Litigation Risk, Financial Reporting Quality, and Critical Audit Matters in the Audit Report: Early U.S. Evidence

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Abstract

This study presents evidence on the critical audit matters (CAMs) communicated in audit reports following the adoption of the new audit standard – AS 3101. A CAM is defined as any matter arising from the audit of the financial statements relating to material accounts or disclosures, that were communicated to the audit committee, and that involved especially challenging, subjective, or complex auditor judgment (PCAOB, 2017). I examine whether the perceived increased exposure to litigation risk will affect auditor CAM reporting behavior and how the reported CAMs map into financial reporting quality. Consistent with litigation hypothesis, I find a positive association between litigation risk and number of CAMs communicated in the audit report, suggesting that auditors try to preempt negative consequences from shareholder lawsuits by reporting more CAMs when litigation risk is higher. The results also show that the number of CAMs in the audit report increases as financial reporting quality decreases, suggesting that audit reports reflect the quality of financial statements. On the other hand, I do not find significant relationships between litigation risk or financial reporting quality and CAMs readability. However, as the quality of financial reporting decreases, in presence of litigation risk, the CAMs readability decreases significantly. This decrease is driven by auditor response rather than CAM description, consistent with obfuscation hypothesis. These results suggest complementary effects of litigation risk, financial reporting quality, and their interaction on the quantity and quality of CAM disclosures. Lastly, I examine the variation in audit effort and costs and find that audit fees and audit report lags are positively associated with number of CAMS but not associated with their readability. Overall these results are consistent with the notion that auditors will disclose issues they are legally obligated to without necessarily making them more readable or understandable.

Keywords: Critical Audit Matters, Audit Report, Litigation Risk, Financial Reporting Quality, Audit Fees, Disclosure Readability.

1. Introduction

The public auditor is an important mediator between investors and public companies with the critical role of providing reasonable assurance that the financial statements are free of material misstatements. However, the traditional pass/fail audit reporting model has led to a highly standardized audit report that provides little information, creating an expectation gap between the auditor and the users of financial statements. After numerous calls from investors to address this issue, the PCAOB issued a new audit reporting standard that requires auditors to communicate the critical audit matters (CAMs) that surfaced during the audit engagement. A CAM is defined as any matter arising from the audit of the financial statements in areas involving material accounts or disclosures, that were communicated or required to be communicated to the audit committee, and that involved especially challenging, subjective, or complex auditor judgment (PCAOB, 2017). A CAM disclosure has two components: (1) the description of the matter and principal considerations that led the auditor to determine that a matter is critical, and (2) the auditor's response as to how the CAM was addressed during the audit engagement. This study examines whether the quantity and quality of CAM disclosures are associated with litigation risk, financial reporting quality, and the interaction between the two. It also examines whether and to what extent audit effort and costs vary with the quantity and quality of CAM disclosures.

The Statement on Audit Standard no. 107, Section 312 (AICPA, 2005), that provides guidance on auditors' considerations of audit risks, describes litigation risk as an important component of auditors' business risk.[1] Indeed, during the entire PCAOB public outreach period prior to the issuance of the new reporting standard, auditors have expressed as one of the major concerns that

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[1] SAS no. 107, Section 312, states that auditors are exposed to loss of or injury to their professional practice from litigation regarding financial statements audited and reported on. Available here:
https://www.aicpa.org/content/dam/aicpa/research/standards/auditattest/downloadabledocuments/au-00312.pdf

the new requirements would significantly increase the exposure to legal liabilities.[2] For example, in one of its comment letters, the Center for Audit Quality (CAQ), cautioned on the substantial risk that whatever the auditor communicates in the report might be challenged after the fact, for example in a shareholder lawsuit following a stock price decline.[3] Recent experimental studies using jurors as participants, provide mixed findings on the effect of a CAM disclosure on jurors' assessment of auditor liability (e.g. Brasel et al., 2016; Backof et al., 2018). The evidence seems inconclusive and it is unclear as to whether and how these findings might affect audit practice. However, more closely related to this study, earlier archival literature confirms that auditors consider litigation risks in their reporting decisions. For example, Kaplan and Williams (2013) and Krishnan and Krishnan (1996) find that ex-ante litigation risk increases the likelihood that auditor issues a going concern report. Consistent with the litigation hypothesis (Skinner, 1994), these findings suggest that when litigation risk is high, auditor will issue a report that may serve as a forewarning to financial statement users in order to preempt negative consequences from eventual shareholder lawsuits. Hence, I hypothesize that the incentive to mitigate legal liabilities will motivate the auditor to include more CAMs in the audit report when litigation risk is higher.

The new reporting requirements intend to avoid standardized language since the PCAOB has guided that each CAM be tailored to the specific audit engagement (PCAOB, 2017). Moreover, the descriptions are also expected to be at a level that investors and other financial statement users would understand (PCAOB, 2019). The guidance on plain English writing and issues to avoid when communicating in regulatory filings, part of the SEC's Plain English Handbook (1998), reinforces the expectation that auditor disclosures should be easy to read and process. Disclosure

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[2] The comment letters received in response to the proposed standard for the expanded auditor's report are available at: https://pcaobus.org/Rulemaking/Pages/Docket034Comments.aspx and https://www.sec.gov/comments/pcaob-2017- 01/pcaob201701.htm.

[3] The CAQ is an autonomous, nonprofit public policy advocacy organization whose members are public audit firms.

readability is defined as the effective communication of relevant information (Loughran and McDonald, 2014). Bloomfield (2008) proposes a potential negative relationship between litigation risk and 10-K readability, where in the presence of litigation risks the readability decreases in order to obfuscate the poor performance and/or because more authority in preparing the report is handed over to lawyers who normally use more complex language and legal jargon. Therefore, I hypothesize that CAMs readability is decreasing in auditor perceived litigation risk.

Traditionally, the majority of audit opinions have been unqualified (Brazel et al., 2011) and, since they are all very similar, it has been difficult to infer the relative financial reporting quality from the audit report. However, often auditors have followed professional standards that enable them to include, at their discretion, additional paragraphs of emphasis of a matter to the traditional unqualified audit report. Czerney et al. (2014) find that financial statements with audit reports containing additional explanatory language are significantly more likely to be subsequently restated than financial statements without such language, suggesting that auditors will report consistent with the inherent quality of financial statements. However, the line of research that evidences negative consequences such as client loss and decrease in future clients and fee growth (e.g. Lennox, 2000; Ettredge et al., 2011; Newton et al., 2016; Cowle and Rowe, 2018), suggests that audit market penalizes auditors for reporting information critical of management. Since CAM disclosures relate to matters that are both critical and material, they might be a source of tension or disagreement between auditor and client to the point that the auditor chooses to maintain an amiable relationship rather than making the client "look bad" when reporting CAMs.

I expect these two countervailing forces to affect the quantity and quality of CAM disclosures in different ways. Consistent with the notion that auditors will feel legally obligated to touch upon critical issues but not necessarily increase clarity on the issues, I hypothesize that as the quality of

financial reporting decreases, the number of CAMs in the audit report will increase, while CAMs' readability will decrease. This is also consistent with the notion that qualitative disclosure is more difficult to verify and with the literature that suggests that managers write less readable disclosures in order to obfuscate poor performance and poor reporting quality (i.e. obfuscation hypothesis Li, 2008; Lo et al, 2017) or because the accounting issues are inherently more complex, (i.e. information hypothesis in Bloomfield, 2008).

Next, I also consider the interaction between litigation risk and financial reporting quality. Based on the above arguments, I expect litigation risk to accentuate the relationship between financial reporting quality and CAMs disclosure whereby in presence of litigation risk, financial reporting quality is negatively (positively) associated with CAMs number (readability).

Lastly, I turn the focus on whether audit effort and costs vary with the number and readability of CAMs communicated in the audit reports. Prior studies that examine consequences of similar standard requirements in other jurisdictions such as the United Kingdom and New Zealand, (e.g. Reid et al., 2019; Li et al., 2018) report mix findings. The evidence seems inconclusive and it is unclear as to whether and how audit fees will vary in the U.S. following the new standard. However, some of the audit firms have noted that they have prepared to meet the new reporting requirements by training auditors and performing CAM disclosures dry runs (CAQ, 2018b). Additional auditor hours appear to be necessary in order to draft, review, and negotiate the new CAM disclosures with the audit committees. Therefore, I predict that audit firms will increase audit effort and charge higher audit fees as the number and readability of CAM disclosures increases.

I obtain CAMs and auditor data from Audit Analytics and client accounting data from Compustat databases. I limit the sample period to auditor signature date February 29, 2020 in order

to control for possible effects on auditor reporting behavior from COVID-19. The proxy for litigation risk follows the notion that auditor litigation risk arises solely from the association with the client (Bell et al., 2001). Therefore, I create an indicator for whether the client operates in a highly litigious industry following Francis et al. (1994) who shows that shareholder litigation of corporate disclosure varies with the industry. Their findings have been supported by later studies (e.g. Kaplan and Williams, 2013) who find higher levels of auditor litigation risk in certain industries such as computers, electronics, and biotechnology. Next, I use the absolute value of discretionary accruals estimated as suggested in Kothari et al. (2005) to proxy for financial reporting quality. I use Bog index and text length in wordcount as measures of CAMs readability while also examining the readability of CAM components: description and auditor response. Audit effort and costs are proxied by audit fees and audit report lag.

