2010) and Deloitte (2013), remediation costs include the diversion of substantial time and resources away from normal operations, which can affect the company's ability to access capital markets or delay periodic filings.[2] Cassell et al. (2013) identify a number of company and auditor characteristics (such as firm size, risk, profitability, complexity, auditor size, and corporate

---

[1] The company responds to the SEC by providing additional information, offering to amend disclosure in future filings, or offering to restate previously issued financial statements. If the SEC is satisfied with the company's response, it issues a "no further comment" letter. However, if the SEC is not satisfied, it starts another round of comments and requires companies to respond again until all issues are resolved. For more information about the SEC comment letter process, refer to the Filing Review Process at http://www.sec.gov/corpfin/Article/filing-review-process---corp-fin.html.

[2] See also http://www.pwc.com/us/en/audit-assurance-services/accounting-advisory/sec-comment-letters.jhtml, retrieved on March 19, 2015: "Effectively resolving questions raised during the filing review process is often critical to ensuring access to the public capital markets, executing M&A and other capital markets transactions, and successfully supporting financial reporting and disclosure practices."

governance mechanisms) that affect the internal costs of comment letter remediation. However, companies are not able to control many of these factors, at least not at a reasonable cost in the short-term. We extend prior work by identifying a relatively easy and inexpensive way for companies to mitigate the costs of comment letter remediation. Specifically, we identify the readability of the company's response to an SEC comment letter as a significant determinant of comment letter remediation costs.[3]

Due to resource constraints, SEC reviewers can only devote a limited amount of time and attention to each filing and to each comment letter conversation. Therefore, they are likely to look for heuristic cues (i.e., cognitive processing shortcuts) to determine whether the company's response is competent, reliable, and trustworthy. Processing fluency theory from the psychology literature suggests that information recipients use readability as a heuristic cue when forming assessments about the reliability and trustworthiness of information. Testing this theory in a financial context, Rennekamp (2012) finds that investors assess more readable press releases to be more reliable, and they respond more strongly to earnings news when the news is conveyed in a more readable way. Also consistent with processing fluency theory, studies show that managers are more likely to provide less readable disclosures when they face incentives to conceal information from shareholders (Li 2008; Laksmana et al. 2012). In addition to acting as a heuristic cue, more readable disclosures are likely to be easier to process, even for sophisticated users like the SEC. Consistent with this, prior literature finds that analysts and bond

---

[3] Anecdotal evidence suggests that companies attempt to manage their communications with the SEC during the filing review process. For example, in a listing of the top five things companies should do when responding to the SEC, PricewaterhouseCoopers LLP reports that companies should "carefully manage interactions with the SEC staff..." Available at http://www.pwc.com/us/en/audit-assurance-services/accounting-advisory/sec-comment-letters.jhtml, March 19, 2015.

rating agencies find it harder to process less readable information (Lehavy et al. 2011; Bonsall and Miller 2014; Bozanic and Thevenot 2015).

Building on these theoretical arguments and empirical evidence, we expect that the SEC staff's willingness to rely on, and ability to process, the company's response to a comment letter will be increasing in the readability of the response, resulting in more favorable filing review outcomes for companies who submit more readable responses. Therefore, we expect a negative association between the company's response readability and: 1) the number of days it takes the SEC to respond to the company's response letter, 2) the probability that the SEC issues follow up comments, 3) the number of days it takes the SEC to close the filing review (i.e., issue a final "no further comment" letter), 4) the number of rounds in the filing review (i.e., the number of letters from the SEC to the company during a given filing review), and 5) the probability of the company being required to restate their financial statements.

We collect data on comment letter conversations from the Audit Analytics database of SEC comment letters. The sample includes SEC comment letters issued from 2004 through 2014 where at least one comment was issued in relation to a 10-K filing. Using the *Fog* index to measure the readability of company responses, the results are consistent with our predictions. Specifically, we find that more readable responses are associated with a lower probability of a multiple-round filing review, shorter response times (i.e., the number of days it takes the SEC to respond to the company's initial response letter and the total number of days it takes to close the conversation), fewer rounds of comments, and a lower probability of a restatement stemming from the filing review. We obtain these results with controls for: 1) the readability of the SEC's initial comment letter, 2) SEC office and year fixed effects, and 3) the company and auditor characteristics previously found to be associated with SEC filing review outcomes. In

supplemental tests, we find supporting results when we control for the readability of the 10-K subject to review and when we use several alternative measures of readability (the Flesch Reading Ease Index, the Kincaid Index, and the length of the company's response in words or characters). Our results are also robust to controlling for firm fixed effects, suggesting that the results are not driven by unobservable time-invariant firm characteristics. Collectively, our analyses provide evidence that SEC filing review outcomes are more favorable when the company's initial response is more readable.

To better understand the types of companies that submit less readable responses to the SEC, we also estimate a determinants model similar to Li (2008). Our determinants model includes controls for the readability of the initial SEC comment letter, the number of filings addressed in the initial SEC comment letter, and the number of topics identified in the initial SEC comment letter. Our results suggest that larger companies, less profitable companies, and companies that have previously restated tend to write less readable responses, which is consistent with the obfuscation hypothesis which predicts that companies with negative information provide less readable disclosures (Li 2008). We also find a positive association between the readability of the reviewed 10-K and the readability of the company's response, suggesting that companies that file less readable 10-Ks also submit less readable responses to the SEC.

Our findings contribute to the emerging literature on SEC comment letters. Recent research (Bozanic et al. 2014; Brown et al. 2014; Cassell et al. 2013; Hennes and Schenck 2014; Johnson and Petacchi 2014; Kubick et al. 2014) shows that the SEC filing review process is associated with significant benefits (in the form of improved disclosure and reduced information asymmetry) and costs (in the form of diverted internal resources and the ability to access the capital markets). On the cost side, Cassell et al. (2013) identify a number of factors that are

associated with comment letter remediation costs, but the identified factors are largely outside of the reviewed company's control (i.e., size, profitability, etc.) in the short run. In contrast, we identify a factor that significantly mitigates the costs of comment letter remediation – the readability of the company's initial response – that can be easily controlled by the company. As such, our results should be of interest to managers, boards of directors, audit committees, and other stakeholders involved in formulating responses to SEC comments or affected by the costs of the remediation process. Our study also contributes to the disclosure readability literature (Li 2008; Miller 2010; Lee 2012; Rennekamp 2012; Lawrence 2013) by documenting the consequences of financial disclosure readability where the disclosure is made to *regulators* instead of *shareholders*. Thus, more broadly, our results should interest those stakeholders involved in formulating disclosures intended for sophisticated readers.

The remainder of this paper is organized as follows: Section 2 provides background information on the SEC's filing review process, discusses prior comment letter and readability research, and develops our hypothesis. We discuss our data and research design in Section 3 and report the results in Section 4. Section 5 concludes.

2. Background, related studies, and hypothesis

SEC comment letters

The SEC's Division of Corporation Finance (the "Division") periodically reviews registrants' filings to ensure compliance with SEC and U.S. Generally Accepted Accounting Principles (GAAP) disclosure requirements and to ensure the clarity and consistency of information presented to shareholders. SOX Section 408 formalized this process such that the Division is now required to review a registrant's filings at least once every three years. For many

companies, particularly the largest registrants, the SEC reviews the filings more frequently.

