Internal Control Quality: The Role of Critical Audit Matters Reporting

Abstract

We examine whether critical audit matter (CAM) reporting in audit reports improves issuers' internal controls over financial reporting. We propose that increased scrutiny by auditors on CAM-related matters lead to early identification and remediation of material weaknesses in internal control (ICMW). Analyses show that compared to control companies, companies with CAM reporting experience a statistically significant decrease in both the likelihood of having an ICMW and the number of ICMWs. This result is driven primarily by account-level ICMWs rather than entity-level ICMWs. We also find that issuers with revenue-recognition CAMs have significantly fewer revenue-related ICMWs, suggesting that ICMWs related to revenue recognition are identified and remediated through the CAM evaluation process. For those that reported ICMW at year end, we find a positive and significant association between CAM reporting and the likelihood of disclosing ineffective internal control in SOX 302 reports. This finding supports that CAM reporting leads to early identification of internal control problems. Overall, our evidence suggests that by focusing auditor attention on areas of potential concern, CAM reporting leads to improvements in internal control quality. Our findings have important policy implications as they show that CAM reporting improves financial reporting quality by affecting auditor and management behavior.

I. INTRODUCTION

In an effort to reduce boilerplate language and improve the usefulness of the auditor's report, substantial changes have been made to the auditor's reporting model over the last decade, both internationally and in the United States. In 2015, the International Auditing and Assurance Standards Board (IAASB) introduced International Standard on Auditing (ISA) 701, "Communicating Key Audit Matters in the Independent Auditor's Report", which requires audit reports for listed companies to include discussion of "key audit matters" (KAMs) for periods ending after December 15, 2016. Similarly, in 2017 the Public Company Accounting Oversight Board (PCAOB or Board) issued Auditing Standard (AS) 3101, "The Auditor's Report on an Audit of Financial Statements When the Auditor Expresses an Unqualified Opinion" to revise the audit report for US public companies (PCAOB 2017). Among other changes, the PCAOB's revised reporting standard requires auditors to include discussion of "critical audit matters" or CAMs in the reports of public companies in the US. Although requirements of ISA 701 and AS 3101 are not identical, KAM and CAM reporting have a similar purpose: to provide readers of audit reports more in-depth and client-specific information about audit engagements from the perspective of the auditors. In addition, CAM reporting can "…assist investors in assessing the credibility of the financial statements and, in at least some instances, audit quality" (PCAOB 2016, p. 64). The PCAOB (2016) notes that these disclosures should help investors develop a more "nuanced understanding" of the financial statement accounts and disclosures associated with the CAMs; additionally, investors should find these types of disclosures to be more credible when they come from independent third parties such as auditors.[1]

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[1] The PCAOB (2016, P. 64-65) writes "…the description of how the auditor addressed the critical audit matter may help investors understand the types of issues that the auditor grappled with in addressing these challenging, subjective, or complex areas of the audit, which may allow a more nuanced understanding of the related financial statement accounts and disclosures."

A CAM is any *material* item arising from an audit of financial statements that "…involves challenging, subjective, or complex auditor judgment…" (PCAOB 2017). CAM reporting can directly benefit investors by increasing the informativeness of the audit reports. It can also indirectly benefit investors by potentially changing auditor and management behaviors. In this study, we focus on one potential indirect benefit CAM reporting could bring—improved internal control quality. More specifically, we examine whether the 2019 introduction of CAM reporting in audit reports in the United States is associated with improvements in issuers' internal controls over financial reporting. The PCAOB indicates that one possible benefit of CAM reporting is that it "…may lead auditors to increase their focus on the matters identified in the auditor's report as critical audit matters" (PCAOB 2016). We propose that such increased scrutiny by auditors on CAM-related matters may lead to early identification and client remediation of material weaknesses in internal control, which results in an improvement in the quality of internal controls over financial reporting. Evidence of this potentially favorable consequence of CAM reporting is relevant to auditing regulators who must weigh the benefits and costs of CAM reporting.

