

# The Disclosure and Consequences of U.S. Critical Audit Matters

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**ABSTRACT:** This study uses difference-in-differences (DiD) analyses to examine the consequences of adopting the U.S. critical audit matter (CAM) disclosure requirement for preparers and users of financial reports. The CAM requirement is one of the largest expansions of the U.S. audit report since the 1940s. We document significant changes to financial statement footnotes referenced by CAMs, which suggests an indirect consequence where management disclosure changes in areas that are expected to be scrutinized following auditor-provided disclosure. Results also suggest that, on average, CAM disclosures do not provide incremental information to the market. To further examine market reaction, we develop well-specified prediction models for the expected number and subject areas of CAMs. We find limited initial evidence that the market reacts negatively when unexpected CAMs are disclosed. Overall, our findings provide insights on the new CAM standard and particularly demonstrate its relevance to management disclosure decisions and to the market.

**Keywords:** critical audit matters; PCAOB; expanded audit report; XBRL; footnote disclosure; textual analysis; market reaction; unexpected disclosures; audit quality; audit fees.

## I. INTRODUCTION

This study examines the requirement to disclose critical audit matters (CAMs), which became effective in 2019 and is one of the largest expansions of the U.S. audit report since the 1940s. CAMs relate to accounts or disclosures that are material to the financial statements and involved especially challenging, subjective, or complex judgment during the audit. Proponents of the regulation argued that disclosing such information in the audit report would allow investors, the intended beneficiaries of the audit, to assess areas of heightened audit risk. In contrast, company management and some audit firms resisted the regulation, fearing that increasing auditor disclosure would increase costs and liability without providing valuable information (Public Company Accounting Oversight Board (PCAOB) 2017).

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Given this tension, the objective of our study is to provide empirical evidence on the consequences of the CAM requirement, particularly for the preparers and users of financial reports.

The U.S. CAM requirement is outlined in PCAOB Auditing Standard 3101 and took effect for audits of large accelerated filers with fiscal year ends on or after June 30, 2019 ([PCAOB 2017](#)).<sup>1</sup> In U.S. audit reports, external auditors are now required to identify the CAM(s) topic, describe the principal considerations that led them to determine the matter was a CAM, reference related accounts and disclosures, and describe how the CAM was addressed in the audit. The U.S. is one of the last major economies to adopt a standard expanding the audit report. With some exceptions, non-U.S. studies generally do not find significant consequences of expanding the audit report (e.g., [Gutierrez, Minutti-Meza, Tatum, and Vulcheva 2018](#); [Bédard, Gonthier-Besacier, and Schatt 2019](#); [Liao, Minutti-Meza, Zhang, and Zou 2019](#); [Reid, Carcello, Li, Neal, and Francis 2019](#); [Goh, Li, and Wang 2020](#); [Gutierrez, Minutti-Meza, Tatum, and Vulcheva 2021b](#); [Zeng, J. H. Zhang, J. Zhang, and M. Zhang 2021](#); [Lennox, Schmidt, and Thompson 2022](#)). Nevertheless, examining this regulation in the U.S. is important, because differences in the U.S. regulatory, capital market, and legal environments could lead to differences in the implementation of the expanded audit report.

We identify 2,253 large accelerated filers with available data that adopted the CAM requirement in fiscal year 2019.<sup>2</sup> An average of 1.69 CAMs are disclosed, with 49.13 percent disclosing only one CAM and 35.33 percent disclosing two CAMs. In the second year after adoption, these large accelerated filers report fewer CAMs at an average of 1.57. These descriptives are particularly striking given that these are the largest and most complex U.S. issuers. Turning to the specific subject areas of CAMs disclosed, we find that the most frequently reported CAMs are related to intangible assets, revenue, and mergers and acquisitions (M&A).

In multivariate analysis of CAM consequences, we focus on whether the CAM requirement influences the preparation of financial reports and has information value for investors. First, we examine whether there are changes to management's disclosure following auditor-provided CAM disclosures. The CAM requirement marks the first time U.S. auditors specifically point to a section of management disclosure. When auditors refer to relevant financial statement accounts or disclosures in their CAMs, investor and regulator scrutiny may be directed to these areas, and the content of the CAM may even provide new information, detail, or sentiment ([PCAOB 2017](#)). Thus, a CAM disclosure could shine a spotlight on referenced disclosures and indirectly motivate management, alone or in conjunction with their auditor, to expand, supplement, or refine their disclosure. To our knowledge, non-U.S. studies have not provided insights on this nuanced consequence of expanded audit reports. U.S. reporting requirements, particularly Extensible Business Reporting Language (XBRL), allow for an investigation of changes to the financial reporting process, which is less feasible in other jurisdictions.

To enable this analysis, we use XBRL to collect the financial statement footnotes of CAM adopters. We employ a robust difference-in-differences (DiD) analysis at the footnote-adopter-year level, where the treatment group includes 3,790 footnotes referenced by a CAM and the control group includes 31,952 footnotes not referenced by a CAM (both for the same issuer and other CAM adopters). We find that when a CAM references a specific footnote, the footnote's length increases, the stickiness of language used decreases, and uncertain sentiment increases following CAM regulation (i.e., in fiscal year 2019) compared to footnotes not referenced by a CAM. These findings are also economically significant. For example, the incremental increase in the average length for footnotes referenced by a CAM in the post-period is 8.56 percent (60 words) relative to footnotes not referenced by a CAM. Overall, results suggest that management disclosures referenced by CAMs change, which may be an attempt to expand, clarify, and/or use more cautionary language in areas expected to be scrutinized. This interpretation is supported by recent comment letters submitted in response to the PCAOB's request for comment on changes to the financial reporting process following the CAM standard. For instance, PwC stated, "after having an opportunity to review our draft CAMs, in some cases management and the audit committee revisited their disclosures related to matters that were determined to be CAMs and how they were describing the significant management judgements" ([PwC 2020](#)).

We conduct additional analysis to further explore this finding. First, we find that the significant changes to footnotes persist for large accelerated filers in their second year of CAM disclosures and that these changes are greater when a new CAM is disclosed. Second, we examine accelerated and nonaccelerated filers in the first year after their adoption of CAMs and continue to find that referenced footnotes change following CAM disclosure. Third, we analyze the textual similarity of CAMs and referenced footnote disclosures and find that 2019 footnotes referenced by CAMs are more

<sup>1</sup> Auditing Standard 3101 took effect for the remainder of U.S. issuer audits with fiscal year ends on or after December 15, 2020 ([PCAOB 2017](#)). The staggered implementation of this regulation allows us to use economically comparable nonadopters as a propensity score matched control group in difference-in-differences analyses and more cleanly identify regulatory effects ([Leuz and Wysocki 2016](#)).

<sup>2</sup> While we refer to the adopters as large accelerated filers throughout the paper, 41 issuers in our sample are below the market capitalization for large accelerated filer status, which suggests they voluntarily adopted the CAM standard.

similar to the CAM than 2018 footnotes. This supports possible explanations that auditors wish to avoid serving as an original source of information or that auditors and management wish to disclose the same information. Overall, these analyses support the robustness and persistence of the significant change to management disclosure.

Next, we explore the impact of CAM regulation on market reaction to the publication of the 10-K that includes the auditor's report. The primary intention behind CAM disclosure is to increase transparency for investors through the provision of audit-specific information (PCAOB 2017). As company operations become increasingly complex, investors may value and react to auditor-provided information on areas that require significant subjective estimates and measurements. Experimental literature suggests investors may perceive auditor-provided information as more credible (Christensen, Glover, and Wolfe 2014; Elliott, Fanning, and Peecher 2020) than similar information disclosed by management. However, prior archival literature has generally not found a significant reaction in other countries, arguing that auditor-provided information is redundant or boilerplate.

Analysis of market reaction is conducted at the issuer level. We use difference-in-differences specifications and measure the magnitude of investor reaction with the absolute value of cumulative abnormal returns and abnormal trading volume. Our control group is U.S. accelerated and nonaccelerated filers not disclosing CAMs (i.e., nonadopters). We report results using all nonadopters with available data as a control group, as well as a more economically comparable control group of propensity score-matched (PSM) nonadopters. The unmatched sample includes 1,801 adopters and 477 nonadopters in 2019. Across all specifications, we do not find significant changes to the dependent variables surrounding the annual report filing date for CAM adopters in the post-period. The conclusion that CAM disclosures, on average, do not elicit a significant market reaction is consistent with non-U.S. findings of Gutierrez et al. (2018), Bédard et al. (2019), Liao et al. (2019), and Gutierrez et al. (2021b), and the PCAOB's interim economic analysis of the standard (Public Company Accounting Oversight Board (PCAOB) 2020b) and inconsistent with Goh et al. (2020).

Given that investors were the primary supporters and intended beneficiaries of CAM regulation, we conduct additional analysis to investigate the null result for market reaction. Although on average, there is no significant market reaction to CAM disclosure, it is possible that certain CAM disclosures, or their absence, provide incremental information. To explore this, we conduct cross-sectional analyses within CAM adopters to examine whether unexpected CAM disclosures are associated with market reaction. We propose well-specified prediction models for the number and specific subject areas of CAMs using issuer fundamentals and past financial reporting issues. Models predicting specific subject areas exhibit high predictive power, which is driven by the inclusion of account-specific variables such as deferred revenue. This is important since the magnitude of deferred revenue, as an example, would be known to the market and the disclosure of a revenue CAM may only provide new information when it is unexpected.

We use these prediction models to create five measures of unexpected CAM disclosures and test their association with signed cumulative abnormal returns, which captures the direction of market reaction. Cross-sectional analyses reveal a negative market reaction when the number of CAMs disclosed deviates from expectations and when CAMs are disclosed in subject areas where they are not expected. We further find that the subject area result is driven by unexpected revenue CAMs, suggesting that investors react negatively when this important account is riskier than anticipated. We caution that these results are sensitive and provide only initial evidence of cross-sectional variation on market reaction and that there may be risk factors known to investors that are not included in the prediction models. Future studies can use our prediction models as a starting point and make improvements as additional years of data become available.

Finally, to triangulate U.S. evidence with prior literature studying related disclosure requirements, we conduct additional analysis examining whether audit outcomes change following the adoption of the CAM disclosure requirement. We do not find significant changes to audit fees or audit quality (measured with several accrual and misstatement-based measures) for CAM adopters in the post-period relative to the control group of nonadopters. This is consistent with the majority of non-U.S. studies (Gutierrez et al. 2018; Bédard et al. 2019; Liao et al. 2019; Gutierrez et al. 2021b) and partially consistent with Reid et al. (2019), who find an increase in audit quality and no change to audit fees following the adoption of the U.K. key audit matter (KAM) standard.

Our examination of the consequences of the newly implemented U.S. CAM disclosure requirement contributes to the literature in several ways. We uniquely show a significant consequence for management disclosure, which has not been explored in other countries. The finding that financial statement footnotes significantly change following CAM adoption provides evidence that increasing auditor disclosure resulted in changes to the financial reporting process, which may indirectly improve public company disclosure and ultimately benefit investors. Our findings for investor reaction are consistent with the majority of studies conducted internationally, supporting the generalizability of the conclusion that, on average, expanded audit reports do not provide incremental information. However, after developing well-specified prediction models for expected CAM disclosures, we find limited initial evidence that certain unexpected CAM disclosures do provide incremental information to the market. This finding is unique to the U.S. and suggests investors may benefit from the requirement as the PCAOB intended.

Our findings also provide insights to the PCAOB and to the recent wave of studies examining outcomes of PCAOB oversight and regulation (e.g., Cunningham, Li, Stein, and Wright 2019; Burke, R. Hoitash, and U. Hoitash 2020). Our descriptive findings and market reaction tests corroborate the PCAOB's own post-implementation analysis (PCAOB 2020b), suggesting that only one or two CAMs are disclosed for notoriously large and complex filers and that CAM disclosures provide only limited value for investors. In future inspections, the PCAOB may consider focusing on the completeness of these disclosures to enhance value for investors and may use our prediction models to guide their expectations. Further, our finding of significant changes to management disclosure adds to the understanding of CAM implementation in the U.S., and may be generalizable and important to standard-setters and investors interested in expanded audit report implementation in other countries where this consequence has not been studied.

## II. REGULATORY BACKGROUND AND PRIOR RESEARCH

### **PCAOB Critical Audit Matter Standard**

In 2017, the PCAOB adopted Auditing Standard 3101, *The Auditor's Report on an Audit of Financial Statements When the Auditor Expresses an Unqualified Opinion*, significantly expanding the required content of the audit report. When issuing audit opinions, auditors now must communicate critical audit matters (CAMs). This standard took effect for audits of U.S. large accelerated filers with fiscal year ends on or after June 30, 2019, and for audits of other U.S. filers with fiscal year ends on or after December 15, 2020.

A critical audit matter (CAM) is any matter arising from the audit of the financial statements that was communicated or required to be communicated to the audit committee and is related to accounts or disclosures that are material to the financial statements and involved especially challenging, subjective, or complex auditor judgment. Once an auditor has determined these CAMs, they must be communicated in the auditor's report. In their communication of the CAM, the auditor must describe the principal considerations that led them to determine that the matter was a CAM, refer to the relevant financial statement accounts or disclosures that relate to the CAM, and describe how the CAM was addressed in the audit (PCAOB 2017).

### **Related Regulation in Other Countries**

Outside of the U.S., regulators and standard setters in most countries have already required expansion of the audit report. Generally, these regulations ask auditors to move beyond the traditional pass/fail model and communicate audit-specific information in their reports. For instance, in 2013, the U.K. mandated disclosure of the risks of material misstatement (RMMs) that had the greatest effect on the audit (Financial Reporting Council (FRC) 2013).<sup>3</sup> Studying the adoption of this standard, Gutierrez et al. (2018) and Reid et al. (2019) do not find evidence that the expanded audit report significantly changed investor reaction or audit fees and present mixed evidence on changes to financial reporting quality (null and increased, respectively). In 2016, the International Auditing and Assurance Standards Board (IAASB) implemented requirements to report key audit matters (KAMs), which are defined as matters that required significant auditor attention in performing the audit (International Auditing and Assurance Standards Board (IAASB) 2015). The IAASB KAM standard was then adopted by regulators in the U.K., Hong Kong, China, Australia, New Zealand, and many other jurisdictions. Academic evidence on the impact of the KAM expanded audit report standard is again mixed. Specifically, Liao et al. (2019) do not find significant investor reaction or audit quality changes to KAM adoption in Hong Kong, while Goh et al. (2020) report a significant market reaction to KAM disclosure in China.

### **U.S. Institutional Environment**

The PCAOB's new regulation is most similar to the IAASB regulation, as they share similar frameworks and considerations for the determination and communication of audit-specific information in CAMs/KAMs.<sup>4</sup> However, consequences of adopting the CAM standard may differ from consequences in other countries given differences in the U.S. regulatory, capital market, and legal environment. For instance, the U.S. regulatory environment is known for strong oversight pressure (e.g., PCAOB oversight and the associated inspection process, SEC securities regulation and

<sup>3</sup> AS 3101 indicates that risk of material misstatement is one factor that should be considered when determining whether something is a CAM, but that not all risks of material misstatement will be CAMs (PCAOB 2017). Therefore, it is likely that fewer CAMs will be disclosed than risks of material misstatement.

<sup>4</sup> Minutti-Meza (2021) summarizes differences between the standards, including that the PCAOB standard emphasizes *significant* and *material* risks that relate to specific accounts or disclosures when determining areas that are CAMs.

comment letter process, etc.). Further, since the U.S. is a late adopter of the expanded audit report, U.S. audit firms are aware of the experiences of affiliates in countries where this regulation has already been adopted and have been able to prepare for CAM implementation (e.g., by conducting dry runs of the process ([Center for Audit Quality \(CAQ\) 2018](#)). The U.S. also has a relatively rich and efficient information environment in the pre-disclosure regime ([Leuz and Verrecchia 2000](#)). These differences may suggest that sufficient risk information is already provided in company disclosures, and CAMs will not have significant consequences.