When the Division identifies issues where a company "can improve its disclosure or enhance its

compliance with the applicable disclosure requirements," it issues a comment letter to the

company.[4] If the Division completes its review without identifying such issues, no

communication is made (i.e., neither the company nor investors are informed that a review took

place). When a company receives a comment letter, they generally respond promptly, where the

response provides additional information, offers to amend disclosures in a future filing, or offers

to restate a previous filing.[5] If the SEC is not satisfied with the response, they issue a follow-up

letter, and the company is again required to respond. This process continues until the SEC issues

a final "no further comment" letter. Beginning in 2004, the SEC began publicly releasing

comment letters after the close of the conversation, thus making the conversation between the

company and the SEC transparent to financial statement users.[6]

Previous literature examining SEC comment letters has focused on the company and

auditor characteristics associated with the receipt of a comment letter (e.g., Ertimur and Nondorf

(2006) for IPO filings, Ettredge et al. (2011) for 8-K filings, Robinson et al. (2011) for proxy

filings, and Cassell et al. (2013) for 10-K filings). In addition to investigating the factors that

---

[4] For more information about the periodic review process, refer to the SEC's Division of Corporation Finance's Filing Review Process at http://www.sec.gov/corpfin/Article/filing-review-process---corp-fin.html:

> In its filing reviews, the Division concentrates its resources on critical disclosures that appear to conflict with Commission rules or the applicable accounting standards and on disclosure that appears to be materially deficient in explanation or clarity. The Division does not evaluate the merits of any transaction or determine whether an investment is appropriate for any investor. The Division's review process is not a guarantee that the disclosure is complete and accurate — responsibility for complete and accurate disclosure lies with the company and others involved in the preparation of a company's filings.

[5] The SEC requests that the company reply within 10 days. In our sample, we find (untabulated) that 22 percent of companies request additional time (based on Audit Analytics' issue #253, "Extension of time request/Response by date certain"), and that the first substantive reply (i.e., not an extension request) is, on average, 20 days after the receipt of the comment letter.

[6] For more information about the SEC's dissemination of comment letter conversations, refer to the SEC's press release 2004-89 (available at http://www.sec.gov/news/press/2004-89.htm).

affect the receipt of a comment letter, Cassell et al. (2013) also investigate the factors that affect the costs of the comment letter remediation process. Specifically, Cassell et al. (2013) find that larger, older, and less profitable companies, and companies with weak internal controls, complex operations, smaller auditors, and weak governance experience higher costs in the remediation process in the form of longer response times, more rounds to resolution, and an increased probability that the comment letter results in a restatement.

Other studies in the comment letter literature focus on whether the comment letter process is effective in improving financial reporting quality or whether investors react to the information embedded in the comment letter conversation. With respect to improvements in financial reporting quality, evidence from prior studies suggests that the SEC's review process is effective. Specifically, prior work documents improvements in the quality of company disclosures, accounting policies, and tax avoidance behavior following the receipt of a comment letter (Bozanic et al. 2014; Brown et al. 2014; Hennes and Schenck 2014; Kubick et al. 2014).[7] Thus, the receipt of a comment letter may be an indicator of poor financial reporting quality (Lawrence et al. 2014) and companies work quickly to remediate the identified issues such that financial reporting quality is improved.

With respect to the information content of the comment letter conversation, Dechow et al. (2014) find that, for companies receiving comment letters questioning revenue recognition practices, abnormal insider trading is detected in the period between the receipt of a comment letter and its public release. Further, Johnston and Petacchi (2014) show that, in periods following the resolution of a comment letter, absolute abnormal returns and trading volume around earnings announcements are lower and analyst forecast accuracy improves, suggesting a

---

[7] Additionally, audit fees increase subsequent to the receipt of a comment letter, suggesting that auditors consider the additional SEC scrutiny as an increased risk factor for the engagement (Gietzmann and Pettinicchio 2014).

reduction in information asymmetry. Both studies suggest that there is important information in the comment letter conversation and that investors and other stakeholders respond to this information. However, other recent work suggests that investors under-utilize the information in comment letter conversations (Ryans 2014).

Our study is most closely related to Cassell et al. (2013). While Cassell et al. (2013) identify a number of factors that affect the receipt of a comment letter and the costs associated with comment letter remediation, the company and auditor characteristics studied in Cassell et al. (2013) are not easily controlled by the company in the short run at a reasonable cost. We complement Cassell et al. (2013) by focusing on a factor that is relatively easy and inexpensive to manage in the comment letter process – the readability of the responses from the company to the SEC – and examine how this factor impacts comment letter remediation costs. We explain the possible implications of response readability in the following section.

Processing fluency theory and the implications of readability

Since the Securities Act of 1933, the SEC has consistently encouraged companies to make financial disclosures more readable and understandable to the average investor (Miller 2010).[8] The SEC's advocacy for more readable disclosures is consistent with arguments from processing fluency theory, which suggests that readers will have more confidence in, and respond more positively to, a message when the message is written more clearly (Oppenheimer 2006). Prior literature tests this theory in a financial context by evaluating investor responses to company-issued press releases. Specifically, Rennekamp (2012) finds that investors evaluate

---

[8] The following quote from Warren Buffet summarizes the potential issues associated with (and inferences drawn from) less readable disclosures (SEC 1998, 1):"There are several possible explanations as to why I and others sometimes stumble over an accounting note or indenture description. Maybe we simply don't have the technical knowledge to grasp what the writer wishes to convey. Or perhaps the writer doesn't understand what he or she is talking about. In some cases, moreover, I suspect that a less-than scrupulous issuer doesn't want us to understand a subject it feels legally obligated to touch upon."

press releases more favorably (i.e., they are judged as being more reliable) when the press releases are written more clearly relative to when they are not. This suggests that investors use readability as a heuristic cue in forming assessments about the reliability of the disclosure (Rennekamp 2012).

The preceding discussion suggests that the SEC and investors believe that disclosure reliability is increasing in disclosure readability. An emerging literature supports this finding by providing evidence that less readable disclosures are more likely when managers face incentives to conceal information from shareholders and that less readable disclosures are associated with adverse capital market outcomes. For example, Li (2008) finds that annual reports of firms with lower earnings are more difficult to read. Similarly, Laksmana et al. (2012) show that firms with excessive CEO pay provide less readable disclosures about executive compensation practices in their proxy statements.[9]

With respect to other implications of less readable disclosures, longer and less readable financial reports are associated with lower trading activity, primarily due to a reduction in small investors' trading activity (Miller 2010; Lawrence 2013). Lee (2012) finds that difficult-to-read quarterly reports inhibit the price adjustment to earnings news, which partially explains the post earnings announcement drift.[10] Rennekamp (2012) finds supporting results in an experiment, where participants responded more strongly to earnings news when the news is conveyed in a more readable way. Importantly, prior work shows that relatively sophisticated readers (e.g., analysts and bong rating agencies) also find it difficult to process less readable information. For

---

[9] In contrast, after conducting a content analysis of the detail, tone, and readability of research and development (R&D) narratives, Merkley (2013) concludes that managers adjust R&D disclosures based on earnings performance in order to provide relevant information to stakeholders (rather than to obfuscate performance).

[10] In a related study, De Franco et al. (2015) examine the readability of sell-side equity analysts' reports and find that trading volume reactions increase with the readability of analysts' text, supporting the view that capital market participants are more likely to respond to information that is more readable.

9

example, Lehavy et al. (2011) and Bozanic and Thevenot (2015) find that less readable disclosures have significant implications for characteristics of analyst forecasts in the form of greater dispersion and lower accuracy, and Bonsall and Miller (2014) find that less readable disclosures are associated with less favorable bond ratings and more disagreement among bond rating agencies.

Collectively, prior studies suggest that companies intentionally manage the readability of their financial disclosures and that less readable disclosures are associated with lower reliability assessments and information processing difficulties. We extend prior work by investigating the implications of the readability of companies' responses to the SEC, a strong advocate for more readable disclosures.

Building on the theoretical arguments and empirical evidence discussed above, we expect that the SEC will understand more clearly, find more credibility in, and react more favorably to more readable company responses. Alternatively, if the company's response is less readable, we expect that the SEC will be more likely to follow up with additional questions, and will be less likely to accept the company's response, resulting in higher internal costs of remediation. Stated in the alternative form, our hypothesis is as follows:

H1: The costs associated with SEC comment letter remediation will be lower when the company's response is more readable.

