Do Critical Audit Matter Disclosures Impact Investor Behavior?

Qian Huang

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ABSTRACT

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The Public Company Accounting Oversight Board (PCAOB) has recently required auditors to disclose critical audit matters (CAMs), which are financial statement matters that involve especially challenging, subjective, or complex auditor judgments. The PCAOB contends that CAMs will increase the decision usefulness of the auditor's report and indirectly benefit investors by increasing audit and financial reporting quality. I examine whether investors react to CAM disclosures and whether they perceive any change in adopting firms' financial reporting quality. Using a difference-in-differences design, I find that (1) while there is no significant stock price reaction to CAMs on average, investors react negatively to CAMs disclosed by firms with high levels of short interest; (2) there is a significant increase in the quarterly earnings response coefficient for adopting firms. The effect is driven by big-N audit firms, and increases with the number of CAMs reported. Collectively, the evidence suggests that investors use CAMs to confirm their pre-existing opinions about a firm, and that they perceive an improvement in audit quality and financial reporting reliability due to the CAM disclosure requirement.

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1. Introduction

In line with worldwide efforts to increase the informativeness of the auditor's report, the Public Company Accounting Oversight Board (PCAOB) has required auditors to disclose "critical audit matters" (CAMs), which are matters material to financial statements and involve especially challenging, subjective, or complex auditor judgments (PCAOB 2017). Prior to this mandate, the auditor's report contains only a standardized pass/fail opinion and provides very little of the information the auditor knows about the firm. CAM disclosures are intended to reduce the information asymmetry between investors and auditors by providing information on matters of high measurement uncertainty and the audit procedures performed to address such matters.

The PCAOB contends that the communication of CAMs would benefit investors in several different ways. First, CAMs may provide investors with new information, focus their attention on key financial reporting issues, and enable them to evaluate the rigor of the audit. This should facilitate investors' analysis of a firm's financial reporting. Second, the process of identifying and disclosing CAMs may incentivize auditors to improve audit quality, which ultimately results in higher financial reporting quality. To the extent that investors perceive an improvement in audit and financial reporting quality, they should become more confident about the reliability of the financial statements. Third, CAMs may provide a signal of audit quality as auditors can now distinguish themselves based on the usefulness of the CAMs disclosed (PCAOB 2017). However, it is unclear whether the CAM disclosure requirement has achieved the intended goals. In this paper, I investigate the impact of CAM disclosures on investor behavior from two aspects—whether investors react to the release of CAM information, and whether they perceive a firm's financial reporting to be more reliable after it starts disclosing CAMs.

Since the primary objective of the CAM disclosure mandate is to make the auditor's report more useful and informative to investors, I start my analysis by examining the short-window investor reaction around the release date of annual reports containing CAM information[1]. While some experimental studies provide evidence that investors use the risk disclosure in the expanded auditor's report to inform their investment decisions (Christensen et al. 2014; Kachelmeier et al. 2019), prior and concurrent empirical studies generally find no significant change in investor reaction associated with the expanded auditor's report (Gutierrez et al. 2018; Lennox et al. 2019; Filer and Gencer 2020; Burke et al. 2020).

Given the absence of significant investor reaction, I explore the possibility that investors react more strongly to CAMs if they have pre-existing concerns about a firm's financial reporting. My proxy for investors' pre-existing concerns is short interest measured at the end of the fiscal year. Since short sellers are professional investors who often anticipate negative future returns and financial statement manipulations (Cassell et al. 2011; Dechow et al. 1996; Desai et al. 2006; Efendi and Swanson 2009; Karpoff and Lou 2010), observing a high level of short interest may increase other investors' suspicion over the target firm's financial reporting. This is especially true when activist short sellers publish negative reports about a firm (Brendel and Ryans 2020). Ex ante, however, investors cannot be certain whether short sellers are right in betting against a firm. In such cases, investors may interpret CAMs, which are official disclosures from the auditor describing complex and uncertain accounting estimates, as confirmation of short sellers' suspicions about a firm's financial reporting quality. Investors may then perceive a higher risk of misstatement and react negatively to CAM disclosures.

[1] The auditor's report is a part of a firm's 10-K filing. Therefore, CAM information becomes accessible to investors on the filing date of 10-Ks.

To examine my hypothesis, I implement a difference-in-differences design that compares two groups of firms subject to different CAM disclosure requirements. Specifically, since the CAM disclosure requirement became effective for large accelerated filers for fiscal years ending on or after June 30, 2019, but does not apply to other firms until December 15, 2020, large accelerated filers are the only firms that filed 10-Ks containing CAMs during the 2019 fiscal year[2]. This enables me to examine the change in the outcome variables for CAM-disclosing firms from the pre-period to the post-period relative to a set of control firms that do not disclose CAMs.

Using abnormal stock return as a proxy for investor reaction, I find that investors react negatively to CAMs disclosed by firms with high levels of short interest. Among the firms required to disclose CAMs, the ones with high short interest experience a 5.2% more negative abnormal stock return around 10-K compared to the ones with low short interest. In additional tests, I further verify that this result is not driven by the difference between treatment and control firms, change in short interest in response to 10-K filings, or market correction for overvalued stocks. Therefore, the findings suggest that investors do use the information in CAMs to confirm their pre-existing concerns about a firm.

Besides improving the usefulness of the auditor's report, CAM disclosures are also expected to enhance investor confidence in the financial statements. Thus I examine whether investors perceive a firm's financial reporting to be more reliable after it starts disclosing CAMs. Although experimental studies suggest that investors may associate CAMs with a lower level of audit assurance (Christensen et al. 2014; Kachelmeier et al. 2019), there are several reasons why investors may perceive an improvement in audit quality and hence financial reporting reliability for a firm that is required to disclose CAMs. First, the discussion between auditors and firm

[2] Large accelerated filers are defined as issuers with a public float greater than $700 million as of the last business day of the firm's most recently completed second fiscal quarter.

management about CAMs may heighten auditors' professional skepticism, resulting in greater scrutiny of the underlying matters (PCAOB 2017). Second, since auditors are required to disclose how they address each CAM, they may be incentivized to use more substantive audit procedures (ACCA 2018). The increase in audit quality in turn raises the reliability of financial reporting (Teoh and Wong 1993; Gipper et al. 2020). Third, the CAM disclosure requirement may lead auditors to examine and strengthen internal controls. In support of this argument, a survey by Intelligize finds that during CAM dry-runs, 43% of audit committees identified additional internal controls to be implemented, while an additional 19% are considering such changes (Butler 2019). With the improvement in internal controls, investors may find the information in unaudited financial statements (i.e. 10-Qs) more reliable as well.

Using the difference-in-differences design, I find that after large accelerated filers start disclosing CAMs, their earnings response coefficient (ERCs) for quarterly earnings announcement have increased relative to firms that are not required to disclose CAMs. This suggests that investors perceive an increase in financial reporting reliability for CAM-disclosing firms. Additionally, I find in cross-sectional tests that this increase in ERC is driven by Big-N auditors, indicating that the effect stems from higher perceived audit quality. I also find that the increase in ERC is greater for large accelerated filers with a higher number of CAMs, which suggests that investors may consider CAM disclosure to be an indicator of audit quality.

My study contributes to two streams of literature. First, I provide new evidence on the effects of the expanded auditor's report. Prior and concurrent research has examined the effects of CAM (or KAM) disclosures on investor behavior and market reaction (Christensen et al. 2014; Gutierrez et al. 2018; Goh et al. 2019; Kachelmeier et al. 2019; Lennox et al. 2019; Liao et al. 2019; Filer and Gencer 2020; Burke et al. 2020; Klevak et al. 2020), auditor responses such as

audit fee, audit quality, and auditor liability (Brasel et al. 2016; Gimbar et al. 2016; Gutierrez et al. 2018; Reid et al. 2019; Burke et al. 2020), and management reporting practices (Burke et al. 2020; Drake et al. 2020). I add to this literature by presenting empirical evidence that investors perceive an increase in financial reporting reliability following CAM disclosure and use CAMs as a signal of audit quality. Although Goh et al. (2019) and Reid et al. (2019) also show an increase in ERCs after the adoption of KAM disclosure requirements, my study extend their findings by showing that investors perceive an increase in reporting reliability not only for audited financial statements, but also for quarterly unaudited financial statements. Additionally, I show that investors react negatively to CAMs disclosed by firms with a high level of short interest, which suggests that investors may use CAMs to confirm their pre-existing opinions about a firm. These findings indicate that the CAM disclosures in the U.S. may be informative to investors under certain conditions and may improve investor confidence in financial statements.

Second, I contribute to the literature on the pricing of financial reporting reliability in capital markets, as measured by ERCs. Prior research shows that poor audit quality is associated with lower ERCs (Moreland 1995; Wilson 2008; Chen et al. 2014; Marshall et al. 2018), and high audit quality is associated with high ERCs (Teoh and Wong 1993; Gipper et al. 2020). In particular, Gipper et al. (2020) provides evidence that public oversight from the PCAOB increases the credibility of audited financial statements. Using the CAM disclosure requirement as an exogenous shock, I show that additional disclosures on the audit process also increases the perceived reliability of financial statements. This finding implies that policy makers can potentially enhance the financial reporting reliability through mandatory disclosure.

The rest of the paper is organized as follows. Section 2 introduces the institutional background of CAM disclosure, verifies that CAMs contain non-boilerplate information, and

discusses the related literature. Section 3 motivates my hypotheses. Sections 4 and 5 present the research design, sample selection, and results for each of the two hypotheses, respectively. Section 4 provides evidence on investor reactions to CAM disclosures. Section 5 analyzes how CAMs affect investors' perception of financial reporting quality. Section 6 presents additional tests, and Section 7 concludes.

2. Background and Related Literature

2.1 Background

In line with worldwide efforts to increase the informativeness of the auditor's report, in June 2017, the PCAOB issued Auditing Standard (AS 3101) *The Auditor's Report on an Audit of Financial Statements When the Auditor Expresses an Unqualified Opinion*. This standard requires auditors to communicate critical audit matters ("CAMs") in the auditor's report. A CAM is defined as any matter arising from the audit of financial statements that "relates to accounts or disclosures that are material to the financial statements," and that "involves especially challenging, subjective, or complex auditor judgment" (AS 3101).[3] For each CAM communicated in the auditor's report, the auditor must identify the CAM, describe the principal considerations that lead the auditor to determine that the matter is a CAM, explain how the CAM was addressed in the audit, and reference the relevant financial statement accounts or disclosures. The requirement to disclose CAMs in the auditor's report is effective for large accelerated filers for fiscal years ending on or

[3] The standard (AS 3101) also includes a number of other changes primarily intended to provide additional information about the auditor and to improve the readability of the auditor's report (PCAOB 2017). These changes are effective for audits of fiscal years ending on or after December 15, 2017.

after June 30, 2019, and will take effect for all other companies for fiscal years ending on or after December 15, 2020.[4]

The CAM disclosure mandate is very similar to the International Auditing and Assurance Standard Board (IAASB)'s requirement (ISA 701) for auditors to disclose key audit matters ("KAMs"), although there are differences in terms and definitions that could lead to different outcomes. The IAASB adopted ISA 701 in 2014, and the requirement to disclose KAMs became effective for listed companies starting in 2016. KAMs are defined as the most significant matters in the audit of the current period's financial statements. While this definition is close to that of CAMs, the PCAOB narrowed the scope of CAMs to matters that are "material" to financial statements as a response to commenter concerns that management could communicate immaterial matters that weaken or obscure the auditor's opinion (PCAOB 2017). Because of the materiality component, firms in the U.S. may report a lower number of CAMs than the number of KAMs reported by firms in Europe.