Finally, a major concern of commenters on the proposed CAM standard ([PCAOB 2017](#)) is that the U.S. is far more litigious than the U.K. and other countries ([Seetharaman, Gul, and Lynn 2002](#); [Khurana and Raman 2004](#); [Choi, Nelson, and Pritchard 2009](#)). Therefore, management may already provide optimal risk information in their disclosures, and auditors may be hesitant to disclose original information and expose themselves to litigation unnecessarily ([PCAOB 2017](#)). On the other hand, auditors may believe disclosing CAMs can disclaim them of responsibility in the event of future litigation surrounding unidentified CAMs ([Brasel, Doxey, Grenier, and Reffett 2016](#); [Kachelmeier, Rimkus, Schmidt, and Valentine 2020](#)).<sup>5</sup>

### III. HYPOTHESES DEVELOPMENT

#### **Consequences of CAM Regulation**

Previously, auditors possessed in-depth information from auditing their client's financial statements yet only communicated findings in a simple modified or standard unqualified audit opinion. Moving away from this dichotomous model toward communicating audit-specific information expands the auditor's role as an information provider. Specifically, in the auditor's description of how they determined and responded to each CAM, they may highlight areas of management disclosure and provide information that management did not previously disclose. This information could be relevant to investors as well as induce behavioral changes if auditors and/or management are concerned about investor, regulator, and legal scrutiny of CAMs and their referenced management disclosures. In this section, we develop hypotheses for changes to related management disclosure and market reaction following the adoption of the CAM regulation.

#### ***Changes to Related Management Disclosure***

In their audit report, both before and after its expansion, auditors are required to express an opinion that covers the financial statements and footnotes ([PCAOB 2017](#)). At first glance, CAM disclosure does not change this process and should not be associated with any changes to management's disclosures. However, since specific financial statement footnotes are often referenced in CAMs, changes may be made to the referenced footnotes, which would suggest that auditors and management have changed their behavior after CAMs are disclosed. The U.S. is an ideal setting to explore this question. Specifically, centralized repositories and standardized machine-readable reporting make an archival analysis of management disclosure more feasible in the U.S. than in other jurisdictions studied by prior literature.

The PCAOB suggests that CAM disclosure could indirectly motivate companies to expand or supplement their disclosures ([PCAOB 2017](#)). In their CAM disclosures, auditors are required to reference financial statement accounts/disclosures that relate to the CAM. Even if the information provided in a CAM was already reported in these referenced disclosures, the CAM increases its salience and may convey different detail, language, or sentiment. Recent experimental evidence suggests that investors perceive auditor-provided information as more credible than management disclosure of the same information ([Christensen et al. 2014](#); [Elliott et al. 2020](#)). Further, conflicting disclosures could expose both parties to unnecessary litigation. Therefore, if auditors and management anticipate that financial statement users and regulators will pay attention to CAMs, this spotlight may motivate them to change their behavior.

For instance, auditors may more closely focus on matters identified as CAMs and perform additional procedures in these areas. These additional procedures can lead to requests for management to alter their disclosures about the matter. Even if additional procedures are not taken, auditors may encourage clients to enhance related disclosures ([PCAOB 2017](#)) so that they are not the original provider of information ([Smith, Zietsman, Mahoney, and Ray 2020](#)). It is possible

<sup>5</sup> Experimental evidence is mixed on the relationship between CAM disclosures and litigation risk. While [Brasel et al. \(2016\)](#) and [Kachelmeier et al. \(2020\)](#) suggest under certain conditions, CAM disclosures can protect auditors from liability, [Gimbar, Hansen, and Ozlanski \(2016\)](#) find less precise CAM disclosures result in a higher propensity for negligence verdicts.

that management previously had incentives, such as proprietary costs (Li, Lin, and Zhang 2018; Fischer and Verrecchia 2000), to not provide sufficient detail. If management's disclosures are enhanced in areas identified as CAMs, this may suggest beneficial auditor involvement in the financial reporting process.<sup>6</sup>

While there appear to be several reasons why referenced footnote disclosures could change following a CAM, this was not the objective of the regulation, and the audit opinion already covered the financial statement footnotes before the CAM disclosure requirement. If the auditor does not provide new or additional information in CAMs, management may not be motivated to change disclosure. Since the U.S. is a late adopter of the expanded audit report, auditors and management likely prepared for this change. In fact, they report conducting dry runs by producing sample CAMs (Center for Audit Quality (CAQ) 2018) and are likely to have learned from their affiliates in countries where an expanded audit report has already been adopted. This would have provided the opportunity to revise disclosures in advance of the CAM disclosure requirement. Since there are many reasons to expect that disclosure will not change, we present our first hypothesis in the null form.

**H1:** Footnotes referenced by CAM disclosures did not change following the adoption of the CAM disclosure requirement.

### Market Reaction

Next, we consider whether the CAM regulation has information value for investors. The PCAOB's stated objective in passing the regulation was to enhance communication of the audit process to investors, who are the intended beneficiaries of the audit (PCAOB 2017). Specifically, the expanded audit report may increase transparency for investors through the provision of audit-specific information. Auditor-provided information in areas that require subjective estimates and measurements may be particularly informative for investors seeking to understand the disclosures of increasingly complex operations. Anecdotal evidence from business media outlets suggests investors are following CAM disclosures (Maurer 2019; Higgins and Sebastian 2020). However, as previously discussed, findings are mixed for the market reaction to the adoption of similar reports in other countries, with studies either finding null (Gutierrez et al. 2018; Bédard et al. 2019; Liao et al. 2019; Lennox et al. 2022) or significant market reaction (Goh et al. 2020).<sup>7</sup>

Despite PCAOB predictions of investor benefits, auditor-provided information may not be value-relevant if the information is redundant or boilerplate. Evidence from the U.K. suggests information provided in RMMs was already available to investors in earnings announcements, conference calls, or the previous year's annual report and thus already incorporated in price (Lennox et al. 2022). Similarly, Czerney, Schmidt, and Thompson (2019) find that investors do not react to explanatory language in U.S. audit reports because they were already privy to the information. However, recent experimental evidence suggests that investors may perceive auditor-provided information as more credible and react to CAM disclosures (Christensen et al. 2014; Elliott et al. 2020). Overall, due to mixed findings in related literature, there are competing predictions for whether investors will react to CAM disclosure. We, therefore, propose our second hypothesis in null form.

**H2:** Market reaction to the annual report did not change following the adoption of the CAM disclosure requirement.

## IV. RESEARCH DESIGN AND SAMPLE

### Changes to Related Management Disclosure (H1)

Analysis of changes to related management disclosure is conducted within CAM adopters and at the footnote-adopter-year level. To best control for time trends in footnote characteristics, we estimate the following difference-in-differences (DiD) model:

$$DEPVAR_{i,t} = \beta_0 + \beta_1 POST_{i,t} + \beta_2 FN-CAM_{i,t} + \beta_3 POST * FN-CAM_{i,t} + \sum \beta_j Controls_{i,t} + IssuerFE + \varepsilon_{i,t} \quad (1)$$

<sup>6</sup> In an experiment, Fuller, Joe, and Luippold (2021) find that participants increase disclosure in the presence of informative CAMs when there is strong audit committee oversight. In contrast, there is some experimental evidence that CAM regulation could induce negative changes to behavior. For instance, Bentley, Lambert, and Wang (2021) find that management changes their real operating activities to avoid CAM disclosures that reveal confidential and proprietary information.

<sup>7</sup> Studies on other less common variations in the U.S. audit report, including explanatory language and going concern report modifications, may be informative for market reaction predictions. Yet, findings of this literature are again mixed, with some finding auditor explanatory language and going concern modifications to be useful for their associations with subsequent issues (Czerney et al. 2014; Chen, He, Ma, and Stice 2016), and others finding that the market does not react to the information (Myers, Shipman, Swanquist, and Whited 2018; Czerney et al. 2019).

This robust model allows conclusions of whether, relative to a control group of footnotes not referenced by a CAM of the same issuer and other CAM adopters, footnotes referenced by CAMs are associated with disclosure changes to a greater degree.<sup>8</sup>

To collect footnote data, we use Python to download the XBRL data for all footnotes of CAM adopters. Using XBRL uniquely allows us to capture an issuer's footnotes across time and footnotes across different issuers. To identify referenced footnotes, we manually match the footnote number referenced in each CAM disclosure to the XBRL tag name capturing that footnote.<sup>9</sup> Appendix B, Panels A and B shows an example CAM referencing a footnote disclosure and the associated XBRL tag. In this example, PricewaterhouseCoopers discloses a CAM related to goodwill impairment for Goodyear and references the account-specific goodwill footnote.

*FN-CAM* is an indicator variable equal to 1 if the footnote is referenced by a CAM disclosure and 0 otherwise. *POST* is an indicator variable equal to 1 for fiscal year 2019 and 0 otherwise. *POST \* FN-CAM* is an interaction term that captures footnotes referenced by CAMs in the post-period and can be used to examine changes to footnote disclosures surrounding CAM disclosure. Since there are several footnotes for each issuer, we include issuer fixed effects in these models to control for time-invariant issuer characteristics that may drive our results.

### Dependent Variables

Three dependent variables are used to capture footnote content for H1. *FN-WORDS* is the log number of words in the footnote. *FN-STICKINESS* captures the year-over-year change in language used in the footnote (Dyer, Lang, and Stice-Lawrence 2017), where a lower value represents more language differences.<sup>10</sup> *FN-UNCERTAIN-WORDS* is the log number of uncertain words in the footnote and captures the amount of cautionary language used.<sup>11</sup>

### Market Reaction (H2)

Analysis of changes to market reaction is conducted at the issuer level. To examine whether the market significantly reacts to the disclosure requirement, we follow Gutierrez et al. (2018) and estimate the following DiD model using both an unmatched and propensity score-matched (PSM) control group of nonadopters.<sup>12</sup> These control groups are further explained in the sample selection section.

$$DEPVAR_{i,t} = \beta_0 + \beta_1 POST_{i,t} + \beta_2 ADOPT_{i,t} + \beta_3 POST * ADOPT_{i,t} + \sum \beta_j Controls_{i,t} + IndustryFE + \varepsilon_{i,t}. \quad (2)$$

In addition to the previously defined *POST* variable, *ADOPT* is an indicator variable equal to 1 for issuers adopting the CAM disclosure requirement and 0 for the control sample of nonadopters. *POST \* ADOPT* is an interaction that captures issuers adopting CAM disclosures in 2019. If CAM disclosures provide incremental information (i.e., increase the amount of information available) to investors, the coefficient on *POST \* ADOPT* would be positive and significant. Since these analyses are at the issuer level, we include two-digit SIC code industry fixed effects.

### Dependent Variables

We employ two dependent variables to capture overall market reaction for H2. First, *ABS-CAR* is the absolute value of the 3-day cumulative abnormal returns surrounding the annual report filing date.<sup>13</sup> Second, *AB-VOLUME* is the 3-day abnormal volume surrounding the annual report filing date.

<sup>8</sup> In all of the DiD analyses, standard errors are clustered at the issuer level.

<sup>9</sup> The most granular narrative disclosure in XBRL is a TextBlock at the footnote level (R. Hoitash, U. Hoitash, and Morris 2021). We cannot use XBRL to further divide the footnote into portions discussing the CAM and manually segmenting the footnote would be subjective and mechanically isolate the portion of the footnote that changes.

<sup>10</sup> Specifically, *FN-STICKINESS* is calculated as the number of words in sentences that include at least one eight-word phrase that is identical to an eight-word phrase used in the prior-year disclosure, divided by the total number of words in the disclosure. We require the same footnote and XBRL tag to exist in 2017, 2018, and 2019, which results in the attrition of observations in analyses of *FN-STICKINESS*.

<sup>11</sup> We use the “uncertainty” dictionary, which is a list of words that express uncertainty in financial text, developed by Loughran and McDonald (2011) to capture words that represent uncertainty.

<sup>12</sup> In analyses reported in Online Appendix 5, we examine baseline pre-post specifications within CAM adopters. We observe some detectable pre-post differences in consequences within adopters. However, conducting analysis within CAM adopters without a control group does not allow us to conclude whether these significant results are due to the regulation or to other factors affecting all issuers.

<sup>13</sup> We test H2 with *ABS-CAR* because we have no reason to expect the market uniformly treats CAMs as positive or negative information. In untabulated analyses, we do not find significant results with signed CAR.

## Control Variables

In both Models (1) and (2), we control for variables that we expect to influence our dependent variables and CAM disclosures. We follow prior literature studying other audit report modifications (e.g., [Doyle, Ge, and McVay 2007](#); [Czerny, Schmidt, and Thompson 2014](#)) and U.K. KAMs (e.g., [Sierra-Garcia, Gambetta, Garcia-Benau, and Orta-Perez 2019](#)) to identify these variables, which are defined in [Appendix A](#). All continuous variables are Winsorized at the first and 99th percentiles.

First, we include indicator variables capturing whether the issuer had an internal control material weakness, restatement disclosure, or comment letter in the current or past two years.<sup>14</sup> The client's history of these financial reporting issues reflects areas identified as problematic by auditors, management, and/or regulators and may influence CAM disclosures. Second, while the PCAOB has stated that auditor experience, expertise, and access to resources should not overcome the inherently challenging, subjective, or complex nature of certain areas of the audit in determining whether an area is a CAM, this has not been studied. We, therefore, include variables to capture characteristics of the audit firm. Third, we include variables that capture characteristics of the client, such as size, accounting and operating complexity, and performance, which will influence overall audit complexity and may be associated with CAM disclosures. Since the U.S. has a highly litigious environment, we include a control for litigation risk. Further, we include variables to control for significant economic events (mergers, acquisitions, and restructuring).

Model (2) includes additional control variables necessary for analyses of market reaction. Specifically, we control for unexpected earnings (change in net income) and the effects of concurrent earnings announcements (an indicator variable for whether the annual report is filed concurrently with the earning release).<sup>15,16</sup> We also include a control for domestic firms since foreign private issuers are included in the sample and may make different disclosure decisions.

## Sample

The construction of our samples is detailed in [Table 1](#). AS 3101 requires large accelerated filers to disclose CAMs (if any) in audit reports issued for fiscal year ends on or after June 30, 2019. After removing issuers missing Compustat and Audit Analytics coverage and data for control variables, we identify 2,253 U.S. issuers that have CAM disclosures between June 30, 2019 and May 31, 2020 (i.e., in their 2019 audit opinion).<sup>17</sup> A total of 99.56 percent, or 2,243, of these issuers disclose at least one CAM and there are 3,803 unique CAMs in this sample. In additional analysis, we incorporate 2020 CAM disclosures, when large accelerated filers disclosed for the second time and smaller filers disclosed CAMs for the first time. [Table 1](#), Panel B details the 2020 sample stepdown for 1,850 large accelerated filers in the second year after adoption and 823 accelerated and nonaccelerated filers in the first year of adoption.<sup>18</sup>

[Table 1](#), Panel C details the sample stepdown for our H1 analyses of changes to referenced footnotes. We remove CAM adopters that do not file 10-Ks (e.g., foreign private issuers that file Forms 20-F and 40-F and have less standard footnote data), that are missing control variable or XBRL data, that do not have any CAMs pointing to account-specific footnotes,<sup>19</sup> and those whose footnotes referenced by CAMs are less than 100 words.<sup>20</sup> Our resulting sample is 1,339 CAM adopters. This translates to 3,790 footnote-adopter-years referenced by CAM disclosures (a balanced sample of 1,895 footnotes in both 2019 and 2018) and 31,952 footnote-adopter-years not referenced by CAM disclosures (a balanced sample of 15,976 footnotes in both 2019 and 2018).

<sup>14</sup> Since comment letters are issued after the annual report is filed, we measure comment letter receipt (CL-2) as the receipt of a comment letter on the past two years' annual reports. We consider only comment letters related to Accounting Rule and Disclosure Issues, as classified by Audit Analytics. [Ballesteros and Schmidt \(2022\)](#) find that auditor involvement in the comment letter process is more likely when the comment letter relates to accounting issues.

<sup>15</sup> Consistent with prior literature, in analyses of market-related dependent variables, the SIZE variable is measured as the log of market value of the company. Results are consistent if SIZE is measured using the log of total assets.

<sup>16</sup> In our main analyses, we use change in net income to proxy for unexpected earnings/earnings surprise because it preserves the largest sample. In [Online Appendix 7](#) and 9, we alternatively control for unexpected earnings/earnings surprise using an analyst forecast based measure and results are consistent.