The new auditor's reporting model with its discussion of CAMs was implemented in 2019 for large accelerated filers. Early research on CAMs finds little to no evidence of market reaction to CAMs or KAMs (Bedard, Coram, and Mock 2016; Files and Gencer 2020; Gutierrez, Tatum, and Vulcheva 2018; Lennox, Schmidt, and Thompson 2021; Liao, Zhang, and Zou, 2019; PCAOB 2020b) and mixed evidence of association with certain measures of audit quality. Using non-U.S. settings, Reid, Carcello, Li, Neal, and Francis (2019) and Santos, Guerra, Marques, and Junior (2020) find that KAM reporting is associated with higher financial reporting quality and lower earnings management. However, other studies fail to find such an effect (Bedard et al. 2016;

Gutierrez et al. 2018; Liao et al. 2019), and Burke, Hoitash, Hoitash, and Xiao (2022) find no evidence of a change in earnings management after CAM disclosure in the U.S.[2]

We contribute to the research on CAM and KAM disclosures by examining the potential effect of CAM reporting on the quality of internal over financial reporting. To our knowledge this has not been examined in the literature. We conjecture that the reporting on CAMs is likely to increase auditors' scrutiny and attention on internal control over financial reporting because (a) the process of identifying, evaluating, and addressing CAMs requires the auditor to perform procedures to test the effectiveness of controls related to high-risk areas, and (b) high-risk areas are where material weaknesses are most likely to exist (Doyle, Ge, and McVay 2007b). After manually reading a large number of CAM disclosures, we find that all of them mention the testing of control effectiveness as an important step in the CAM reporting process. Therefore, we proposed that CAM reporting is likely to have a direct and immediate effect on the quality of internal control over financial reporting. Specifically, we expect to observe a positive association between CAM reporting and internal control quality for two reasons. First, CAM reporting requires the auditor to "start early and communicate often" (PCAOB 2019; Tysiac 2018). This is likely to lead to early identification and client remediation of any material weaknesses in internal control. Second, mandatory disclosure is an effective mechanism that incentivizes desirable behaviors and discourages undesirable ones (Leuz and Wysocki 2016). Mandatory CAM disclosures therefore have the potential for disciplining the behavior of auditors and management, which would result in greater client effort and clients proactively working with the auditor to ensure effective internal control over financial reporting.

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[2] Of course, the failure of these studies to reject the null hypotheses is not evidence that the null hypotheses are true (Cready, He, Lin, Shao, Wang, and Zhang 2021).

To test this research question, we exploit the staggered introduction of CAM reporting requirements in the US using a difference-in-difference research design to examine whether CAM reporting in 2019 audit reports is associated with a reduction in the likelihood of internal control material weaknesses (ICMW).[3] Specifically, we examine changes in occurrence of ICMWs for companies that were subject to CAM disclosure in 2019, i.e. larger accelerated filers (treatment companies) before and after the mandated reporting of CAMs, and compare this change with that of companies that were not required to disclose CAM in 2019, i.e. small accelerated filers (control companies) over the same period. Univariate results show that treatment (control) companies have a decrease of 0.016 (0.001) in the incidence of ICMWs from 2018 to 2019. Multivariate analyses show that compared to control companies, treatment companies experience a statistically significant decrease in both (a) the likelihood of having any ICMW, and (b) the number of ICMWs after CAM reporting was implemented. These results suggest that CAM reporting benefits companies by improving their internal control quality. Next, we separately examine the effect of CAM reporting on account-level ICMWs and entity-level ICMWs and show that the result is driven primarily by account-level ICMWs rather than entity-level ICMWs. This result is intuitive because CAMs, by definition, relate to material accounts/transactions or disclosures in the financial statements (as opposed to entity-level audit matters that cannot be tied to specific accounts or disclosures).

To strengthen our argument that audit firm investigation and reporting of CAMs is associated with reduced ICMWs, we next focus on a particular audit area—*Revenue Recognition*—and examine whether *revenue recognition*-specific CAMs map onto *revenue recognition*-related internal control issues. We choose *revenue recognition* because it is the most frequently-reported

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[3] CAM reporting is required to be included in audit reports of large accelerated filers issued on or after June 30, 2019, and in the audit reports of other filers issued on or after December 15, 2020.