I estimate a regression model for the number and readability of CAMs in the auditor report depending on litigation risk, financial reporting quality, interaction between the two, and other covariates. Consistent with my prediction in the first hypothesis, I find a positive and significant association between litigation risk and number of reported CAMs, suggesting that auditors will attempt to mitigate legal liability by communicating more CAMs in their report. The CAMs readability, however, is not associated with litigation risk and I cannot reject the null in this case. Furthermore, as predicted, there is a negative association between financial reporting quality and the number of CAMs communicated in the audit report. The CAMs readability, however, is not associated with financial reporting quality and I cannot reject the null. Lastly, the interaction between litigation risk and financial reporting quality does not have an incremental effect on the number of CAMs but a significantly negative effect on CAMs readability as measured by the Bog

index. Overall, these results suggest complementary effects of litigation risk, financial reporting quality, and their interaction on the number and readability of reported CAMs.[4]

To test my last set of hypotheses, following prior related literature (e.g. Reid et al., 2019; Gutierrez et al., 2018), I estimate an OLS regression that models audit fees and audit report lag. As expected, the test results show that as the number of CAMs in audit report increases, audit effort and costs increase providing support for the hypothesis. However, while audit fees are not affected by CAMs readability or wordcount, the audit report lag is affected only by the CAMs length (wordcount) but not by CAMs readability. Thus, I cannot reject the null hypotheses in this case. These results are consistent with the notion that auditors will disclose issues they are legally obligated to, without necessarily making them more readable or understandable. Future research can examine why auditors focus on making the CAMs lengthier rather than making them more readable, and to what extent CAMs disclosure represent boilerplate language.

This study faces a few limitations that remain to be addressed by future research. First, the changes in reporting requirements are very recent and the limited sample size may limit the power of some of the tests which may not be able to detect a significant effect even if there is one. Second, this study uses only one year of data and therefore cannot determine whether the increase in audit costs are of temporary or persistent nature. Nevertheless, I believe that my results suggesting a negative association between financial reporting quality and number of reported CAMs can be of interest to investors when evaluating the CAMs disclosed in the audit report. Moreover, the results suggesting a positive association between number of reported CAMs and audit fees can be of

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[4] In untabulated analysis, I explore the extent of boilerplate language in CAMs using WCopyFind program (e.g., Campbell et al., 2020) to capture language similarity between each pair of CAMs. Results from regressions with Quadratic Assignment Procedure for dyadic boilerplate data show a positive and significant coefficient on pairwise Litigation risk. Moreover, a comparison of standardized coefficients from QAP analysis suggest that language similarity in CAMs is mainly affected by audit firm (0.640, p<0.001), CAM topic (0.195, p<0.001), litigation (0.013, p<0.005), audit office (0.012, p<0.001), and audit partner (0.009, p<0.001).

interest to managers when exploring ways to mitigate the high audit costs and long audit report lags. The results suggesting a positive association between litigation risk and number of reported CAMs confirm that auditors report consistent with their concerns voiced during the PCAOB public outreach period prior to standard adoption and can be of interest to standard setters when evaluating the cost benefits of new reporting requirements.

This study extends prior literature in three important ways. This is the first study to examine the reporting of CAMs in response to litigation exposure. I extend prior literature that examines auditor reporting behavior in relation to litigation risk (e.g., Kaplan and Williams, 2013; Krishnan and Krishnan, 1996) by showing that auditors will communicate more CAMs to financial statements users when they perceive higher litigation risk. Second, this study is the first to examine how CAMs communicated in the audit report relate to financial reporting quality and provides evidence consistent with auditor reporting reflecting the quality of financial statements. Lastly, this study extends prior audit fees literature by examining the association between audit fees and number of reported CAMs. I provide evidence consistent with the notion that increased effort is required when preparing audit reports that include greater number of CAMs.

The remainder of this study is organized as follows: Section 2 provides background information on auditor report requirements, reviews the related literature, and develops the hypotheses. Section 3 explains the research design. Section 4 describes the results and Section 5 concludes.

2. Background and hypotheses development

2.1. Background Information

In June 2017 the PCAOB adopted the new auditor's reporting standard – AS 3101: *The Auditor's Report on an Audit of Financial Statements When the Auditor Expresses an Unqualified*

Opinion – with the objective of making the audit report more relevant to investors by requiring auditors to provide more information about the specific audit engagement. The standard introduced the most significant change to the audit report in the last 70 years – a considerable expansion of the binary model. Prior research on users' assessment of the auditor's report has evidenced the existence of an expectation gap between financial statement users and auditors (Church et al., 2008). While still useful as confirming evidence, the traditional pass/fail audit report has been considered insufficient in the recent increased information asymmetry between investors and companies due to growing complexity in financial reporting (Ferguson, 2016). Thus, the AS 3101 aims at narrowing, if not closing, the expectation gap formed over years between investors' demand for information and what audit reports provide.

The new standard is the culmination of a long process that began with the U.S. Department of the Treasury's Advisory Committee on the Auditing Profession recommending on its 2008 Final Report that PCAOB should consider making improvements to the auditor's standard reporting model. Following this recommendation, the PCAOB started a process of outreach to investors, auditors, audit committee members, and preparers of financial statements asking for their views on audit report. Based on the concerns expressed from investors and other financial statement users, in June 2011 the PCAOB issued a concept release seeking public comments on potential changes to the audit reporting model.[5]

In August 2013—two years and 155 comment letters later—the Board issued the first proposal of the new auditor reporting standard which received great interest from many different stakeholders.[6] The inclusion of CAMs as part of an expanded audit report draw particular attention.

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[5] See the PCAOB's Concept Release at https://pcaobus.org//Rulemaking/Docket034/Concept_Release.pdf
[6] Comment letters received in response to the proposed standard for the expanded auditor's report are available at: https://pcaobus.org/Rulemaking/Pages/Docket034Comments.aspx and https://www.sec.gov/comments/pcaob-2017- 01/pcaob201701.htm.

The majority of the commenters shared the PCAOB view that CAMs could help investors and other financial statement users focus on aspects of financial statements that the auditor also found to be challenging and could enable them to analyze more closely any related financial statement accounts and disclosures. However, there were some investors that believed the proposal did not go far enough in mandating that auditors share their expert opinions of risks in the company's accounting, financial reporting, or operations. Meanwhile, many of the auditors commented that the requirements were too burdensome (Hanson, 2016).

Among the suggestions for improving the proposed standard, the CAQ cautioned that any expansion of the auditor's report is almost certain to lead to additional legal liability exposure for the independent auditor: "There is a real and substantial risk that whatever the auditor says will be challenged, after the fact, for example following a stock price decline. An investor might allege that the auditor should have said more in its reporting of CAMs, claiming that some detail known to the auditor should have been communicated in the report."[7]

After considering the different perspectives from all interested parties, in June 2017, the PCAOB adopted the new auditor reporting standard, AS 3101, approved by the SEC in October 2017. According to AS 3101, the audit report should disclose CAMs encountered during a specific audit engagement where a CAM is defined as a matter required to be communicated to the audit committee, that relates to accounts or disclosures that are material to the financial statements, and involved especially challenging, subjective, or complex auditor judgment. Besides the topic, the CAM disclosure includes a description of the matter and principal considerations that led the auditor to determine the matter as a CAM, and how the CAM was addressed during the audit (PCAOB, 2019; CAQ, 2018). Although research findings have suggested that the auditor's report

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[7] https://pcaobus.org/Rulemaking/Docket034/99b_CAQ.pdf

may be enhanced by including additional information, potential concerns are that the report may become lengthy or the wording may remain boilerplate (Church et al., 2008). The standard intends to avoid standardized language by requiring that each CAM should be specific to the audit engagement circumstances. The information included in the CAM is expected to provide a clear, concise, and understandable discussion of the issue and to be at a level that investors and other financial statement users would understand (PCAOB, 2019). Moreover, the guidance on plain English writing and issues to avoid when communicating in regulatory filings, in the SEC's Plain English Handbook(1998), reinforces the expectation that auditor disclosures should be easy to read and process. Some of the issues that the SEC lists in the handbook relate to the use of lengthy sentences, superfluous and abstract words, passive voice, weak or hidden verbs, and legal and financial jargon.

2.2. Hypotheses Development

2.2.1. Litigation Risk, Financial Reporting Quality, and CAMs

Recent experimental studies using participants that act as jurors examine the effects of CAMs on (*ex-post)* auditor liability. On the one hand, Brown et al. (2020), Kachelmeier et al. (2020), and Brasel et al. (2016) find evidence consistent with a "disclaimer effect" where disclosing a CAM will act as a forewarning to financial statement users thereby lowering auditor's liability. On the other hand, Gimbar et al. (2016) and Backof et al. (2018) find that jurors perceive auditors as more negligent when the audit report includes a related CAM disclosure. Overall, the experimental evidence seems inconclusive and it is unclear as to whether and how these findings may affect audit practice.

SAS no. 107, Section 312, that provides guidance on the auditor's considerations of audit risks, describes litigation risk as a component of business risk suggesting that auditors should factor in

litigation risks when setting fees, planning and conducting their work, and also when issuing reports (AICPA, 2005). Literature has shown that auditors face considerable reputation losses beyond litigation damages (Weber et al., 2008; Skinner and Srinavasan, 2012). Given the potential financial and reputational costs at stake, auditors respond in some way to heightened litigation risk. Consistently, prior archival research finds that litigation risk is positively associated with audit fees (Venkataraman et al., 2008) and auditor resignation (Shu, 2000; Krishnan and Krishnan, 1997). Moreover, consistent with litigation hypothesis (Skinner, 1994), studies also confirm that auditors consider litigation risk in their reporting decisions. For example, Kaplan and Williams (2013) and Krishnan and Krishnan (1996) find that higher perceived litigation risks increase the likelihood that auditor issues a going concern report. These findings suggest that when litigation risk is higher, auditors may issue a report that serves as a warning to financial statement users in order to preempt negative consequences like shareholder lawsuits and associated legal costs. Thus, I expect auditors to increase the number of reported CAMs in the presence of high litigation risk.