<sup>17</sup> Since the requirement is effective for large accelerated filers with fiscal year ends on or after June 30th, 2019 and fiscal year 2019 starts June 1, 2019, our sample covers all of fiscal year 2019.

<sup>18</sup> Our 2020 collection includes fiscal year ends through January 31, 2021.

<sup>19</sup> Many issuers have CAMs that point only to the accounting policy footnote, which references several accounting areas. In our main analysis, we remove these issuers to create a more homogenous sample wherein CAMs point to account-specific footnotes. Nevertheless, our results are robust to the inclusion of these issuers in our control group. In [Online Appendix 3](#), we present analyses examining whether disclosure changes also occur at the policy level. Results are consistent with our H1 findings, where policies referenced by CAMs change to a greater extent than policies not referenced by CAMs. These results are unique as they show that accounting policies, which are typically sticky also change when an associated CAM is disclosed.

<sup>20</sup> We remove footnotes with less than 100 words because a manual review reveals that these footnotes typically refer only to a table. While our sample stepdown is shown at the issuer level, cleaning steps such as requiring two years of control variable and XBRL data and removing footnotes with less than 100 words are done for both the treatment (footnotes referenced by CAMs) and control (footnotes not referenced by CAMs) groups.

**TABLE 1**  
**Sample Derivation**

**Panel A: CAM Adopters in 2019**

	<b>Adopters</b>	<b>Nonadopters</b>
Fiscal year 2019 audit opinions		
(FYE between June 30, 2019 and May 31, 2020 per Audit Analytics)	2,400	3,300
Less: Missing Compustat identifier and total assets	(99)	(185)
Less: Missing data for control variables in Model (1)	(48)	(795)
Sample for fiscal year 2019	2,253	2,320

**Panel B: CAM Filers in 2020, Used in Additional Analysis**

	<b>Large Accelerated Filers in Second Year</b>	<b>Accelerated and Nonaccelerated Filers in First Year</b>
Fiscal year 2020 audit opinions		
(FYE between June 30, 2020 and January 31, 2021 per Audit Analytics)	1,894	1,056
Less: Missing data for control variables in Model (1) in 2020	(36)	(233)
Less: Adopters excluded from the 2019 sample	(8)	
Sample for fiscal year 2020	1,850	823

**Panel C: Analysis for H1, Conducted at Footnote Level (Table 3)**

	<b>Adopters in 2019</b>	<b>Referenced in CAMs</b>	<b>Not Referenced in CAMs</b>
Sample for fiscal year 2019 from Table 1, Panel A	2,253		
Less: Issuers disclosing zero CAMs	(10)		
Less: Issuers not filing 10-Ks	(290)		
Less: Issuers missing data for control variables in 2018	(17)		
Less: Issuers missing or with incomplete XBRL footnote data in 2019	(43)		
Less: Issuers where CAMs solely reference significant accounting policies	(368)		
Less: Issuers where footnotes referenced by CAMs are shorter than 100 words or did not exist in 2018	(186)		
Sample for footnote analysis of <i>FN-WORDS</i> and <i>FN-UNCERTAIN-WORDS</i>	1,339	3,790	31,952
Less: Footnotes missing stickiness data in 2018		(620)	(6,838)
Sample for footnote analysis of <i>FN-STICKINESS</i>		3,170	25,114

**Panel D: Analysis for H2, Conducted at Issuer Level (Table 5)**

	<b>Adopters in 2019</b>	<b>Adopter-Years (2018 and 2019)</b>	<b>Nonadopters in 2019</b>	<b>Nonadopter-Years (2018 and 2019)</b>
Sample for fiscal year 2019 from Table 1, Panel A	2,253		2,320	
Less: Missing data for variables in market reaction model for years 2019 and 2018	(69)		(643)	
Less: 2019 annual report filed on or after March 4, 2020	(383)		(1,200)	
Full available sample for <i>ABS-CAR</i> and <i>AB-VOLUME</i>	1,801	3,602	477	954
PSM sample for <i>ABS-CAR</i> and <i>AB-VOLUME</i>	175	350	175	350

**Table 1**, Panel D details the sample stepdown for our H2 analyses of market reaction. We remove observations missing dependent and control variables for market reaction models and those with 2019 annual reports filed on or before March 4, 2020 (since COVID-19 generated significant volatility in the market after this time).<sup>21</sup> The resulting sample is 3,602 adopter-years (a balanced sample of 1,801 adopters in both 2019 and 2018). We employ two control groups in these issuer-level DiD estimations: (1) an unmatched control group of nonadopters and (2) a PSM control group of nonadopters. Taking advantage of the staggered adoption of the CAM requirement, these control groups include issuers that were not required to disclose CAMs in fiscal year 2019. For the unmatched sample, there are 954 nonadopter-years with available data (a balanced sample of 477 nonadopters in both 2019 and 2018). For the PSM sample, we identify suitable matches by calculating propensity scores using all control variables.<sup>22</sup> A total of 350 adopters and 350 nonadopters are included in the PSM sample.

## V. RESULTS

### Descriptive Statistics

#### CAM Disclosures

**Table 2** reports descriptive statistics within the issuer-level sample of 2,253 CAM adopters. Panel A shows that the mean (median) of the number of CAMs disclosed is 1.69 (2.0). Most auditors report only one CAM, and the maximum number of CAMs disclosed is 7.0. This descriptive is similar to the median of 2.0 KAMs in China and Hong Kong (Liao et al. 2019) and lower than the median of 4.0 risks of material misstatements in the U.K. (Gutierrez et al. 2018; Reid et al. 2019; Lennox et al. 2022).<sup>23</sup> It is surprising that the majority of our sample discloses only one or two CAMs, given that these are the largest and most complex U.S. issuers. Panel A further shows that the mean number of words in the CAM description (auditor response) is 366.45 (313.58), with a mean of 7.01 (5.76) uncertain words used in the description (auditor response). In [Appendix C](#), we outline the subject areas most frequently disclosed at the unique CAM level. **Table 2**, Panel A shows that 26.9 percent of issuers disclose a CAM related to intangible assets, followed by revenue (26.1), merger and acquisitions (22.4), taxes (15.6), property, plant, and equipment (PP&E) (14.9), allowance for credit losses (11.6), and contingencies (11.2).

**Table 2**, Panel B displays descriptive statistics of the number of CAMs, CAM topics, and changes to CAMs in 2020. On average, large accelerated filers in the second year after adoption disclose 1.57 CAMs, a decrease of 4.4 percent from the first year. CAMs related to intangible assets remain the most commonly disclosed. 22.70 percent of issuers have fewer CAMs, and CAMs related to mergers and acquisitions are most commonly dropped. Conversely, 16.06 percent of issuers disclose more CAMs, and CAMs related to intangible assets are most commonly added. In Panel C, we observe that accelerated and nonaccelerated filers in their first year of adoption disclose an average of 1.27 CAMs, which is significantly less than either year of disclosures for large accelerated filers, perhaps because these filers are smaller and less complex to audit. For these filers, CAMs related to revenue are the most commonly disclosed.

#### Dependent and Control Variables

**Table 2**, Panel D reports the pre- and post-period descriptives and differences in means for dependent variables used in our main analyses.<sup>24</sup> On a univariate basis, we observe significant differences in certain dependent variables for both treatment and control groups between the pre- and post-period. For example, footnotes referenced by CAMs significantly increase in length and use of uncertain words, whereas footnotes not referenced by CAMs experience a significant decrease. This suggests that footnotes, on average, are being streamlined over time, which is consistent with the SEC's

<sup>21</sup> Worldwide stock markets shut down on March 6, 2020. Since our market variables are measured in a 3-day window surrounding the annual report date, March 4, 2020 is the last filing date out of this window. In [Online Appendix 6](#), we examine several alternative cut-off dates for these tests, including February 1, 2020, February 15, 2020, and March 1, 2020. Results are consistent regardless of the cut-off date.

<sup>22</sup> Specifically, the dependent variable is an indicator equal to 1 if the issuer adopts CAM disclosures in 2019 and the predictors include all control variables and industry fixed effects in the pre-adoption year of 2018. We match a CAM adopter with a non-adopter with the closest propensity score (without replacement) and require a caliper width of 0.10. After identifying the matches, the mean differences of predictors between groups are statistically insignificant.

<sup>23</sup> Our sample includes 56 issuers that are cross-listed and therefore disclose both U.S. CAMs and U.K. KAMs. Untabulated descriptives show that these issuers disclose an average of 2.84 CAMs and 3.68 KAMs, with nearly half disclosing fewer CAMs than KAMs. We manually reviewed the differences in these disclosures and primarily find large differences in the number of CAMs/KAMs disclosed are due to standard-based differences (e.g., information technology is frequently disclosed as a KAM but not as a CAM).

<sup>24</sup> [Online Appendix 1](#) reports descriptive statistics of control variables.

**TABLE 2**  
**Descriptive Statistics at Issuer Level**

**Panel A: Descriptives of CAM Variables for 2019 Adopters**

	<b>n</b>	<b>Mean</b>	<b>Median</b>	<b>Std. Dev.</b>	<b>25th Percentile</b>	<b>75th Percentile</b>
<i>NUM-CAMS</i>	2,253	1.688	2.000	0.831	1.000	2.000
<i>CAM-WORDS (raw value)</i>	2,243	366.453	313.000	210.585	212.000	477.000
<i>RESPONSE-WORDS (raw value)</i>	2,243	313.581	274.000	172.696	183.000	400.000
<i>CAM-UNCERTAIN-WORDS (raw value)</i>	2,243	7.012	5.000	6.114	2.000	10.000
<i>RESPONSE-UNCERTAIN-WORDS (raw value)</i>	2,243	5.763	5.000	5.127	2.000	8.000
<i>CAM-INTANGIBLE</i>	2,253	0.269	0.000	0.443	0.000	1.000
<i>CAM-REVENUE</i>	2,253	0.261	0.000	0.440	0.000	1.000
<i>CAM-M&amp;A</i>	2,253	0.224	0.000	0.417	0.000	0.000
<i>CAM-TAXES</i>	2,253	0.156	0.000	0.363	0.000	0.000
<i>CAM-PPE</i>	2,253	0.149	0.000	0.356	0.000	0.000
<i>CAM-CREDIT-LOSSES</i>	2,253	0.116	0.000	0.321	0.000	0.000
<i>CAM-CONTINGENCIES</i>	2,253	0.112	0.000	0.316	0.000	0.000

**Panel B: Descriptives for Large Accelerated Filers in the Second Year After Adoption**

	<b>n</b>	<b>Mean</b>	<b>Median</b>	<b>Std. Dev.</b>	<b>25th Percentile</b>	<b>75th Percentile</b>
<i>NUM-CAMS</i>	1,850	1.570	1.000	0.768	1.000	2.000
<i>CAM-INTANGIBLE</i>	1,850	0.295	0.000	0.456	0.000	1.000
<i>CAM-REVENUE</i>	1,850	0.247	0.000	0.431	0.000	0.000
<i>CAM-M&amp;A</i>	1,850	0.167	0.000	0.373	0.000	0.000
<i>CAM-TAXES</i>	1,850	0.138	0.000	0.345	0.000	0.000
<i>CAM-PPE</i>	1,850	0.129	0.000	0.335	0.000	0.000
<i>CAM-CREDIT-LOSSES</i>	1,850	0.127	0.000	0.333	0.000	0.000
<i>CAM-CONTINGENCIES</i>	1,850	0.091	0.000	0.288	0.000	0.000

		<b>n</b>	<b>%</b>	<b>Cumulative %</b>
Changes from 2019 to 2020				
No change in <i>NUM-CAMS</i>	Exactly the same number of CAMs are disclosed	913	49.35	61.24
	Number of CAMs added equal to number of CAMs dropped	220	11.89	
Decrease in <i>NUM-CAMS</i>	CAMs dropped without adding new CAMs	36s8	19.89	22.70
	Number of CAMs dropped exceed CAMs added	52	2.81	
Increase in <i>NUM-CAMS</i>	CAMs added without dropping previous CAMs	266	14.38	16.06
	Number of CAMs added exceed CAMs dropped	31	1.68	

**Panel C: Descriptives for Accelerate and Nonaccelerated Filers Adopting for the First Time in 2020**

	<b>n</b>	<b>Mean</b>	<b>Median</b>	<b>Std. Dev.</b>	<b>25th Percentile</b>	<b>75th Percentile</b>
<i>NUM-CAMS</i>	823	1.272	1.000	0.599	1.000	2.000
<i>CAM-INTANGIBLE</i>	823	0.192	0.000	0.394	0.000	0.000
<i>CAM-REVENUE</i>	823	0.261	0.000	0.440	0.000	1.000
<i>CAM-M&amp;A</i>	823	0.102	0.000	0.303	0.000	0.000
<i>CAM-TAXES</i>	823	0.072	0.000	0.258	0.000	0.000
<i>CAM-PPE</i>	823	0.114	0.000	0.318	0.000	0.000
<i>CAM-CREDIT-LOSSES</i>	823	0.182	0.000	0.386	0.000	0.000
<i>CAM-CONTINGENCIES</i>	823	0.045	0.000	0.207	0.000	0.000

(continued on next page)

TABLE 2 (continued)

**Panel D: Descriptives of Dependent Variables in Consequence Analysis**

**Footnotes Referenced by CAMs in 2019**  
(*FN-CAM = 1 and POST = 1*)

	<b>n</b>	<b>Mean</b>	<b>Median</b>	<b>Std. Dev.</b>	<b>n</b>	<b>Mean</b>	<b>Median</b>	<b>Std. Dev.</b>	<b>Diff. in Means</b>
<i>FN-WORDS</i>	1,895	6.806	6.880	0.894	1,895	6.749	6.855	0.945	0.058*
<i>FN-STICKINESS</i>	1,585	0.774	0.839	0.218	1,585	0.798	0.860	0.198	-0.024**
<i>FN-UNCERTAIN-WORDS</i>	1,895	2.588	2.708	0.999	1,895	2.512	2.639	1.046	0.076**

**Footnotes not Referenced by CAMs in 2019**  
(*FN-CAM = 0 and POST = 1*)

	<b>n</b>	<b>Mean</b>	<b>Median</b>	<b>Std. Dev.</b>	<b>n</b>	<b>Mean</b>	<b>Median</b>	<b>Std. Dev.</b>	<b>Diff. in Means</b>
<i>FN-WORDS</i>	15,976	6.262	6.277	0.857	15,976	6.292	6.316	0.869	-0.030***
<i>FN-STICKINESS</i>	12,557	0.862	0.928	0.174	12,557	0.853	0.921	0.178	0.010***
<i>FN-UNCERTAIN-WORDS</i>	15,976	1.755	1.792	1.065	15,976	1.782	1.792	1.067	-0.027**

**Adopters in 2019**  
(*ADOPT = 1 and POST = 1*)

	<b>n</b>	<b>Mean</b>	<b>Median</b>	<b>Std. Dev.</b>	<b>n</b>	<b>Mean</b>	<b>Median</b>	<b>Std. Dev.</b>	<b>Diff. in Means</b>
<i>ABS-CAR</i>	1,801	0.041	0.024	0.049	1,801	0.035	0.018	0.044	0.006***
<i>AB-VOLUME</i>	1,801	0.004	-0.001	0.018	1,801	0.005	0.000	0.015	-0.001**

**Nonadopters in 2019**  
(*ADOPT = 0 and POST = 1*)

	<b>n</b>	<b>Mean</b>	<b>Median</b>	<b>Std. Dev.</b>	<b>n</b>	<b>Mean</b>	<b>Median</b>	<b>Std. Dev.</b>	<b>Diff. in Means</b>
<i>ABS-CAR</i>	477	0.071	0.042	0.077	477	0.062	0.034	0.066	0.009*
<i>AB-VOLUME</i>	477	0.003	-0.005	0.032	477	0.003	-0.002	0.019	0.000

\* , \*\* , \*\*\* Indicate statistical significance at the p < 0.10, p < 0.05, and p < 0.01 levels, respectively, based on two-tailed tests.

disclosure effectiveness initiative. These differences illustrate the importance of using a DiD design to test our hypotheses, and of including issuer fixed effects in the H1 analyses and using a PSM sample in the H2 analyses.<sup>25</sup>

## Main Results

### H1: Changes to Related Management Disclosure

Results of Model (1) are displayed in [Table 3](#). The interaction term *POST \* FN-CAM* is significant for all three dependent variables, suggesting that, on average, footnotes referenced by CAM disclosures become longer, less sticky, and contain more uncertain words (i.e., use more cautionary language) in the 2019 post-period. This does not support H1, which was proposed in null form due to competing predictions. Instead, findings suggest that CAM disclosure is associated with significant changes, perhaps indicating that the anticipation of increased scrutiny prompts changes to management disclosure. These findings are economically significant. For example, the incremental effect of *POST\*FN-CAM* is 8.56 percent, representing a 60-word differential increase between footnotes referenced by CAM and those that are not. Similarly, the incremental effect of the interaction term suggests a 10.08 percent increase for uncertain words (from a mean of five to six) and a 3.85 percent decrease for stickiness.