3. Data and research design

Data

We begin with the Audit Analytics (AA) SEC comment letter conversations database, which provides all publicly filed comment letter conversations. We extract all comment letter

conversations with at least one comment related to a 10-K filing.[11] We create one unique

observation per 10-K conversation (i.e., one observation per reviewed 10-K) because some

conversations refer to more than one 10-K filing (where there would be different financial and/or

auditor characteristics associated with the referenced filings). Following the method described in

Cassell et al. (2013), we drop conversations that appear "incomplete" in the SEC's EDGAR

database, and are thus incomplete in the AA database.[12] This results in 17,989 potential 10-K

conversations.

Using the comment letter database, which provides the text and AA classifications for the

individual letters within the comment letter conversation, we identify the first SEC comment

letter (i.e., the earliest letter in the conversation with an "UPLOAD" file type) and the first

substantive company response (i.e., the earliest letter in the conversation with a "CORRESP" file

type that does not request an extension).[13]

Using the referenced filing FTP key and filing date from the AA comment letter database,

which provides unique identifying information for the 10-K filing that was reviewed, we match

---

[11] We focus on comment letters from the 10-K review process because the SEC typically begins its review process with the 10-K filing (Johnson 2015). We find (untabulated) that our inferences remain the same if we expand our sample to include comment letters on other filing types.

[12] Specifically, following the methodology described in Cassell et al. (2013) footnote 28 on page 1889, we drop conversations where: 1) the first letter in the conversation is not "UPLOAD," because this suggests that the initial letter from the SEC is missing, 2) there is not a "no further comment" letter (AA's issue number 266), 3) the only letter in the conversation is the "no further comment" letter (this occurs when the SEC references a filing in the final letter but never issued comments related to that filing), 4) there is only one letter from the SEC in the conversation, and 5) there are fewer than three letters in the conversation. In addition, because we are focused on the company's initial response and the SEC's follow-up response (versus overall response time examined in Cassell et al. (2013)), we also drop conversations where: 1) there is not a company response dated after the first SEC comment letter, 2) there is not an SEC response dated after the company's first response, and 3) the first or last letter date from the comment letters database is not equal to the "first_letter_date" or "last_letter_date" from the comment letter conversations database, because this may imply the comment letters database, which we use to calculate readability, is incomplete.

[13] It is important to drop company responses seeking an extension because we are interested in the readability of the letter that provides a full response to the SEC. We exclude letters where "iss_wholet_keys" includes "253" (request for extension). Similarly, we exclude other letters where no substantive information is provided. Specifically, if the count of issues in "list_cl_issue_taxgrp" is equal to 1 or 0, and the "iss_wholet_keys" includes "903" (no new information), "1109" (cover letter), "1257" (duplicate letter), or "928" (tandy letter), we classify the letter as having no substantive information.

to the AA opinions database for auditor information and the Compustat Fundamentals Annual

database for financial information. After dropping observations with insufficient data to calculate

the significant control variables from Cassell et al. (2013), we have 14,342 10-K conversations in

our sample. The full sample selection process is described in Table 1.

Research design

We hypothesize that higher levels of readability in the company's response to the SEC

will be associated with lower comment letter remediation costs. We measure the costs of the

remediation process using a number of variables that proxy for the internal time devoted to the

remediation process and by determining whether the company is required to restate its financial

statements as a result of the filing review. Specifically, we use the following dependent variables

in our analyses: 1) *SECRespTime* is equal to the natural log of the number of days between the

company's response and the SEC's second letter (which will either be a "no further comment"

letter or a letter with additional comments), 2) *SECFollowUp* is an indicator variable set equal to

one if the SEC issues follow-up comments after receiving the company's initial response (i.e.,

the second letter from the SEC is not a "no further comment" letter), and zero otherwise, 3)

TotalRespTime is equal to the natural log of the number of days between the initial comment

letter and the "no further comment" letter,[14] 4) *Rounds* is equal to the number of letters issued by

the SEC, and 5) *CL_Restate* is an indicator variable set equal to one if the company issues a

restatement in response to the comment letter conversation, and zero otherwise.

We calculate the readability of individual SEC comment letters and company responses

using the "CL_TEXT" field in the AA comment letters database and the Lingua-EN-Fathom

---

[14] We find (untabulated) that inferences remain the same if we use an alternative measure of total response time, measured as the number of days between the SEC's initial letter and the company's final response (i.e., the last company response before the SEC's "no further response" letter). This alternative measure removes variation in the total response time that is attributable to SEC delays in the final stage of a filing review.

package in Perl, which is the same computing method used by many papers studying financial disclosure readability (Li 2008; Miller 2010; Lee 2012).[15] Our primary readability measure is the *Fog* index because it is the most common measure used in the readability literature.[16] The *Fog* index captures text complexity as a function of the number of syllables per word and the number of words per sentence (i.e., *Fog* = (words per sentence + percent of complex words) * 0.4). By construction, higher values of the *Fog* index represent *less* readable information. For ease of interpretation, we multiply the calculated *Fog* index by negative one in all analyses such that higher values of our readability measures represent *more* readable information.

We control for the readability of the SEC's initial comment letter in order to isolate the effect of the readability of the company's response (which may be impacted by the issues identified by the SEC).[17] In addition, following Cassell et al. (2013), we control for a number of company and auditor characteristics that have been shown to affect the costs associated with comment letter remediation. Our regression model is as follows:

$$
\begin{aligned}
CL\_Remed\_Cost_{it} = {} & \gamma_0 + \gamma_1 Response\_Readability_{it} + \gamma_2 SEC\_Readability_{it} + \gamma_3 lnAssets_{it} \\
& + \gamma_4 MWeak_{it} + \gamma_5 Restate_{it} + \gamma_6 CompanyAge_{it} + \gamma_7 Loss_{it} + \gamma_8 BankruptcyRank_{it} \\
& + \gamma_9 Segments_{it} + \gamma_{10} M\&A_{it} + \gamma_{11} ExtFinancing_{it} + \gamma_{12} Litigation_{it} + \gamma_{13} Big4_{it} \\
& + \gamma_{14} Second\text{-}Tier_{it} + \gamma_{15} AudTenure_{it} + \gamma_{16} Filings_{it} + \gamma_{17} NumTopics_{it} \\
& + \gamma_j Year\ FE + \gamma_k SEC\ Office\ FE + \varepsilon_{it}
\end{aligned}
\tag{1}
$$

where:

---

[15] As described in more detail in Li (2008), it is important that the analyzed text be stripped of all tables and html formatting. We use "CL_TEXT" from the AA database because it is formatted in plain text, thus eliminating the need to remove tables or formatting. For more information about the readability measures and the calculation from the Lingua-EN-Fathom package in Perl, see http://search.cpan.org/dist/Lingua-EN-Fathom/lib/Lingua/EN/Fathom.pm.

[16] As discussed in Section 4, we find similar results using a number of alternative readability measures (e.g., the Flesch Reading Ease Index, the Kincaid Index, and the length of the text in words or characters). We do not perform tests using other measures of readability such as file size (Loughran and McDonald 2014) and manually created indices that capture specific characteristics of the SEC's plain English guidelines (Bonsall et al. 2015) because the data needed to construct these measures are not readily available.

[17] This is particularly important in our setting because companies typically repeat the SEC's comments in their response. See, for example, Walmart's response to the SEC on July 9, 2013 (available at http://www.sec.gov/Archives/edgar/data/104169/000010416913000022/filename1.htm). Walmart first lists the SEC's original comment, and then provides a company response.