From a qualitative perspective, tailoring the disclosure to reflect specific circumstances of the matter while simultaneously ensuring readability and understandability from the perspective of public investors maybe particularly challenging in the presence of high litigation risk. For example, in the discussion of Li (2008), Bloomfield (2008) argues that firms might issue less readable disclosures to shield themselves from litigation if more authority over the writing of the report is handed over to lawyers, who are known for using more complex language. In the presence of litigation risk, I expect that CAMs readability will be relatively lower:

> ***H1a. Litigation risk is positively associated with the number of CAMs in the audit report.***

> ***H1b. Litigation risk is negatively associated with the readability of CAMs in the audit report.***

The public auditor has the critical role of providing reasonable assurance that the financial statements are free of material misstatements (PCAOB, 2018). However, the traditional model has led to a highly standardized audit report that provides little information to financial statements users. The majority of audit opinions are unqualified (Brazel et al., 2011). As such, it is difficult to infer anything with respect to the relative financial reporting quality of public companies.

Auditors, however, often have followed professional standards that enable them to include, at their discretion, additional paragraphs of emphasis of a matter to the traditional unqualified audit report. Czerney et al. (2014) examine whether there is an association between the additional explanatory language and financial statements quality and find that financial statements with audit reports containing explanatory language are significantly more likely to be subsequently restated than financial statements without such language. Their results support the notion that auditors can expand their reports in order to reflect the inherent quality of financial statements.

However, unlike the explanatory language, CAM disclosure relates to matters that are both critical and material and may serve as a source of tension or disagreement between the auditor and the client to the point that would cause the auditor to choose between maintaining an amiable relationship or risk making the client "look bad" when reporting CAMs. Prior literature examining the behavior of unhappy clients evidences a higher likelihood of client loss. Lennox (2000) finds that auditor changes occur more often after companies receive modified opinions. Also, Ettredge et al. (2011) and Newton et al. (2016) show that clients engage successfully in shopping for clean internal control opinions. Furthermore, the loss of a client can have a negative domino effect on other clients, too. For example, Cowle and Rowe (2018) examine whether the audit market penalizes auditors for reporting information critical of management and find that following the issuance of an internal control material weakness audit opinion, the audit firm experiences an

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overall decrease in future clients and fee growth. These results support the notion that the audit market disincentivizes auditors from disclosing critical information about their clients.

These two countervailing forces may affect the quantity and quality of CAM disclosures in different ways. On the one hand, in order to comply with standard requirements and professional standards, we would expect auditors to expand their reports and the number of CAMs to increase as the financial statements quality decreases, thus reflecting a number of accounting issues. On the other hand, from a qualitative perspective, it is inherently more difficult to write about critical issues. Moreover, prior studies argue that qualitative disclosure shares key characteristics of cheap talk and is usually more difficult to verify, compared to quantitative disclosure (Baginski et al., 2016). Further, management disclosures literature shows that managers write less readable disclosures in order to obfuscate poor performance (Li, 2008; Lo et al, 2017), supporting the notion that managers may not want investors to understand a subject they are legally obligated to touch upon. To the extent that auditors feel compelled to tailor the disclosure in a way that does not make them and their client "look bad", they are likely to craft more complex and less readable CAM disclosures. Hence, the second set of hypotheses:

> ***H2a. Financial reporting quality is negatively associated with the number of CAMs in the audit report.***

> ***H2b. Financial reporting quality is positively associated with the readability of CAMs in the audit report.***

Lastly, we also need to consider the interplay between litigation risk and financial reporting quality. Prior literature suggests that the audit environment and jurors culpability conclusions create incentives for "overly cautious audits" or "defensive auditing" (Peecher et al., 2013). Based on the arguments explained above, it is likely that litigation risk will accentuate the relationship between financial reporting quality and CAMs disclosure. Hence the third set of hypotheses:

H3a. In presence of litigation risk, financial reporting quality is negatively associated with the number of CAMs in the audit report.

H3b. In presence of litigation risk, financial reporting quality is positively associated with the readability of CAMs in the audit report.

2.2.3. CAMs in the Audit Report and Audit Effort

An increase in audit costs due to increased audit effort has been another major concern of auditors during the discussions of the new standard proposal. AS 3101 requires the auditor to disclose in the report the critical matters encountered during the specific audit engagement. The disclosure of each CAM should include a description of the CAM that includes the principal considerations that led the auditor to determine that the matter is a CAM, and an explanation of auditor's response to address the issue during the audit. Thus, relative to the binary pass/fail, the new model represents a significant expansion in the audit report which would require increased audit effort on both, the quantity and quality of disclosures. Quantitatively, auditors would spend more audit hours when the number of critical matters they address increases and these matters are disclosed in the report. From a qualitative perspective, tailoring the disclosure to reflect specific circumstances of the matter while ensuring understandability from the perspective of public investors would also require additional hours in preparing the audit report. Therefore, we would expect higher audit effort as the number and readability of CAMs disclosed in the audit report increases.

Studies examining similar requirements in other jurisdictions provide inconclusive evidence. Reid et al. (2019) and Gutierrez et al. (2018) examine the impact of auditor report changes in the U.K. and find no evidence of a significant increase in audit fees. On the other hand, Li et al. (2018) investigates the impact of new and revised audit reporting standards on audit fees in the New Zealand and find evidence of a significant increase in audit fees.

In the U.S. some of the audit firms have noted that they have been preparing to meet the new reporting requirements by training auditors and performing CAM disclosures dry runs prior to the standard effective date. Additional auditor hours appear to be necessary in order to identify and also to draft, review, and discuss more readable CAMs in the audit report. In response, audit firms are expected to increase audit effort and charge higher audit fees as the number and quality of CAM disclosures increases.

H4a. The number of CAMs in the audit report is positively associated with the audit effort (costs).

H4b. The readability of CAMs in the audit report is positively associated with the audit effort (costs).

I acknowledge that, due to audit market competition, audit firms might not be able to transfer the additional costs to client firms and are constrained to absorb this burden, or the dry runs have prepared auditors to effortlessly draft and report the critical matters. The extent to which these occur, biases against my predicted results.

3. Research design

3.1. Sample Construction and Variable Definition

This study performs an analysis of the cross-sectional variation of number of CAMs in the expanded audit reports. The sample includes client firms with large accelerated filer status with available data on Compustat and Audit Analytics. Since June 30, 2019, auditors have started to disclose CAMs in the audit report and Audit Analytics has been tracking the CAMs communicated in each report. I obtain from Audit Analytics data feed the text files containing the Description and the auditor Response for each CAMs and combine these components to create the CAM disclosure. I limit my sample period to February 29, 2020 for the auditor signature date, in order to control for possible changes in auditor reporting behavior due to negative consequences from COVID-19.

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I start with measuring the readability scores for each CAM (*Cam_Readability*) and its respective components, Description (*Descr_Readability*) and Response (*Resp_Readability*). I use three readability measures from prior research. The first is the Bog Index, a new multi-faceted readability measure, which captures the plain English writing attributes recommended by linguistics experts and highlighted in the SEC's Plain English Handbook (SEC, 1998b). This measure has been introduced and validated by the multi-method study from Bonsall IV et al. (2017) and is constructed using the *StyleWriter* software. The Bog index rates the style and readability of a document according to document type and the target audience. I set these criteria as "Report" and "Public", respectively. The formula considers three elements: *Sentence Bog,* which identifies readability issues stemming from sentence length and is higher for longer sentences; *Word Bog,* which captures the word difficulty and considers issues from overwriting, passive verbs, hidden verbs, legal terms, and wording phrases based on a proprietary list of more than 200,000 graded words, instead of simply counting syllables or word length as in traditional measures; and, *Pep* which reduces the index because it captures writing attributes that facilitate the understanding of a text by summing items such as interesting words and sentence variety. By construction, higher values of Bog index (*Bog*) indicate lower readability. I also employ the simple document length measured by the number of words contained in the document (*Length*).

Next, I aggregate the data at the client firm level to calculate the number of critical matters (*nrCAMs*) communicated in the audit report and other variables, from merging with accounting data from COMPUSTAT, and audit fees and internal control weaknesses data from Audit Analytics. The proxy for litigation risk is based on the notion that auditor litigation risk of shareholders lawsuits arises solely from the association with the client (Bell et al., 2001). Hence, I follow prior literature (e.g. Francis et al., 1994; Cassell et al., 2013) and create an indicator

variable, *Litigation*, equal to one for client firms in highly litigious industries such as biotechnology (SIC codes 2833-2836), computers (SIC codes 3570-3577 and 7370-7374), electronics (SIC codes 3600-3674), and retailing (SIC codes 5200-5961), and zero otherwise. To proxy for financial reporting quality, I use the absolute value of discretionary accruals (*Abs_da*) estimated from a regression based on the Jones (1991) modified model (Dechow et al. 1995) as adjusted for performance in Kothari et al. (2005). By construction, higher values of absolute discretionary accruals indicate lower financial reporting quality. Lastly, to measure audit costs and effort, I use audit fees and audit report lag from the fiscal year-end date, respectively. See Appendix B for a detailed definition of all the variables and respective data sources.