In Table 1, I provide insights on CAMs reported by large accelerated filers through April 26, 2020. Using data from Audit Analytics, I identify 3,512 CAMs disclosed by 2,109 large accelerated filers. As shown in Table 1 Panel A, 51.8% of firms report just one CAM. Only one firm reports zero CAMs, while the maximum number of reported CAMs is five. The average number of reported CAMs is 1.7, which is considerably lower than the average number of KAMs filed in the U.K.[5]

[4] Large accelerated filers are defined as issuers with a public float greater than $700 million as of the last business day of the firm's most recently completed second fiscal quarter.

[5] Guitierrez et al. (2018) reports a mean of 3.97 and a median of 4.00 for KAMs in the audit reports of U.K. listed firms between 2014 and 2015.

Table 1 Panel B presents the topics that have most frequently been identified as CAMs.[6] The percentage of firms reporting a CAM on business combinations, goodwill, and revenue from customer contracts are 19.3%, 18.4%, and 17.6%, respectively. I classify CAM topics into five categories (intangibles, revenue recognition, operating accruals, taxes, and other), and document in Table 1 Panel C that 40.4% of firms report at least one CAM related to intangibles, 23.5% of firms report at least one CAM related to revenue recognition, 38.9% of firms report at least one CAM related to operating accruals, and 15.4% of firms report at least one CAM related to taxes.

There are some commonalities among reported CAMs for firms in the same industry, which is not surprising given their exposure to industry-specific risks and accounting rules. For example, Table 1 Panel D shows that 64.5% of firms in the consumer nondurables industry report CAMs related to intangibles, 49.6% of firms in the business equipment industry report CAMs related to revenue recognition, and 68.1% of firms in the utilities industry report CAMs related to operating accruals. However, one can still observe considerable variation in the type of CAMs reported by firms in the same industry.

Practitioners and academics have expressed the concern that auditors could disclose boilerplate CAMs to avoid legal liability, making the disclosure uninformative to investors. Specifically, a CAM related to a litigated issue may increase jurors' perception that an auditor could have foreseen the problem but have missed the litigated issue due to negligence, leading to a higher assessment of culpability (Gimbar et al. 2016). This may incentivize auditors to disclose boilerplate CAMs that are generic and similar to those disclosed by other firms in the same industry

[6] Audit Analytics collects CAM titles from each firm's audit report, and then classifies these titles by common topic. For example, the firm-specific title "valuation of acquired developed product technology intangible assets - BioTek acquisition" is grouped under "business combination." There are 51 unique CAM topics identified by Audit Analytics. In this paper, I further classify CAM topics into five broader categories: intangibles, revenue recognition, operating accruals, taxes, and other.

in order to decrease litigation risk (Davis Polk comment letter). On the other hand, auditors may be motivated to disclose meaningful CAMs if they believe that so doing would shield them from legal liability in the case of future misstatements. Consistent with this argument, Brasel et al. (2016) find in an experimental study that when the auditors failed to detect a misstatement, jurors are less likely to find auditors negligent if they have previously disclosed a CAM related to the misstated account.

In Table 1 Panel E, I verify that reported CAMs are not boilerplate by examining the association between CAM topics and pre-disclosure characteristics that reflect the complexity and subjectivity of a firm's accounting. Specifically, I run a set of Poisson regressions where the dependent variable varies between the total number of CAMs disclosed by each firm and the number of CAMs in each of the four major categories (intangibles, revenue recognition, operating accruals, and taxes). Independent variables include a list of firm characteristics that drive certain categories of CAM or that reflect the overall business complexity of the firm. I also control for factors that may affect auditors' incentives to report CAMs. All variables are defined in Appendix 1. If CAMs are boilerplate and do not vary across firms, there should be no significant association between the number or topic of CAMs and the corresponding pre-disclosure firm characteristics. However, Column (1) shows a positive and significant association between the number of CAMs and proxies for the complexity and subjectivity of a firm's financial reporting (e.g., intangible assets, net deferred tax assets, firm size, number of segments, loss, and restatement in the past year). Columns (2) to (5) show that the proxies for complexity in intangible assets, revenue recognition, and taxes are all positively associated with the number of CAMs in the corresponding categories. Overall, the multivariate evidence suggests that CAM disclosures are at least somewhat informative and are potentially useful to investors.

2.2 Related Literature

A large body of experimental and empirical research examines the effect of the expanded auditor's report on investor behavior. The findings of experimental studies suggest that CAM (or KAM) disclosures affect investors' investment decisions. For example, Christensen et al. (2014) find that when presented with an auditor's report containing a CAM, nonprofessional investors perceive higher misstatement risk, feel less confidence about a firm, and are more likely to stop considering the firm as an investment. Similarly, Kachelmeier et al. (2019) find their experimental participants to feel less confident about the financial statement area identified as a CAM.

Empirical studies examining the effect of key audit matters ("KAMs") in various countries have found mixed evidence. Evidence from the United Kingdom suggests that there is no significant investor reaction to KAMs (Gutierrez et al. 2018; Lennox et al. 2019), but that the expanded audit report requirements are associated with a significant improvement in financial reporting quality (Reid et al. 2019). Goh et al. (2019) find that in China, the expanded audit report is incrementally informative to investors, resulting in higher abnormal trading volume and earnings response coefficients. However, Liao et al. (2019) do not find evidence that KAMs provide incremental information or change audit quality in Hong Kong and China. Because of the mixed findings in the literature, the unique "materiality" component in the CAM disclosure requirement, and the distinct institutional environments, it is ex ante unclear whether CAM disclosures have any significant effect in the United States.

There are four concurrent studies providing empirical evidence on the effect of the CAM disclosure requirement in the United States. While Klevak et al. (2020) find a negative association between the number and length of CAMs and the stock returns around 10-K filings, Files and Gencer (2020) and Burke et al. (2020) both document no significant changes to price or volume

reactions or to audit fees for large accelerated filers in the first year of CAM disclosure. Burke et al. (2020) also document that CAMs disclosures are not boilerplate, and that there are significant changes in the financial statement footnotes referenced by CAMs, suggesting that management does change disclosures in response to the CAM mandate. Additionally, Drake et al. (2020) show that tax-related CAMs are associated with less tax-related earnings management, indicating that the required disclosure may have the indirect effect of constraining management misbehavior.

My study adds to the literature in two ways. First, I show that although there is no significant investor reaction to CAMs on average, investors do react negatively to CAMs when a firm has a high level of short interest. This suggests that investors may view CAMs as confirming short seller suspicion about a firm, but in the absence of pre-existing concerns, investors may believe that auditors have already addressed the disclosed risk. This is one potential explanation for the lack of significant market reaction around CAM disclosures. Second, I present empirical evidence that investors perceive an increase in financial reporting reliability following CAM disclosure and use CAMs as a signal of audit quality. Specifically, I show that when large accelerated filers start to report CAMs, there is an increase in ERC for these firms' subsequent quarterly earnings. Although Goh et al. (2019) and Reid et al. (2019) also show an increase in ERCs after the adoption of KAM disclosure requirements, my study extend their findings by showing that investors perceive an increase in reporting reliability not only for audited financial statements, but also for quarterly unaudited financial statements.

3. Hypothesis Development

3.1 Investor Reaction to CAM Disclosures

The primary purpose of the CAM disclosure requirement is to increase the decision usefulness of disclosing firms' financial reports to investors. If the disclosed CAMs provide unique

insights on how auditors view and address complex and subjective accounting matters, these reports can potentially inform investors' investment decisions. For example, if investors think that an auditor failed to adequately address a CAM, they may expect a restatement to happen in the future and incorporate the estimated future cash flow associated with the restatement into the pricing of the firm. If investors find a CAM more complicated than they previously thought, they can update their beliefs about the riskiness of the firm and about the proper discount rate to use on the firm's valuation.

However, concurrent archival studies over similar sample periods have not found evidence of any incremental information content from CAMs (Burke et al. 2020; Filer and Gencer 2020).[7] There could be several reasons for these findings. First, investors may believe that the disclosed risks have been adequately addressed by auditors, and may perceive no change in the riskiness of the firm or in the expectation of future cash flows (Gutierrez et al. 2018). Second, investors may already know the information conveyed in CAMs (Lennox et al. 2019). Third, investors may not understand the implications of CAMs.

In this paper, I explore the possibility that investors react more strongly to CAMs if the disclosed information confirms their pre-existing concerns about a firm's financial reporting. My proxy for these concerns is short interest measured at the end of the fiscal year. Since short sellers are professional investors who often anticipate negative future returns and financial statement manipulations (Cassell et al. 2011; Dechow et al. 1996; Desai et al. 2006; Efendi and Swanson 2009; Karpoff and Lou 2010), observing a high level of short interest may increase investor

[7] Klevak et al. (2020) find that CAM disclosures are associated with negative stock returns. However, Klevak et al. (2020) examine 10-Ks filed between August 2019 and May 2020, while I restrict my sample to 10-Ks filed before February 20, 2020 because of the sharp increase in market volatility (VIX index) after COVID-19. The difference in sample periods could potentially explain the difference between our results, since stock returns measured after February may be affected by news and speculations related to the pandemic.

suspicion about a target firm's financial reporting. This is especially true when activist short sellers publish negative reports about a firm (Brendel and Ryans 2020). Ex ante, however, investors cannot be certain whether short sellers are right in betting against a firm. In such cases, investors may interpret CAMs, which are official disclosures from the auditor describing complex and uncertain accounting estimates, as confirmation of short seller suspicions about a firm's financial reporting quality. Investors may then perceive a higher risk of misstatement and react negatively to CAM disclosures. Therefore, my first hypothesis is:

Hypothesis 1: Investors react more negatively to CAMs when a firm has high short interest.

3.2 Change in Investors' Perception of Firms' Financial Reporting Reliability

In addition to making the auditor's report more informative to investors, the standard-setter assert that the communication of CAMs may benefit investors by enhancing audit quality (PCAOB 2017). If audit quality does improve or if investors perceive an increase in audit quality associated with CAM disclosure, then investors will consider audited firms' financial reporting to be more reliable (Teoh and Wong 1993). Moreover, I expect investors to perceive both audited annual financial statements (i.e. 10-Ks) and unaudited quarterly financial statements (i.e. 10-Qs) to be more reliable after CAM disclosure.

Investors may find a firm's audited financial statements more reliable if they believe that the process of identifying and disclosing CAMs leads to an improvement in audit quality. For instance, the discussions between auditors and firm management regarding CAMs may heighten auditors' professional skepticism, resulting in greater scrutiny of the underlying matters (PCAOB 2017). Moreover, since auditors are required to disclose how they address each CAM, they may be incentivized to use more substantive audit procedures (ACCA 2018). If an auditor closely

scrutinizes a CAM and does not find fault with the firm's accounting, investors may feel more confident that the audited financial data accurately reflect the economic value of the firm.

Investors may also perceive a firm's unaudited quarterly financial statements to be more reliable because the CAM disclosure requirement may lead auditors to examine and strengthen internal controls. Consistent with this view, a survey by Intelligize finds that during CAM dry-runs, 43% of audit committees identified additional internal controls to be implemented, while an additional 19% are considering such changes (Butler 2019). The improvement in internal controls may alleviate the concern of financial manipulation and increase the accuracy of financial reports. Thus investors may find the information in both audited and unaudited quarterly financial statements to be more reliable.

On the other hand, investors may rely less on a firm's financial reporting if they misinterpret CAMs as reducing the level of audit assurance. In identifying a CAM, auditors are essentially declaring that an account is discretionary and difficult to audit. When provided with such information, investors may associate CAMs with less audit assurance and could perceive related accounts as less reliable. Indeed, experimental studies find that investors have lower confidence in a firm's financial statement when it contains CAMs (Christensen et al. 2014; Kachelmeier et al. 2019). However, this confidence-reducing effect is moderated by the inclusion of a resolution section where auditors discuss the procedures used to address the CAMs (Christensen et al. 2014).