CL_Remed_Cost =   one of five measures of remediation costs (*SECRespTime*, *SECFollowUp*, *TotalRespTime*, *Rounds*, or *CL_Restate*);

SECRespTime =   the natural log of the number of days between the company's first substantial response (CORRESP file type) and the second letter from the SEC (UPLOAD file type);

SECFollowUp =   an indicator variable set equal to one if the second SEC letter (UPLOAD file type) is not a "no further comment" letter, and zero otherwise;

TotalRespTime =   the natural log of the number of days between the first letter from the SEC and the final "no further comment" letter;

Rounds =   the number of SEC letters (UPLOAD file type) in the conversation;

CL_Restate =   an indicator variable set equal to one if the comment letter resulted in a restatement, and zero otherwise. To determine whether the comment letter resulted in a restatement, we use the AA Non-Reliance database to identify restatement announcements with a file date between the date of the initial SEC comment letter and the public dissemination date of the conversation. We then read all restatement-related disclosures and all letters in the comment letter conversation to determine whether the comment letter triggered the restatement;

Response_Readability =   negative one times the *Fog* index of the first substantial letter from the company (CORRESP file type), calculated using the Lingua-EN-Fathom package in Perl;

SEC_Readability =   negative one times the *Fog* index of the first letter from the SEC (UPLOAD file type), calculated using the Lingua-EN-Fathom package in Perl;

lnAssets =   the natural log of total assets;

MWeak =   an indicator variable set equal to one if the internal control audit opinion (under SOX Section 404) or the management certification (under SOX Section 302) is qualified for a material weakness, and zero otherwise;

Restate =   an indicator variable set equal to one if the company filed a restatement in the two years before the receipt of the comment letter, and zero otherwise;

CompanyAge =   the total number of years (through year t) assets are reported in Compustat;

Loss = an indicator variable set equal to one if income before extraordinary items (IB) is negative, and zero otherwise;

BankruptcyRank = the decile rank of Altman's bankruptcy score, calculated following DeFond and Hung (2003) and Altman (1968);

Segments = the number of business segments reported;

M&A = an indicator variable set equal to one for non-zero acquisitions or mergers as reported on a pre-tax basis (AQP), and zero otherwise;

ExtFinancing = the sum of equity financing and debt financing scaled by total assets, measured in t+1, following Ettredge et al. (2011);

Litigation = an indicator variable set equal to one if the company is in a litigious industry (four-digit SIC industry codes 2833-2836, 3570-3577, 3600-3674, 5200-5961, or 7370-7374, following Francis et al. (1994)), and zero otherwise;

Big4 = an indicator variable equal to one if the company is audited by Deloitte, Ernst & Young, KPMG, or PricewaterhouseCoopers, and zero otherwise;

Second-Tier = an indicator variable set equal to one if the company is audited by BDO Seidman, Crowe Horwath, Grant Thornton, or McGladrey & Pullen, and zero otherwise;

AudTenure = the number of consecutive years (through year t) during which the auditor has audited the company;

Filings = the number of filings (e.g., 10-K, 8-K, 10-Q, DEF 14A) addressed in the initial SEC comment letter, based on the number of filings reported in LIST_FORM_DATES;

NumTopics = the total number of issue codes (assigned by AA) in the initial comment letter from the SEC (LIST_CL_ISSUE_TAXGROUP);

Year FE = indicator variables for each fiscal-year represented in the sample; and

SEC Office FE = indicator variables for each SEC Division of Corporation Finance office represented in the sample. SEC offices are assigned based on the two-digit industry code.

We estimate equation (1) separately using each of the five comment letter remediation cost measures described above: 1) *SECRespTime*, 2) *SECFollowUp,* 3) *TotalRespTime*, 4)

Rounds, and 5) *CL_Restate*. For *SECRespTim*e and *TotalRespTime*, we estimate equation (1) using ordinary least squares (OLS) regression with robust standard errors clustered by company. For *Rounds*, we estimate equation (1) using Poisson regression with robust standard errors clustered by company. Finally, for *SECFollowUp* and *CL_Restate*, we estimate equation (1) using logistic regression with robust standard errors clustered by company.

Consistent with our hypothesis, we expect a negative association between our variable of interest, *Response_Readability*, and each of our dependent variables. We do not make a directional prediction for *SEC_Readability*. Following Cassell et al. (2013), we control for company size (*lnAssets*), the strength of internal controls (*MWeak*), the issuance of a restatement in either the current or prior year (*Restate*), company age (*CompanyAge*), profitability and financial condition (*Loss, BankruptcyRank*), complexity (*Segments, M&A, ExtFinancing*), whether the company is in a highly litigious industry (*Litigation*), auditor size (*Big4, Second-Tier*) and tenure (*AudTenure*), the number of filings referenced in the comment letter (*Filings*), and the number of topics in the first comment letter from the SEC as coded by AA (*NumTopics*).[18] Equation (1) also includes year (*Year FE*) and SEC office (*SEC Office FE*) fixed effects to control for variation in comment letter remediation costs across years and SEC offices.

4. Empirical results and sensitivity analyses

Descriptive statistics

---

[18] To avoid data attrition, we proxy for size using the natural log of total assets instead of the natural log of market capitalization, and we use only those variables that are statistically significant in equations (2) and (3) from Cassell et al. (2013). Although variables for high volatility, CEO-Chairman duality, and board independence are significant in Cassell et al (2013), we omit them from equation (1) because inclusion of these variables significantly reduces the sample size (by more than 20 percent). However, we find (untabulated) that our inferences remain the same when we include these variables. The only other difference compared to Cassell et al. (2013) is that we use one variable to capture restatements filed in either the current or prior year because Cassell et al. (2013) find that restatements in both the current and prior year are positively associated with response time and the number of rounds to resolution.

In Table 2, we report descriptive statistics for the sample. For ease of interpretation, *SECRespTime*, *TotalRespTime*, and *lnAssets* are reported in raw (unlogged) form. The mean (median) number of days between the company's initial response and the SEC's second letter is 26 (18) days. For the lowest quartile of companies, the SEC's response time is 10 days or shorter and for the highest quartile, the SEC's response time is 31 days or longer. For approximately 46 percent of sample observations, the SEC issues a second letter with follow up comments. The mean (median) total response time is 78 (54) days, and the mean (median) total number of rounds is 3 (2). Approximately 3 percent of comment letters result in a restatement of the reviewed filing. Collectively, these descriptive statistics suggest that there is considerable variation in the costs associated with the comment letter remediation process.

The mean (median) *Response_Readability* (negative one times the *Fog* index of the company's response) is -19.0 (-19.0). For reference, *Fog* scores of greater than or equal to 18 are generally classified as being unreadable, scores of 14 to 18 are classified as being difficult to read, and scores of 12 to 14 are classified as being ideal.[19] Therefore, the average (and median) company response to the SEC is classified as being unreadable. In untabulated analyses, we find that 70 percent of company responses are classified as being unreadable and 29 percent of company responses are classified as being difficult to read. In contrast to company responses, the mean (median) *SEC_Readability* (negative one times the *Fog* index of the SEC's letter) is -17.1 (-17.0), which is classified as being difficult to read. We find (untabulated) that only 24 percent of SEC letters are classified as being unreadable and 75 percent of SEC letters are classified as being difficult to read.

---

[19] See Li (2008) and http://search.cpan.org/dist/Lingua-EN-Fathom/lib/Lingua/EN/Fathom.pm.

We report the correlation coefficients among the independent variables in Table 3. As would be expected, our variable of interest (*Response_Readability*) is positively correlated with the readability of the SEC's initial comment letter (*SEC_Readability*) – the Pearson (Spearman) coefficient is 0.24 (0.35). This correlation is attributable to the convention that companies repeat the SEC's comments in their response and it highlights the importance of controlling for the readability of the SEC's initial comment letter. Importantly, the mean variance inflation factor (VIF) among all independent variables is 1.34 (the largest VIF is 2.36), suggesting that multicollinearity is not a serious concern.