In columns (4)–(6) of [Table 3](#), Panel A, we include observations from 2017 and 2018 and alternatively define the post-period as 2018, which allows us to examine whether footnotes changed in advance of CAM disclosures because of the well documented “dry runs” (i.e., producing sample CAMs ahead of the requirement) that auditors and management performed ([Center for Audit Quality \(CAQ\) 2018; Smith et al. 2020](#)). Importantly, significant associations are not observed when the post-period is defined as 2018, which is a strong falsification test of our results and suggests management did not optimally revise their disclosures in advance of the requirement.

### Additional Analysis for H1

In this section, we conduct several analyses to further explore our H1 finding of a significant change to footnotes referenced by CAMs in 2019.

**Second-year of CAM disclosures.** We first examine whether the H1 result persists into the second year of CAM disclosure for large accelerated filers. This analysis includes 3,308 footnote-adopter-years referenced and 30,032 footnote-adopter-years not referenced in the second year of CAM disclosures. *POST \* FN-CAM* captures whether footnotes in 2020 referenced by CAMs in 2020 audit reports changed relative to the same footnotes in 2019 and other footnotes not referenced by CAMs. Results in [Table 4](#), Panel A again show that footnotes referenced by CAMs significantly change. In columns (4)–(6), we separate footnotes referenced by CAMs into those that repeat from 2019 (*FN-CAM-SAME*) and those that appear in the audit report for the first time in 2020 (*FN-CAM-ADD*). Coefficients on the interaction terms for both repeat and new CAMs and *POST* are significantly positive, and F-tests for coefficient differences reveal that footnotes referenced by new CAMs change to a greater extent. This demonstrates the persistence of the H1 finding and suggests that CAMs added in 2020, which prompts the initial comparison of management and auditor-provided disclosures, are associated with a greater change.

**First-time adopters in 2020.** Next, we examine whether the significant change to referenced footnotes also occurs for accelerated and nonaccelerated filers, which disclosed CAMs for the first time in 2020. We identify 1,086 footnote-adopter-years referenced by CAMs of first-time adopters in 2020 and 9,404 footnote-adopter-years not referenced. Results in [Table 4](#), Panel B show that footnotes of these filers referenced by CAMs significantly change in the post-period, relative to footnotes of these filers not referenced by CAMs. This demonstrates the generalizability of H1 to issuers of different sizes.

**Similarity of CAM and footnote language.** To test the validity of the interpretation that changes to footnotes align with information disclosed in CAMs, we utilize a cosine similarity score to measure the similarity between the CAM disclosures and the referenced footnotes.<sup>26</sup> If footnote changes are unrelated to the CAM, we would not expect similarity

<sup>25</sup> To examine the effectiveness of our PSM procedure and DiD models, we examine the H2 dependent variables before AS 3101 to ensure the parallel trends assumption is met ([Kausar, Shroff, and White 2016; Cunningham et al. 2019](#)). We observe no significant differences in pre-period trends between the treatment and PSM control groups, which supports the parallel trends assumption. Additionally, while we cannot observe whether post-treatment trends in the dependent variables would have continued to be parallel, several of our research design choices limit this concern. For example, we use balanced panels and PSM samples to ensure that sample composition does not affect our results. In analyses reported in [Online Appendix 2](#) and [5](#), we include issuer fixed effects in all models and results are consistent.

<sup>26</sup> This analysis is performed at the CAM-referenced footnote pair level and includes 3,966 pairs. This is larger than the sample of 3,790 CAMs since one CAM can reference multiple footnotes.

TABLE 3

## H1: Changes to Footnotes following the Adoption of the CAM Disclosure Requirement

POST = 2019

	(1)	(2)	(3)	(4)	(5)	(6)
	<i>FN-WORDS</i>	<i>FN-STICKINESS</i>	<i>FN-UNCERTAIN-WORDS</i>	<i>FN-WORDS</i>	<i>FN-STICKINESS</i>	<i>FN-UNCERTAIN-WORDS</i>
<i>POST</i>	-0.045*** (-9.655)	0.018*** (4.353)	-0.046*** (-9.025)	-0.019*** (-4.031)	0.009** (2.506)	-0.032*** (-5.615)
<i>FN-CAM</i>	0.454*** (20.428)	-0.053*** (-10.307)	0.733*** (29.793)	0.429*** (17.613)	-0.059*** (-10.230)	0.747*** (27.334)
<i>POST * FN-CAM</i>	0.086*** (8.506)	-0.032*** (-4.890)	0.100*** (8.505)	0.004 (0.357)	0.008 (1.259)	-0.005 (-0.401)
<i>ICMW-3</i>	0.002 (0.093)	-0.027** (-2.081)	0.006 (0.357)	-0.005 (-0.338)	-0.004 (-0.320)	-0.004 (-0.222)
<i>RESTATE_3</i>	-0.001 (-0.053)	0.005 (0.651)	-0.002 (-0.129)	0.019** (1.973)	0.003 (0.491)	0.015 (1.268)
<i>CL-2</i>	-0.000 (-0.061)	-0.000 (-0.046)	-0.001 (-0.118)	0.005 (0.727)	-0.004 (-0.834)	-0.001 (-0.100)
<i>BIG 4</i>	-0.094 (-1.623)	0.007 (0.177)	-0.026 (-0.421)	-0.027 (-0.990)	0.006 (0.346)	0.019 (0.437)
<i>AU-CHANGE</i>	0.020 (0.646)	0.007 (0.270)	-0.009 (-0.298)	-0.002 (-0.092)	-0.041 (-1.598)	-0.001 (-0.029)
<i>AU-TENURE</i>	0.018 (0.945)	0.019 (1.072)	-0.006 (-0.421)	-0.006 (-0.990)	-0.014 (0.346)	-0.021 (-1.103)
<i>ARC</i>	0.429*** (11.316)	-0.140*** (-4.400)	0.353*** (8.747)	0.443*** (11.265)	-0.138*** (-4.109)	0.333*** (7.334)
<i>SIZE</i>	0.073*** (3.844)	-0.051*** (-2.873)	0.098*** (4.552)	0.030* (1.718)	-0.064*** (-4.477)	0.029 (1.355)
<i>AGE</i>	-0.097* (-1.884)	0.041 (0.858)	-0.034 (-0.561)	-0.006 (-0.115)	0.167*** (3.411)	0.059 (0.954)
<i>BM</i>	-0.006 (-1.015)	-0.008 (-0.785)	0.009 (1.086)	-0.001 (-0.080)	0.015 (1.378)	0.015 (1.066)
<i>SALESs-GROWTH</i>	0.006 (0.772)	-0.017*** (-2.664)	0.014* (1.653)	0.002 (0.264)	-0.014* (-1.907)	0.006 (0.929)
<i>SEGMENTS</i>	0.009 (0.279)	0.042* (-2.664)	0.027 (-0.528)	0.043 (-0.872)	0.065*** (0.040)	0.024 (-0.624)
<i>FOREIGN-SALES</i>	-0.002 (-0.026)	-0.107** (-2.168)	-0.041 (-0.528)	-0.042 (-0.872)	0.001 (0.040)	-0.028 (-0.624)

(continued on next page)

TABLE 3 (continued)

	<i>POST = 2019</i>			<i>POST = 2018</i>		
	(1) <i>FN-WORDS</i>	(2) <i>FN-STICKINESS</i>	(3) <i>FN-UNCERTAIN- WORDS</i>	(4) <i>FN- WORDS</i>	(5) <i>FN-STICKINESS</i>	(6) <i>FN-UNCERTAIN- WORDS</i>
<i>LEV</i>	-0.059 (-1.541)	-0.053 (-1.565)	-0.024 (-0.499)	0.088* (1.753)	-0.056 (-1.485)	0.117** (2.001)
<i>ROA</i>	-0.153*** (-2.621)	0.082* (1.673)	-0.164*** (-2.726)	-0.036 (-0.704)	0.019 (0.411)	0.007 (0.135)
<i>LOSS</i>	0.005	-0.016 (-1.612)	-0.005 (-0.349)	0.011 (1.018)	0.002 (0.227)	0.018 (1.403)
<i>ZSCORE</i>	-0.000 (-0.189)	0.001 (0.734)	-0.003* (-1.758)	0.001 (1.138)	0.001 (0.467)	0.000 (0.058)
<i>LIT-RISK</i>	0.077*** (9.456)	-0.041*** (-3.626)	0.197*** (4.837)	-0.502*** (-12.092)	0.501*** (13.625)	-0.324*** (-6.209)
<i>MA</i>	0.002 (0.382)	-0.028*** (-5.242)	0.017** (2.276)	0.015** (2.291)	-0.011** (-2.088)	0.014* (1.714)
<i>RESTRUCTURE</i>	-0.007 (-0.959)	0.011** (1.968)	-0.004 (-0.457)	-0.001 (-0.176)	-0.001 (1.015)	-0.001 (-0.085)
Constant	3.365*** (11.184)	1.975*** (7.187)	-1.163*** (-3.619)	3.414*** (12.116)	1.587*** (6.043)	-0.613* (-1.760)
Issuer Fixed Effects	Included	Included	Included	Included	Included	Included
Observations	35,742	28,284	35,742	28,168	24,954	28,168
Adopter-Footnote-Years Referenced by <i>C4M</i> ( <i>FN-C4M</i> = 1)	3,790	3,170	3,790	3,158	2,880	3,158
Adopter-Footnote-Years not Referenced by <i>C4M</i> ( <i>FN-C4M</i> = 0)	31,952	25,114	31,952	25,010	22,074	25,010
Adjusted R <sup>2</sup>	0.103	0.098	0.105	0.100	0.088	0.104

\* , \*\* , \*\*\* Indicate statistical significance at the p < 0.10, p < 0.05, and p < 0.01 levels, respectively, based on two-tailed tests. Test statistics are in parentheses. The number of observations decreases when *POST* = 2018 because some firms are missing control variables or the referenced footnote in 2017.

This table presents the difference-in-differences regression results examining the association between the adoption of the CAM disclosure requirement and changes to footnotes referenced by CAM disclosures.

All variables are defined in Appendix A.

TABLE 4  
Additional Analysis for Footnote Changes

	<b>Panel A: Changes to Footnotes in 2020 for Second Year Filers</b>	<b>(1)</b> <i>FN- WORDS</i>	<b>(2)</b> <i>FN- STICKINESS</i>	<b>(3)</b> <i>FN-UNCERTAIN- WORDS</i>	<b>(4)</b> <i>FN- WORDS</i>	<b>(5)</b> <i>FN- STICKINESS</i>	<b>(6)</b> <i>FN-UNCERTAIN- WORDS</i>
<i>POST</i>		0.029*** (5.078)	-0.016*** (-3.723)	0.017*** (2.598)	0.030*** (5.179)	-0.016*** (-3.770)	0.018*** (2.799)
<i>FN-CAM</i>		0.407*** (17.029)	-0.039*** (-7.722)	0.717*** (27.231)			
<i>POST * FN-CAM</i>		0.154*** (13.008)	-0.069*** (-9.027)	0.172*** (12.729)			
<i>FN-CAM-SAME</i>				0.479*** (18.907)	-0.039*** (-7.052)	0.766*** (26.717)	
<i>POST * FN-CAM-SAME</i>				0.094*** (8.030)	-0.038*** (-4.865)	0.098*** (7.536)	
<i>FN-CAM-ADD</i>				0.129*** (2.899)	-0.040*** (-3.514)	0.506*** (10.771)	
<i>POST * FN-CAM-ADD</i>				0.328*** (11.166)	-0.175*** (-9.823)	0.363*** (10.211)	
Control Variables from Table 3	Included	Included	Included	Included	Included	Included	
Observations	33,340	27,766	33,340	33,340	27,766	33,340	
Adopter-Footnote-Years Referenced by CAM	3,308	3,020	3,308	3,308	3,020	3,308	
Adopter-Footnote-Years not Referenced by CAM	30,032	24,746	30,032	30,032	24,746	30,032	
Adjusted R <sup>2</sup>	0.106	0.106	0.103	0.108	0.111	0.105	
F-test for Difference between Coefficients							
<i>POST * FN-CAM-SAME</i>	0.094						
<i>POST * FN-CAM-ADD</i>	0.328						
Difference	0.234***						
(4) <i>FN-WORDS</i>							
<i>POST * FN-CAM-SAME</i>	-0.038						
<i>POST * FN-CAM-ADD</i>	-0.175						
Difference	-0.137***						
(5) <i>FN-STICKINESS</i>							
<i>POST * FN-CAM-SAME</i>	0.098						
<i>POST * FN-CAM-ADD</i>	0.363						
Difference	0.265***						
(6) <i>FN-UNCERTAIN-WORDS</i>							
<i>POST * FN-CAM-SAME</i>	0.098						
<i>POST * FN-CAM-ADD</i>	0.363						
Difference	0.265***						

(continued on next page)

TABLE 4 (continued)

**Panel B: Changes to Footnotes in 2020 for First-Time Adopters**

	(1) <i>FN-WORDS</i>	(2) <i>FN-STICKINESS</i>	(3) <i>FN-UNCERTAIN-WORDS</i>
<i>POST</i>	0.001 (0.082)	-0.018** (-2.132)	-0.008 (-0.789)
<i>FN-CAM</i>	0.570*** (14.666)	-0.015* (-1.778)	0.792*** (17.656)
<i>POST * FN-CAM</i>	0.161*** (7.900)	-0.105*** (-8.249)	0.134*** (6.310)
Control Variables from <a href="#">Table 3</a>	Included	Included	Included
Observations	10,490	8,190	10,490
Adopter-Footnote-Years Referenced by <i>CAM</i>	1,086	930	1,086
Adopter-Footnote-Years not Referenced by <i>CAM</i>	9,404	7,260	9,404
Adjusted R <sup>2</sup>	0.115	0.139	0.097

**Panel C: Similarity of CAMs and Referenced Footnote Disclosures**

	(1) <i>FNCAM-SIMILARITY</i>	(2) <i>FNRESP-SIMILARITY</i>
<i>POST</i>	0.019*** (18.462)	0.006*** (9.465)
Controls from <a href="#">Table 3<sup>a</sup></a>	Included	Included
Industry Fixed Effects	Included	Included
Observations	3,966	3,966
Adjusted R <sup>2</sup>	0.119	0.146

\*, \*\*, \*\*\* Indicate statistical significance at the p < 0.10, p < 0.05, and p < 0.01 levels, respectively, based on two-tailed tests. Test statistics are in parentheses. For brevity, coefficients on control variables are suppressed.

This table presents additional analysis for H1. Panel A presents results examining the H1 association in 2020 for second year filers. Panel B presents results examining the H1 association in 2020 for first-time adopters. Panel C presents a pre-post regression examining the similarity of CAMs and referenced footnote disclosures.

<sup>a</sup> *FN-WORDS* is also included as a control in these models.

All variables are defined in [Appendix A](#).

between the two disclosures to increase. [Table 4](#), Panel C displays results of a pre-post analysis. *POST* is positive and significant, demonstrating that the textual similarity of a CAM disclosure and its referenced footnote increases from 2018 to 2019. This provides evidence that the changes to footnotes align with the auditor-provided CAM disclosure. This result is further supported by the example in [Appendix B](#), where the text of the footnote that changes is similar to the text of the CAM. Specifically, the highlighted portion of the CAM (auditor-provided) aligns with the highlighted portion of the 2019 referenced footnote (management-provided), which did not appear in the 2018 footnote.