Finally, it is possible that CAMs have no effect on investors' perception of firms' financial reporting reliability. This could happen if the CAM contains information that is generic or already known by investors. Alternatively, investors may perceive no connection between CAM disclosure and audit quality, especially when the CAM section of the auditor's report begins with the

statement that "the communication of critical audit matters does not alter in any way [the auditor's] opinion on the financial statements" (PCAOB 2017). Under this interpretation, investors should not perceive any change in the reliability of a firm's financial reporting.

Since investors' beliefs are not directly observable, I study the ERCs around the quarterly earnings announcements following the release of the 10-Ks containing CAMs. Prior research shows that investor response to earnings surprise increases with perceived auditor quality (Teoh and Wong 1993; Gipper et al. 2020). In the case of CAM disclosure, there could be an increase in ERC if investors associate CAMs with higher audit quality. However, there could be a decrease in ERC if investors interpret CAMs as lowering the level of audit assurance. There could also be no change in ERC if CAMs have no effect on investors' perception of audit quality. My third hypothesis is therefore:

Hypothesis 2: Investors respond more to a firm's reported earnings after the firm starts reporting CAMs.

4. Investor Reaction to CAMs

4.1 Research Design

To examine investor reaction to CAM disclosures, I implement a difference-in-differences design where the treatment group consists of large accelerated filers and the control group consists of firms in other filer categories. Specifically, since the CAM disclosure requirement has become effective for large accelerated filers for fiscal years ending on or after June 30, 2019, but does not apply to other firms until December 15, 2020, the large accelerated filers are the only firms filing 10-Ks containing CAMs during fiscal year 2019. This enables me to examine the change in the CAM-disclosing firms' investor reaction from the pre-period to the post-period relative to a set of

control firms that do not disclose CAMs. First, to verify the prior paper's finding that there is no significant market reaction to CAMs on average, I estimate the following regression:

$$ABRET_{i,t} = \beta_0 + \beta_1 POST_t * TREAT_i + \sum \beta_J CONTROLS_{i,t} + Firm\ FE + Month\ FE + \varepsilon_{i,t} \quad (1a)$$

where ABRET is abnormal stock return calculated as the sum of market-adjusted stock returns over the three-day event window surrounding a firm's 10-K filing date. $TREAT_i$ is an indicator variable equal to one for large accelerated filers required to disclose CAM during the phase-in period, and zero otherwise. $POST_t$ is an indicator equal to one for fiscal years that end on or after June 30, 2019, and zero otherwise. The main variable of interest, $POST_t * TREAT_i$, captures the impact of CAM disclosures on the outcome variables. Instead of including $TREAT_i$ and $POST_t$ separately in the regression, I use firm and month fixed effects to control for unobservable firm-level characteristics and time-varying heterogeneity. $CONTROLS_{i,t}$ represents the control variables defined in Appendix 1, including firm size (SIZE), market-to-book ratio (BTM), return on assets (ROA), an indicator for negative earnings (LOSS), leverage (LEV), big-N auditor (BIGN), analyst following (LN_ANALYST), percentage of institutional ownership (INSTOWN), average stock return volatility (VOLATILITY), average turnover (TURNOVER), and the number of days between the earnings announcement and the 10-K filing date (DAYSAFTEREA).

The key identifying assumption for consistency of the difference-in-differences estimator is the parallel trends assumption, which requires that the average change in outcome variables is the same for both the treatment and control groups in the absence of treatment (Roberts and Whited, 2013). Verifying this assumption is particularly important in my setting because the treatment firms, which are large accelerated filers, have significantly larger market capitalizations and operate in richer information environments than do the control firms in other filer categories.

To assess the validity of the parallel trends assumption, I plot trends of the counter-factual treatment effect on ABRET. Specifically, I replace the $POST_t$ indicator in Equation (1a) with separate indicators for each fiscal year between FY 2015 and FY 2019 (except for the benchmark year of FY 2015). After estimating the modified regression, I map coefficient estimates for the interaction of $TREAT_i$ with each fiscal year indicator with 95% confidence intervals. As shown in Figure 1, the estimated treatment effects for ABRET are not significantly different from zero during the pre-period, indicating that there is no different trends for treatment and control firms prior to the treatment. The evidence in Figure 1 also anticipates the result that there are no significant reactions to CAM disclosures, as the treatment effects for ABRET are not significantly different from zero in the post-treatment period of FY 2019.

Next, to examine whether investors react negatively to CAMs disclosed by firms with high levels of short interests, I add an indicator variable for high level of short interest and its interaction with $POST_t$ and $TREAT_i$ to the difference-in-differences model. The new regression specification is as follows:

$$ABRET_{i,t} = \beta_0 + \beta_1 POST_t * TREAT_i * HIGH\_SHORT_{i,t} + \beta_2 POST_t * TREAT_i + \beta_3 POST_t * HIGH\_SHORT_{i,t} + \beta_4 TREAT_i * HIGH\_SHORT_{i,t} + \beta_5 HIGH\_SHORT_{i,t} + \sum \beta_J CONTROLS_{i,t} + Firm\ FE + Month\ FE + \varepsilon_{i,t} \quad (1b)$$

where $HIGH\_SHORT_{i,t}$ is an indicator variable equals to one if the short interest for a firm-year is higher than the sample median of that particular fiscal year, and zero otherwise. Short interest for each firm-year is computed as the number of shares held short scaled by total shares outstanding. All other variables are defined as in Equation (1a).

The main variable of interest is β_1, the coefficient of $POST_t * TREAT_i * HIGH\_SHORT_{i,t}$, which captures the incremental investor reaction to CAMs for treatment firms with higher levels

of short interests. If investors perceive CAMs as negative news for firms targeted by short sellers, then β_1 would be negative.

To verify that short interest does not affect the outcome variables in the absence of CAM disclosure, I plot trends for the incremental treatment effect of short interest on ABRET. First, I replace the $POST_t$ indicator in Equation (1b) with separate indicators for each fiscal year between FY 2015 and FY2019, except for the benchmark year of 2015. After estimating the modified regression, I map coefficient estimates for the interaction of $TREAT_i * HIGH\_SHORT_{i,t}$ with each fiscal year indicator with 95% confidence intervals. As shown in Figure 2, the estimated incremental treatment effects for ABRET during the pre-period are not significantly different from zero, indicating that prior to treatment, short interest does not have any incremental effect on investor reaction to 10-Ks. Figure 2 also shows that in FY 2019, when treatment firms first start reporting CAMs, the incremental treatment effect on ABRET becomes significantly negative. This implies that investors react more negatively to CAMs when they are already suspicious about a firm's financial reporting, proxied for by a firm's high level of short interest.

4.2 Sample Selection and Descriptive Statistics

Table 2 Panel A presents the sample selection procedure for the difference-in-difference analysis. I start from all U.S. firms on Compustat between fiscal years 2017 and 2019 with primary stocks listed on NYSE, NASDAQ, or AMEX, restrict the sample to nonfinancial firms (i.e., I exclude firms with SIC codes 6000 to 6999), and eliminate firm-years with missing data for outcome or for control variables. I then merge these data with Calcbench to obtain the 10-K filing date that corresponds to each firm-year. In order to avoid the period of high volatility caused by COVID-19 and the confounding effects on the outcome variables, I eliminate firms that filed their FY 2019 10-Ks after February 20, 2020. I also eliminate firms that do not file a 10-K on or after

June 30, 2019, which is the effective date of the CAM disclosure requirement. I require all firms in the sample to have at least one observation in the pre- and in the post-treatment periods. Finally, I exclude two non-large accelerated filers that voluntarily disclosed CAMs. This results in a pre-matching sample of 758 firms, with 542 treatment and 216 control firms.[8]

Table 2 Panel B provides the descriptive statistics for the 2,237 firm-year observations in the full sample. For sample firms, the average log market value of equity is 7.70 (equivalent to $2,208 million), the twenty-fifth percentile is 6.26 (equivalent to $523 million), and the seventy-fifth percentile is 9.28 (equivalent to $10.7 billion). The standard deviation for firm size is 2.28. The large variation in size across the sample is expected because the treatment group consists of large accelerated filers while the control group includes firms in other filer categories which are smaller by definition. The average firm has a market-to-book ratio of 4.26 and a return-on-asset ratio of 0.2%, suggesting that sample firms are generally profitable. The mean standard deviation for abnormal daily returns is 2.1% for the 250 trading days prior to the release of the 10-Ks. The average turnover is 0.9%. These statistics are comparable to those in the literature.

4.3 Results and Analysis

Table 3 shows the difference-in-difference regression results for Hypotheses 1. Column (1) shows the result from estimating Equation (1a), where ABRET is regressed on POST*TREAT and on control variables with firm and year fixed effects. Standard errors are clustered by firm. The coefficient on POST*TREAT remains statistically insignificant (0.007, $p > 0.10$). Based on these results, there is insufficient evidence to reject the null hypothesis that on average, CAM disclosures

[8] There are fewer control than treatment firms because large accelerated filers are required to file their 10-Ks within a shorter timeframe than firms in other filer categories (i.e., large accelerated filers are required to file 10-Ks no later than 60 days after the fiscal year end, accelerated filers should file no later than 75 days after the fiscal year end, and non-accelerated filers should file no later than 90 days after the fiscal year end). Thus, many control firms filed 10-Ks for fiscal year 2019 after February 20, 2020, and are not included in the sample.

have no effect on abnormal stock returns around 10-K releases. This is consistent with concurrent studies finding that CAM disclosures do not prompt any abnormal investor reaction in terms of stock returns.

Columns (2) presents the results from estimating Equation (1b), which examines investors' reaction to the CAM disclosures of firms targeted by short sellers. When ABRET is regressed on the indicator for high short interest (HIGH_SHORT) and on its interactions with POST and TREAT, the coefficient on the main variable of interest, POST*TREAT*HIGH_SHORT, is negative and significant at the 1% level (-0.052, $p < 0.01$). This implies that investors view CAMs as confirming their pre-existing suspicions about a firm's financial reporting, and thus they react negatively to CAMs disclosed by firms with higher levels of short interest. Additionally, the coefficient on POST*TREAT is positive and significant at the 5% level (0.026, $p < 0.05$). This is potentially because investors believe that auditors have addressed CAMs and ensured more reliable financial reporting for firms with low short interests.

In sum, I find that while there is no incremental stock return reaction to CAMs on average, investors react negatively to CAMs disclosed by firms with high levels of short interest. These findings are consistent with my hypothesis that investors' reaction to CAMs vary with their pre-existing perception about a firm.

5. Effect of CAMs on Perceived Financial Reporting Reliability

5.1 Research Design

To examine whether CAMs affect how investors perceive disclosing firms' financial reporting reliability, I combine the ERC regression with a difference-in-difference design following Ferri et al. (2018). Using this design, I am able to mitigate the concern that changes in ERC are caused by factors unrelated to CAMs.