Primary results

In Table 4, we report results from five estimations of equation (1), where the dependent variables are *SECRespTime*, *SECFollowUp*, *TotalRespTime*, *Rounds*, and *CL_Restate*, in Columns (1) – (5), respectively. We find a negative and significant coefficient on *Response_Readability* ($p < 0.01$ in Columns (1) – (4) and $p < 0.05$ in Column (5)), suggesting that more readable company responses are associated with lower remediation costs. Regarding the control variables in equation (1), we find mixed results on the effect of the readability of the SEC's initial comment letter (*SEC_Readability*) on remediation costs. However, the results in Columns (1) – (5) generally indicate that comment letter remediation costs are higher among larger companies (*lnAssets*), companies reporting losses (*Loss*), and companies that receive comment letters with more topics (*NumTopics*), and that comment letter remediation costs are lower among companies that engage a Big 4 (*Big4*) or second-tier (*Second-Tier*) auditor.

In sum, the results in Table 4 provide strong support for our hypothesis – that comment letter remediation costs are lower when company responses are more readable. The identified incremental costs associated with less readable company responses include: longer response

times from the SEC (*SECRespTime*), a higher likelihood of the SEC asking follow up questions (*SECFollowUp*), longer delays between the initial SEC comment letter and the final "no further comment" letter (*TotalRespTime*), more rounds in the filing review process (*Rounds*), and a greater likelihood of a restatement stemming from the filing review (*CL_Restate*).

Firm-fixed effects

Costs associated with the comment letter remediation process and company response readability might be jointly determined by certain unobservable firm characteristics. To the extent that these firm characteristics are time-invariant, we address this concern by controlling for firm fixed effects (and dropping industry and year fixed effects). We find (untabulated) a negative and significant coefficient on *Response_Readability* in all five estimations of equation (1), suggesting that our results are not driven by unobservable time-invariant firm characteristics.

Controlling for 10-K readability

It is possible that a company's writing style is relatively fixed and that the effect we observe is driven by the readability of the 10-K filing that is the subject of the SEC's review. To mitigate concerns related to this alternative explanation for our results, we re-estimate equation (1) after controlling for the readability of the reviewed 10-K filing.[20] Here, we use a reduced sample of 7,216 observations because data on 10-K readability is only available for a subset of our sample observations. We find (untabulated) that the mean (median) 10-K readability (negative one times the *Fog* index of the 10-K) is -19.5 (-19.8), the Pearson correlation coefficient between 10-K readability and *Response_Readability* is 0.09 (p-value < 0.01), and the coefficients on 10-K readability in the five estimations of equation (1) are all insignificant.

---

[20] We thank Feng Li for providing data on 10-K readability. The data are available at http://webuser.bus.umich.edu/feng/.

Importantly, the coefficient on *Response_Readability* remains negative and significant in all five estimations of equation (1).

Alternative measures of readability

In addition to the *Fog* index, the readability literature has used a number of alternative proxies for readability. These alternative measures include the Flesch Reading Ease Index, the Kincaid Index, and the length of the text in words or characters. The Flesch Reading Ease Index and Kincaid index are similar to the *Fog* index in that they measure readability using the number of syllables per word and the number of words per sentence.[21] Thus, along with the Fog Index, these metrics calculate readability as a function of the average *complexity* of text (where complexity is assumed to be increasing in the number of syllables per word and the number of words per sentence). In contrast, other measures of readability use the number of words and/or the number of characters to calculate readability as a function of the *length* of text.[22]

In supplemental tests, we assess the sensitivity of our results to these alternative measures of readability. Where appropriate, we multiply these alternative readability measures by negative one so that higher values indicate that the response is more readable. The results, presented in Table 5, are consistent with the results obtained when the variable of interest is measured using the *Fog* index.[23] Specifically, using each of the alternative readability measures, we find that comment letter remediation costs are lower for companies that provide more readable responses to the SEC.

---

[21] The Flesch Reading Ease Index is calculated as 206.835 – (1.015 * words per sentence) – (84.6 * syllables per word). The Kincaid Index is calculated as (11.8 * syllables per word) + (0.39 * words per sentence) – 15.59. Higher (lower) values of the Flesch Reading Ease Index (Kincaid Index) indicate more (less) readable information.
[22] The use of readability measures based on text length are not ideal in our setting because the length of the company's response (as measured by the number of words or the number of characters) is highly correlated (correlation coefficient = 0.60) with the number of issues that are identified in the SEC's initial letter. That is, the length of the company response is driven, to a large extent, by the number of topics that the response must address.
[23] Coefficients on control variables are suppressed for brevity.

The determinants of company response readability

Our main findings indicate that the readability of a company's response to an SEC

comment letter affects comment letter remediation costs. Because the costs associated with

comment letter remediation can be substantial, and our findings suggest that remediation costs

are higher for companies that submit less readable responses, it is important to understand the

types of companies that submit less readable responses to the SEC. Therefore, we next examine

the determinants of comment letter response readability. Our determinants model is as follows:

$$
\begin{aligned}
Response\_Readability_{it} = \ & \beta_0 + \beta_1 SEC\_Readability_{it} + \beta_2 lnAssets_{it} + \beta_3 MWeak_{it} + \beta_4 Restate_{it} \\
& + \beta_5 CompanyAge_{it} + \beta_6 Loss_{it} + \beta_7 BankruptcyRank_{it} + \beta_8 Segments_{it} \\
& + \beta_9 M\&A_{it} + \beta_{10} ExtFinancing_{it} + \beta_{11} Litigation_{it} + \beta_{12} Filings_{it} \\
& + \beta_{13} NumTopics_{it} + \beta_j Year\ FE + \beta_k Industry\ FE + \omega_{it} \qquad (2)
\end{aligned}
$$

Similar to Li (2008) who examines the determinants of the readability of the annual

report (10-K), we expect that company characteristics such as size (*lnAssets*), age

(*CompanyAge*), internal control strength (*MWeak*), financial reporting quality (*Restate*),

profitability (*Loss*), financial condition (*BankruptcyRank*), and complexity (*Segments*, *M&A*,

ExtFinancing) may affect the readability of the company's response. However, we acknowledge

that the readability of the company's response will be affected by a number of factors that are

largely outside of their control when they receive a comment letter from the SEC. Therefore,

equation (2) includes a number of control variables related to the nature of the SEC's initial

comment letter. Specifically, we control for the number of filings addressed in the SEC's initial

comment letter (*Filings*), the number of topics addressed in the SEC's initial comment letter

(*NumTopics*), and the readability of the SEC's initial comment letter (*SEC_Readability*).

Results from the estimation of equation (2), reported in Table 6, suggest that larger

companies (*lnAssets*), companies that have previously restated (*Restate*), and less profitable

companies (*Loss*) tend to write less readable responses. Company responses are also less

readable when the SEC's initial comment letter addresses more filings or identifies more issues. As expected, company responses are more readable when the SEC's initial comment letter is more readable. We also re-estimate equation (2) using a reduced sample with data on the readability of the 10-K subject to the SEC filing review. Here we find a positive and significant coefficient on 10-K readability (coefficient = 0.045, p-value < 0.01), suggesting that companies that issue less readable 10-Ks also submit less readable responses to SEC comment letters.

5. Conclusion

Prior research shows that SEC filing reviews bring significant benefits (e.g., improved disclosure and reduced information asymmetry) and costs (e.g., substantial time and resources diverted away from normal operations). Cassell et al. (2013) identify a number of company and auditor characteristics (such as firm size, risk, profitability, complexity, auditor size, and corporate governance mechanisms) that affect the internal costs of comment letter remediation. However, companies are not able to control many of these factors, at least not at a reasonable cost in the short-term. We extend prior work by identifying a relatively easy and inexpensive way for companies to mitigate the costs of comment letter remediation. Specifically, we identify the readability of the company's response to an SEC comment letter as a significant determinant of comment letter remediation costs.