**Alternative event-based explanation.** It is possible that an event unrelated to the CAM could prompt the footnote changes and that an event could prompt both a CAM and footnote change. If these are prevalent phenomena, we could be over-attributing the H1 result to the CAM standard. In [Online Appendix 4](#), we present several additional analyses to investigate this alternative explanation. We focus these analyses on mergers and acquisitions (M&A) because they are a clear event independent of management discretion. That is, we would not expect management to change an M&A decision because of a CAM disclosure decision.<sup>27</sup> Our results are consistent throughout samples that consider the influence

<sup>27</sup> Other significant accounts, such as impairments or UTB, are endogenous as they could also be outcomes of the CAM reporting process (i.e., management changes real operating activities or their estimates because of the CAM disclosure). For example, a working paper by [Drake, Goldman, Lusch, and Schmidt \(2021\)](#) finds that disclosure of a tax CAM is associated with a lower likelihood that the company uses tax expense to meet analysts' after-tax consensus forecasts (i.e., management uses tax accounts as an earnings management tool prior to the spotlight).

of M&A. Even when holding the M&A event constant, we find that our result holds, which suggests that the CAM spotlight is incremental to the event. While these results provide some assurance that our results hold even in the presence and absence of major events, it is impossible to observe the counterfactual and know whether the footnotes would have changed absent the CAM standard. We acknowledge that we cannot completely rule out an event-based alternative explanation.

## H2: Market Reaction

[Table 5](#) presents results testing H2 using Model (2). We do not observe significant interaction terms in either the unmatched or PSM sample for either of the dependent variables. Following [Hoenig and Heisey \(2001\)](#) and [Cunningham et al. \(2019\)](#), we also consider the magnitude of the confidence intervals for all statistically insignificant coefficients. As shown under the interaction term, we generally find a narrow range between the upper and lower bounds of these confidence intervals. When compared to the standard deviation of each dependent variable examined (untabulated), the potential effect sizes are small. Overall, this suggests that CAM disclosures, on average, do not provide incremental information to the market. This is consistent with several non-U.S. studies ([Gutierrez et al. 2018](#); [Bédard et al. 2019](#); [Liao et al. 2019](#); [Gutierrez et al. 2021b](#)) and with the PCAOB's interim analysis, which reports an insignificant market reaction to the CAM regulation ([PCAOB 2020b](#)).

### Additional Analysis for H2: Unexpected CAM Disclosures

Results for H2 suggest that, on *average*, CAMs do not provide incremental information to the market. However, it is possible that certain unexpected CAM disclosures represent news to the market.<sup>28</sup> In this additional analysis, we examine whether unexpected CAM disclosures are perceived favorably or unfavorably by the market. To explore this, we conduct cross-sectional analyses within issuers adopting CAMs in 2019 using the following model, which follows [Gutierrez et al. \(2018\)](#):<sup>29</sup>

$$\begin{aligned} CAR_{i,t} = & \beta_0 + \beta_1 POST_{i,t} + \beta_2 Unexpected\ CAM_{i,t} + \beta_3 POST * Unexpected\ CAM_{i,t} \\ & + \sum \beta_j Controls_{i,t} + IndustryFE + \varepsilon_{i,t}. \end{aligned} \quad (3)$$

Instead of *ABS-CAR*, we use signed cumulative abnormal returns (*CAR*) in these cross-sectional analyses to best capture whether the market reacts in a specific direction, positively or negatively, in response to unexpected CAMs.

**Predicting number of CAMs.** To generate an issuer-specific unexpected number of CAMs, we predict *NUM-CAMS*, a count variable for the number of CAMs disclosed in the audit opinion, using control variables expected to influence CAM disclosures from Model (1). The result of this negative binomial regression model is displayed in [Table 6](#), Panel A.<sup>30</sup> We find that *ICMW-3*, *CL-2*, *ARC*, *SIZE*, *SALES-GROWTH*, *LOSS*, *MA*, and *RESTRUCTURE* are positively associated with *NUM-CAMS*, suggesting that past reporting issues and greater complexity increase the number of CAMs disclosed. The coefficient for *FOREIGN-SALES* is negative and significant. The coefficient for *BIG 4* is also negative and significant, which may suggest that Big 4 audit firms under-disclose CAMs, or that audit areas that may otherwise be CAMs are not challenging for them to audit. Staff guidance from the PCAOB suggests that CAM determinants should not vary depending on the size of the auditor ([Public Company Accounting Oversight Board \(PCAOB\) 2019](#)), so the significance of this variable is interesting. The coefficient on *FILE10K* is also negative and significant, which suggests that foreign issuers disclose more CAMs and is consistent with the higher number of KAMs reported in the descriptives of non-U.S. studies. Related to the U.S.-specific litigation environment, the coefficient on *LIT-RISK* is positive and significant, which is consistent with [Sulcay \(2021\)](#) and supports predictions that auditors may be more prone to disclose when litigation risk is higher.

<sup>28</sup> A study by [Klevak, Livnat, Pei, and Soslava \(2021\)](#) finds that investors interpret more extensive CAM disclosures as a negative signal. In contrast, non-U.S. studies have generally not found the variations in the content of expanded audit reports, such as the number of risks disclosed or the extent of uncertainty expressed, to be meaningfully associated with variation in market reaction ([Gutierrez et al. 2018](#); [Liao et al. 2019](#); [Gutierrez et al. 2021b](#); [Lennox et al. 2022](#)). One exception is [Goh et al. \(2020\)](#), which finds that KAM content is associated with variations in market reaction. Several other studies examine the association between KAM characteristics and other dependent variables ([Rousseau and Zehms 2020](#); [Camacho-Minano, Munoz-Izquierdo, Pincus, and Wellmeyer 2021](#); [Gutierrez, Korczak, and Vulcheva 2021a](#); [Porumb, Zengin-Karaibrahimoglu, Lobo, Hooghiemstra, and Waard 2021](#)).

<sup>29</sup> Since nonadopters used as a control group in H2 do not disclose CAMs, we cannot use them in DiD analysis of CAM content. The model instead requires the 2019 CAM adopters to have both 2018 and 2019 data and applies the same *Unexpected CAM* measure to both. *POST \* Unexpected CAM* captures the impact of unexpected CAM disclosures on the change in market reaction pre- and post-adoption and controls for within-firm time invariant confounders.

<sup>30</sup> The negative binomial model is a generalized extension of the Poisson model for count data that corrects for unobserved heterogeneity. Our results are consistent if the model is run as a Poisson or OLS model.

**TABLE 5**  
**H2: Market Reaction Changes following the Adoption of the CAM Disclosure Requirement**

	Unmatched Sample				PSM Sample			
	(1) <i>ABS-CAR</i>		(2) <i>AB-VOLUME</i>		(3) <i>ABS-CAR</i>		(4) <i>AB-VOLUME</i>	
<i>POST</i>	0.007*	(1.648)	-0.001	(-0.395)	0.008	(1.146)	-0.003**	(-2.116)
<i>ADOPT</i>	-0.001	(-0.409)	0.007***	(5.277)	-0.006	(-0.881)	0.002	(1.250)
<i>POST * ADOPT</i>	-0.001	(-0.215)	-0.001	(-0.658)	0.007	(0.782)	0.001	(0.686)
Confidence Interval for Coefficient	(-0.010–0.008)		(-0.003–0.002)		(-0.011–0.025)		(-0.002–0.005)	
<i>ICMW-3</i>	0.004*	(1.647)	0.002	(1.592)	0.007	(1.183)	0.002	(0.721)
<i>RESTATE-3</i>	-0.001	(-0.237)	-0.000	(-0.238)	-0.010*	(-1.665)	-0.003	(-1.551)
<i>CL-2</i>	-0.002	(-1.267)	0.001	(0.802)	-0.003	(-0.439)	0.006**	(2.290)
<i>BIG 4</i>	0.004*	(1.667)	0.002	(1.560)	0.002	(0.293)	-0.001	(-0.487)
<i>AU-CHANGE</i>	-0.000	(-0.012)	-0.002	(-0.775)	0.001	(0.116)	0.002	(0.512)
<i>AU-TENURE</i>	0.000	(0.126)	0.001	(1.190)	-0.001	(-0.235)	0.002*	(1.795)
<i>FILE10K</i>	0.002	(0.459)	-0.001	(-0.382)	0.007	(0.761)	0.004	(1.136)
<i>ARC</i>	0.008**	(2.449)	0.004**	(2.246)	0.002	(0.182)	0.003	(0.781)
<i>SIZE<sup>a</sup></i>	-0.005***	(-7.198)	-0.001*	(-1.801)	-0.006*	(-1.735)	0.002**	(2.279)
<i>AGE</i>	-0.001	(-1.186)	-0.001***	(-3.000)	0.003	(0.810)	-0.001	(-0.631)
<i>BM</i>	-0.002	(-1.114)	0.001	(1.221)	-0.000	(-0.113)	0.001	(0.861)
<i>SALES-GROWTH</i>	0.000	(0.155)	0.001	(1.578)	0.004	(1.283)	0.002*	(1.828)
<i>SEGMENTS</i>	-0.004**	(-2.243)	-0.003***	(-3.910)	0.008	(1.145)	-0.001	(-0.495)
<i>FOREIGN-SALES</i>	-0.002	(-0.677)	-0.002	(-1.261)	-0.002	(-0.233)	-0.003	(-0.721)
<i>LEV</i>	0.002	(0.420)	0.004	(1.422)	0.025**	(2.543)	0.005	(1.434)
<i>ROA</i>	-0.014*	(-1.673)	-0.005	(-0.899)	-0.031	(-1.623)	-0.002	(-0.206)
<i>LOSS</i>	0.012***	(4.460)	0.004***	(3.341)	0.013**	(2.002)	0.007**	(2.582)
<i>ZSCORE</i>	0.000	(0.209)	0.000	(0.674)	0.000	(0.699)	-0.000	(-0.180)
<i>LIT-RISK</i>	0.004	(1.133)	0.003**	(2.080)	0.002	(0.209)	0.006*	(1.703)
<i>MA</i>	0.000	(0.246)	-0.001*	(-1.952)	-0.006	(-1.155)	-0.003	(-1.586)
<i>RESTRUCTURE</i>	0.004**	(2.093)	0.001	(1.538)	0.014**	(2.554)	-0.001	(-0.404)
<i>CHG-NI</i>	0.006	(1.019)	0.001	(0.312)	0.008	(0.580)	-0.000	(-0.026)
<i>CONCUR</i>	0.034***	(19.042)	0.006***	(9.451)	0.041***	(8.195)	0.006***	(3.756)
Constant	0.020	(1.143)	-0.018*	(-1.907)	0.022	(0.374)	-0.041*	(-1.685)
Industry Fixed Effects	Included		Included		Included		Included	
Observations	4,556		4,556		700		700	
Adopter-Years	3,602		3,602		350		350	
Nonadopter-Years	954		954		350		350	
Adjusted R <sup>2</sup>	0.259		0.163		0.267		0.231	

\*, \*\*, \*\*\* Indicate statistical significance at the  $p < 0.10$ ,  $p < 0.05$ , and  $p < 0.01$  levels, respectively, based on two-tailed tests. Test statistics are in parentheses.

This table presents the difference-in-differences regression results examining the association between the adoption of the CAM disclosure requirement and market reaction.

<sup>a</sup> The *SIZE* variable is measured as the log of market value for these dependent variables.

All variables are defined in [Appendix A](#).

We save the residual of the model as *NUM-CAMS-UNEX*, which captures the number of CAMs the market may not have expected, with positive residuals representing more CAMs than expected and negative residuals representing fewer CAMs than expected.

**Predicting subject areas of CAMs.** Next, we consider whether CAMs in specific subject areas are unexpected. To conduct this analysis, we develop prediction models for the seven subject areas of CAMs shown in [Appendix C](#). In addition to our standard set of control variables, we expand these models to include variables related to each subject area. Specifically, we

**TABLE 6**  
**Additional Analysis for H2, Predicting Unexpected CAMs**

**Panel A: Prediction Model for Number of CAMs Disclosed**

	(1)	<i>NUM-CAMS</i>
<i>ICMW-3</i>	0.105***	(3.387)
<i>RESTATE-3</i>	0.015	(0.497)
<i>CL-2</i>	0.055**	(2.490)
<i>BIG 4</i>	−0.110***	(−2.931)
<i>AU-CHANGE</i>	−0.035	(−0.485)
<i>AU-TENURE</i>	−0.011	(−0.850)
<i>FILE10K</i>	−0.147***	(−3.965)
<i>ARC</i>	0.278***	(6.545)
<i>SIZE</i>	0.062***	(7.591)
<i>AGE</i>	−0.001	(−0.079)
<i>BM</i>	0.022	(1.340)
<i>SALES-GROWTH</i>	0.057**	(2.442)
<i>SEGMENTS</i>	0.021	(0.874)
<i>FOREIGN-SALES</i>	−0.071*	(−1.655)
<i>LEV</i>	0.003	(0.051)
<i>ROA</i>	0.073	(1.411)
<i>LOSS</i>	0.088***	(3.150)
<i>ZSCORE</i>	−0.004*	(−1.834)
<i>LIT-RISK</i>	0.113***	(2.727)
<i>MA</i>	0.072***	(3.380)
<i>RESTRUCTURE</i>	0.064***	(2.984)
Constant	−1.805***	(−6.475)
Industry Fixed Effects	Included	
Observations	2,253	
Log Likelihood	−2,992	

*(continued on next page)*

review the content of restatements, internal control material weaknesses (ICMWs), and comment letters to determine whether each is related or unrelated to the subject examined, which is information that would be known to the market at the time of the CAM disclosure.<sup>31</sup> We also include variables for the magnitude of certain financial statement accounts that require a high degree of judgment, such as deferred revenues, inventory, impairments, unrecognized tax benefits, etc.

Table 6, Panel B displays results of logit models predicting specific subject areas of CAMs.<sup>32</sup> For each subject area, we restrict the sample to issuers that report non-zero values in specific related accounts and whose auditor could therefore reasonably report a related CAM. For example, in the model predicting the disclosure of an intangible asset CAM, we restrict the sample to issuers with a non-zero value for either *INTANGIBLE* or *IMPAIR*. These models have high areas under the receiver operating characteristic (ROC) curve (ranging from 72.2 percent to 96.6 percent), which indicates high predictive power (Hosmer and Lemeshow 2000). In analyses reported in Online Appendix 8, we use 2020 data to conduct out-of-sample validation tests of these prediction models. When the coefficients from Table 6, Panel B are applied to 2020 data (when all issuer sizes are required to disclose CAMs), the ROC ranges from 70.0 percent to 95.6 percent. These results demonstrate the predictive ability of these subject area models.<sup>33</sup>

<sup>31</sup> To link CAMs to prior financial reporting issues, we map CAM subject areas to subject areas of internal control material weaknesses, restatement disclosures, and comment letter issues. This mapping is shown in Appendix C.

<sup>32</sup> To control for the interdependence of the selection of CAM topics, we control for the number of CAMs in each of the subject area models and confirm results are robust.

<sup>33</sup> To test the generalizability of these models, in untabulated analyses, we include both 2019 and 2020 data in the prediction models and find that predictions are largely consistent (e.g., the probability of having the same prediction when 2019 data is used versus 2019 and 2020 combined ranges from 93.28 to 99.67 percent in each subject area).