3.2. Empirical Models

3.2.1. Litigation Risk, Financial Reporting Quality, and Reported CAMs

The first set of hypotheses predicts that for clients in litigious industries the auditor is more likely to issue a relatively more expanded report disclosing a greater number of CAMs that are more complex or less readable. The second set of hypotheses predicts that the financial reporting quality is positively related to the number of CAMs and CAMs that are more difficult to process. The third set of hypotheses predicts an interaction effect where the presence of litigation risk will accentuate the relationship between financial reporting quality and quantity and quality of CAMs disclosure. To test these hypotheses, I estimate the following regression model:

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\begin{aligned}
CAMs = {}& \beta_0 + \beta_1(Litigation) + \beta_2(Abs\_da) + \beta_3(Litigation \; x \; Abs\_da) + \beta_4(Tenure) + \beta_5(Big4) \\
& + B_6(Busy) + \beta_7(Size) + \beta_8(Countweak) + \beta_9(Mtb) + \beta_{10}(Roa) + \beta_{11}(Leverage) + \\
& \beta_{12}(Loss) + \beta_{13}(Exter\_fin) + \beta_{14}(Restruct) + \beta_{15}(Complexity) + \beta_{16}(Inventory) + \\
& \beta_{17}(Receivables) + IND + \varepsilon \quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad (1)
\end{aligned}
$$

The dependent variable CAMs is either the number of issues included as CAMs in the audit report (*nrCAMS*) or the *Readability* of CAMs proxied by the measures explained above. *Litigation* is the indicator equal to one when the client operates in a litigious industry and zero otherwise;

H1a predicts a positive β_1 when the model estimates the number of CAMs and H1b predicts a negative β_1 when the model estimates CAMs readability. *Abs_da* is the absolute value of discretionary accruals estimated based on Kothari et al. (2005) model; H2a predicts a positive β_2 when estimating the number of CAMs and H2b predicts a negative β_2 when estimating CAMs readability. The interaction term captures the incremental effect of financial reporting quality on CAMs in presence of litigation risk; H3a predicts a positive β_3 when estimating the number of CAMs and H3b predicts a negative β_3 when estimating CAMs readability. The model controls for the effects of auditor size (*Big4*), familiarity with client's issues (*Tenure*) and a busy financial reporting season (*Busy*). I also control for issues potentially arising from client's internal controls or other business operations and activities that could affect the variables of interest. Hence, *Countweak* is the number of internal control weaknesses over financial reporting, *Complexity* is the logarithmic value of the number of operating segments, *Receivables* is the amount of accounts receivable scaled by total assets, and *Inventory* is the total value of inventory scaled by total assets. I also control for events that could make the audit process more challenging by including the variable *Restruct* that captures whether the firm underwent any restructuring during the fiscal year. Moreover, firms that experience a loss or financial distress may systematically differ from other firms in terms of litigation risk or financial reporting. Thus, the model controls for net loss (*Loss*), debt (*Leverage*), and external financing (*Exter_fin*). Next, I control for other firm characteristics typically affecting reporting quality such total assets (*Size*), performance (*Roa*), and growth (*Mtb*). Lastly, to capture CAMs systematic differences across industries I include industry fixed effects (*IND*).

3.2.2. Reported CAMs and Audit Fees and Audit Report Lag

My fourth set of hypotheses predicts a positive association between number and readability of CAMs communicated in audit report and audit effort and costs. Following the audit fees literature (e.g., Hay et al., 2006) and the literature that examines audit fees as the result of expanded auditor report in other institutional settings (e.g., Reid et al., 2019; Gutierrez et al., 2018; Li et al., 2018), I estimate the following regression model:

$$Ln\_AFees \text{ (or } Ln\_Replag) = \gamma_0 + \gamma_1(nrCAMs \text{ or } Readability) + \gamma_2(Big4) + \gamma_3(Tenure) +$$
$$\gamma_4(Busy) + \gamma_5(Size) + \gamma_6(Countweak) + \gamma_7(Complexity) + \gamma_8(Age) +$$
$$\gamma_9(Restruct) + \gamma_{10}(Cfo) + \gamma_{11}(Receivables) + \gamma_{12}(Inventory) +$$
$$\gamma_{13}(Loss) + \gamma_{14}(Mtb) + \gamma_{15}(Roa) + \gamma_{16}(Exter\_fin) + \gamma_{17}(Zscore) +$$
$$\gamma_{18}(Litigation) + \gamma_{19}(Abs\_da) + IND + \varepsilon \tag{2}$$

The dependent variable is either the natural logarithm of audit fees (*Ln_AFees*) or the natural logarithm of audit report lag (*Ln_Replag*) calculated as the number of days between the fiscal year-end date and the auditor signature date. *nrCAMs* is the number of critical matters communicated in audit report and H4a predicts a positive and significant γ_1 coefficient. *Readability* refers to one of the scores described above, which are decreasing in higher readability, and H4b predicts a negative and significant γ_1 coefficient. Since audit effort may vary based on financial reporting season and quality and expertise of the auditor, the model controls for auditor quality (*Big4*), knowledge of client (*Tenure*) and busy season (*Busy*). Next, larger and more complex client firms require greater effort from the auditor during the audit engagement. Therefore, I control for client total assets (*Size*), operating segments (*Complexity*), cash flows from operations (*Cfo*), inventories (*Inventory*), and accounts receivable (*Receivables*). The model also controls for the effect of weaknesses in the internal controls over financial reporting (*Countweak*) and restructuring events (*Restruct*) on both, audit efforts and critical matters in audit report. I also include control variables that capture difficulties in the audit arising from client performance (*Roa*), operating loss (*Loss*) and financial distress (*Exter_fin*, *Zscore*). I also consider cases when auditing may require different levels of effort depending on client growth (*Mtb*) and life cycle (*Age*). Moreover, I control for

litigation risk and quality of financial reporting because, as explained above, I expect those to affect CAMs, while literature suggests they also affect audit effort. To capture any other systematic differences in audit effort across industries I include industry fixed effects based on the two-digit SIC codes (*IND*).

4. Results

4.1. Descriptive Statistics and Univariate Results

Table 1 reports the number of CAMs per each topic. I create the frequency distribution of CAMs across several topic categories as illustrated in Figure 1a, borrowing the taxonomy from Drake et al. (2020, pg.26) for consistency with the related literature. From a total of 3,124 reported CAMs, the most frequent categories are *Intangible* assets including Goodwill (16 percent), *Revenues* (15 percent), *M&A* or business combinations (12 percent), and *Taxes* (10 percent). The financial reporting issues represent about 6% of the total CAMs and include, among others, matters related to internal controls, policy changes, and related party transactions. The less frequent CAMs are included in the category *Other* and relate to foreign currency, regulatory assets and liabilities, shareholder valuation, SG&A, vendors, other expenses, other liabilities, balance sheet classification, and fresh start accounting. For more details on CAM categories formation refer to Appendix A borrowed from Drake et al. (2020). Figure 1b shows CAM frequency by auditor. EY has disclosed the highest number of CAMs, about 31 percent of the total. Other non-Big 4 auditors overall disclosed less than ten percent. This is not surprising given that these clients are large accelerated filers and are mostly audited by larger auditors.

After aggregating the CAMs data from Audit Analytics, there are 1,896 unique audit client-year observations. Figure 1c shows that the number of CAMs per audit report ranges from one to five where the majority (52 percent) of audit reports disclose only one CAM. All issuers received

at least one CAM in the audit report and this is consistent with the expectation mentioned in the new audit standard (AS 3101.12).[8] As shown in Table 2, Panel A, which presents the descriptive statistics for the full sample at the audit report level, the average number of disclosed CAMs is 1.65 CAMs per report, and less than 25 percent of audited clients have three or more CAMs. Furthermore, 24 percent of sample client firms are part of a highly litigious industries, less than 25 percent have a range of one to six material weaknesses in the internal controls over financial reporting, and 90 percent of them are audited by one of the big four public accounting firms.

Table 2, Panel B presents descriptive statistics of readability scores at the CAM level. The Bog index (*Cam_Bog*) ranges from 56 to 238, with a mean score of 114. Recall that higher values of Bog indicate lower document readability and the threshold that *StyleWriter* sets to the rate of "Excellent Writing" of a public report is a score of 30, meaning that none of the CAMs disclosed represents an excellent writing. To put these measures in perspective, Bonsall et all. (2017) show that the mean Bog of 10-K and management prospectus filings are about 84 and 86, respectively, after fiscal year 2000. This is consistent with the results of a more recent study, Cassell et al. (2020), who also find that while the SEC initial comment letters have a mean Bog index of 60, the companies' responses are more difficult to read as the mean Bog index is 78. Summarizing, it appears that on average, auditor CAM disclosures readability as measured by the Bog index is lower than 10-Ks and SEC comment letters. When examining each of the components, CAM description and auditor response, separately, the results show that both indexes have much wider ranges—which suggests a higher variability in these components' readabilities—than in the case

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[8] AS 3101.12 states that it is expected that, in most audits, the auditor would determine that at least one matter involved especially challenging, subjective, or complex auditor judgment.

of whole CAMs.[9] The next measure, wordcount (*Cam_length*) ranges from 122 to 1,109 words with a mean 360 words.

Table 3 shows the results from the univariate tests. As preliminary evidence, we observe positive and significant coefficients of correlations between the number of CAMs (*nrCAMs*) and audit fees (*Ln_afees*), and between the number of CAMs (*nrCAMs*) and audit report lag (*Ln_Replag*). There are also positive coefficients of correlations between litigation risk (*Litigation*) and the number of CAMs (*nrCAMs*), and absolute value of discretionary accruals (*Abs_da*) and the number of CAMs (*nrCAMs*), albeit of a weaker magnitude. Furthermore, the coefficients of correlation between litigation risk and disclosure readability are negative across all measures. On the other hand, the correlation coefficients between audit effort and disclosure readability are positive across all different measures. Meanwhile the correlation coefficients between financial reporting quality and disclosure readability are not consistent. I next proceed with multivariate tests to control for confounding effects from the other identified factors.