The intuition behind my difference-in-difference regression is that investors learn about CAMs from the FY 2019 10-K filings of large accelerated filers, and update their beliefs about firms' financial reporting quality for the subsequent earnings announcements. If investors perceive earnings as more reliable after they learn about CAMs, they will react more strongly to earnings surprise, resulting in a higher average ERC around earnings announcements after the FY 2019 10-K filing date. I therefore estimate the following regression:

$$CAR_{i,t} = \beta_0 + \beta_1 UE_{i,t} * POST_{i,t} * TREAT_{i,t} + \beta_2 UE_{i,t} + \beta_3 UE_{i,t} * POST_{i,t} + \beta_4 UE_{i,t} * TREAT_{i,t} + \beta_5 POST_{i,t} + \beta_6 TREAT_{i,t} + \beta_7 POST_{i,t} * TREAT_{i,t} + \sum \beta_j CONTROLS_{i,t} + \sum \beta_k UE_{i,t} * CONTROLS_{i,t} + \varepsilon_{i,t} \quad (2)$$

where $CAR_{i,t}$ is the three-day market-adjusted stock return around the date of the quarterly earnings announcements. $UE_{i,t}$ is unexpected earnings, computed by taking the difference between quarterly earnings per share and the median of one-quarter-ahead analyst forecasts of quarterly earnings per share, and then scaling the difference by stock price two days before the earnings announcement date. $TREAT_{i,t}$ is an indicator variable equal to one for large accelerated filers that are required to disclose CAM for fiscal years ending on or after June 30, 2019, and zero otherwise. $POST_{i,t}$ is an indicator variable equal to one for earnings announcements that take place on or after the respective firm's FY 2019 10-K filing date, and zero otherwise. The interaction term, $UE_{i,t} * POST_{i,t} * TREAT_{i,t}$, captures the incremental change in ERCs for treatment firms relative to control firms from the pre- to post-treatment period. To ensure that the tests are less likely to capture the effect of any earlier events, I restrict the sample period to fiscal years 2019 and 2020, which include the quarters right before and after the implementation of the CAM disclosure requirement.

Following prior literature (Collins and Kothari 1989, Easton and Zmijewski 1989, Ferri et al. 2018, Gipper et al. 2020), I include firm characteristics and their interactions with UE to control for factors that affect ERCs, including firm size (SIZE), growth opportunities (MTB), leverage (LEV), stock covariation with the market return (BETA), a loss indicator (LOSS), analyst forecast dispersion (DISP), and the degree of persistence in earnings (PERS). To control for the influence of different industries and fiscal quarters on ERC, I include industry fixed effects (using the Fama French 48 industries specification), fiscal year-quarter fixed effects, and their interaction with UE. Standard errors are clustered by earnings announcement dates to account for cross-sectional dependencies among firms that announce earnings on the same day. In order to mitigate the effect of potential outliers in the UE variable, I estimate Equation (2) using a robust regression that places less weight on observations with high leverage or with large absolute residuals.

I perform two additional tests to verify whether changes in ERC are driven by CAM disclosure. The first test exploits variation in ex-ante auditor skill across sample firms. For investors to believe that a firm's financial reporting is more reliable, these investors must consider an auditor skillful enough to improve audit quality through the CAM disclosure process. A skillful auditor may use more substantive audit procedures and enhance internal controls to address CAMs and reduce the likelihood of misreporting, while a less skillful auditor may be incapable of effectively auditing these complex matters or identifying the necessary internal control improvements. Therefore, ex-ante auditor skills should be positively correlated with the effect of CAM on ERCs. Using an indicator variable for a Big-N auditor in order to proxy for auditor skills and resources, I add to Equation (2) the indicator BIGN and its interactions with UE, POST, and TREAT (i.e., UE*BIGN*POST*TREAT, UE*BIGN*POST, UE*BIGN*TREAT, BIGN*POST, and BIGN*TREAT). I expect a positive coefficient on UE*BIGN*POST*TREAT.

The second test explores cross-sectional variation within treatment firms. If the change in ERC is caused by CAMs, the magnitude of change should be positively correlated with the number of CAMs disclosed. Specifically, if investors believe that an auditor disclosing a higher number of CAMs have conducted a more thorough examination of a firm's subjective and complex accounts, then they may find a firm's reporting more reliable when its auditor discloses a higher number of CAMs. On the other hand, if investors associate CAMs with lower audit assurance, then a higher number of CAMs should reflect a lower level of reporting reliability. To test this, I replace TREAT in Equation (2) with the number of CAMs (NCAM). The regression model is estimated with only the treatment firms, and the key variable of interest is UE*NCAM*POST. I expect the coefficient on UE*NCAM*POST to be positive.

5.2 Sample Selection and Descriptive Statistics

Table 4 Panel A presents the sample selection procedure for the earnings response coefficient analysis. I start from all U.S. firms on Compustat Quarterly between fiscal years 2019 and 2020 with primary stocks listed on NYSE, NASDAQ, or AMEX. The sample period is then restricted to the fiscal quarters right before and after the implementation of the CAM disclosure requirement so that the tests are less likely to capture the effect of any earlier events. Next, I restrict the sample to nonfinancial firms with their 2019 fiscal years ending on or after June 30, 2019, keep firm-quarters with non-missing data for the full panel, and only retain firms that announced quarterly earnings after the FY 2019 10-K filing date and before February 20, 2020. These restrictions ensure that investors of treatment firms have access to CAMs disclosed in the FY 2019 10-K filings before they process subsequent earnings announcement information. Earnings announcements after February 20, 2020 are excluded in order to avoid the period of high volatility and uncertainty caused by COVID-19. Finally, I require firms to have at least one earnings

announcement before the FY 2019 10-K filing date to ensure that they have observations in the pre- and in the post-periods. The resulting sample consists of 346 unique firms, with 268 treatment and 78 control firms.

The descriptive statistics for this sample are shown in Table 4 Panel B. The average market-adjusted stock return around earnings announcements (CAR) is 0.13%, and the average unexpected earnings (UE) is 0.0005, which are comparable with those in prior literature. Table 4 Panel C provides the differences in mean between treatment and control firms. The average log market value of equity is 8.66 (equivalent to $5,768 million) for treatment firms and 5.71 (equivalent to $302 million) for control firms. The considerable difference in size is expected because all treatment firms are large accelerated filers, and are more sizable than control firms by definition. As compared to an average control firm, an average treatment firm has a significantly higher market-to-book ratio (MTB), higher leverage (LEV), higher beta (BETA), lower loss (LOSS), lower analyst forecast dispersion (DISP), lower earnings persistence (PERS), and a higher likelihood of having a Big-N auditor (BIGN).

5.3 Results and Analysis

Table 5 shows the difference-in-difference regression results. Column (1) provides the result when CAR is regressed on POST, TREAT, POST*TREAT, and their interactions with UE. Control variables, industry and fiscal-quarter fixed effects, and their respective interactions with UE are included. Standard errors are clustered by earnings announcement date. The main variable of interest, UE*POST*TREAT is positive and significant (3.053, $p < 0.01$), suggesting that investors react more to surprise earnings of treatment firms in the post-treatment period than to the surprise earnings of control firms.

Column (2) shows the result for a modified Equation (2) with BIGN and its interactions with UE, POST, and TREAT. The coefficient on UE*BIGN*POST*TREAT is positive and significant at the 5% level (22.220, $p < 0.05$), indicating that among treatment firms, ERC increases more for firms audited by Big-N auditors. Interestingly, the coefficient on UE*POST*TREAT is negative and significant at the 5% level (-18.355, $p < 0.05$), suggesting that treatment firms audited by non-Big-N auditors experience a decrease in ERC relative to control firms. A possible explanation is that investors believe that skillful auditors are able to improve audit quality and internal controls through the process of CAM disclosure, but that less skilled auditors are unable to adequately address the CAMs. Thus, investors rely more on financial information from treatment firms audited by Big-N auditors, but become less confident about the financials of treatment firms audited by smaller auditors.

Column (3) presents the result for the cross-sectional test where TREAT is replaced with NCAM. Since NCAM is only reported by treatment firms, this regression is estimated using only treatment observations. The key variable of interest, UE*POST*NCAM, has a positive coefficient that is significant at the 5% level (3.885, $p < 0.05$). This suggests that among treated firms, investors consider those with higher numbers of CAMs to have a greater improvement in financial reporting reliability during the post-treatment period. Investors seem to associate a higher number of CAMs with greater auditor scrutiny and effort.

The evidence from Table 5 suggests that CAM disclosures make investors perceive audited firms' financial reporting as more reliable. Additional tests further confirm that the increase in ERC is a result of CAM disclosure and changes in perceived audit quality.

6. Additional Analyses

6.1 Propensity Score Matched Analysis

In order to mitigate the concern that my results are driven by observable differences between the treatment and control firms, I re-estimate the difference-in-differences regressions for both Hypotheses using propensity-score-matched samples. Due to the way the CAM disclosure requirement was implemented, the treatment group consists of large accelerated filers while the control group consists of firms in other filer categories. Thus, the treatment firms have significantly larger market capitalizations and operate in richer information environments than do the control firms. Since firm size and information environment are both important factors that may affect investor reaction to firms' 10-K filings, I form a matched sample where the treatment and control groups are more comparable along these dimensions.

I start by constructing a propensity score for each firm based on its industry (defined using two-digit SIC industry codes), size, number of analysts following, and percentage of institutional ownership during the pre-treatment period. I then perform a one-to-one nearest neighbor matching with replacement, imposing a caliper distance of 0.50.[9]

The propensity-score-matched sample for Hypothesis 1 comprises of 82 treatment and 26 control firms. Compared to the full sample, the matched sample contains smaller firms in the treatment group and larger firms in the control group that are more comparable in size and information environment. As shown in Table 6 Panel A, the average log market value of equity in the matched sample is 7.01 (equivalent to $1,108 million). The twenty-fifth percentile is 6.65 (equivalent to $773 million), which is slightly larger than that of the full sample, and the seventy-fifth percentile is 7.49 (equivalent to $1,790 million), which is considerably smaller than that of

[9] Due to the small number of control firms in my sample, matching with replacement allows me to form a larger matched sample compared to matching without replacement. In addition, Roberts and Whited (2013) recommends matching with replacement, as it allows for better matches and less bias. Due to the lack of overlap between the treatment and control groups, a larger than normal caliper distance is necessary for me to form a reasonably sized sample after matching.

the full sample. This is because the largest treatment (smallest control) firms are dropped from the sample due to a lack of matching control (treatment) firms. Table 6 Panel B shows that although the matched treatment firms are still significantly larger than the matched control firms, the difference in mean size has dropped from 4.03 in the full sample to 0.83 in the matched sample. Similarly, the difference in the mean log number of analysts has dropped from 1.61 to 0.42, and the difference in mean institutional ownership has dropped from 36% to 12%. Additionally, the difference in the means of most variables (including short interest, market-to-book, return on assets, loss, and leverage) become statistically insignificant in the matched sample. This suggests that treatment and control firms in the matched sample are more comparable, and there is a higher likelihood that investors' reaction to these firms' 10-Ks will follow the same trend.

Table 6 Panel C presents the results from estimating Equations (1a) and (1b) using the matched sample. The findings are largely the same as those from the full sample: On average, there is no abnormal stock return reaction to 10-Ks containing CAMs. However, Column (2) shows that investors react negatively to CAMs when a firm has a high level of short interest (the coefficient on POST*TREAT*HIGH_SHORT is -0.146, $p < 0.05$).

The propensity-score-matched sample for Hypothesis 2 consists of 35 treatment and 16 control firms. As shown in Table 7 Panel A, the average log market value of equity in the matched sample is 6.93 (equivalent to $1,022 million), which is much smaller than that of the full sample (8.04, equivalent to $3,102 million). Table 7 Panel B shows that the difference in mean size between the treatment and control firms has dropped from 2.95 in the full sample to 0.65 in the matched sample. The difference in other firm characteristics have also reduced to various extents, suggesting that treatment and control firms in the matched sample are more comparable. Because investors in firms of similar sizes and information environments may respond to unexpected

earnings in a similar way, the matched sample alleviate the concern that the change in ERC is due to any systematic change in firm characteristics.