TABLE 6 (continued)

**Panel B: Prediction Model for Subject Areas of CAMs**

	(1) <i>CAM- INTANGIBLE</i>	(2) <i>CAM- REVENUE</i>	(3) <i>CAM-M&amp;A</i>	(4) <i>CAM-TAXES</i>	(5) <i>CAM-PPE</i>	(6) <i>CAM-CREDIT- LOSSES</i>	(7) <i>CAM- CONTINGENCIES</i>
<i>ICMW-CAM-RELATED<sup>a</sup></i>	0.336 (0.690)	0.389 (1.464)	-0.117 (-0.333)	1.186*** (3.430)	0.156 (0.329)	-0.014 (-0.019)	0.240 (0.424)
<i>ICMW-CAM-UNRELATED<sup>a</sup></i>	0.113 (0.617)	-0.106 (-0.517)	-0.229 (-1.045)	0.201 (0.835)	-0.511 (-1.538)	-0.457 (-0.924)	-0.133 (-0.464)
<i>RESTATE-CAM-RELATED<sup>a</sup></i>	1.010 (1.578)	0.517* (1.771)	-0.662 (-1.487)	-0.212 (-0.457)	0.919* (1.832)	-0.158 (-0.139)	2.043** (2.214)
<i>RESTATE-CAM-UNRELATED<sup>a</sup></i>	0.016 (0.098)	-0.062 (-0.298)	-0.164 (-0.792)	-0.113 (-0.498)	0.449* (1.727)	0.630* (1.668)	-0.209 (-0.731)
<i>CL-CAM-RELATED<sup>a</sup></i>	0.596** (1.969)	0.366** (2.004)	0.739** (2.373)	0.486 (1.496)	-0.004 (-0.009)	0.762 (1.276)	1.359*** (3.646)
<i>CL-CAM-UNRELATED<sup>a</sup></i>	0.154 (1.077)	0.104 (0.621)	-0.146 (-0.904)	-0.070 (-0.415)	0.410** (2.051)	0.213 (0.617)	0.023 (0.110)
<i>BIG 4</i>	0.156 (0.660)	0.189 (0.768)	-0.041 (-0.177)	-0.767*** (-2.762)	-0.422 (-1.037)	0.251 (0.425)	0.566 (1.331)
<i>AU-CHANGE</i>	-0.811* (-1.858)	0.109 (0.300)	0.131 (0.296)	-0.015 (-0.031)	0.680 (1.155)	-0.904 (-0.734)	-0.029 (-0.061)
<i>AU-TENURE</i>	-0.061 (-0.797)	-0.043 (-0.541)	0.057 (0.650)	-0.008 (-0.089)	0.082 (0.768)	-0.123 (-0.643)	-0.307*** (-2.988)
<i>FILE10K</i>	-0.070 (-0.307)	-0.678*** (-3.112)	0.281 (1.132)	0.013 (0.054)	-1.328*** (-4.970)	-0.246 (-0.493)	-0.768*** (-2.747)
<i>ARC</i>	0.443 (1.615)	0.088 (0.343)	0.614** (2.002)	0.844*** (2.619)	-0.450 (-1.289)	0.812 (1.349)	-0.061 (-0.163)
<i>SIZE</i>	0.091* (1.740)	-0.062 (-1.230)	-0.187*** (-3.053)	0.260*** (4.781)	0.048 (0.702)	0.181 (1.400)	0.194*** (2.606)
<i>AGE</i>	0.031 (0.323)	-0.134 (-1.436)	0.163 (1.551)	-0.135 (-1.241)	-0.228 (-1.644)	0.231 (1.037)	0.325** (2.142)
<i>BM</i>	0.286* (1.956)	-0.235** (-2.527)	0.047 (0.347)	-0.103 (-0.819)	0.441*** (2.724)	-0.148 (-0.856)	0.006 (0.039)
<i>SALES-GROWTH</i>	-0.359 (-1.160)	0.269* (1.936)	1.520*** (2.733)	-0.354 (-1.193)	-0.179 (-0.558)	-0.011 (-0.032)	-0.518 (-1.238)
<i>SEGMENTS</i>	0.269* (1.862)	0.200 (1.313)	-0.066 (-0.429)	-0.053 (-0.311)	0.437** (2.399)	0.327 (1.008)	-0.062 (-0.337)
<i>FOREIGN-SALES</i>	0.075 (0.297)	-0.636** (-2.517)	0.038 (0.141)	1.852*** (6.446)	-0.493 (-1.488)	-0.935 (-1.422)	-0.776** (-1.976)

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TABLE 6 (continued)

	(1) <i>CAM- INTANGIBLE</i>	(2) <i>CAM- REVENUE</i>	(3)	(4)	(5)	(6) <i>CAM-CREDIT- LOSSES</i>	(7) <i>CAM- CONTINGENCIES</i>
	<i>LEV</i>	<i>CAM-M&amp;A</i>	<i>CAM-TAXES</i>	<i>CAM-PPE</i>	<i>CAM-LOSSES</i>		
<i>ROA</i>	-0.314 (-0.959)	-0.585** (-1.966)	0.504 (1.404)	0.089 (0.255)	0.871** (2.250)	0.459 (0.857)	0.174 (0.355)
<i>LOSS</i>	-0.215 (-0.554)	0.816 (1.438)	0.159 (0.171)	4.799*** (3.515)	-1.150 (-1.176)	0.242 (0.154)	5.133*** (3.340)
<i>ZSCORE</i>	0.253 (1.487)	0.037 (-0.013)	-0.024 (-0.006)	0.056 (0.010)	0.203 (0.009)	-0.333 (-0.056)	0.180 (0.553)
<i>LIT-RISK</i>	-0.027 (-0.133)	0.923*** (4.802)	-0.352 (-1.634)	0.217 (-2.602)	(0.854) (-1.411)	(-0.675) (-0.406)	-0.039 (-1.595)
<i>MA</i>	-0.002 (-0.017)	-0.097 (-0.678)	1.375*** (5.401)	-0.239 (-1.441)	-0.049 (-0.271)	-0.225 (-0.695)	-0.180 (-0.943)
<i>RESTRUCTURE</i>	0.250** (1.990)	0.062 (0.468)	-0.189 (-1.319)	0.448*** (2.906)	0.193 (1.044)	-0.539 (-1.634)	0.127 (0.674)
<i>DEF-REVENUES</i>	-2.045* (-1.826)	8.260*** (6.355)	-0.395 (-0.381)	-0.555 (-0.483)	-4.872** (-2.255)	-9.210* (-1.943)	-1.447 (-0.569)
<i>RECEIVABLES</i>	-0.391 (-0.667)	2.236*** (4.350)	-0.359 (-0.566)	-0.404 (-0.549)	-8.633*** (-5.557)	5.566*** (7.542)	-0.695 (-0.788)
<i>INVENTORY</i>	1.390* (1.848)	-1.834* (-1.850)	-2.180** (-2.213)	0.321 (0.332)	-1.690 (-1.515)	-1.477 (-0.792)	2.146** (2.226)
<i>PPE</i>	0.586 (1.438)	-0.236 (-0.575)	-0.756 (-1.484)	0.488 (1.012)	1.930*** (3.988)	-1.441 (-1.571)	-0.757 (-1.304)
<i>INTANGIBLE</i>	3.517*** (8.845)	0.989*** (2.624)	0.796** (2.030)	0.557 (1.198)	-2.338*** (-3.613)	-1.890** (-1.977)	-0.680 (-1.078)
<i>IMPAIR</i>	0.786*** (6.301)	-0.136 (-0.988)	0.107 (0.739)	-0.259 (-1.607)	0.089 (0.489)	-0.430 (-1.168)	-0.51 (0.590)
<i>UTB</i>	-0.124** (-1.976)	0.142*** (2.854)	-0.153** (-2.237)	0.364*** (6.025)	-0.118 (-1.027)	-0.965*** (-3.421)	-0.051 (-0.540)
<i>LOAN-LOSSES</i>	-0.033 (-0.042)	-3.771** (-2.023)	-0.282 (-0.399)	-0.465 (-0.407)	2.426** (2.337)	73.557** (2.014)	-1.436 (-1.063)
<i>ADA</i>	0.149* (1.706)	0.024 (0.244)	-0.350 (-1.588)	0.135 (1.141)	0.159 (0.742)	0.637** (2.457)	0.037 (0.296)
<i>CONTINGENCIES</i>	-0.035 (-0.182)	0.138 (0.634)	-0.066 (-0.307)	-0.193 (-0.740)	0.384 (1.525)	0.472 (1.313)	0.717*** (3.241)

*(continued on next page)*

TABLE 6 (continued)

	(1) <i>CAM- INTANGIBLE</i>	(2) <i>CAM- REVENUE</i>	(3) <i>CAM-M&amp;A</i>	(4) <i>CAM-TAXES</i>	(5) <i>CAM-PPE</i>	(6) <i>CAM-CREDIT- LOSSES</i>	(7) <i>CAM- CONTINGENCIES</i>
Constant	-5,626*** (-3.467)	-0.674 (-0.457)	-5,483*** (-3.127)	-9,349*** (-5.052)	2,345 (1.155)	-10,428*** (-2.707)	-3,496 (-1.565)
Industry Fixed Effects	Included	Included	Included	Included	Included	Included	Included
Observations	2,054	2,253	1,534	2,253	2,108	2,127	1,604
Pseudo R <sup>2</sup>	0.216	0.249	0.106	0.217	0.407	0.724	0.135
ROC	0.804	0.826	0.722	0.818	0.905	0.966	0.749

\* , \*\* , \*\*\* Indicate statistical significance at the p < 0.10, p < 0.05, and p < 0.01 levels, respectively, based on two-tailed tests. Test statistics are in parentheses.

In Panel B, we use the Fama & French 12 industry classification to preserve more observations in these logit models. Using two-digit SIC codes in these models causes more observations to drop due to perfect prediction of the dependent variable. Despite the smaller samples, our results are generally robust to controlling for two-digit SIC codes. Five of the seven models are restricted based on the presence of significant accounts. Column (1) (*CAM-INTANGIBLE*) excludes observations with a value of 0 for both *INTANGIBLE* and *MPAIR*. Column (3) (*CAM-M&A*) excludes observations with a value of 0 for *MA* in year *t* and *t-1*. Column (5) (*CAM-PPE*) excludes observations with a value of 0 for *PPE*. Column (6) (*CAM-CREDIT-LOSSES*) excludes observations with a value of 0 for *RECEIVABLES*. Column (7) (*CAM-CONTINGENCIES*) excludes observations with a value of 0 for both *CLG* and *INVENTORY*. This table presents additional analysis for H2. Panel A presents results of the prediction model for the number of CAMs disclosed. Panel B presents results of the prediction models for subject areas of CAMs disclosed.

These are general labels that are defined differently in each of the seven models, where they are indicator variables equal to 1 if the company has/does not have an internal control material weakness, restatement disclosure, or comment letter in the current or past two years in the same subject area as the CAM being predicted. For instance, in column (5), *ICMW-CAM-RELATED* is an indicator for whether the issuer had a tax-related ICMW in the recent three years and *ICMW-CAM-UNRELATED* is an indicator for whether the issuer had an ICMW unrelated to tax in the recent three years.

All variables are defined in Appendix A.

(continued on next page)

TABLE 6 (continued)

## Panel C: Descriptive Statistics of Signed CAR and Unexpected CAM Variables for 2019 Adopters in Table 5

	<b>n</b>	<b>Mean</b>	<b>Median</b>	<b>Std. Dev.</b>	<b>25th Percentile</b>	<b>75th Percentile</b>
<i>CAR</i>	1,801	-0.006	-0.004	0.063	0.019	0.372
<i>NUM-CAMS-UNEX</i>	1,801	-0.003	-0.157	0.689	-0.515	0.434
<i>EXTRA-CAM</i>	1,801	0.515	1.000	0.500	0.000	1.000
<i>NUM-EXTRA-CAM</i>	1,801	0.614	1.000	0.670	0.000	1.000
<i>MISSED-CAM</i>	1,801	0.452	0.000	0.498	0.000	1.000
<i>NUM-MISSED CAM</i>	1,801	0.559	0.000	0.693	0.000	1.000

The magnitude of related accounts, which would be known to the market, are generally significant and positively associated with the disclosure of a CAM in the related subject area.<sup>34</sup> For example, *DEF-REVENUES* is positively associated with *CAM-REVENUE* but is negatively associated with other CAM subject areas. Since the majority of issuers disclose only one CAM, this suggests that if deferred revenues are a material account, auditors are more likely to disclose a revenue-related CAM but not other CAMs. Importantly, when account-specific control variables are removed, all seven models have a significantly lower ROC. Firm-level predictors, such as size, complexity, and Big 4, which were significant when predicting number of CAMs disclosed, are not consistently significant when predicting specific subject areas.

In Online Appendix 10, we report these models within full unrestricted samples. This is important since we cannot control for all factors or related accounts that lead an auditor to disclose a CAM. In certain instances, the auditor still reports a CAM even when there is a zero value in the related account(s). The full samples also have high predictive power and may be preferable for future researchers interested in incorporating the full context of the CAM disclosure decision.

**Unexpected CAM measures.** We use the models in Table 6, Panel B to create several measures of unexpected CAM disclosures.<sup>35</sup> *EXTRA-CAM* is equal to 1 if the auditor discloses a CAM in at least one of the seven subject areas where the models predict nondisclosure (predicted probability not in the top quintile) or where the observation is dropped from the sample because of no material account in that subject area,<sup>36</sup> and therefore is an aggregation of the subject area level. *NUM-EXTRA-CAM* is the number of subject areas where an auditor discloses a CAM where the model predicts nondisclosure or where the observation is dropped from the sample because of no material account in that subject area. These variables capture instances where the market would not have expected a CAM(s) and one was disclosed, which we expect to be viewed negatively. *MISSED-CAM* is equal to 1 if the auditor does not disclose CAMs in at least one of the seven subject areas where the models predict disclosure (predicted probability in the top quintile) and 0 otherwise. *NUM-MISSED-CAM* is the number of subject areas where an auditor does not disclose a CAM where the model predicts disclosure. These variables capture whether the market may have expected a CAM and one was not disclosed, which they could view as positive (the area is not as risky as expected) or neutral (the auditor's CAM disclosure does not change risk perceptions). Table 6, Panel C displays descriptive statistics of these measures.

**Cross-sectional results of unexpected CAMs.** Table 7, Panel A displays results of Model (3), where each column displays results with one of the five measures discussed above. Findings in column (1) show *POST\*NUM-CAMS-UNEX* is negatively associated with *CAR*. This indicates a decrease in signed abnormal returns in the post-adoption period for issuers with a greater number of unexpected CAMs. Since the CAM disclosure was new to the market in 2019, this suggests that investors interpret unexpected CAMs as a negative and risky signal.

Column (2) shows that *EXTRA-CAM* is negatively associated with *CAR*, suggesting that when a CAM is disclosed and the market did not anticipate the risk (based on our prediction models), there is a negative reaction in the

<sup>34</sup> This is consistent with Lynch, Mandell, and Rousseau (2021), who find that the magnitude and complexity of tax accounts is associated with the disclosure of a tax KAM in the U.K.

<sup>35</sup> In analyses reported in Online Appendix 8, we analyze the distribution of disclosure and non-disclosure in each subject area by quintile of predicted probability. The clustering of firms that disclose a CAM in the top quintile demonstrates the predictive ability of our model (Ge, Koester, and McVay 2017). For example, among firms disclosing a revenue CAM, 51.8 percent are in the top quintile of predicted probability and the percentage decreases sharply in the bottom four quintiles. In contrast, among firms without a revenue CAM, 8.7 percent are in the top quintile and the percentage increases sharply in the bottom four quintiles.

<sup>36</sup> Our results hold if we do not classify observations dropped from the subject area models as *EXTRA-CAM*.

**TABLE 7**  
**Additional Analysis for H2, Cross-Sectional Analysis of Unexpected CAMs**

**Panel A: Cross-Sectional Analyses of Unexpected CAMs on Market Reaction following CAM Adoption**

Unexpected CAM Measure	(1)	(2)	(3)	(4)	(5)
	NUM-CAMS-UNEX	EXTRA-CAM	NUM-EXTRA-CAM	MISSED-CAM	NUM-MISSED-CAM
	CAR	CAR	CAR	CAR	CAR
<i>POST</i>	-0.007*** (-3.597)	-0.003 (-1.067)	-0.003 (-1.229)	-0.008*** (-3.162)	-0.009*** (-3.606)
<i>Unexpected CAM</i>	-0.001 (-0.276)	0.005* (1.704)	0.003 (1.273)	0.000 (0.025)	-0.000 (-0.191)
<i>POST* Unexpected CAM</i>	-0.007** (-2.319)	-0.008** (-2.045)	0.006** (-2.219)	0.002 (0.482)	0.003 (1.088)
Controls from <a href="#">Table 5</a>	Included	Included	Included	Included	Included
Observations	3,602	3,602	3,602	3,602	3,602
Adjusted R <sup>2</sup>	0.027	0.025	0.025	0.024	0.024

(continued on next page)

post-period. This suggests that certain CAM disclosures do provide incremental information to what was previously known. Results in column (3) replicate this finding with the count variable. *MISSED-CAM* and *NUM-MISSED-CAM* are not significant. This suggests that investors do not reward or penalize the company for any under-disclosure by the auditor and/or do not change their view of risk based on the auditor's lack of CAM disclosure.<sup>37</sup>

These cross-sectional results extend our insignificant DiD results. While CAMs do not provide incremental information on average (perhaps because they are predictable), results of these analyses provide limited initial evidence of a market reaction when CAM disclosures deviate from expectations.<sup>38</sup> However, there may be risks already known to investors but not included in the CAM prediction models that lead to a negative market reaction. Thus, we acknowledge that these models are a starting point based on only one year of data and future research can improve upon them. Our results are also sensitive under certain specifications and as noted by [Minutti-Meza \(2021\)](#), these cross-sectional analyses should not be interpreted as causal tests of the consequences of CAM requirements. Therefore, these results should be interpreted with caution.