4.2. Multivariate Results

4.2.1. Litigation Risk, Financial Reporting Quality, and Reported CAMs Test Results

Table 4 shows the results from model 1 when the dependent variable is the number of CAMs. I estimate a negative binomial regression to examine how litigation risk, financial reporting quality, and their interaction are related to the number of CAMs in the audit report. The first column shows the results before adding the interaction term while the second column shows the results from the expanded model. In both columns the coefficient on *Litigation* is positive and highly significant (0.1367, p<0.01; 0.1616, p<0.01) which suggests a positive association between

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[9] The zero minimum values of in the response component represent few cases of Going Concern CAM topic where the auditor do not provide explanations of how they addressed the matter during the audit.

auditor perceived litigation risk and number of CAMs in the audit report, providing support for H1a. The coefficient on *Abs_da* is also positive and significant in both columns (0.7270, p<0.01; 0.9615, p<0.01) which suggests a positive association between financial reporting quality and number of CAMs in the audit report, providing support for H2a. Lastly, the coefficient on the interaction term has a negative sign but is not significant at conventional levels. Thus, H3a is not supported.

Regarding the control variables, thet number of CAMs per audit report is positively associated with client firm size (*Size*), number of internal control weaknesses (*Countweak*), operating loss (*Loss*), number of segments (*Complexity*), and restructuring events (*Restruct*). Meanwhile, the big four public accounting firms (*Big4*) seem to disclose relatively fewer CAMs per report. Lastly, growth client firms (*Mtb*) receive fewer CAMs per report, on average.

Table 5 shows the results from model 1 when estimating OLS regressions at the CAM level where the dependent variable is either the readability of CAMs (column 1), or the readability of descriptions (column 2), or the readability of responses (column 3), measured by the logarithmic values of Bog and the total number of words. Across different measures (panels A and B), the coefficient on *Litigation* is not significant (column 1). Even when examining separately each component, CAM description (columns 2) and auditor response (column 3), the results do not support any association between litigation risk and readability. Thus, H1b is not supported.

Next, results in panels A and B show that the coefficient on *Abs_da* is not significant (column 1). I examine separately each CAM component and while there is no supporting evidence for the association between financial reporting and CAM description readability (column 2), the evidence from auditor response (column 3) is inconsistent since only the result in panel B seem to suggest

that as the financial reporting quality decreases the auditor responses in CAM disclosures become more lengthy. Thus, H2b is not supported.

Lastly, the coefficient on the interaction term between *Litigation* and *Abs_da* is significantly positive when using the Bog measure but insignificant when using the wordcount measure. This implies that even though CAMs are not necessary lengthier, they are less readable and understandable as the financial reporting quality decreases, in presence of litigation risk. Given that this reconciling explanation implies that financial reporting quality is positively associated with CAMs readability, I conclude that H3b is supported. Interestingly, results from examining each component separately in panel A, suggest that the significance on the interaction coefficient is because the auditor response (column 3) is less readable (0.5973, p<0.05) and not because the issue is inherently more complex to describe (the coefficient in column 2 is not significant).

Summarizing, the results show a positive and significant association between litigation risk and number of CAMs (H1a), a negative and significant association between financial reporting quality and number of CAMs (H2a), but no significant decrease in CAMs readability (H1b and H2b). Furthermore, the interaction between litigation risk and financial reporting quality does not have an incremental effect on the number of CAMs (H3a) but a significantly negative effect on CAMs readability (H3b) as measured by the Bog index.

4.2.2. Reported CAMs and Audit Fees and Audit Report Lag Test Results

I estimate OLS regressions, as modelled in (2), to test for the association between the quantity and readability of CAMs and the audit effort and costs proxied by audit fees and audit report lag. Table 6 reports the results from the tests where the variable of interest is the number of CAMs. In column 1, audit effort is proxied by the natural logarithm of audit fees and as expected the coefficient on the number of CAMs is positive and significant (0.0875, p<0.01); in column 2, audit

effort is proxied by the natural logarithm of the number of days between client fiscal year-end date and auditor signature date and as expected the coefficient on the number of CAMs is positive and significant (0.0124, p<0.05). These results suggest that as the number of CAMs in audit report increases, audit effort and costs increase as well, providing the support for H4a.[10]

Further, the coefficients on control variables are largely consistent with prior literature. Specifically, the big four public accounting firms charge higher audit fees as suggested by the coefficient on *Big4* (0.3001, p<0.01). Furthermore, larger (*Size*) and more complex client firms (*Complexity, Receivables*), and clients undergoing restructuring events (*Restruct*) and with more material weaknesses (*Countweak*) pay higher audit fees as suggested by the significantly positive respective coefficients.

Table 7, panel A, reports the results from model (2) where the variable of interest is CAMs readability as measured by the Bog index. These results do not show evidence that supports any associations between CAMs (Descriptions, Responses) readability and audit fees or audit report lag. Meanwhile, results in Panel B show that CAMs (Descriptions, Responses) length measured by the total number of words is not associated with audit fees, but is positively associated with the audit report lag. When examining CAMs components separately, the results suggest that this association is driven by the auditor response (column 6) and not the CAM description (column 5). Given the overall inconclusive results, I cannot reject the null hypotheses of H4b. Summarizing, while audit fees are not affected by CAMs readability or text length, the audit report lag is affected only by the CAMs text length but not by CAMs readability. It remains to be examined why auditors

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[10] In untabulated analyses, I add the firm as its own control in the pre standard adoption period. Although the requirements took effect in 2019, auditors started preparing since in 2017 when the standard was adopted, hence I drop years within the transition period and keep only fiscal year 2016 as the sample control period while allowing the number of CAMs to vary during the fiscal year 2019—the sample treatment period. Result again support the conclusion that audit fees increase as the number of CAMs in the audit report increases.

are disclosing lengthier but not more readable reports and to what extent CAMs disclosures represent boilerplate language.

5. Conclusions

This study presents early evidence on the number and textual quality of CAMs communicated in audit reports of large accelerated filers as part of new reporting requirements introduced by AS 3101. Specifically, I examine whether the number of reported CAMs in the audit report and the readability and length of CAMs varies with litigation risk, financial reporting quality, and the interaction of these two factors. I also examine whether audit effort proxied by audit fees and audit report lag varies with the number and readability of CAMs in audit reports. These examinations are motivated by the discussions and comments from public accounting firms during the PCAOB public outreach period, prior to the adoption of the new audit standard. These comments suggest that higher exposure to litigation risk of shareholder lawsuits and related legal costs, as well as higher audit costs due to increased reporting efforts are the main issues that have concerned auditors as potential negative consequences of the new reporting requirements.

First, I focus on auditor reporting behavior. One the one hand, I predict that the number of reported CAMs is increasing in litigation risk, decreasing in financial reporting quality, and decreasing in the interaction between the two, where in presence of litigation risk, the number of CAMs increases further more as the quality of financial statements drops. Given that CAMs are expected to be tailored to the specific engagement and crafted consistently with the SEC's Plain English Handbook(1998b) such that investors can easily understand them I also examine CAMs readability. On the other hand, I predict that CAMs readability is decreasing in litigation risk, increasing in financial reporting quality, and increasing in the interaction between the two, where

in presence of litigation risk, CAMs readability decreases as the quality of financial statements decreases consistent with obfuscation hypothesis.

The test results show positive and significant association between litigation risk and number of CAMs (H1a), negative and significant association and between financial reporting quality and number of CAMs (H2a), but no significant decrease in CAMs readability (H1b and H2b). Furthermore, the interaction between litigation risk and financial reporting quality does not have an incremental effect on the number of CAMs (H3a) but a significantly negative effect on CAMs readability (H3b) as measured by the Bog index. Overall, these results suggest complementary effects of litigation risk, financial reporting quality, and their interaction on the quantity and quality of reported CAMs.

Next, I focus on audit effort and costs and predict that audit fees and audit report lag are increasing in the number of CAMs in audit report, and increasing in CAMs readability and length. proxied by audit fees and audit report lag. The test results from estimating model (2) show that as the number of CAMs in audit report increases, audit effort and costs increase. However, while audit fees are not associated with the readability or length of CAMs, the audit report lag is associated with CAMs length but not with CAMs readability.

Overall these results are consistent with the notion that auditors will disclose issues they are legally obligated to, without necessarily making them more readable or understandable. Future research can examine why auditors spend more time on making the CAMs lengthier but not on making them more readable, and to what extent CAM disclosures represent boilerplate language.

This study faces a few limitations. First, the changes in reporting requirements are very recent and the limited sample size may limit the power of some of the tests which may not be able to detect a significant effect even if there is one. Second, this study uses only one of year data and it

is not able to determine whether the auditor reporting behavior and the increase in audit costs are of temporary or persistent nature. These limitations remain to be addressed by future research.

Nevertheless, I believe that the results reported in this study suggesting a negative association between financial reporting quality and number of reported CAMs can be of interest to investors when evaluating the CAMs disclosed in the audit report. Moreover, the results suggesting a positive association between number of reported CAMs and audit fees can be of interest to managers when exploring ways to mitigate the high audit costs and long audit report lags. Further, the results suggesting a positive association between litigation risk and number of reported CAMs confirm that auditors report consistent with their concerns voiced during the PCAOB public outreach period prior to standard adoption and can be of interest to standard setters when evaluating the cost benefits of new reporting requirements.