Table 7 Panel C presents the results from estimating Equations (2) using the matched sample. The sign and significance of the key coefficients are similar to those form the full sample. Column (1) shows an increase in ERC after firms start reporting CAMs (the coefficient on UE*POST*TREAT is 10.313, $p < 0.01$). Column (2) shows that the increase in ERC is driven by Big-N auditors. Column (3) shows that among treatment firms, the ones reporting more number of CAMs experience a greater increase in ERC.

The fact that the matched-sample results are consistent with the full-sample results provides some assurance that the results are not driven by observable differences between the treatment and control groups.

6.2 Change in Short Interest around 10-K Filing

An alternative explanation for the investor reaction results in Table 3 is that short sellers use CAMs as an excuse to push down the stock price. That is, the negative and significant coefficient on POST*TREAT*HIGH_SHORT is attributable to short sellers further increasing short interest after treatment firms reported CAMs. If that is the case, then one cannot infer from the regression results that CAMs provide useful information to investors.

To test the validity of the alternative explanation, I examine the change in short interest around 10-K filings in a difference-in-difference regression. Because the stock exchanges disclose short interests on the fifteenth and the end of each month, I measure the change in short interest from the last available report before to the first available report after the 10-K filing date. Table 8 displays the result of regressing the change in short interest (ΔSHORT) on POST, TREAT, HIGH_SHORT, and their interactions. In Column (1), the coefficient on POST*TREAT is zero

and statistically insignificant. In Column (2), the coefficients on POST*TREAT*HIGH_SHORT is also statistically insignificant, suggesting that even for treatment firms with high level of short interest, there is no significant change in short interest around the 10-K filing date relative to the control firms. Therefore, the negative return observed in the main tests are not a result of short sellers' manipulation.

6.3 Falsification Test Using B/P Ratio

Another concern is that firms with high levels of short interests are likely to be overvalued, and the negative stock return I observe could be due to market correction. To mitigate this concern, I re-estimate Equation (1b) using the book-to-price ratio (B/P) in place of HIGH_SHORT. B/P ratio is calculated as the ratio of book value of equity to market value of equity. A low B/P ratio indicates overvaluation, and there is indeed a negative and significant correlation (-0.06, $p < 0.01$) between B/P and short interest in my sample. If the negative stock return were due to overvaluation, I should observe a negative and significant coefficient on POST*TREAT*LOW_BP.

Table 9 shows the results from estimating Equation (1b). Column (1) shows the result from regressing abnormal stock return around 10-K filings on POST, TREAT, and their interactions with B/P. The coefficient on POST*TREAT*B/P is 0.006 and statistically insignificant. In Column (2), abnormal stock return is regressed on POST, TREAT, and their interaction with LOW_B/P, which is an indicator variable equal to one if the B/P ratio of a firm-year is lower than the sample median of that fiscal year. The coefficient on POST*TREAT*LOW_BP is -0.006 and statistically insignificant. Using P/E ratio as an alternative proxy yields similar results. These findings alleviate the concern that the investor reactions observed in the main tests are a result of market correction for overvalued stocks.

7. Conclusion

In this paper, I examine whether investors react to CAM disclosures and whether they perceive any change in adopting firms' financial reporting quality. Using a difference-in-differences design, I find investors react negatively to CAMs disclosed by firms with high levels of short interest. I also find a significant increase in the quarterly earnings response coefficient for adopting firms after they start to disclose CAMs. The effect is driven by big-N audit firms, and increases with the number of CAMs reported. Collectively, the evidence suggests that investors use CAMs to confirm their pre-existing opinions about a firm, and that they perceive an improvement in audit quality and financial reporting reliability due to the CAM disclosure requirement.

Despite my best efforts, this paper has several limitations. First, the findings of this paper may not be representative of the effect of CAMs on smaller firms that have not yet adopted the new standard. Due to differences in the information environments of large accelerated filers and other firms, the effect may not be the same. Second, the findings are based on a short sample period as the CAM disclosure requirement was implemented after June 30, 2019, and I have to restrict the sample further to avoid the confounding effects of COVID-19. This limited sample does not allow me to examine the long-term outcomes of CAM disclosures. Finally, despite using a difference-in-differences design and strict fixed effect specifications, I cannot rule out the possibility that my results are driven by factors other than CAM disclosures. The cross-sectional tests mitigate, but cannot eliminate this concern.

Nevertheless, the findings of this paper add to the debate about the usefulness of CAM disclosures and highlight different aspects of investor behavior that regulators may want to take into account when evaluating the costs and benefits of the CAM disclosure requirement.

Figure 1. Parallel Trend: Coefficient Plot for POST*TREAT

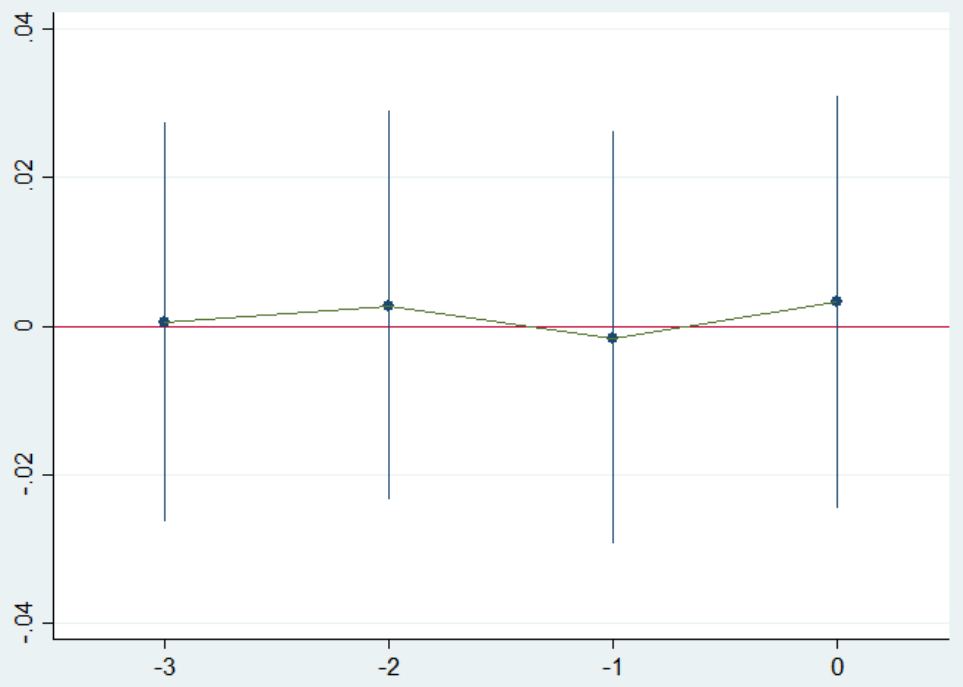

Figure 2. Parallel Trend: Coefficient Plot for POST*TREAT*HIGH_SHORT

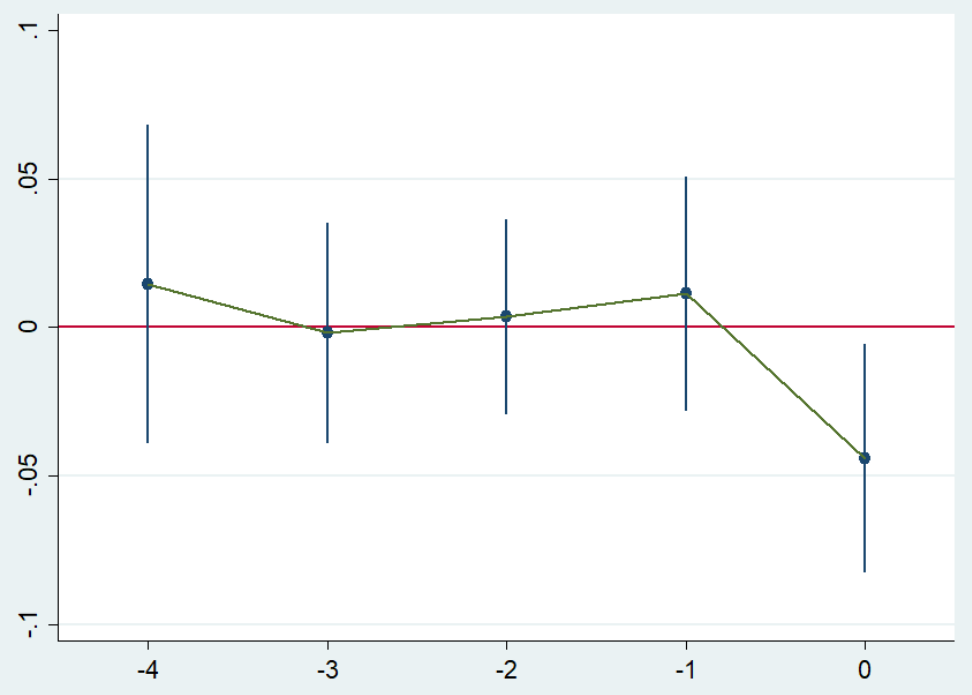

Table 1. Descriptive Statistics for CAMs

Table 1 presents descriptive statistics for CAMs disclosed by large accelerated filers as of April 26, 2020. Panel A shows the number of CAMs reported by each firm. Panel B shows the top ten most frequently reported CAM topics. The Audit Analytics database provides the topic for each CAM based on its title. For example, the firm-specific title "valuation of acquired developed product technology intangible assets - BioTek acquisition" is grouped under the topic "business combination." This paper further classifies CAM topics into five main categories: intangibles, revenue recognition, operating accruals, taxes, and other. Panel C shows the number of firms that report each category of CAMs. Panel D summarizes the number of firms reporting each category of CAMs by industry (classified using the Fama French 12 industries). Panel E presents results from regressing the number of CAMs on firm characteristics that reflect the complexity and subjectivity of a firm's accounting. Because the number of CAMs is a count variable, I use a Poisson regression model instead of an OLS regression. In Column (1), the dependent variable is the number of CAMs reported (NCAM). In Columns (2), (3), (4), and (5), the dependent variables are the number of CAMs related to intangible (INTAN_CAM), revenue recognition (REVREC_CAM), operating accruals (OPACC_CAM), and taxes (TAX_CAM), respectively. Industry fixed effects (classified using the Fama French 48 industries) are included in all regressions. All variables are defined in Appendix 1. t-statistics, based on robust standard errors clustered at the industry level, are presented below the coefficient estimates. ***, **, * indicates significance at the 1%, 5%, and 10% levels, respectively.