Our tests are motivated by arguments from the processing fluency theory, which suggest that information recipients use readability as a heuristic cue to determine whether the information is reliable, and the argument that more readable disclosures are easier for readers to process. Using the *Fog* index to measure the readability of company responses to SEC comment letters, we find that more readable responses are associated with shorter response times (i.e., the

number of days it takes the SEC to respond to the company's initial response letter and the number of days it takes the SEC to close the comment letter process), a lower probability the SEC follows up with more comments, fewer rounds of review comments, and a lower probability of restatements stemming from the filing review process. We obtain these results after controlling for: 1) the readability of the SEC's initial comment letter, 2) SEC office and year fixed effects, and 3) the company and auditor characteristics that prior literature has shown to affect the costs of comment letter remediation. Our results are robust to the use of several alternative measures of readability, including the Flesch Reading Ease Index, the Kincaid Index, and the length of the response text in words or characters. Our results are also robust to controlling for the readability of the 10-K subject to review and firm fixed effects.

Collectively, our results suggest that SEC filing review outcomes are more favorable when the company's initial response is more readable. Because we identify a significant factor (response readability) affecting comment letter remediation costs that companies can easily control in the short term, our results should be of interest to managers, boards of directors, audit committees, and other stakeholders involved in formulating responses to SEC comments or affected by the costs of the remediation process.

References

Altman, E. I. 1968. Financial ratios, discriminant analysis and the prediction of corporate bankruptcy. *The Journal of Finance* 23 (4): 589–609.

Bonsall IV, S. B., A. J. Leone., and B. P. Miller. 2015. A plain English measure of financial reporting readability. Working paper: The Ohio State University, University of Miami, and Indiana University.

Bonsall IV, S. B., and B. P. Miller. 2014. The impact of narrative disclosure readability on bond ratings and rating agency disagreement. Working paper: The Ohio State University and Indiana University.

Bozanic, Z., J. R. Dietrich, and B. Johnson. 2014. The SEC Comment Letter Process and Firm Disclosure. Working paper: The Ohio State University.

Bozanic, Z., and M. Thevenot. 2015. Qualitative disclosure and changes in sell-side financial analysts' information environment. *Contemporary Accounting Research* (Forthcoming).

Brown, S. V., X. Tian, and J. W. Tucker. 2014. The spillover effect of SEC comment letters on qualitative corporate disclosure: Evidence from the risk factor disclosure. Working paper: Arizona State University, The Ohio State University, and University of Florida.

Cassell, C. A., L. M. Dreher, and L. A. Myers. 2013. Reviewing the SEC's review process: 10-K comment letters and the cost of remediation. *The Accounting Review* 88 (6): 1875-1908.

De Franco, G., O-K. Hope, D. Vyas, and Y. Zhou. 2015. Analyst report readability. *Contemporary Accounting Research* 32 (1): 76-104.

Dechow, P., A. Lawrence, and J. Ryans. 2014. SEC comment letters and insider sales. Working paper: University of California at Berkeley.

DeFond, M. L., and M. Hung. 2003. An empirical analysis of analysts' cash flow forecasts. *Journal of Accounting and Economics* 35: 73–100.

Deloitte: Deloitte & Touche LLP. 2013. SEC Comment Letters - Including Industry Insights: Constructing Clear Disclosures, 7th Edition. (December 5). Available at http://deloitte.wsj.com/riskandcompliance/files/2013/12/SEC-Comment-Letters-2014-Including-Industry-Insights-2014-Constructing-Clear-Disclosures.pdf.

Ertimur, Y., and M. Nondorf. 2006. IPO firms and the SEC comment letter process. Working paper, Duke University and University of California, Berkeley.

Ettredge, M., K. Johnstone, M. Stone, and Q. Wang. 2011. The effects of firm size, corporate governance quality, and bad news on disclosure compliance. *Review of Accounting Studies* 16 (4): 866–889.

Francis, J., D. Philbrick, and K. Schipper. 1994. Shareholder litigation and corporate disclosures. *Journal of Accounting Research* 32 (2): 137–164.

Gietzmann, M. B., and A. K. Pettinicchio. 2014. External auditor reassessment of client business risk following the issuance of a comment letter by the SEC. *European Accounting Review* 23 (1): 57-85.

Hennes, K. M., and K. M. Schenck. 2014. The development of reporting norms without explicit guidance: An example from accounting for gift cards. *Accounting Horizons* 28 (3): 561-578.

Johnson, S. 2010. The SEC has a few questions for you. *CFO* (May): 25-28.

Johnson, B. A. 2015. The impact of SEC comment letter releases: Short window evidence of information content and changes in information asymmetry. Working paper: The Ohio State University.

Johnston, R., and R. Petacchi. 2014. Regulatory oversight of financial reporting: Securities and Exchange Commission comment letters. Working paper: Rice University and MIT Sloan School of Management.

Kubick, T. R., D. P. Lynch, M. A. Mayberry, and T. C. Omer. 2014. The effects of regulatory scrutiny on tax avoidance: An examination of SEC comment letters. Working paper: University of Kansas, University of Wisconsin-Madison, University of Florida, and University of Nebraska.

Laksmana, I., W. Tietz, and Y. W. Yang. 2012. Compensation discussion and analysis (CD&A): Readability and management obfuscation. *Journal of Accounting and Public Policy* 31 (2): 185-203.

Lawrence, A. 2013. Individual investors and financial disclosure. *Journal of Accounting and Economics* 56 (1): 130-147.

Lawrence, A., M. Minutti-Meza, and D. Vyas. 2014. Is operational control risk informative of financial reporting risk? Working paper: University of California at Berkeley, University of Miami, and University of Toronto.

Lee, Y-J. 2012. The effect of quarterly report readability on information efficiency of stock prices. *Contemporary Accounting Research* 29 (4): 1137-1170.

Lehavy, R., F. Li, and K. Merkley. 2011. The effect of annual report readability on analyst following and the properties of their earnings forecasts. *The Accounting Review* 86 (3): 1087-1115.

Li, F. 2008. Annual report readability, current earnings, and earnings persistence. *Journal of Accounting and Economics* 45 (2): 221-247.

Loughran, T., and B. McDonald. 2014. Measuring readability in financial disclosures. *The Journal of Finance* 69 (4): 1643-1671.

Merkley, K. J. 2013. Narrative disclosure and earnings performance: Evidence from R&D disclosures. *The Accounting Review* 89 (2): 725-757.

Miller, B. P. 2010. The effects of reporting complexity on small and large investor trading. *The Accounting Review* 85 (6): 2107-2143.

Oppenheimer, D. M. 2006. Consequences of erudite vernacular utilized irrespective of necessity: problems with using long words needlessly. *Applied Cognitive Psychology* 20 (2): 139–156.

Rennekamp, K. 2012. Processing fluency and investors' reactions to disclosure readability. *Journal of Accounting Research* 50 (5): 1319-1354.

Robinson, J. R., Y. Xue, and Y. Yu. 2011. Determinants of disclosure noncompliance and the effect of the SEC review: Evidence from the 2006 mandated compensation disclosure regulations. *The Accounting Review* 86 (4): 1415–1444.

Ryans, J. 2014. Textual classification of comment letters. Working paper: University of California, Berkeley.

SEC: Securities and Exchange Commission. 1998. *A Plain English Handbook: How to Create Clear SEC Disclosure*. SEC Office of Investor Education and Assistance. Washington, D.C.: Government Printing Office.