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Appendix A:
CAM Categories Based on the Taxonomy from Drake et al. (2020)

CAM Categories	Description
Intangibles	CAMs identified by Audit Analytics as relating to goodwill or other intangible assets.
Revenue	CAMs identified by Audit Analytics as relating to revenue, sales returns, interest, or other revenue.
M&A	CAMs identified by Audit Analytics as relating to business combinations.
Taxes	CAMs identified by Audit Analytics as relating to deferred taxes, uncertain tax positions, or other taxes.
Contingent Liabilities	CAMs identified by Audit Analytics as relating to warranties, insurance, or other contingent liabilities.
Property	CAMs identified by Audit Analytics as relating to PPE, capitalization, long-lived assets, reserves, or depreciation.
Investments	CAMs identified by Audit Analytics as relating to equity investments, long-term investments, research and development, other assets, or other investments.
Losses	CAMs identified by Audit Analytics as relating to allowances for losses.
Financial Reporting	CAMs identified by Audit Analytics as relating to going concerns, consolidations, related parties, policy changes, *regulatory assets and liabilities*, and internal control.
Inventory	CAMs identified by Audit Analytics as relating to inventory.
Disposals	CAMs identified by Audit Analytics as relating to disposals, discontinued operations, or asset retirement obligations.
Financial Instruments	CAMs identified by Audit Analytics as relating to derivatives or other debt.
Pensions	CAMs identified by Audit Analytics as relating to pensions.
Accounts Receivable	CAMs identified by Audit Analytics as relating to accounts receivable.
Leases	CAMs identified by Audit Analytics as relating to leases.
Stock Compensation	CAMs identified by Audit Analytics as relating to stock compensation.
Other	Includes all CAMs not categorized in the categories above, which includes CAMs identified by Audit Analytics as relating to foreign currency, other expenses, shareholder valuation, vendors, SG&A, other liabilities, balance sheet classification, fresh start accounting, *and subsidiaries/afiliates*.

APPENDIX B.
Variable Definitions

Variables of Interest	Definition (Data Source)
nrCAMs	Number or critical audit matters disclosed in the audit report since June 30, 2019. (Audit Analytics)
Cam_Bog	BOG index is the first Cam_Readability measure calculated for the whole CAM document. The formula is: Bog Index = Sentence Bog + Word Bog – Pep Where, $Sentence\ Bog = \dfrac{(Average\ Sentence\ Length)^2}{Long\ Sentence\ Limit\ (35\ words)}$ Word Bog = (Style Problems + Heavy Words + Abbrev + Special)*250 $Pep = \dfrac{(Names + Interest\ Words + Convers)*25}{Number\ of\ Words} + Sent.\ Variety$ Sentence Variety = (Standard Deviation*10) / Average Sentence Length
Descr_Bog	BOG index calculated as described above, but only for the Description part of the CAM
Resp_Bog	BOG index calculated as described above, but only for the Auditor Response part of the CAM
Cam_length	Is the Cam_Readability measure calculated as the natural logarithm of number of words in the whole CAM document.
Descr_ length	The natural logarithm of the word count of the Description part of the CAM. (Audit Analytics)
Resp_ length	The natural logarithm of the word count of the Auditor Response part of the CAM. (Audit Analytics)
Litigation	Indicator variable equal to one if the company is in a highly litigious industry, (SIC industry codes 2833–2836, 3570–3577, 3600–3674, 5200 5961, or 7370–7374, following Francis et al. (1994)), and zero otherwise.
Abs_Da	The absolute value of Discretionary Accruals is the residual from the modified Jones (1991) model ((Dechow et al. 1995), adjusted for performance as suggested by Kothari et al. (2005). (Compustat) $TA = \alpha_0 + \alpha_1(1/lag\_Assets) + \alpha_2[(\Delta SALE - \Delta AR)/lag\_Assets] + \alpha_3(PPE/lag\_Assets) + \alpha_4(lag\_NI/ lag\_Assets) + \varepsilon$
Ln_AFees	The natural logarithm of total audit fees. (Audit Analytics)
Ln_Replag	The natural logarithm of the number of days between fiscal year-end date and auditor signature date. (Audit Analytics)

Control Variables

Age	The natural logarithm of the number of years the client firm appears in Compustat plus one.
Big4	Indicator variable which equals 1 if the company is audited from one of the largest four audit firms (PWC, Deloitte, EY, and KPMG) and 0 otherwise. (Compustat)
Busy	Indicator variable if the fiscal year ends on December 31.
Complexity	Equals the logarithm of the number of operating segments of the firm. If the data is missing the variable is set equal to business segments. If both data are missing the variable is set to 1 (active firms). (Compustat)
Cfo	The cash flows from operating activities (OANCF) divided by total assets. (Compustat)
Countweak	The number of internal control weaknesses. (Audit Analytics)
Exterfin	Indicator variable equal to one for non-zero external financing (i.e. if [sstk+prstkc-dv+dltis-dltr-dlcch] > 0), and 0 otherwise. (Compustat)
Inventory	Total inventory (invt) scaled by the total assets (at). (Compustat)
Leverage	The sum of long-term debt (DLTT) and short-term debt (DLC) scaled by the total assets. (Compustat)
Loss	Indicator variable equals one if the firm has negative income before extraordinary items (IB<0). (Compustat)
Mtb	Market-to-book ratio proxies for growth; it is calculated as sum of market value of equity and total liabilities divided by total assets [(prcc_f×csho) + (lt)] / (at), winsorized at the 1% and 99% levels. (Compustat)
Receivables	Total accounts receivables (rect) scaled by the total assets (at). (Compustat)
Restructring	Indicator variable that equals 1 if the company is involved in a restructuring (rca rcd rceps rcp >0), and 0 otherwise. (Compustat)
Roa	The return on assets proxies for firm operating performance; it is the ratio of net income with total assets. (Compustat)
Size	The logarithm transformed total assets (AT). (Compustat)
Tenure	The natural logarithm of the number of years the auditor has been auditing the financial statements. (Audit Analytics)
Zscore	A proxy for financial distress, the Altman's Z-score is measured as: $((1.2*(actq-lctq) + 1.4*req+3.3*(piq+xintq) + 1.0*saleq)/atq) + 0.6*(prccq*cshoq/ltq)$, winsorized at the 1% and 99% levels. (Compustat)

FIGURE 1. Frequency Distributions
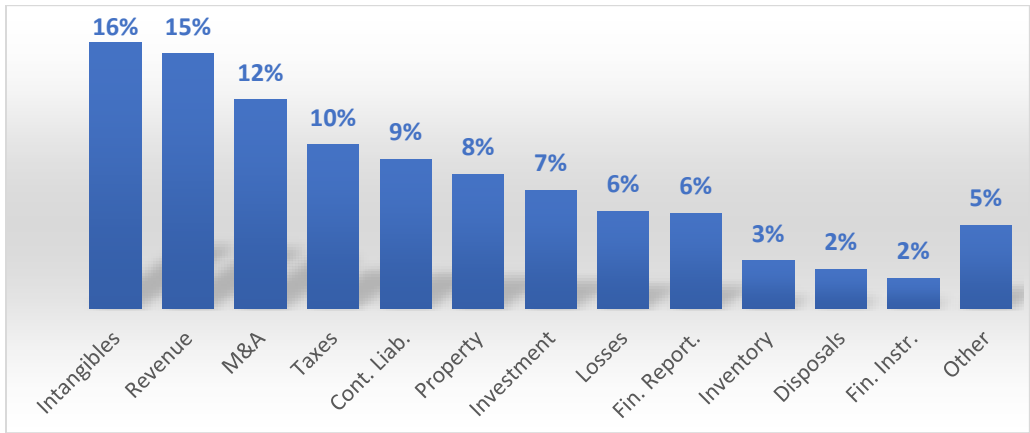
a) **Distribution of CAMs by Topic Categories**
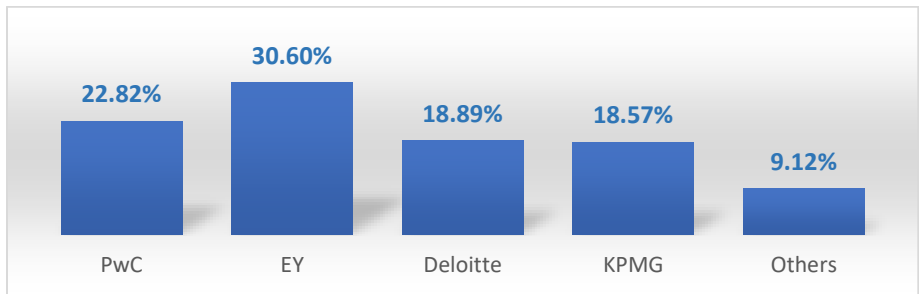
b) **Distribution of CAMs by Auditor**
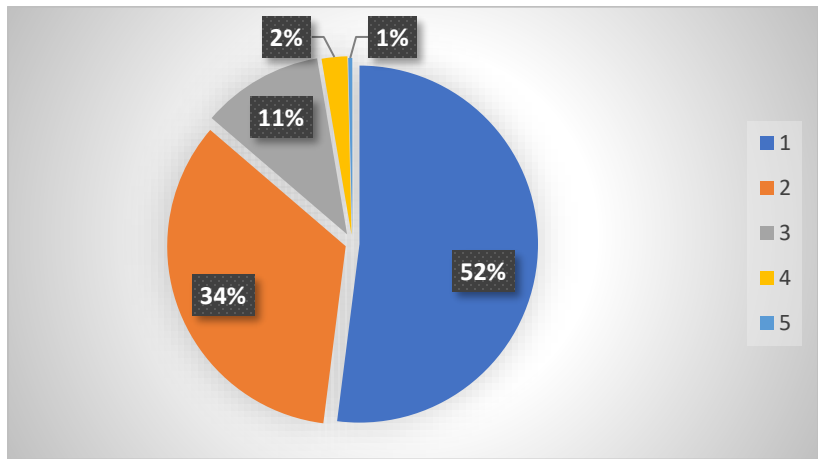
c) **Distribution of number of CAMs per Audit Report**