Panel A. Number of CAMs Reported by Each Firm

Number of CAMs reported	Number of firms	% of firms
0	1	0.0%
1	1092	51.8%
2	710	33.7%
3	240	11.4%
4	54	2.6%
5	12	0.6%
Total	2109	100.0%

Panel B. Top Ten Most Frequently Reported CAM Topics

Rank	CAM topics	Number of firms	% of firms
1	Business combinations	407	19.3%
2	Goodwill	388	18.4%
3	Revenue from customer contracts	372	17.6%
4	Allowance for credit losses	208	9.9%
5	Other contingent liabilities	187	8.9%
6	Property, plant, and equipment	173	8.2%
7	Uncertain tax positions	124	5.9%
8	Other investments	123	5.8%
9	Deferred income taxes	114	5.4%
10	Deferred and capitalized costs	100	4.7%
Total number of firms		2109	

Panel C. Frequency of CAM Categories

CAM categories and main topics	Number of firms	% of firms
Intangibles	853	40.4%
Business combinations	407	19.3%
Goodwill	388	18.4%
Other intangible assets	94	4.5%
Revenue recognition	495	23.5%
Revenue from customer contract	372	17.6%
Sales return and allowances	79	3.7%
Other revenue	47	2.2%
Operating accruals	821	38.9%
Allowance for credit losses	208	9.9%
Property, plant, and equipment	173	8.2%
Deferred and capitalized costs	100	4.7%
Taxes	324	15.4%
Deferred income tax	114	5.4%
Uncertain tax position	124	5.9%
Other income tax	92	4.4%
Other	650	30.8%
Other contingent liabilities	186	8.8%
Other investments	123	5.8%
Policy changes	85	4.0%
Total	2109	

Table 1 Panel D. Frequency of CAM Categories by Industry

Fama French 12 industries	Number of firms	Intangibles		Revenue recognition		Operating accruals		Taxes		Other	
		N	%	N	%	N	%	N	%	N	%
Consumer NonDurables	76	49	64.5%	15	19.7%	15	19.7%	18	23.7%	22	28.9%
Consumer Durables	50	20	40.0%	16	32.0%	18	36.0%	10	20.0%	10	20.0%
Manufacturing	187	115	61.5%	51	27.3%	34	18.2%	43	23.0%	42	22.5%
Oil, Gas, and Coal Extraction and Products	99	27	27.3%	3	3.0%	36	36.4%	14	14.1%	64	64.6%
Chemicals and Allied Products	60	33	55.0%	5	8.3%	3	5.0%	21	35.0%	17	28.3%
Business Equipment	270	104	38.5%	134	49.6%	74	27.4%	70	25.9%	42	15.6%
Telephone and Television Transmission	58	34	58.6%	15	25.9%	17	29.3%	10	17.2%	16	27.6%
Utilities	94	33	35.1%	6	6.4%	64	68.1%	7	7.4%	30	31.9%
Wholesale, Retail, and Some Services	113	56	49.6%	16	14.2%	27	23.9%	20	17.7%	46	40.7%
Healthcare, Medical Equipment, and Drugs	223	75	33.6%	111	49.8%	84	37.7%	32	14.3%	37	16.6%
Finance	536	165	30.8%	32	6.0%	335	62.5%	33	6.2%	206	38.4%
Other	330	141	42.7%	91	27.6%	114	34.5%	46	13.9%	105	31.8%
Non-classifiable	13	1	7.7%	0	0.0%	0	0.0%	0	0.0%	13	100.0%

Table 1 Panel E. Information Content of CAMs

	(1) NCAM	(2) INTAN_CAM	(3) REVREC_CAM	(4) OPACC_CAM	(5) TAX_CAM
INTAN	0.434***	2.224***			
	(6.86)	(13.95)			
DR_SALES	0.031		0.625***		
	(0.94)		(3.18)		
ABS_DCA	0.023			-0.100	
	(0.66)			(-0.46)	
DTA	1.501***				7.451***
	(4.00)				(4.63)
SIZE	0.040**	-0.014	0.054*	-0.068	0.185***
	(2.15)	(-0.50)	(1.73)	(-1.20)	(3.74)
LN_AGE	0.030	0.101**	-0.088	0.104	0.021
	(1.15)	(2.21)	(-0.89)	(1.20)	(0.14)
NSEG	0.013***	0.025***	0.004	-0.024	0.061***
	(3.70)	(3.05)	(0.28)	(-0.95)	(2.91)
MTB	-0.000	-0.008**	0.004	-0.004	0.004
	(-0.41)	(-2.25)	(1.10)	(-0.73)	(0.73)
LEV	0.050	0.158	-0.408	-0.241	0.375
	(0.73)	(1.06)	(-1.25)	(-0.74)	(0.85)
LOSS	0.145***	0.135*	0.217**	0.519***	-0.568***
	(5.13)	(1.89)	(2.33)	(3.00)	(-2.72)
RES_ACCT	0.110**	0.227***	0.087	-0.094	0.410*
	(2.44)	(2.85)	(0.88)	(-0.52)	(1.66)
BIGN	-0.075	0.077	-0.054	0.061	-0.411*
	(-1.61)	(0.73)	(-0.36)	(0.25)	(-1.67)
LN_ANALYSTS	-0.022	-0.122**	-0.012	0.168	-0.055
	(-0.72)	(-2.20)	(-0.13)	(1.46)	(-0.43)
INSTOWN_PERC	0.027	-0.086	0.237	0.090	-0.271
	(0.42)	(-0.70)	(1.30)	(0.39)	(-0.81)
Constant	0.221	-1.462***	-15.523***	-0.971*	-1.419**
	(1.40)	(-4.10)	(-13.78)	(-1.86)	(-2.35)
Fixed effect	Industry	Industry	Industry	Industry	Industry
Cluster	Industry	Industry	Industry	Industry	Industry
N	1025	1025	1025	1025	1025
Pseudo R-sq	0.018	0.117	0.116	0.072	0.130

Table 2. Investor Reaction Sample Selection and Descriptive Statistics

Panel A presents the sample selection procedure for the analysis of investor reactions around 10-K filings (Hypothesis 1). Panel B presents the descriptive statistics for this sample. All continuous variables are winsorized at the 1% and 99% levels.

Panel A. Sample Selection

	N of obs.
U.S. firms listed on NYSE, AMEX, or NASDAQ (FY=2017, 2018, 2019)	10609 (4085 firms)
Less:	
Firms in the financial industry	8412 (3300 firms)
Firm-years with missing data	7925 (3111 firms)
Firms that filed FY 2019 10-K after 02/20/2020	3228 (1364 firms)
Firms that ended FY 2019 before 06/30/2019	2268 (785 firms)
Firms with less than two firm-year observations	2243 (760 firms)
Firms that voluntarily disclosed CAMs	2237 (758 firms)

Panel B. Descriptive Statistics

Variables	N	Mean	SD	p25	p50	p75
ABRET	2237	0.002	0.069	-0.023	0.001	0.025
NCAM	1607	1.63	0.74	1	1	2
HIGH_SHORT	2237	0.50	0.50	0	0	1
SIZE	2237	7.70	2.28	6.26	7.93	9.28
MTB	2237	4.26	9.89	1.25	2.28	4.67
ROA	2237	0.00	0.22	0.00	0.04	0.09
LOSS	2237	0.24	0.43	0	0	0
LEV	2237	0.28	0.23	0.10	0.27	0.40
BIGN	2237	0.77	0.42	1	1	1
LN_ANALYSTS	2237	1.97	1.01	1.39	2.20	2.77
INSTOWN_PERC	2237	0.64	0.31	0.37	0.76	0.89
VOLATILITY	2237	0.02	0.01	0.01	0.02	0.02
TURNOVER	2237	0.01	0.01	0.00	0.01	0.01
DAYS_AFTER_EA	2237	7.72	10.50	0	2	14

Table 3. Investor Reaction Regression Analysis

This table presents results from the estimations of Equation (1a) and Equation (1b). TREAT is an indicator variable equal to one for large accelerated filers required to disclose CAM during the phase-in period, and zero otherwise. POST is an indicator equal to one for fiscal years that end on or after June 30, 2019, and zero otherwise. The dependent variable is ABRET, the three-day cumulative market-adjusted stock returns around 10-K filings dates. Column (1) shows the result for regressing ABRET on POST*TREAT, controlling for firm characteristics. Column (2) shows the results for estimating Equation (1b), where ABRET is regressed on an indicator for high level of short interest (HIGH_SHORT) and on its interactions with POST and TREAT. HIGH_SHORT is equal to one if the short interest for a firm-year is higher than the sample median of that particular fiscal year, and zero otherwise. Firm and month fixed effects are included, and standard errors are clustered by firm in each column. All variables are defined in Appendix 1. t-statistics are presented below the coefficient estimates. ***, **, * indicates significance at the 1%, 5%, and 10% levels, respectively.

	(1) ABRET	(2) ABRET
POST*TREAT	0.007	0.026**
	(0.70)	(2.32)
POST*TREAT*HIGH_SHORT		-0.052***
		(-2.90)
POST*HIGH_SHORT		0.046***
		(2.78)
TREAT*HIGH_SHORT		0.004
		(0.25)
HIGH_SHORT		-0.015
		(-0.94)
SIZE	-0.020***	-0.021***
	(-2.68)	(-2.82)
MTB	0.000	0.000
	(1.34)	(1.34)
ROA	-0.004	-0.002
	(-0.14)	(-0.07)
LOSS	-0.002	-0.002
	(-0.31)	(-0.30)
LEV	-0.022	-0.019
	(-0.83)	(-0.75)
BIGN	0.032	0.035
	(1.21)	(1.35)
LN_ANALYSTS	-0.008	-0.007
	(-0.92)	(-0.85)
INSTOWN_PERC	0.004	0.006
	(0.35)	(0.54)
VOLATILITY	-0.714	-0.633
	(-1.60)	(-1.45)
TURNOVER	0.159	0.147

	(0.29)	(0.26)
DAYS_AFTER_EA	-0.000	-0.000
	(-0.21)	(-0.15)
Constant	0.163***	0.165***
	(2.62)	(2.67)
Fixed effect	Firm, Month	Firm, Month
Cluster	Firm	Firm
N	2236	2236
adj. R-sq	0.047	0.055

Table 4. Perceived Reporting Reliability Sample Selection and Descriptive Statistics

Panel A of this table presents the sample selection procedure for the analysis of the change in investors' perception of financial reporting reliability. Panel B provides the descriptive statistics for this sample. Panel C presents the difference in means between the treatment and the control group. All variables are defined in Appendix 1. All continuous variables are winsorized at 1% and 99%. ***, **, * indicates significance at the 1%, 5%, and 10% levels, respectively.

Panel A. Sample Selection

	N of obs.
All U.S. firms on Compustat Quarterly (FY= 2019, 2020)	46331 (9329 firms)
Keep:	
Nonfinancial firms that ended FY 2019 on or after 06/30/2019	12176 (2556 firms)
Firm-quarters with missing data needed for ERC regression	7071 (2064 firms)
Firms announcing quarterly earnings after the FY 2019 10-K filing date and before 02/20/2020	1577 (355 firms)
Firms with at least one earnings announcement before FY 2019 10-K filing date	1562 (346 firms)

Panel B. Descriptive Statistics

	N	Mean	SD	p25	p50	p75
CAR	1562	0.0011	0.0853	-0.0434	0.0015	0.0493
UE	1562	0.0005	0.0067	-0.0002	0.0006	0.0021
SIZE	1562	8.04	1.69	6.94	8.12	9.14
MTB	1562	4.03	6.35	1.48	2.46	5.30
LEV	1562	0.59	0.26	0.40	0.58	0.73
BETA	1562	1.08	0.43	0.78	1.04	1.35
LOSS	1562	0.23	0.42	0	0	0
DISP	1562	0.00	0.01	0.00	0.00	0.00
PERS	1562	0.38	0.24	0.18	0.41	0.57
BIGN	1562	0.84	0.37	1	1	1
NCAM	1237	1.68	0.79	1	1	2

Panel C. Difference in Means between Treatment and Control Groups

	N	Mean	N	Mean	Diff in Mean
CAR	1237	-0.0008	325	0.0081	-0.009*
UE	1237	0.0007	325	-0.0002	0.0008**
SIZE	1237	8.66	325	5.71	2.95***
MTB	1237	4.30	325	3.03	1.27***
LEV	1237	0.61	325	0.49	0.13***
BETA	1237	1.10	325	0.97	0.13***
LOSS	1237	0.19	325	0.35	-0.15***
DISP	1237	0.003	325	0.005	-0.002***
PERS	1237	0.36	325	0.46	-0.11***
BIGN	1237	0.94	325	0.46	0.48***

Table 5. Perceived Reporting Reliability Regression Analysis

This table presents results from the estimation of Eq. (2). I regress the three-day cumulative market-adjusted returns around earnings announcements (CAR) on unexpected earnings (UE), an indicator for treatment firms (TREAT), an indicator for the treatment period (POST), the interaction of POST*TREAT, control variables, year-quarter fixed effects, industry fixed effects, and on the interactions of UE with control variables, year-quarter fixed effects, industry fixed effects and treatment indicators. In order to mitigate the effect of outliers, I use a robust regression instead of an OLS regression. All variables are defined in Appendix 1. t-statistics, based on robust standard errors clustered at the earnings announcement date level, are presented below the coefficient estimates. ***, **, * indicates significance at the 1%, 5%, and 10% levels, respectively.