Appendix

Variable Definitions

AudTenure	the number of consecutive years (through year *t*) during which the auditor has audited the company (AA)
BankruptcyRank	the decile rank of Altman's bankruptcy score, calculated following DeFond and Hung (2003) and Altman (1968) (Compustat)
Big4	an indicator variable set equal to one if the company is audited by Deloitte, Ernst & Young, KPMG, or PricewaterhouseCoopers, and zero otherwise (AA)
CL_Restate	an indicator variable set equal to one if the comment letter resulted in a restatement, and zero otherwise. To determine whether the comment letter resulted in a restatement, we use the AA Non-Reliance database to identify restatement announcements with a file date between the date of the initial SEC comment letter and the public dissemination date of the conversation. We then read all restatement-related disclosures and all letters in the comment letter conversation to determine whether the comment letter triggered the restatement.
CompanyAge	the total number of years (through year *t*) assets are reported (Compustat)
ExtFinancing	the sum of equity financing and debt financing scaled by total assets, measured in *t*+1, following Ettredge et al. (2011) (Compustat)
Filings	the number of filings (e.g., 10-K, 8-K, 10-Q, DEF 14A) addressed in the initial SEC comment letter, based on the number of filings reported in LIST_FORM_DATES (AA)
Litigation	an indicator variable set equal to one if the company is in a litigious industry (four-digit SIC industry codes 2833-2836, 3570-3577, 3600-3674, 5200-5961, or 7370-7374, following Francis et al. (1994)), and zero otherwise (Compustat)
lnAssets	the natural log of total assets (Compustat)
Loss	an indicator variable set equal to one if income before extraordinary items (IB) is negative, and zero otherwise (Compustat)
M&A	an indicator variable set equal to one for non-zero acquisitions or mergers as reported on a pre-tax basis (AQP), and zero otherwise (Compustat)

MWeak	an indicator variable set equal to one if the internal control audit opinion (under SOX Section 404) or the management certification (under SOX Section 302) is qualified for a material weakness, and zero otherwise (AA)
NumTopics	the total number of issue codes (assigned by AA) in the initial comment letter from the SEC (LIST_CL_ISSUE_TAXGROUP) (AA)
Response_Readability	negative one times the *Fog* index of the first substantial letter from the company (CORRESP file type), calculated using the Lingua-EN-Fathom package in Perl. See Section 3 for additional details on how we remove non-substantial company responses (e.g., those requesting an extension)
Restate	an indicator variable set equal to one if the company filed a restatement in the two years before the receipt of the comment letter, and zero otherwise (AA)
Rounds	the number of SEC letters (UPLOAD file type) in the conversation (AA)
SEC_Readability	negative one times the *Fog* index of the first letter from the SEC (UPLOAD file type), calculated using the Lingua-EN-Fathom package in Perl
SEC Office FE	indicator variables for each SEC Division of Corporation Finance office represented in the sample. SEC offices are assigned based on the two-digit industry code (Compustat)
Second-Tier	an indicator variable set equal to one if the company is audited by BDO Seidman, Crowe Horwath, Grant Thornton, or McGladrey & Pullen, and zero otherwise (AA)
SECFollowUp	an indicator variable set equal to one if the second SEC letter (UPLOAD file type) is not a "no further comment" letter, and zero otherwise
SECRespTime	the natural log of the number of days between the company's first substantial response (CORRESP file type) and the second letter from the SEC (UPLOAD file type) (AA)
Segments	the number of business segments reported (Compustat)
TotalRespTime	the natural log of the number of days between the first letter from the SEC and the final "no further comment" letter (AA)
Year FE	indicator variables for each fiscal-year represented in the sample (Compustat)

TABLE 1
Sample selection

Unique conversation ID numbers in the AA Comment Letters database as of October 2014	**77,726**
Less: conversations unrelated to a 10-K filing	(55,539)
Plus: conversations related to more than one 10-K filing	674
Less: conversations that appear incomplete (see Section 3)	(4,872)
Complete 10-K conversations	**17,989**
Less: conversations unable to match to Compustat database or with missing AA opinion data	(3,174)
Less: conversations where assets are less than $1 million	(418)
Less: missing control variables	(55)
Final Sample	**14,342**

TABLE 2
Descriptive statistics

	N	mean	sd	p25	p50	p75
SECRespTime	14,342	26.148	29.515	10.000	18.000	31.000
SECFollowUp	14,342	0.461	0.498	0.000	1.000	1.000
TotalRespTime	14,342	77.774	78.848	31.000	54.000	97.000
Rounds	14,342	2.735	1.037	2.000	2.000	3.000
CL_Restate	14,342	0.032	0.178	0.000	0.000	0.000
Response_ Readability	14,342	-19.035	2.294	-20.409	-19.040	-17.669
SEC_Readability	14,342	-17.065	1.845	-17.957	-17.044	-16.231
lnAssets	14,342	14,325	106,254	176	957	4,270
MWeak	14,342	0.079	0.270	0.000	0.000	0.000
Restate	14,342	0.150	0.357	0.000	0.000	0.000
CompanyAge	14,342	21.477	16.037	9.000	16.000	28.000
Loss	14,342	0.303	0.460	0.000	0.000	1.000
BankruptcyRank	14,342	5.499	2.870	3.000	5.000	8.000
Segments	14,342	1.990	1.816	1.000	1.000	3.000
M&A	14,342	0.149	0.356	0.000	0.000	0.000
ExtFinancing	14,342	0.020	0.353	-0.046	-0.003	0.030
Litigation	14,342	0.258	0.438	0.000	0.000	1.000
Big4	14,342	0.728	0.445	0.000	1.000	1.000
Second-Tier	14,342	0.102	0.303	0.000	0.000	0.000
AudTenure	14,342	6.722	3.508	4.000	7.000	9.000
Filings	14,342	1.709	0.942	1.000	1.000	2.000
NumTopics	14,342	10.354	7.202	5.000	9.000	14.000

All variables are as defined in the Appendix except that *SECRespTime*, *TotalRespTime*, and *lnAssets* are reported in raw (unlogged) form.

TABLE 3

Correlation matrix for independent variables

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	Response_Readability		0.35	-0.10	0.01	-0.02	-0.01	-0.02	-0.05	-0.02	-0.02	-0.01	-0.06	-0.12	0.02	-0.03	-0.06	-0.02
2	SEC_Readability	0.24		-0.08	0.02	0.01	-0.01	0.01	-0.03	0.02	-0.08	-0.01	-0.03	-0.04	0.01	-0.09	0.02	0.16
3	lnAssets	-0.10	-0.05		-0.19	-0.05	0.36	-0.35	0.13	0.07	0.18	-0.19	-0.20	0.55	-0.19	0.39	-0.07	-0.10
4	MWeak	0.01	0.02	-0.20		0.28	-0.11	0.16	0.07	0.00	-0.05	0.07	0.02	-0.16	0.04	-0.18	0.03	0.06
5	Restate	-0.02	0.01	-0.04	0.28		-0.04	0.08	0.05	0.01	-0.01	0.03	0.03	-0.01	-0.01	-0.09	0.02	0.06
6	CompanyAge	0.00	0.01	0.38	-0.10	-0.05		-0.20	-0.08	0.18	0.05	-0.19	-0.10	0.19	-0.05	0.40	-0.06	-0.02
7	Loss	-0.02	0.00	-0.36	0.16	0.08	-0.20		0.33	-0.06	-0.06	0.20	0.12	-0.21	0.06	-0.17	0.03	0.05
8	BankruptcyRank	-0.05	-0.03	0.10	0.07	0.05	-0.07	0.33		-0.12	0.00	0.15	-0.19	-0.09	0.01	-0.06	-0.01	-0.04
9	Segments	-0.02	0.02	0.18	-0.02	0.00	0.26	-0.09	-0.07		0.02	-0.06	-0.03	0.14	-0.05	0.07	0.00	0.06
10	M&A	-0.02	-0.05	0.18	-0.05	-0.01	0.05	-0.06	0.00	0.03		0.01	0.03	0.10	-0.03	0.14	-0.04	-0.07
11	ExtFinancing	-0.01	0.00	-0.16	0.06	0.02	-0.09	0.16	0.10	-0.03	-0.01		0.02	-0.13	0.03	-0.14	0.01	-0.01
12	Litigation	-0.06	-0.02	-0.19	0.02	0.03	-0.12	0.12	-0.19	-0.09	0.03	0.05		0.01	0.02	-0.01	0.03	0.02
13	Big4	-0.12	-0.02	0.56	-0.16	-0.01	0.21	-0.21	-0.09	0.16	0.10	-0.09	0.01		-0.55	0.38	-0.04	-0.06
14	Second-Tier	0.02	0.02	-0.16	0.04	-0.01	-0.07	0.06	0.01	-0.05	-0.03	0.00	0.02	-0.55		-0.17	0.04	0.02
15	AudTenure	-0.02	-0.07	0.38	-0.18	-0.09	0.34	-0.18	-0.06	0.10	0.15	-0.07	-0.01	0.37	-0.17		-0.09	-0.15
16	Filings	-0.05	0.00	-0.06	0.03	0.02	-0.06	0.02	-0.01	-0.01	-0.04	-0.01	0.03	-0.04	0.04	-0.10		0.34
17	NumTopics	0.00	0.09	-0.09	0.07	0.07	-0.02	0.05	-0.04	0.05	-0.07	-0.01	0.03	-0.07	0.02	-0.16	0.35	

All variables are as defined in the Appendix. Pearson (Spearman) correlation coefficients are reported in the lower (upper) section. Values in bold are statistically significant (p-values less than 0.10).