TABLE 1. Critical Audit Matters by Topic for Full Sample

CAM Topic	# of CAMs
Accounts/loans receivable	37
Allowance for credit losses	198
Asset retirement and environmental obligations	45
Balance sheet classification of assets	1
Business combinations	405
Consolidation	13
Deferred and capitalized costs	96
Deferred and stock-based compensation	14
Deferred income taxes	90
Depreciation and amortization	25
Derivatives and hedging	10
Discontinued operations	8
Disposals and divestitures	6
Equity investments and joint ventures	51
Foreign currency translation	1
Fresh start accounting	1
Going concern	4
Goodwill	345
Goodwill and intangible assets	49
Insurance contract liabilities	71
Interest revenue	6
Internal controls	10
Inventory	90
Leases	30
Long-lived assets	4
Long-term investments	4
Other assets	9
Other contingent liabilities	180
Other debt	43
Other expenses	6
Other income taxes	88
Other intangible assets	87
Other investments	100
Other liabilities and provisions	14
Other revenue	43
Pension and other post-employment benefits	41
Policy changes	82
Property, plant and equipment	138
Proven and unproven reserves	47
Related party transactions	14
Research and development expenses	28
Revenue from customer contracts	352
Sales return and allowances	78
Selling, general and administrative expenses	2
Shareholder valuation	3
Subsidiary/affiliate	5
Uncertain tax positions	110
Vendor/supplier rebates	6
Warranty liabilities	34
TOTAL	**3,124**

TABLE 2. Descriptive Statistics

Panel A. Firm Level

	N	Mean	St. Dev.	Min	Q1	Median	Q3	Max
nrCAMs	1,896	1.65	0.80	1	1	1	2	5
Litigation	1,896	0.24	0.43	0	0	0	0	1
Abs_da	1,559	0.04	0.05	0.00	0.01	0.03	0.05	0.41
Ln_AFees	1,884	14.89	0.98	12.21	14.20	14.76	15.50	18.16
Ln_Replag	1,896	3.972	0.16	2.64	3.91	4.03	4.06	5.15
Big4	1,896	0.903	0.30	0	1	1	1	1
Tenure	1,893	2.723	0.84	0.69	2.08	2.83	3.26	4.88
Busy	1,896	0.878	0.33	0	1	1	1	1
Size	1,896	8.644	1.65	4.16	7.50	8.52	9.62	15.07
Countweak	1,896	0.063	0.44	0	0	0	0	6
Complexity	1,726	0.818	0.72	0	0	1.10	1.39	3.22
Age	1,895	3.108	0.73	1.10	2.56	3.22	3.58	4.25
Restruct	1,896	0.390	0.49	0	0	0	1	1
Cfo	1,896	0.064	0.12	-1.10	0.03	0.07	0.11	0.57
Inventory	1,882	0.165	0.20	0	0.04	0.10	0.18	0.82
Receivables	1,854	0.055	0.09	0	0	0.01	0.09	0.49
Loss	1,896	0.194	0.40	0	0	0	0	1
Mtb	1,889	2.269	1.89	0.74	1.10	1.54	2.61	10.57
Roa	1,896	0.019	0.12	-0.62	0.01	0.03	0.07	0.28
Exter_fin	1,896	0.259	0.44	0	0	0	1	1
Zscore	1,565	3.431	4.03	-1.82	1.24	2.38	3.94	28.50
Leverage	1,891	0.325	0.22	0	0.14	0.32	0.46	1.00

Panel B. Textual Analysis Variables at the CAM Level

	N	Mean	St.Dev.	Min	Q1	Median	Q3	Max
Cam_Bog	3,124	114.06	20.88	56	100	113	126	238
Descr_Bog	3,124	113.94	24.14	27	99	112	127	365
Resp_Bog	3,124	112.59	36.54	0	92	110	129	576
Cam_length	3,124	360.42	116.30	122	279	341	423.5	1109
Descr_length	3,124	177.28	80.03	22	121	161	218	740
Resp_length	3,124	142.78	62.59	0	101	140	178	696

Note: This table presents the descriptive statistics of all variables.

TABLE 3. Correlation Coefficients

	Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)
1	nrCAMs	1																										
2	Cam_Bog	0.02	1																									
3	Descr_Bog	**0.04**	**0.73**	1																								
4	Resp_Bog	0.01	**0.64**	**0.29**	1																							
5	Cam_length	**-0.07**	**0.27**	**0.20**	**0.23**	1																						
6	Descr_length	**-0.06**	**0.22**	**0.23**	**0.19**	**0.81**	1																					
7	Resp_length	**-0.04**	**0.09**	**0.08**	**0.22**	**0.71**	**0.25**	1																				
8	Litigation	0.01	**-0.06**	-0.02	**-0.04**	**-0.12**	**-0.08**	**-0.08**	1																			
9	Abs_da	0.01	0.01	0.00	-0.01	**-0.04**	-0.02	-0.03	**0.05**	1																		
10	Ln_AFees	**0.40**	0.03	0.02	0.01	**0.08**	**0.05**	**0.05**	**-0.09**	**-0.11**	1																	
11	Ln_Replag	**0.04**	0.02	0.03	0.02	0.02	0.00	0.03	-0.01	**0.09**	**-0.15**	1																
12	Big4	**0.04**	**-0.07**	**-0.04**	**-0.09**	0.05	-0.02	**0.08**	**0.05**	**-0.08**	**0.32**	**-0.07**	1															
13	Tenure	-0.01	0.00	-0.02	0.01	**0.06**	**0.04**	**0.04**	**-0.11**	**-0.12**	**0.26**	**-0.18**	**0.13**	1														
14	Busy	-0.02	0.03	0.02	**0.04**	-0.01	0.02	-0.02	**-0.08**	-0.04	-0.05	**0.06**	-0.02	**-0.10**	1													
15	Size	**0.34**	**0.13**	**0.08**	**0.10**	**0.11**	**0.09**	**0.06**	**-0.28**	**-0.14**	**0.75**	**-0.18**	**0.15**	**0.24**	0.06	1												
16	Countweak	**0.12**	0.01	**0.08**	-0.03	-0.02	0.02	**-0.06**	**0.05**	**0.06**	0.03	**0.21**	0.01	**-0.11**	-0.05	**-0.08**	1											
17	Complexity	**0.23**	0.00	0.00	0.00	**0.10**	**0.09**	**0.07**	**-0.31**	**-0.10**	**0.45**	-0.05	**0.09**	**0.21**	-0.07	**0.41**	-0.02	1										
18	Age	**0.07**	-0.01	-0.03	0.01	**0.09**	**0.07**	**0.06**	**-0.26**	**-0.16**	**0.30**	**-0.19**	0.03	**0.51**	**-0.09**	**0.34**	**-0.14**	**0.37**	1									
19	Restruct	**0.14**	**-0.06**	**-0.07**	**-0.04**	0.04	0.02	**0.04**	0.00	**-0.07**	**0.27**	**-0.07**	**0.09**	**0.08**	**-0.09**	**0.06**	0.02	**0.14**	**0.12**	1								
20	Cfo	**-0.04**	**-0.10**	**-0.08**	**-0.06**	-0.02	**-0.04**	0.01	**-0.12**	**-0.12**	**0.09**	**-0.17**	0.03	**0.16**	**-0.12**	**0.08**	**-0.08**	**0.10**	**0.22**	**0.12**	1							
21	Receivables	-0.01	**0.15**	**0.09**	**0.14**	**0.07**	**0.07**	0.03	**-0.18**	**0.12**	-0.04	**0.12**	**-0.22**	-0.02	0.02	**0.21**	-0.02	**0.06**	**0.04**	**-0.06**	**-0.10**	1						
22	Inventory	-0.03	**-0.11**	**-0.08**	**-0.07**	**-0.04**	**-0.05**	0.01	**-0.05**	0.01	**0.07**	-0.03	0.03	**0.10**	**-0.22**	**-0.10**	0.07	**0.11**	**0.15**	**0.17**	**0.07**	**-0.07**	1					
23	Loss	**0.04**	**-0.04**	-0.02	-0.01	0.01	**0.04**	0.00	**0.24**	**0.11**	-0.09	**0.06**	0.01	**-0.16**	**0.05**	**-0.24**	0.08	**-0.16**	**-0.27**	0.03	**-0.39**	**-0.18**	-0.05	1				
24	Mtb	**-0.15**	**-0.05**	**-0.05**	**-0.04**	**-0.13**	**-0.10**	**-0.09**	**0.40**	**0.16**	**-0.20**	**-0.10**	-0.01	**-0.07**	**-0.08**	**-0.41**	0.00	**-0.28**	**-0.18**	**-0.13**	0.04	**-0.17**	0.00	**0.12**	1			
25	Roa	**-0.05**	**-0.04**	-0.03	**-0.04**	**-0.05**	**-0.05**	-0.03	**-0.23**	**-0.10**	**0.13**	**-0.14**	0.03	**0.19**	**-0.10**	**0.19**	-0.07	**0.16**	**0.28**	**0.06**	**0.75**	0.05	**0.12**	**-0.64**	-0.04	1		
26	Exter_fin	**-0.06**	0.00	0.00	-0.01	0.03	**0.04**	0.00	**0.09**	**0.07**	0.00	-0.01	-0.03	0.00	**-0.05**	-0.03	-0.03	**-0.09**	0.03	**-0.05**	**-0.06**	**0.06**	0.03	-0.01	**0.14**	-0.03	1	
27	Zscore	**-0.18**	**-0.04**	-0.02	-0.03	**-0.12**	**-0.08**	**-0.09**	**0.21**	0.03	**-0.22**	**-0.05**	**-0.06**	-0.02	**-0.12**	**-0.32**	-0.01	**-0.17**	**-0.05**	**-0.12**	**0.20**	0.01	**0.12**	**-0.08**	**0.66**	**0.22**	**0.13**	1
28	Leverage	0.01	**-0.06**	**-0.05**	**-0.07**	0.01	-0.02	0.03	-0.03	0.02	0.03	**-0.05**	**0.12**	**-0.06**	**0.07**	-0.02	0.01	0.02	**-0.05**	**0.07**	**0.04**	**-0.25**	-0.02	**0.06**	**-0.04**	-0.01	**-0.14**	**-0.42**

Note: This table shows Pearson correlation coefficients between all variables for the whole sample. Bold represent significance at the 5% level or better.