	(1) CAR	(2) CAR	(3) CAR
UE*POST*TREAT	3.053***	-18.355**	
	(2.67)	(-1.99)	
UE*TREAT	1.966	13.571***	
	(1.32)	(3.62)	
UE*POST	-1.760	-1.502	-5.130*
	(-1.29)	(-1.11)	(-1.66)
UE	19.209	19.042	-30.707***
	(1.38)	(1.33)	(-3.60)
UE*BIGN*POST*TREAT		22.220**	
		(2.40)	
UE*POST*NCAM			3.885**
			(2.49)
UE*NCAM			-0.038
			(-0.04)
UE*SIZE	0.722*	0.820**	0.806*
	(1.93)	(2.19)	(1.70)
UE*MTB	-0.002	-0.024	0.006
	(-0.08)	(-0.84)	(0.06)
UE*LEV	-1.212	-0.827	-1.138
	(-1.11)	(-0.81)	(-0.55)
UE*BETA	-3.237***	-2.327***	-1.576
	(-3.57)	(-2.72)	(-1.17)
UE*LOSS	-2.996***	-2.758***	-1.614*
	(-4.25)	(-4.14)	(-1.68)
UE*DISP	-66.636***	-38.926**	-172.811***
	(-4.38)	(-1.98)	(-3.37)
UE*PERS	1.368	1.321	2.373*
	(1.28)	(1.26)	(1.71)
Constant	-0.042*	-0.045*	0.056***
	(-1.74)	(-1.70)	(3.59)
Firm characteristics	Yes	Yes	Yes
Firm characteristics * UE	Yes	Yes	Yes

Fixed effects	Yes	Yes	Yes
Fixed effects * UE	Yes	Yes	Yes
Indicators POST, TREAT	Yes	Yes	Yes
POST*TREAT	Yes	Yes	No
BIGN	No	Yes	No
BIGN*UE	No	Yes	No
BIGN interaction with POST, TREAT	No	Yes	No
BIGN*UE interaction with POST, TREAT	No	Yes	No
Replace TREAT with NCAM	No	No	Yes
N	1555	1555	1229
Adj. R-sq	0.265	0.261	0.267

Table 6. Propensity Score Matched Analysis: Investor reaction

Panel A presents the descriptive statistics for the propensity-score-matched sample. Panel B presents the difference in means between the treatment and control group for the full sample and the matched sample. Panel C presents results from the estimations of Equation (1a) and Equation (1b). TREAT is an indicator variable equal to one for large accelerated filers required to disclose CAM during the phase-in period, and zero otherwise. POST is an indicator equal to one for fiscal years that end on or after June 30, 2019, and zero otherwise. The dependent variable is ABRET, the three-day cumulative market-adjusted stock returns around 10-K filings dates. Column (1) shows the result for regressing ABRET on POST*TREAT, controlling for firm characteristics. Column (2) shows the results for estimating Equation (1b), where ABRET is regressed on an indicator for high level of short interest (HIGH_SHORT) and on its interactions with POST and TREAT. HIGH_SHORT is equal to one if the short interest for a firm-year is higher than the sample median of that particular fiscal year, and zero otherwise. Firm and month fixed effects are included, and standard errors are clustered by firm in each column. All variables are defined in Appendix 1. t-statistics are presented below the coefficient estimates. ***, **, * indicates significance at the 1%, 5%, and 10% levels, respectively.All variables are defined in Appendix 1. All continuous variables are winsorized at 1% and 99%. ***, **, * indicates significance at the 1%, 5%, and 10% levels, respectively.

Panel A. Descriptive Statistics for Propensity Score Matched Sample

	N	Mean	SD	p25	p50	p75
ABRET	322	0.002	0.075	-0.031	-0.002	0.026
NCAM	248	1.53	0.72	1	1	2
HIGH_SHORT	322	0.63	0.48	0	1	1
SIZE	322	7.01	0.72	6.65	7.11	7.49
MTB	322	3.58	8.32	1.36	2.23	3.80
ROA	322	0.02	0.11	0.00	0.03	0.06
LOSS	322	0.27	0.45	0	0	1
LEV	322	0.27	0.24	0.08	0.22	0.41
BIGN	322	0.77	0.42	1	1	1
LN_ANALYSTS	322	1.77	0.61	1.39	1.79	2.20
INSTOWN_PERC	322	0.72	0.28	0.63	0.83	0.91
VOLATILITY	322	0.02	0.01	0.02	0.02	0.03
TURNOVER	322	0.01	0.01	0.01	0.01	0.01
DAYS_AFTER_EA	322	6.92	8.73	0	2	13

Panel B. Mean Differences between Treatment and Control Firms

	Before matching			After matching		
	Treatment: Mean	Control: Mean	Diff. in means	Treatment: mean	Control: Mean	Diff. in means
ABRET	0.002	0.001	0.001	0.002	0.001	0.0016
HIGH_SHORT	0.57	0.32	0.26***	0.67	0.52	0.15**
SIZE	8.84	4.81	4.03***	7.21	6.38	0.83***
MTB	4.87	2.71	2.16***	3.33	4.37	-1.04
ROA	0.05	-0.12	0.18***	0.01	0.04	-0.02*
LOSS	0.15	0.48	-0.32***	0.27	0.29	-0.02
LEV	0.32	0.20	0.11***	0.28	0.23	0.04
BIGN	0.94	0.34	0.60***	0.84	0.55	0.30***
LN_ANALYSTS	2.42	0.82	1.61***	1.87	1.45	0.42***
INSTOWN_PERC	0.74	0.39	0.36***	0.75	0.63	0.12***
VOLATILITY	0.017	0.033	-0.016***	0.022	0.025	-0.003***
TURNOVER	0.010	0.008	0.001***	0.010	0.007	0.003***
DAYS_AFTER_EA	8.69	5.28	3.40***	7.47	5.17	2.30**

Panel C. Propensity Score Matched Regression Analysis: Investor Reaction

	(1) ABRET	(2) ABRET
POST*TREAT	0.003	0.085*
	(0.10)	(1.82)
POST*TREAT*HIGH_SHORT		-0.146**
		(-2.34)
POST*HIGH_SHORT		0.129**
		(2.22)
TREAT*HIGH_SHORT		0.091**
		(1.99)
HIGH_SHORT		-0.106***
		(-2.69)
SIZE	-0.003	-0.006
	(-0.14)	(-0.32)
MTB	0.001*	0.001*
	(1.73)	(1.91)
ROA	0.059	0.034
	(0.77)	(0.49)
LOSS	0.013	0.007
	(0.65)	(0.36)
LEV	0.045	0.052
	(0.69)	(0.96)
BIGN	-0.017	-0.006
	(-0.43)	(-0.16)
LN_ANALYSTS	-0.003	0.002
	(-0.13)	(0.11)
INSTOWN_PERC	0.022	0.027
	(0.80)	(0.97)
VOLATILITY	-1.528	-1.575
	(-1.16)	(-1.21)
TURNOVER	2.743	3.457
	(1.19)	(1.54)
DAYS_AFTER_EA	-0.003**	-0.003**
	(-2.16)	(-2.62)
Constant	0.029	0.027
	(0.21)	(0.21)
Fixed effect	Firm, Month	Firm, Month
Cluster	Firm	Firm
N	318	318
adj. R-sq	-0.010	0.038

Table 7. Propensity Score Matched Analysis: Perceived Reporting Reliability

Panel A presents the descriptive statistics for the propensity-score-matched sample. Panel B presents the difference in means between the treatment and control group for the full sample and the matched sample. Panel C presents results from the estimation of Eq. (2). I regress the three-day cumulative market-adjusted returns around earnings announcements (CAR) on unexpected earnings (UE), an indicator for treatment firms (TREAT), an indicator for the treatment period (POST), the interaction of POST*TREAT, control variables, year-quarter fixed effects, industry fixed effects, and on the interactions of UE with control variables, year-quarter fixed effects, industry fixed effects and treatment indicators. In order to mitigate the effect of outliers, I use a robust regression instead of an OLS regression. All variables are defined in Appendix 1. t-statistics, based on robust standard errors clustered at the earnings announcement date level, are presented below the coefficient estimates. ***, **, * indicates significance at the 1%, 5%, and 10% levels, respectively.

Panel A. Descriptive Statistics

	N	Mean	SD	p25	p50	p75
CAR	227	0.0021	0.1093	-0.0806	0.0017	0.0780
UE	227	0.0001	0.0079	-0.0013	0.0010	0.0033
SIZE	227	6.93	0.65	6.58	6.93	7.41
MTB	227	2.17	5.55	1.23	2.11	3.56
LEV	227	0.58	0.29	0.39	0.50	0.77
BETA	227	1.16	0.44	0.83	1.15	1.45
LOSS	227	0.31	0.46	0	0	1
DISP	227	0.00	0.01	0.00	0.00	0.01
PERS	227	0.43	0.22	0.28	0.47	0.61
BIGN	227	0.76	0.43	1	1	1
NCAM	156	1.78	0.85	1	2	2

Panel B. Mean Differences between Treatment and Control Groups

	Before matching			After matching		
	Treatment: Mean	Control: Mean	Diff. in means	Treatment: mean	Control: Mean	Diff. in means
CAR	-0.0008	0.0081	-0.0090*	-0.0075	0.0233	-0.0310**
UE	0.0007	-0.0002	0.0008**	0.0002	-0.0001	0.0003
SIZE	8.66	5.71	2.95***	7.13	6.48	0.65***
MTB	4.30	3.03	1.27***	1.72	3.17	-1.45**
LEV	0.61	0.49	0.120***	0.58	0.59	-0.01
BETA	1.10	0.97	0.132***	1.20	1.07	0.13**
LOSS	0.19	0.35	-0.153***	0.31	0.31	0.004
DISP	0.00	0.00	-0.00***	0.00	0.00	-0.0008
PERS	0.36	0.46	-0.11***	0.43	0.43	-0.003
BIGN	0.94	0.46	0.48***	0.85	0.58	0.27***

Panel C. Propensity Score Matched Regression Analysis: Change in ERC

	(1) CAR	(2) CAR	(3) CAR
UE*POST*TREAT	10.313***	-32.695***	
	(2.71)	(-4.24)	
UE*TREAT	-21.169***	-6.110	
	(-3.95)	(-0.80)	
UE*POST	2.267	7.964*	-29.398**
	(0.57)	(1.93)	(-2.26)
UE	-68.135**	-60.426**	-41.122
	(-2.56)	(-2.48)	(-0.99)
UE*BIGN*POST*TREAT		49.357***	
		(4.84)	
UE*POST*NCAM			12.721**
			(2.57)
UE*SIZE	12.398***	8.624***	5.785
	(3.70)	(2.64)	(1.19)
UE*MTB	-0.309	-0.037	0.234
	(-1.16)	(-0.14)	(0.64)
UE*LEV	-1.693	2.743	8.707
	(-0.34)	(0.55)	(1.14)
UE*BETA	-0.262	-2.714	-5.411
	(-0.08)	(-0.90)	(-1.25)
UE*LOSS	2.907	5.388**	0.147
	(1.22)	(2.46)	(0.04)
UE*DISP	-274.987	-349.149**	-33.033
	(-1.64)	(-2.44)	(-0.18)
UE*PERS	-18.166***	-19.461***	-9.134
	(-2.78)	(-3.15)	(-0.98)
Constant	0.512***	0.445***	0.470*
	(3.08)	(3.29)	(1.75)
Firm characteristics	Yes	Yes	Yes
Firm characteristics * UE	Yes	Yes	Yes
Fixed effects	Yes	Yes	Yes
Fixed effects * UE	Yes	Yes	Yes
Indicators POST, TREAT	Yes	Yes	No
POST*TREAT	Yes	Yes	No
BIGN	No	Yes	No
BIGN*UE	No	Yes	No
BIGN interaction with POST, TREAT	No	Yes	No
BIGN*UE interaction with POST, TREAT	No	Yes	No
NCAM	No	No	Yes
NCAM*UE	No	No	Yes
Indicators POST, NCAM	No	No	Yes
NCAM interaction with POST	No	No	Yes
N	220	208	148
adj. R-sq	0.533	0.691	0.581