**Role of concurrent earnings announcements.** A total of 36.8 percent of adopters examined in this cross-sectional analysis file their earnings announcement within 1 day of the annual report (i.e., are concurrent filers). [Table 7](#), Panel B reports the cross-sectional analysis within samples of nonconcurrent and concurrent filers, respectively.<sup>39</sup> We find that *POST\* Unexpected CAM* results hold only in the concurrent filer sample.<sup>40</sup> Importantly, we do not observe that unexpected CAM disclosures are correlated with unexpected/new information in concurrent earnings announcements.<sup>41</sup> A potential explanation for why we find market reaction driven by concurrent filers is that these firms have more investor and analyst attention on their disclosures on that date ([Li, Nekrasov, and Teoh 2020](#)). For the nonconcurrent sample,

<sup>37</sup> We conduct several analyses to examine the robustness of this result. First, we include issuer fixed effects. Second, we generate the subject area unexpected measures using an alternative, more restrictive, cut-off. Finally, we follow [Leone, Minutti-Meza, and Wasley \(2019\)](#) and use robust regression to ensure results are not sensitive to potentially influential extreme observations. Our results are consistent across these robustness checks.

<sup>38</sup> In analyses reported in [Online Appendix 11](#), we follow [Lennox et al. \(2022\)](#) and create measures of industry and company-specific CAMs based on the frequency of CAMs in each industry. Results are consistent, where the market does not react to industry-wide CAMs but reacts negatively to company-specific CAMs.

<sup>39</sup> In analyses reported in [Online Appendix 7](#), we also examine whether the timing of the earnings announcement impacts the insignificant difference-in-differences result. We replicate Model (2) within samples of non-concurrent and concurrent filers and results remain insignificant in all specifications.

<sup>40</sup> We also conduct robustness checks in the concurrent filer sample. We find that results remain consistent when controlling for unexpected earnings based on analyst forecasts and when issuer fixed effects are included.

<sup>41</sup> Specifically, measures of unexpected extra CAMs are not significantly correlated with change in net income. We also manually review earnings announcements and do not observe that information in the unexpected CAM disclosure aligns with unexpected/new information in the earnings announcement (e.g., if an unexpected intangible asset CAM is disclosed, there is not new information related to intangibles in the earnings announcement).

TABLE 7 (continued)

**Panel B: Cross-Sectional Analysis of Unexpected CAMs within Samples of Nonconcurrent Filers and Concurrent Filers**

Unexpected CAM Measure	Nonconcurrent Filer Sample					Concurrent Filer Sample				
	(1) <i>NUM- CAMS- UNEX</i>	(2) <i>EXTRA- CAM</i>	(3) <i>NUM- EXTRA- CAM</i>	(4) <i>MISSED- CAM</i>	(5) <i>NUM-MISSED- CAM</i>	(6) <i>NUM-CAMS- UNEX</i>	(7) <i>EXTRA- CAM</i>	(8) <i>NUM- EXTRA- CAM</i>	(9) <i>MISSED- CAM</i>	(10) <i>NUM- MISSED- CAM</i>
	<i>CAR</i>	<i>CAR</i>	<i>CAR</i>	<i>CAR</i>	<i>CAR</i>	<i>CAR</i>	<i>CAR</i>	<i>CAR</i>	<i>CAR</i>	<i>CAR</i>
<i>POST</i>	-0.003* (-1.913)	-0.003 (-1.384)	-0.004* (-1.706)	-0.004* (-2.376)	-0.005** (-2.407)	-0.005** (-3.148)	-0.015*** (-3.148)	-0.003 (-0.489)	-0.014** (-0.462)	-0.015*** (-2.257)
<i>Unexpected CAM</i>	0.000	0.000	-0.000	-0.001	-0.001	-0.002	0.015** (-0.539)	0.008* (2.238)	0.001 (1.693)	0.001 (0.155)
<i>POST * Unexpected CAM</i>	-0.001	0.001	0.001	0.004	0.003	-0.016** (-0.413)	-0.023*** (2.238)	-0.020*** (-0.023)	-0.003 (-0.020)	0.001 (0.222)
Controls from Table 5	Included	Included	Included	Included	Included	Included	Included	Included	Included	Included
Observations	2,278	2,278	2,278	2,278	2,278	1,324	1,324	1,324	1,324	1,324
Adjusted R <sup>2</sup>	0.015	0.015	0.015	0.016	0.016	0.031	0.025	0.027	0.020	0.020

**Panel C: Unexpected Revenue CAM**

	Full Sample		Concurrent Filer Sample	
			(1) <i>CAR</i>	(2) <i>CAR</i>
	<i>POST</i>	<i>EXTRA-REVENUE</i>	<i>POST * EXTRA-REVENUE</i>	<i>Controls from Table 5</i>
Observations	3,602	3,602	3,602	3,602
Adjusted R <sup>2</sup>	0.027	0.027	0.027	0.029

\* , \*\*, \*\*\* Indicate statistical significance at the p < 0.10, p < 0.05, and p < 0.01 levels, respectively, based on two-tailed tests. Test statistics are in parentheses. For brevity, coefficients on control variables are suppressed.  
 This table presents additional analysis for H2. Panel A presents results of cross-sectional analyses of unexpected CAMs on market reaction following CAM adoption. Panel B presents results within subsamples of nonconcurrent and concurrent filers. In these samples, the *CONCUR* control variable is removed. In Panels A and B, each column displays a different measure of unexpected CAMs, labeled in bold below the column header. Panel C presents results of cross-sectional analyses of unexpected revenue CAMs on market reaction following CAM adoption.  
 All variables are defined in Appendix A.

TABLE 8

## Additional Analysis: Audit Fee and Audit Quality Changes following the Adoption of the CAM Disclosure Requirement

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	<i>ssAUDIT-FEES</i>	<i>ABS-DACC</i>	<i>ABS-TACC</i>	<i>FSCORE</i>	<i>RESTATE</i>	<i>MISSTATE</i>	<i>MEET</i>
<i>POST</i>	-0.027*** (-3.307)	-0.006 (-1.091)	-0.010 (-0.966)	0.137 (1.241)	-0.016** (-2.204)	-0.016*** (-2.821)	0.002 (0.167)
<i>ADOPT</i>	0.024	0.012*	-0.003	0.233** (2.019)	0.001 (0.083)	-0.006 (-0.572)	-0.039** (-2.235)
<i>POST * ADOPT</i>	(1.087) 0.005 (0.542)	(1.832) 0.007 (1.140)	(-0.416) 0.008 (1.122)	(-0.093 (-0.742))	0.005 (0.480)	-0.004 (-0.519)	-0.003 (-0.168)
Confidence Interval for Coefficient	(-0.013-0.023)	(-0.005-0.019)	(-0.006-0.023)	(-0.338-0.153)	(-0.014-0.023)	(-0.019-0.011)	(-0.038-0.032)
Model-Specific Control Variables	Included	Included	Included	Included	Included	Included	Included
Observations	8,522	6,520	8,280	8,522	8,522	8,522	6,404
Adopter-Years	4,416	3,288	3,288	4,262	4,416	4,416	4,192
Nonadopter-Years	4,106	3,232	3,232	4,018	4,106	4,106	2,212
Adjusted R <sup>2</sup>	0.881	0.373	0.707	0.176	0.061	0.031	0.025

\* , \*\* , \*\*\* Indicate statistical significance at the p < 0.10, p < 0.05, and p < 0.01 levels, respectively, based on two-tailed tests. Test statistics are in parentheses. For brevity, coefficients on control variables are suppressed.

This table presents the difference-in-differences regression results examining the association between the adoption of the CAM disclosure requirement and audit fees and audit quality. All variables are defined in Appendix A.

results are not significant, which may be because there is less attention given to the subsequent disclosure of the 10-K containing CAMs.

**Revenue subject area.** Leveraging our subject area prediction models, we further consider whether the unexpected CAM disclosures are driven by specific subject areas. We find that the findings are driven by the unexpected disclosure of revenue CAMs, where the market reacts negatively when a revenue CAM is disclosed when not anticipated. We table this result in both the full sample and concurrent filer sample in [Table 7](#), Panel C. This result is consistent with revenue being one of the most important accounts to investors.

### Additional Analysis: Audit Fees and Audit Quality

Audit outcomes may change as a consequence of CAM disclosure. Prior literature examining related disclosure requirements generally reports no significant change to audit fees ([Gutierrez et al. 2018; Bédard et al. 2019; Reid et al. 2019; Gutierrez et al. 2021b](#)) and either no evidence or some evidence of an increase in audit quality ([Gutierrez et al. 2018; Li, Hay, and Lau 2019; Reid et al. 2019; Zeng et al. 2021](#)).<sup>42</sup> Now that U.S. auditors are providing issuer-specific disclosure even for unqualified opinions, they may anticipate increased scrutiny of their work and associated outcomes. In turn, CAMs may incentivize auditors to perform additional procedures in areas reported as CAMs, leading to higher audit fees and audit quality.

We, therefore, examine whether audit fees and audit quality change following the adoption of the U.S. CAM standard. Dependent variables tested are defined in [Appendix A](#) and include audit fees, absolute value of discretionary accruals, absolute value of total accruals, probability of misstatement (F-score), likelihood of restatement announcement, likelihood of misstatement, and likelihood of meeting/beating analyst forecast. We use the standard controls from [Table 5](#) and include model-specific controls where necessary. Results are reported in [Table 8](#). We do not find a significant association between the interaction term and any of the dependent variables. In [Online Appendix 12](#), we replicate these models in PSM samples and results remain insignificant.

The insignificant audit fee finding is consistent with non-U.S. studies that conclude that costs associated with expanding the audit report are insignificant relative to total audit costs ([Bédard et al. 2019; Gutierrez et al. 2018; Reid et al. 2019; Gutierrez et al. 2021b](#)). The insignificant audit quality finding is consistent with [Gutierrez et al. \(2018, 2021b\)](#), [Bédard et al. \(2019\)](#), and [Liao et al. \(2019\)](#), and suggests that, on average, audit quality does not change following the adoption of the CAM disclosure requirement.

## VI. CONCLUSION

In 2019, an expanded auditor's report was introduced in the U.S. Auditors are now required to disclose CAMs, which relate to accounts or disclosures that are material to the financial statements and involved especially challenging, subjective, or complex judgment during the audit. In this study, we examine the consequences of the CAM disclosure requirement for the preparers and users of financial reports.

CAM disclosures provide insight into critical areas of the audit process for issuers that typically receive an unqualified boilerplate audit opinion. Our results show that managers, alone or in conjunction with their auditors, anticipate this new insight will increase attention/scrutiny of financial statement disclosures referenced by CAMs and change these disclosures accordingly. This nuanced consequence may be an indicator of improved auditor involvement in the financial reporting process, which can indirectly benefit investors. Additional analyses demonstrate the robustness, persistence, and generalizability of this finding. We do not find evidence of a significant market reaction following the U.S. CAM regulation, which is consistent with several non-U.S. studies. However, within CAM adopters, we find initial limited evidence that unexpected CAM disclosures do provide incremental information to the market.

Currently, only two years of CAM disclosures are available, and it is difficult to examine consequences in the second year of compliance (2020) because of the COVID-19 pandemic. We caution readers from reaching general conclusions about the consequences of CAMs with only two years of data. Nevertheless, it is important to conduct early analyses of these disclosures to understand their initial impact. As additional years of U.S. CAM disclosures become available, future research can extend our study to explore, for example, specific CAM subject areas (including trade-offs auditors make when selecting which CAM(s) to disclose) and related outcomes or spillover effects to other areas of the 10-K.

<sup>42</sup> A concurrent paper by [Dee, Luo, and Zhang \(2021\)](#) finds that the likelihood of internal control material weaknesses decreases following the adoption of the U.S. CAM disclosure requirement.

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## APPENDIX A

### Variable Definitions

#### Test Variables Used in H1 and H2 Consequence Analysis

<i>POST</i>	1 if current year is 2019, and 0 otherwise.
<i>FN-CAM</i>	1 if footnote is referenced in CAM disclosure, and 0 otherwise.
<i>ADOPT</i>	1 if audit opinion contains CAM disclosure, and 0 otherwise.

#### Dependent Variables Used in H1 Consequence Analysis

<i>FN-WORDS</i>	Natural log of the number of words in the footnote.
<i>FN-STICKINESS</i>	The number of words in sentences of 10-K footnotes that include at least one eight-word phrase that is identical to an eight-word phrase used in the prior-year 10-K footnote, divided by the total number of words in the 10-K footnotes.
<i>FN-UNCERTAIN-WORDS</i>	Natural log of one plus the number of uncertain words in the footnote.

#### Variables Used in H1 Additional Analysis

<i>FN-CAM-SAME</i>	1 if footnote is referenced in CAMs in 2020 and the CAMs stay the same as those in 20190 otherwise. By construction, this variable is only available for fiscal year 2020.
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## APPENDIX A (continued)

<i>FN-CAM-ADD</i>	1 if footnote is referenced in CAMs in 2020 and the CAMs do not exist in 20,190 otherwise. By construction, this variable is only available for fiscal year 2020.
<i>FNCAM-SIMILARITY</i>	Binary similarity score between the CAM description and referenced footnote disclosure of issuer i.
<i>FNRESPONSE-SIMILARITY</i>	Binary similarity score between the auditor response and referenced footnote disclosure of issuer i.
Dependent Variables Used in H2 Consequence Analysis	
<i>ABS-CAR</i>	Absolute value of cumulative market adjusted return for the 3 days surrounding the date on which the annual report is filed, with daily return calculated as the excess return on the value-weighted return of all U.S. CRSP firms listed on the NYSE, AMEX, or NASDAQ.
<i>AB-VOLUME</i>	Average of the 3-day trading volume scaled by common shares outstanding surrounding the date on which the annual report is filed less the average trading volume scaled by common shares outstanding over the period [-60, -10] prior to the earnings announcement
Variables Used in H2 Additional Analysis	
<i>NUM-CAMS</i>	Number of CAMs disclosed in audit opinion.
<i>CAM-INTANGIBLE</i>	1 if a CAM related to intangible assets is disclosed, 0 otherwise
<i>CAM-REVENUE</i>	1 if a CAM related to revenue is disclosed, 0 otherwise.
<i>CAM-M&amp;A</i>	1 if a CAM related to mergers and acquisitions is disclosed, 0 otherwise.
<i>CAM-TAXES</i>	1 if a CAM related to taxes is disclosed, 0 otherwise.
<i>CAM-PPE</i>	1 if a CAM related to property, plant, and equipment is disclosed, 0 otherwise.
<i>CAM-CREDIT-LOSSES</i>	1 if a CAM related to allowance for credit losses is disclosed, 0 otherwise.
<i>CAM-CONTINGENCIES</i>	1 if a CAM related to contingencies is disclosed, 0 otherwise.
<i>ICMW-CAM-RELATED</i>	1 if <i>ICMW-3</i> = 1 and the ineffective control is related to the CAM subject area being examined, and 0 otherwise. Subject area mapping is shown in <a href="#">Appendix C</a> .
<i>ICMW-CAM-UNRELATED</i>	1 if <i>ICMW-3</i> = 1 and the ineffective control is not related to the subject area being examined, and 0 otherwise.
<i>RESTATE-CAM-RELATED</i>	1 if <i>RESTATE-3</i> = 1 and the restatement is related to the CAM subject area being examined, and 0 otherwise. Subject area mapping is shown in <a href="#">Appendix C</a> .
<i>RESTATE-CAM-UNRELATED</i>	1 if <i>RESTATE-3</i> = 1 and the restatement is not related to the CAM subject area being examined, and 0 otherwise.
<i>CL-CAM-RELATED</i>	1 if <i>CL-2</i> = 1 and the accounting comment is related to the CAM subject area being examined, and 0 otherwise. Subject area mapping is shown in <a href="#">Appendix C</a> .
<i>CL-CAM-UNRELATED</i>	1 if <i>CL-2</i> = 1 and the accounting comment is not related to the CAM subject area being examined, and 0 otherwise.
<i>DEF-REVENUES</i>	Total deferred revenue divided by total assets.
<i>RECEIVABLES</i>	Total receivables divided by total assets.
<i>INVENTORY</i>	Total inventory divided by total assets.
<i>PPE</i>	Net property, plant, and equipment divided by total assets.
<i>INTANGIBLE</i>	Intangible assets divided by total assets.
<i>IMPAIR</i>	1 if issuer reports non-zero pre-tax impairments of goodwill or pre-tax write-down costs, and 0 otherwise.
<i>UTB</i>	Total uncertain tax benefits multiplied by 100, divided by total assets.
<i>LOAN-LOSSES</i>	Reserve for loan losses multiplied by 100, divided by total assets.
<i>ADA</i>	Allowance for doubtful accounts multiplied by 100, divided by total assets.
<i>CONTINGENCIES</i>	Contingent liabilities (guarantees) multiplied by 100, divided by total assets.
<i>CAR</i>	Signed value of cumulative market adjusted return for the 3 days surrounding the date on which the annual report is filed, with daily return calculated as the excess return on the value-weighted return of all U.S. CRSP firms listed on the NYSE, AMEX, or NASDAQ.
<i>NUM-CAMS-UNEX</i>	Residual from the prediction model in <a href="#">Table 6</a> , Panel A. Calculated as the actual disclosed value minus the predicted value.