TABLE 4. Litigation risk, Financial Reporting Quality, and Number of CAMs using Negative Binomial Regressions

Variables	Pred.	(1) Coef. Est. (p-val)	(2) Coef. Est. (p-val)
Litigation	+	**0.1367*** (0.008)**	**0.1616*** (0.004)**
Abs_da	+	**0.7270*** (0.002)**	**0.9615*** (0.001)**
Litigation x Abs_da	-		-0.5519 (0.242)
Tenure		-0.0019 (0.904)	-0.0017 (0.918)
Big4		-0.1165** (0.014)	-0.1177** (0.012)
Busy		-0.0452 (0.184)	-0.0458 (0.178)
Size		0.0861*** (0.000)	0.0863*** (0.000)
Countweak		0.0561* (0.064)	0.0574* (0.059)
Mtb		-0.0196*** (0.008)	-0.0187** (0.011)
Roa		-0.0601 (0.665)	-0.0612 (0.658)
Leverage		0.0359 (0.564)	0.0412 (0.511)
Loss		0.0721* (0.068)	0.0724* (0.066)
Exter_fin		-0.0300 (0.265)	-0.0309 (0.253)
Restruct		0.0759*** (0.004)	0.0753*** (0.004)
Complexity		0.0351* (0.089)	0.0362* (0.080)
Inventory		-0.1164 (0.522)	-0.1043 (0.566)
Receivables		-0.0768 (0.518)	-0.0762 (0.522)
Ind F.E.		Yes	Yes
Intercept		Yes	Yes
Obs.		1,349	1,349

This table shows the results from negative binomial regression analysis where the dependent variable is the number of CAMs in the audit report (*nrCAMs*). See Appendix B for variable definitions. Bold indicates results corresponding to hypothesized relationship. The p-values are in parentheses. ***, **, and * denotes a significance of less than 0.01, 0.05, and 0.10, respectively, based on two-tailed t-tests. The coefficients are estimated using heteroskedasticity robust standard errors.

TABLE 5. Litigation risk, Financial Reporting Quality, and Readability of CAMs

	Pred.	(1) CAM	(2) Description	(3) Response
Panel A. Bog Index				
Litigation	-	-0.0129	0.0183	-0.0184
		(0.559)	(0.439)	(0.573)
Abs_da	-	-0.1296	-0.1248	-0.1547
		(0.295)	(0.370)	(0.406)
Litigation x Abs_da	+	**0.4046****	0.2089	**0.5973****
		(0.029)	(0.326)	**(0.036)**
Controls		Yes	Yes	Yes
Ind F.E.		Yes	Yes	Yes
Intercept		Yes	Yes	Yes
Obs.		2,212	2,212	2,212
R-squared		0.102	0.069	0.084

	Pred.	(1) CAM	(2) Description	(3) Response
Panel B. Text Length				
Litigation	-	-0.0530	-0.0561	-0.0308
		(0.147)	(0.291)	(0.534)
Abs_da	-	0.0657	-0.1993	**0.4580***
		(0.711)	(0.450)	**(0.064)**
Litigation x Abs_da	+	-0.2242	0.2000	-0.7057
		(0.525)	(0.635)	(0.203)
Controls		Yes	Yes	Yes
Ind F.E.		Yes	Yes	Yes
Intercept		Yes	Yes	Yes
Obs.		2,212	2,212	2,212
R-squared		0.109	0.082	0.074

This table shows the results from OLS regressions, at the CAM level, where the dependent variable in Panel A (B, C) is the natural logarithm of *Bog* (*RGrade*, *Length*) and higher values indicate lower readability. See Appendix B for variable definitions. Results in Column 1 refer to CAMs, while results in Columns 2 and 3 refer to each component of CAMs - Description and Response, respectively. The p-values are in parentheses. ***, **, and * denotes a significance of less than 0.01, 0.05, and 0.10, respectively. The coefficients are estimated using heteroskedasticity robust standard errors clustered at the firm level.

TABLE 6. Number of Critical Audit Matters and Audit Effort

Variables	Pred.	(1) Ln_AFees	(2) Ln_Replag.
nrCAMs	+	**0.0875*****	**0.0124****
		(0.000)	**(0.048)**
Big4		0.3001***	0.0205
		(0.000)	(0.213)
Tenure		0.0244	-0.0019
		(0.185)	(0.817)
Busy		-0.0085	-0.0171
		(0.806)	(0.256)
Size		0.4685***	-0.0351***
		(0.000)	(0.000)
Countweak		0.1184***	0.0703***
		(0.003)	(0.008)
Complexity		0.1345***	0.0008
		(0.000)	(0.920)
Age		-0.0353	-0.0117
		(0.142)	(0.194)
Restruct		0.1671***	-0.0222**
		(0.000)	(0.022)
Cfo		-0.1652	-0.1401**
		(0.399)	(0.016)
Receivables		0.4083**	0.0184
		(0.039)	(0.679)
Inventory		0.1849	0.0271
		(0.440)	(0.739)
Loss		0.0831*	-0.0092
		(0.081)	(0.509)
Mtb		0.0327***	-0.0174***
		(0.001)	(0.000)
Roa		0.1635	0.0351
		(0.485)	(0.635)
Exter_fin		0.0232	-0.0114
		(0.451)	(0.264)
Zscore		-0.0153***	-0.0009
		(0.001)	(0.572)
Litigation		-0.0228	-0.0048
		(0.702)	(0.818)
Abs_da		0.0909	0.1194
		(0.788)	(0.207)
Ind F.E.		Yes	Yes
Intercept		Yes	Yes
Observations		1,241	1,245
R-squared		0.788	0.244

This table shows the results from OLS regressions where the dependent variable in Column 1 (2) is the natural logarithm of Audit Fees (Audit Report Lag). See Appendix B for variable definitions. The p-values are in parentheses. ***, **, and * denotes a significance of less than 0.01, 0.05, and 0.10, respectively. The coefficients are estimated using robust standard errors.

TABLE 7. Readability of CAMs and Audit Effort

Panel A. Independent Variable = Bog Index

		Audit Fees			Audit Report Lag		
		(1)	(2)	(3)	(4)	(5)	(6)
	Pred.	CAM	Description	Response	CAM	Description	Response
Readability	+	0.0600	0.0685	0.0206	0.0004	0.0071	0.0081
		(0.366)	(0.209)	(0.641)	(0.984)	(0.678)	(0.593)
Controls		Yes	Yes	Yes	Yes	Yes	Yes
Ind F.E.		Yes	Yes	Yes	Yes	Yes	Yes
Intercept		Yes	Yes	Yes	Yes	Yes	Yes
Observations		2,053	2,053	2,053	2,062	2,062	2,062
R-squared		0.802	0.802	0.802	0.259	0.259	0.259

Panel B. Independent Variable = Text Length

		Audit Fees			Audit Report Lag		
		(1)	(2)	(3)	(4)	(5)	(6)
	Pred.	CAM	Description	Response	CAM	Description	Response
Readability	+	-0.0266	-0.0074	-0.0193	**0.0284****	0.0018	**0.0296*******
		(0.482)	(0.772)	(0.428)	**(0.033)**	(0.843)	**(0.001)**
Controls		Yes	Yes	Yes	Yes	Yes	Yes
Ind F.E.		Yes	Yes	Yes	Yes	Yes	Yes
Intercept		Yes	Yes	Yes	Yes	Yes	Yes
Observations		2,053	2,053	2,053	2,062	2,062	2,062
R-squared		0.802	0.802	0.802	0.261	0.259	0.264

This table shows the results from OLS regressions, at the CAM level, where the independent variable in Panel A (B, C) is the natural logarithm of *Bog* (*RGrade*, *Length*). The dependent variable in Columns 1, 2, and 3 is the natural logarithm of Audit Fees (*Ln_AFees)*, while the dependent variable in Columns 4, 5, and 6 is the natural logarithm of Audit Report Lag (*Ln_Replag*). See Appendix B for variable definitions. Results in Column 1 and 4 refer to CAMs; results in Columns 2 and 5 refer to the Description component of CAMs; and, results in Columns 3 and 6, refer to the Response component of CAMs. The p-values are in parentheses. ***, **, and * denotes a significance of less than 0.01, 0.05, and 0.10, respectively. The coefficients are estimated using heteroskedasticity robust standard errors clustered at the firm level.