Table 8. Change in Short Interest around 10-K

This table presents results from regressing the change in short interest (ΔSHORT) around 10-K filing date on TREAT, POST, HIGH_SHORT, and their interactions, controlling for firm characteristics. TREAT is an indicator variable equal to one for large accelerated filers required to disclose CAM during the phase-in period, and zero otherwise. POST is an indicator equal to one for fiscal years that end on or after June 30, 2019, and zero otherwise. HIGH_SHORT is an indicator variable equal to one if the short interest for a firm-year is higher than the sample median of that particular fiscal year, and zero otherwise. Column (1) shows the result for regressing ΔSHORT on POST*TREAT, controlling for firm characteristics. Column (2) includes the interaction of POST and TREAT with HIGH_SHORT. Firm and month fixed effects are included, and standard errors are clustered by firm in each column. All variables are defined in Appendix 1. t-statistics are presented below the coefficient estimates. ***, **, * indicates significance at the 1%, 5%, and 10% levels, respectively.All variables are defined in Appendix 1. All continuous variables are winsorized at 1% and 99%. ***, **, * indicates significance at the 1%, 5%, and 10% levels, respectively.

	(1) ΔSHORT	(2) ΔSHORT
POST*TREAT	0.000	-0.000
	(0.40)	(-0.32)
POST*TREAT*HIGH_SHORT		0.002
		(1.14)
POST*HIGH_SHORT		-0.001
		(-0.77)
TREAT*HIGH_SHORT		0.001
		(0.26)
HIGH_SHORT		-0.002
		(-1.02)
SIZE	-0.000	-0.000
	(-0.33)	(-0.24)
MTB	0.000	0.000
	(0.56)	(0.51)
ROA	0.003	0.002
	(0.64)	(0.60)
LOSS	-0.000	-0.000
	(-0.55)	(-0.50)
LEV	-0.006*	-0.006*
	(-1.93)	(-1.86)
BIGN	0.000	0.000
	(0.09)	(0.09)
LN_ANALYSTS	0.001	0.001
	(1.14)	(1.18)
INSTOWN_PERC	0.001	0.001
	(0.95)	(1.13)
VOLATILITY	-0.002	-0.002
	(-0.05)	(-0.05)
TURNOVER	0.094	0.111*

	(1.53)	(1.72)
DAYS_AFTER_EA	-0.000	-0.000
	(-0.26)	(-0.25)
Constant	0.000	0.000
	(0.03)	(0.03)
Fixed effect	Firm, Month	Firm, Month
Cluster	Firm	Firm
N	2236	2236
adj. R-sq	0.050	0.054

Table 9. Falsification Test Using B/P Ratio

This table presents results from the estimations of Equation (1b), where HIGH_SHORT is replaced with book-to-price ratio (B/P) in Column (1) and LOW_B/P in Column (2). LOW_B/P is an indicator variable that is equal to one if a firm-year has B/P ratio lower than the sample median for that particular fiscal year, and zero otherwise. Firm and month fixed effects are included, and standard errors are clustered by firm in each column. All variables are defined in Appendix 1. t-statistics are presented below the coefficient estimates. ***, **, * indicates significance at the 1%, 5%, and 10% levels, respectively.All variables are defined in Appendix 1. All continuous variables are winsorized at 1% and 99%. ***, **, * indicates significance at the 1%, 5%, and 10% levels, respectively.

	(1) ABRET	(2) ABRET
POST*TREAT	0.006	0.007
	(0.37)	(0.63)
POST*TREAT*B/P	0.000	
	(0.02)	
POST*B/P	-0.005	
	(-0.31)	
TREAT*B/P	-0.013	
	(-0.43)	
B/P	0.017	
	(0.79)	
POST*TREAT*LOW_BP		-0.006
		(-0.29)
POST*LOW_BP		0.014
		(0.74)
TREAT*LOW_BP		0.018
		(0.98)
LOW_BP		-0.014
		(-0.84)
SIZE	-0.018**	-0.022***
	(-1.99)	(-2.71)
MTB	0.000	0.000
	(1.34)	(1.31)
ROA	-0.009	-0.006
	(-0.31)	(-0.22)
LOSS	-0.003	-0.002
	(-0.37)	(-0.26)
LEV	-0.020	-0.022
	(-0.74)	(-0.83)
BIGN	0.031	0.033
	(1.16)	(1.26)
LN_ANALYSTS	-0.008	-0.008
	(-0.93)	(-0.94)
INSTOWN_PERC	0.004	0.003

	(0.37)	(0.32)
VOLATILITY	-0.704	-0.704
	(-1.55)	(-1.56)
TURNOVER	0.166	0.132
	(0.30)	(0.24)
DAYS_AFTER_EA	-0.000	-0.000
	(-0.20)	(-0.15)
Constant	0.141*	0.172***
	(1.94)	(2.70)
Fixed effect	Firm, Month	Firm, Month
Cluster	Firm	Firm
N	2236	2236
adj. R-sq	0.046	0.047

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Appendix. Variable definitions

Variable name	Description	Source
Variables definitions for Table 1 Panel E:		
NCAM	Number of CAMs reported by a firm.	Audit Analytics
INTAN_CAM	Number of CAMs related to intangible assets.	Audit Analytics
REVREC_CAM	Number of CAMs related to revenue recognition.	Audit Analytics
OPACC_CAM	Number of CAMs related to operating accruals.	Audit Analytics
TAX_CAM	Number of CAMs related to taxes.	Audit Analytics
INTAN	The sum of intangible assets and goodwill divided by total assets.	Compustat
DR_SALES	Deferred revenue divided by total sales.	Compustat
ABS_DCA	Absolute value of discretionary accruals, estimated using the Modified Jones Model.	Compustat
DTA	Net deferred tax asset or liability divided by total assets.	Compustat
SIZE	Natural log of market capitalization. Market capitalization is measured at the end of the fiscal year and is computed as share price (PRCC_F) times the number of shares outstanding (CSHO).	Compustat
LN_AGE	Natural log of firm age. Firm age is defined as the number of years a firm has data on Compustat.	Compustat
NSEG	The total number of business segments.	Compustat segment
MTB	Market-to-book ratio, computed as share price (PRCC_F) times the number of common shares outstanding (CSHO) divided by the book value of common equity (CEQ).	Compustat

LEV	Leverage, computed as long-term debt (DLTT) divided by total common equity (CEQ).	Compustat
ROA	Return on asset, computed as net income (NI) divided by total assets (AT).	Compustat
LOSS	An indicator variable equal to one if basic earnings per share excluding extraordinary items (EPSFX) is less than zero, and zero otherwise.	Compustat
RES_ACCT	An indicator variable equal to one if a firm had a restatement within the last year.	Audit Analytics
BIGN	An indicator variable for a Big-N auditor.	Compustat
LN_ANALYSTS	Natural log of the number of analysts covering the firm.	I/B/E/S
INSTOWN_PERC	Percentage of institutional ownership, computed as the number of shares owned by institutional investors divided by total number of shares outstanding.	TFN 13-F

Variable definitions for Hypothesis 1:

TREAT	An indicator variable equal to one for large accelerated filers required to disclose CAM during the phase-in period, and zero otherwise.	Calcbench, Audit Analytics
POST	An indicator variable equal to one for fiscal years that end on or after June 30, 2019, and zero otherwise.	Calcbench
ABRET	Abnormal stock return, computed as the three-day stock return around the 10-K filing date, minus the CRSP market return over the same period.	CRSP
HIGH_SHORT	An indicator variable equal to one if the short interest for a firm-year is higher than the sample median of that particular fiscal year, and zero otherwise. Short interest is computed as total shares held short (SHORTINT) scaled by total shares outstanding (CSHO).	Compustat
VOLATILITY	Stock return volatility, computed as the standard deviation of daily abnormal stock returns for the 250 trading-day period ending two trading days before the 10-K filing date.	CRSP

TURNOVER	Average daily share turnover for the 250 trading-day period ending two trading days before the 10-K filing date.	CRSP
DAYSAFTEREA	Number of days between the earnings announcement and the 10-K filing.	Compustat, Calcbench

Variable definitions for Hypothesis 2:

TREAT	An indicator variable equal to one for large accelerated filers required to disclose CAM for fiscal years ending on or after June 30, 2019, and zero otherwise.	Calcbench, Audit Analytics
POST	An indicator variable equal to one for earnings announcements on or after the respective firm's FY 2019 10-K filing date, and zero otherwise.	Calcbench
CAR	Abnormal stock return, computed as the three-day stock return around the 10-K filing date, minus the CRSP market return over the same period.	CRSP
UE	Unexpected earnings, computed as I/B/E/S quarterly EPS minus the most recent median forecast of quarterly EPS prior to the earnings announcement, scaled by stock price two days prior to the earnings announcement.	I/B/E/S, CRSP
SIZE	Natural log of market capitalization. Market capitalization is measured at the end of the fiscal year and is computed as share price (PRCC_F) times the number of shares outstanding (CSHO).	Compustat
MTB	Market-to-book ratio, computed as share price (PRCC_F) times the number of common shares outstanding (CSHO) divided by the book value of common equity (CEQ).	Compustat
LEV	Leverage, computed as long-term debt (DLTT) divided by total common equity (CEQ).	Compustat
BETA	The regression coefficient from regressing a firm's excess daily returns on excess market returns over the calendar year ending on the fiscal-quarter-end date.	CRSP, Fama French website

LOSS	An indicator variable equal to one if basic earnings per share excluding extraordinary items (EPSFX) is less than zero, and zero otherwise.	Compustat
DISP	The difference between the highest and lowest analyst forecasts, scaled by stock price two days prior to the earnings announcement.	I/B/E/S, CRSP
PERS	Earnings persistence, computed as the regression coefficient from regressing quarterly EPS on past quarter EPS using up to 10 years of data.	Compustat
Variable definitions for Additional Tests:		
ΔSHORT	Change in short interest from the latest report date before to the first report date after the 10-K filing date. Short interest is computed as total shares held short (SHORTINT) scaled by total shares outstanding (CSHO).	Compustat
B/P	Book-to-price ratio computed as the ratio of book value of common equity (B) to the market value of common equity (P). B is Compustat's common equity (CEQ) plus any preferred treasury stock (TKTKP) less any preferred dividends in arrears (DVPA), and is measured at the end of the fiscal year. P is the number of common shares outstanding (CSHO) multiplied by the stock price at the end of the fiscal period (PRCC_F).	Compustat
LOW_B/P	An indicator variable equal to one if the B/P ratio for a firm-year is lower than the sample median of that particular fiscal year, and zero otherwise.	Compustat