TABLE 4
The association between comment letter response readability and comment letter remediation costs

This table presents the results of the estimation of equation (1) where the dependent variable is one of five measures, reported in Columns (1) – (5) respectively: *SECRespTime*, *SECFollowUp*, *TotalRespTime*, *Rounds*, *CL_Restate*. Columns (1) and (3) are estimated using OLS, columns (2) and (5) are estimated using logistic regression, and Column (3) is estimated using Poisson regression. Two-tailed *p-values* are based on cluster-robust standard errors (clustered by company). *, **, *** denote significance at the 0.1, 0.05, and 0.01 level, respectively. All variables are as defined in the Appendix.

DV =	(1) SECRespTime		(2) SECFollowUp		(3) TotalRespTime		(4) Rounds		(5) CL_Restate	
	coef	p-value	coef	p-value	coef	p-value	coef	p-value	coef	p-value
Intercept	2.432***	0.000	-2.844***	0.000	3.624***	0.000	0.653***	0.000	-4.503***	0.000
Response_Readability	-0.023***	0.000	-0.051***	0.000	-0.025***	0.000	-0.005***	0.000	-0.059**	0.012
SEC_Readability	-0.006	0.151	0.022**	0.032	-0.001	0.746	0.003**	0.045	0.064***	0.009
lnAssets	0.029***	0.000	0.071***	0.000	0.035***	0.000	0.018***	0.000	-0.143***	0.000
MWeak	0.047	0.128	0.133*	0.073	0.119***	0.000	0.049***	0.000	0.222	0.131
Restate	0.045**	0.046	0.086	0.106	0.050***	0.006	0.010	0.262	0.163	0.226
CompanyAge	-0.002***	0.006	0.000	0.895	0.000	0.357	0.000	0.448	-0.011**	0.018
Loss	0.089***	0.000	0.137***	0.004	0.083***	0.000	0.021**	0.012	0.150	0.238
BankruptcyRank	-0.003	0.403	0.000	0.987	-0.002	0.459	0.001	0.592	0.015	0.413
Segments	0.009*	0.055	-0.006	0.573	0.003	0.483	-0.001	0.740	-0.013	0.736
M&A	-0.029	0.179	0.036	0.523	0.001	0.949	0.012	0.223	-0.223	0.278
ExtFinancing	-0.015	0.510	0.042	0.382	-0.005	0.787	0.009	0.418	-0.094	0.187
Litigation	-0.045**	0.043	0.085	0.139	-0.028	0.150	0.015	0.125	-0.145	0.393
Big4	-0.108***	0.000	-0.495***	0.000	-0.269***	0.000	-0.141***	0.000	-1.184***	0.000
Second-Tier	-0.108***	0.001	-0.402***	0.000	-0.228***	0.000	-0.106***	0.000	-1.083***	0.000
AudTenure	0.001	0.835	0.005	0.433	0.005**	0.038	0.001	0.612	-0.020	0.322
Filings	0.015*	0.067	0.020	0.330	0.001	0.912	-0.007**	0.049	0.016	0.749
NumTopics	0.021***	0.000	0.101***	0.000	0.036***	0.000	0.014***	0.000	0.069***	0.000

Year FE	Yes	Yes	Yes	Yes	Yes
SEC Office FE	Yes	Yes	Yes	Yes	Yes
N	14,342	14,342	14,342	14,342	14,342
Adjusted/ Pseudo R^2	0.142	0.104	0.200	0.015	0.176
Area Under ROC Curve		0.714			0.820

TABLE 5
Additional analysis: alternative measures of comment letter response readability

This table presents the results of the estimation of equation (1) where the dependent variable is one of five measures, reported in Columns (1) – (5) respectively: *SECRespTime*, *SECFollowUp*, *TotalRespTime, Rounds, CL_Restate*. Columns (1) and (3) are estimated using OLS, columns (2) and (5) are estimated using logistic regression, and Column (3) is estimated using Poisson regression. Each row represents a separate estimation where *Response_Readability* is measured using one of four alternative measures, each of which is transformed such that higher values represent more readable responses: (a) the Flesch Reading Ease Index (*Flesch*), (b) the Kincaid Index times negative one (*Kincaid*), (c) length in number of words times negative one, divided by 100 (*Words*), and (4) length in number of characters times negative one, divided by 1,000 (*Characters*). Coefficients for control variables have been suppressed for brevity. The sample size in all estimations is 14,342. Two-tailed *p-values* are based on cluster-robust standard errors (clustered by company). *, **, *** denote significance at the 0.1, 0.05, and 0.01 level, respectively. All variables are as defined in the Appendix.

DV =	(1) SECRespTime		(2) SECFollowUp		(3) TotalRespTime		(4) Rounds		(5) CL_Restate	
	coef	p-value	coef	p-value	coef	p-value	coef	p-value	coef	p-value
(a) Flesch	-0.008***	0.000	-0.015***	0.000	-0.008***	0.000	-0.001***	0.009	-0.013*	0.072
Adj/Pseudo R²	0.142		0.104		0.200		0.014		0.175	
ROC			0.714						0.819	
(b) Kincaid	-0.025***	0.000	-0.056***	0.000	-0.028***	0.000	-0.005***	0.000	-0.065**	0.013
Adj/Pseudo R²	0.142		0.104		0.199		0.015		0.177	
ROC			0.714						0.820	
(c) Words	-0.017***	0.000	-0.036***	0.000	-0.020***	0.000	-0.005***	0.000	-0.029***	0.000
Adj/Pseudo R²	0.174		0.126		0.261		0.017		0.186	
ROC			0.734						0.827	
(d) Characters	-0.024***	0.000	-0.051***	0.000	-0.028***	0.000	-0.007***	0.000	-0.043***	0.000
Adj/Pseudo R²	0.173		0.125		0.260		0.017		0.186	
ROC			0.733						0.827	

TABLE 6
The determinants of comment letter response readability

This table presents the results of the OLS estimation of equation (2) where the dependent variable is *Response_Readability*. Two-tailed *p-values* are based on cluster-robust standard errors (clustered by company). *, **, *** denote significance at the 0.1, 0.05, and 0.01 level, respectively. All variables are as defined in the Appendix.

DV =	*Response_Readability*	
	coefficient	**p-value**
Intercept	-12.039***	0.000
SEC_Readability	0.290***	0.000
lnAssets	-0.122***	0.000
MWeak	0.023	0.761
Restate	-0.133**	0.013
CompanyAge	0.002	0.121
Loss	-0.156***	0.002
BankruptcyRank	-0.014	0.101
Segments	0.000	0.972
M&A	-0.006	0.912
ExtFinancing	-0.066	0.158
Litigation	-0.027	0.672
Filings	-0.110***	0.000
NumTopics	-0.005*	0.060
Year FE	Yes	
SEC Office FE	Yes	
N	14,342	
Adjusted R^2	0.094	