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## APPENDIX A (continued)

<i>EXTRA-CAM</i>	1 if the issuer discloses CAMs in at least one of the seven subject areas that the model predicts the issuer should not disclose CAMs (i.e., predicted probability in the bottom four quintiles) or where the observation is dropped from the sample because of no material account in that subject area, 0 otherwise. Predicted probability in each subject area is estimated from the prediction model in <b>Table 6</b> , Panel B.
<i>NUM-EXTRA-CAM</i>	Number of subject areas where the issuer discloses CAMs but the model predicts the issuer should not disclose CAMs or where the observation is dropped from the sample because of no material account in that subject area.
<i>MISSED-CAM</i>	1 if the issuer does not disclose CAMs in at least one of the seven subject areas that the model predicts the issuer should disclose CAMs (i.e., predicted probability in the top quintile), 0 otherwise. Predicted probability in each subject area is estimated from the prediction model in <b>Table 6</b> , Panel B.
<i>NUM-MISSED-CAM</i>	Number of subject areas where the issuer does not disclose CAMs but the model predicts the issuer should disclose CAMs.
<i>EXTRA-REVENUE</i>	1 if the issuer discloses a CAM in the revenue subject area and the model predicts the issuer should not disclose a revenue CAM (i.e., predicted probability in the bottom four quintiles), 0 otherwise.
Additional Analysis	
<i>AUDIT-FEES</i>	Natural log of audit fees.
<i>ABS-DACC</i>	Absolute value of discretionary accruals derived from the difference between total accruals and expected accruals estimated with modified Jones model by two-digit SIC industry and year and augmented with ROA ( <a href="#">Kothari, Leone, and Wasley 2005</a> , 174). We require a minimum 10 observations for each industry-year combination.
<i>ABS-TACC</i>	Absolute value of total current accruals, calculated as income before extraordinary items minus net cash flow from operating activities excluding extraordinary items, divided by lagged total assets.
<i>FSCORE</i>	Estimated from Model (1) in <b>Table 7</b> , Panel A of <a href="#">Dechow, Ge, Larson, and Sloan (2011)</a> , scaled by the unconditional probability of having accounting misstatements.
<i>RESTATE</i>	1 if the issuer discloses a restatement in current year, 0 otherwise.
<i>MISSTATE</i>	1 if current year financial statements contain misstatements, 0 otherwise.
<i>MEET</i>	1 if the I/B/E/S actual minus the median analyst EPS forecast is between zero and two cents (inclusive), and 0 otherwise.
Standard Control Variables	
<i>ICMW-3</i>	1 if issuer or its auditor discloses a material weakness under SOX 404 or SOX 302 in current and prior two years, and 0 otherwise.
<i>RESTATE-3</i>	1 if issuer discloses a restatement in current and prior two years, and 0 otherwise.
<i>CL-2</i>	1 if the issuer receives accounting comments from the SEC on its prior two years' annual reports, and 0 otherwise.
<i>BIG 4</i>	1 if Big 4 auditor, and 0 otherwise.
<i>AU-CHANGE</i>	1 if audit firm changes, and 0 otherwise.
<i>AU-TENURE</i>	Natural log of the number of years of audit firm-client relationship.
<i>FILE10K</i>	1 if issuer files 10-K annual reports, and 0 otherwise.
<i>ARC</i>	Natural log of the total number of distinct monetary XBRL tags in financial statements of the 10-K filings ( <a href="#">Hoitash and Hoitash 2018</a> ; <a href="https://www.xbrlresearch.com/">https://www.xbrlresearch.com/</a> ).
<i>SIZE</i>	Natural log of total assets.
<i>AGE</i>	Natural log of the number of years for which total assets are reported in Compustat.
<i>BM</i>	Book value of equity divided by market value of equity.
<i>SALES-GROWTH</i>	Current sales minus lagged sales divided by lagged sales.
<i>SEGMENTS</i>	Natural log of 1 plus the total number of segments from the Compustat WRDS SEGMERGED dataset.

*(continued on next page)*

### APPENDIX A (continued)

<i>FOREIGN-SALES</i>	Total nondomestic sales divided by total sales. Nondomestic sales are taken from the Compustat WRDS_SEGMERGED dataset for segments with GEOTP = 3.
<i>LEV</i>	Total debt divided by total assets.
<i>ROA</i>	Income before extraordinary items divided by average total assets.
<i>LOSS</i>	1 if income before extraordinary items is negative, and 0 otherwise.
<i>ZSCORE</i>	Altman's Z-score calculated following <a href="#">DeFond and Hung (2003)</a> and <a href="#">Altman (1968)</a> , equal to $1.2 * [\text{net working capital/total assets}] + 1.4 * [\text{retained earnings/total assets}] + 3.3 * [\text{earnings before interest and taxes/total assets}] + 0.6 * [\text{market value of equity/book value of liabilities}] + 1.0 * [\text{sales/total assets}]$ .
<i>LIT-RISK</i>	1 if the issuer belongs to an industry with high litigation risk, 0 otherwise. High litigation risk industries as defined by <a href="#">Francis, Philbrick, and Schipper (1994)</a> are: biotech (2,833–2,836, 8,731–8,734), computer (3,570–3,577, 7,370–7,374), electronics (3670–3674), or retail (5,200–5,961).
<i>MA</i>	1 if issuer reports non-zero pre-tax earnings impact of mergers or acquisitions, and 0 otherwise.
<i>RESTRUCTURE</i>	1 if issuer reports non-zero pre-tax restructuring costs, and 0 otherwise.
<i>CHG-NI</i>	Change in net income before extraordinary items, divided by lagged market value of equity.
<i>CONCUR</i>	1 if the earnings announcement date is the same or 1 day between as the annual report filing date, and 0 otherwise.

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## APPENDIX B

### An Example of CAM Disclosures and Referenced Footnotes (Goodyear, CIK: #0000042582)<sup>43</sup>

#### Panel A: CAM Disclosure in the Auditors' Report in Form 10-K:

##### **Critical Audit Matters**

The critical audit matters communicated below are matters arising from the current period audit of the consolidated financial statements that were communicated or required to be communicated to the audit committee and that (i) relate to accounts or disclosures that are material to the consolidated financial statements and (ii) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we also remain responsible for our opinions on the critical audit matters below, providing separate opinions on the critical audit matters to which they relate.

##### *Goodwill Impairment Assessment - EMEA Reporting Unit*

Footnote 11 is the reference to account-specific footnote referenced by the CAM

As described in Note 11 to the consolidated financial statements, the Company's consolidated goodwill balance was \$565 million as of December 31, 2019, and the goodwill associated with the Europe, Middle East and Africa (EMEA) reporting unit was \$411 million. Goodwill is tested for impairment annually or more frequently if an indicator of impairment is present. Management performed a quantitative assessment for the EMEA reporting unit as of October 31, 2019, the date of its annual goodwill impairment testing. Management tests goodwill for impairment by comparing the fair value of a reporting unit to its carrying amount, including goodwill. Management determines the estimated fair value for each reporting unit based on discounted cash flow projections and market values for comparable businesses. The most critical assumptions used in the calculation of the fair value of the EMEA reporting unit are the projected long term operating margin, discount rate, and the selection of market multiples.

The principal considerations for our determination that performing procedures relating to the goodwill impairment assessment of the EMEA reporting unit is a critical audit matter are there was significant judgment by management when developing the fair value measurement of the reporting unit. This in turn led to a high degree of auditor judgment, subjectivity, and effort in performing procedures to evaluate management's fair value estimate and significant assumptions, including the projected long term operating margin, discount rate, and the selection of market multiples. In addition, the audit effort involved the use of professionals with specialized skill and knowledge to assist in performing these procedures and evaluating the audit evidence obtained.

Addressing the matter involved performing procedures and evaluating audit evidence in connection with forming our overall opinion on the consolidated financial statements. These procedures included testing the effectiveness of controls relating to management's goodwill impairment assessment, including controls over the valuation of the Company's EMEA reporting unit. These procedures also included, among others (i) testing management's process for developing the fair value estimate of the EMEA reporting unit, (ii) evaluating the appropriateness of the discounted cash flow model and market approach, (iii) testing the completeness, accuracy, and relevance of underlying data used in the models, and (iv) evaluating the significant assumptions used by management, including the projected long term operating margin, discount rate, and the selection of market multiples. Evaluating management's assumptions related to the projected long term operating margin involved evaluating whether the assumptions used by management were reasonable considering (i) the current and past performance of the reporting unit, (ii) the consistency with external market and industry data, and (iii) whether these assumptions were consistent with evidence obtained in other areas of the audit. Professionals with specialized skill and knowledge were used to assist in the evaluation of the Company's discounted cash flow model and certain significant assumptions, including the discount rate and the selection of market multiples.

/s/ PricewaterhouseCoopers LLP

*(continued on next page)*

<sup>43</sup> PricewaterhouseCoopers also reports a CAM related to taxes for Goodyear in 2019. For presentation purposes, we display only one CAM in this Appendix.

## APPENDIX B (continued)

## Panel B: Footnotes Referenced in the CAM Disclosures and the Footnotes' XBRL Tags

**GOODYEAR TIRE & RUBBER CO /OH/ (Filer) CIK: 0000042582**

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Goodwill and Intangible Assets		12 Months Ended Dec. 31, 2019				
Goodwill and Intangible Assets Disclosure [Abstract]	Goodwill and Intangible Assets					
<p>- <b>Definition</b> The entire disclosure for goodwill and intangible assets.</p> <p>+ <b>References</b></p> <ul style="list-style-type: none"> <li>- <b>Details</b></li> <li>Name: us-gaap_GoodwillAndIntangibleAssetsDisclosureTextBlock</li> <li>Namespace Prefix: us-gaap_</li> <li>Data Type: nonnum:textBlockItemType</li> <li>Balance Type: na</li> <li>Period Type: duration</li> </ul>						
		Balance at December 31, 2019	Acquisitions	Divestitures	Translation	Balance at December 31, 2019
	\$ 91	\$ —	\$ —	\$ —	\$ —	\$ 91
	415	2	—	(6)	411	
	63	1	—	(1)	63	
	<b>\$ 569</b>	<b>\$ 3</b>	<b>\$ —</b>	<b>\$ (7)</b>	<b>\$ 565</b>	

The following table presents the net carrying amount of goodwill allocated by segment, and changes during 2019:

[Tables removed for space]

Intangible assets are primarily comprised of the rights to use the Dunlop brand name and related trademarks and certain other brand names and trademarks.

Amortization expense for intangible assets totaled \$2 million in 2019, 2018 and 2017. We estimate that annual amortization expense related to intangible assets will be approximately \$1 million in 2023 and 2024. The weighted average remaining amortization

Our annual impairment analyses for 2019, 2018 and 2017 indicated no impairment for goodwill or intangible assets with indefinite lives. Our quantitative goodwill analysis as of October 31, 2019, substantially exceeded the carrying amounts for each reporting unit tested, except for the EMEA reporting unit. There were no events or circumstances that indicated the quantitative impairment tests should be re-performed for goodwill or for intangible assets with indefinite lives for any reporting unit at December 31, 2019.

We determine the estimated fair value for each reporting unit based on discounted cash flow projections and market values for comparable businesses. EMEA had an estimated fair value that exceeded its carrying value, including goodwill, by approximately 10%. The most critical assumptions used in the calculation of the fair value of the EMEA reporting unit are the projected long term operating margin, discount rate and the selection of market multiples. If we make adverse revisions to our significant assumptions, including as a result of business performance or market conditions, or if our market capitalization declines further and if such a decline becomes indicative that the fair value of our reporting units has declined below their carrying values, we may need to record a material, non-cash goodwill impairment charge in a future period.

**Footnotes XBRL tags identified by manual review**

This section of the footnote is new in 2019 and aligns with the language used by the auditor in the CAM

(The full-color version is available online.)

**APPENDIX C**  
**CAM Subject Areas**

CAM Topic Key	CAM Topic	Percentage of Unique CAMs		CAM Subject Area	Percentage of Unique CAMs	Internal Control Noteffective Reason Key	Restatement Category Key	Comment Letter Issue Key
		n	11.20%					
26	Goodwill	426	11.20%	Intangible assets	16.96%	14, 16 (if reason description includes text “goodwill” or “intangible”)	3 (if accompanied by subcategory key 46), 23	180, 208
30	Other intangible assets	101	2.66%					
27	Goodwill and intangible assets	70	1.84%					
14	Deferred and capitalized costs	48	1.26%	Revenue	16.20%	39	6	212
61	Revenue from customer contracts	456	11.99%					
63	Sales return and allowances	109	2.87%					
54	Other revenue	46	1.21%					
78	Interest revenue	5	0.13%					
6	Business combinations	452	11.89%	M&A	14.15%	24, 35	10, 13	177, 183, 184
76	Equity investments and joint ventures	72	1.89%					
9	Consolidation	14	0.37%					
57	Property, plant, and equipment	123	3.23%	PPE	10.07%	3 (if accompanied by subcategory key 73), 16 (if reason description does not include text “goodwill” and “intangible”), 28	1, 3 (if not accompanied by subcategory key 46), 21 (if accompanied by subcategory key 42)	190, 204, 207, 816
79	Leases	113	2.97%					
91	Long-lived assets	64	1.68%					
88	Proven and unproven reserves	55	1.45%					
16	Depreciation and amortization	28	0.74%					
35	Uncertain tax positions	134	3.52%	Taxes	9.47%	41	18	214
34	Deferred income taxes	120	3.16%					
33	Other income taxes	106	2.79%					
71	Allowance for credit losses	241	6.34%	Credit losses	7.44%	15	14	176, 283, 284
2	Accounts/loans receivable	42	1.10%	Contingencies	6.92%	3 (if not accompanied by subcategory key 73)	21 (if not accompanied by subcategory key 42)	203
10	Other contingent liabilities	227	5.97%					
50	Warranty liabilities	36	0.95%					

Classifications for CAM Topics, Internal Control Noteffective Reasons, Restatement Categories, and Comment Letter Issues are manually determined, and taxonomy keys are assigned by Audit Analytics. Audit Analytics assigns CAMs to 51 granular topics in our sample. We use the Audit Analytics classification so that our study can be more easily replicated and extended by future research. To conduct meaningful analyses, we collapse related topics into broader subject areas (shown in this Appendix). We focus on CAM subject areas that represent at least 5 percent of unique CAMs disclosed. Combined, these subject areas capture 81.21 percent of the CAMs in our 2019 sample. To link CAMs to prior financial reporting issues, we map CAM subject areas to Audit Analytics' internal control material weakness, restatement, and comment letter taxonomies. Mapped keys are reported in this Appendix.

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