ICMW in our sample and is the second-most frequent topic of CAM reporting in the US (Coleman, Conley, and Hallas 2021). If CAM reporting indeed leads to reduced ICMWs, we expect that *revenue recognition*-specific CAMs are associated with reductions in *revenue recognition*-related ICMWs. Consistent with our expectation, our analyses show that issuers with *revenue recognition*-specific CAMs have significantly fewer *revenue recognition*-related ICMWs compared to other issuers (those issuers whose audit reports contain no CAMs, and issuers with CAMs unrelated to revenue recognition).[4] This result is consistent with the notion that ICMWs related to *revenue recognition* are identified and remediated through the auditor's process of evaluating *revenue recognition*-specific CAMs.

As an additional analysis, we examine the impact of CAM reporting on accounting misstatements and find that treatment companies experience a statistically significant decrease in the likelihood of having accounting misstatements. We also test whether the association between CAM reporting and internal control quality is conditional on the amount of auditor effort related to CAMs. To measure auditor effort, we use the length of the paragraphs in which the auditor discusses how CAMs were addressed scaled by the number of CAMs.[5] Results show that the positive association between CAM disclosures and internal control quality—that is, the negative association between CAMs and ICMWs—is more pronounced for audit firms showing greater effort in CAM reporting.

Lastly, for the 323 observations in our sample that report an ICMW at year end, we examine the association between CAM reporting and the likelihood of management disclosing ineffective internal control in a quarterly report under section 302 of the Sarbanes-Oxley Act of 2002 (SOX)

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[4] CAM reporting is the responsibility of the audit firm, not the client. However, for expediency we may use the phrase "issuers with CAMs" or similar wording throughout the paper.

[5] As part of each CAM identified in the audit report, the audit firm includes a section describing how they addressed the specific CAM.

before yearend. Our finding shows that CAM reporting significantly increases the likelihood of disclosing ineffective internal control in SOX 302 reports, which supports the argument that CAM reporting leads to early identification of internal control problems,

We perform a variety of sensitivity tests. First, we extend our sample period to fiscal year 2020 and examine the change in the occurrence of ICMW from 2019 to 2020 between large accelerated filers and non-large accelerated filers which did not voluntarily report CAMs in 2019. Because large accelerated filers already reported CAMs in 2019 and non-large accelerated filers started to report CAMs in 2020, in this test, non-large accelerated filers become our treatment group and large accelerated filers serve as control group. We find that from 2019 to 2020, non-large accelerated filers experienced a significantly decrease in in both (a) the likelihood of having any ICMW, and (b) the number of ICMWs, compared to large accelerated filers. This evidence provides strong support on the relation between CAM reporting and the quality of internal control over financial reporting.

Next, we re-estimate our models using the year 2018 as a pseudo-event year and 2017 as the pseudo-initial year. Results using 2018 as the pseudo-event year show no difference between treatment and control companies in the number or likelihood of ICMWs from 2017 to 2018. We repeat this test using year 2017 as the pseudo-event year and 2016 as the pseudo-initial year, and similarly find no evidence of a decrease in ICMWs. This suggests that our main results—CAM reporting is associated with a reduction in number and likelihood of ICMWs—are unlikely to be caused by uncontrolled-for differences in treatment and control companies. In addition, we perform analyses using an alternative control sample matched by size, industry, and auditor type to the treatment sample, designed to mitigate differences between the treatment and control samples. Our results using this more closely matched sample are the same as our primary findings:

CAM reporting is associated with a reduction in ICMWs, primarily a reduction in account-level ICMWs as opposed to entity-level ICMWs. Finally, we conduct a validity test to make sure the parallel-trend assumption under the difference-in-difference design is valid.

Our paper contributes to the literature in the following ways. We add insight into the literature on corporate disclosures of material weaknesses in internal controls. Our work builds on Rice, Weber, and Wu (2015), who find that auditor turnover, management turnover, and class action lawsuits are more likely when a restatement is preceded by disclosure of an ICMW; and on Rice and Weber (2012), who show that relatively few restatements are preceded by disclosure of an ICMW.[6] Our results suggest that future research examining ICMW or restatements should consider the effects of CAM disclosures. Doyle, Ge, and McVay (2007) document differences between companies reporting account-level versus entity-level material weaknesses; they propose (Doyle et al. 2007, p. 219) one interpretation of their results could be that "…some firms might choose to have weak internal control over revenue recognition in order to manage earnings." Our findings build on Doyle et al. (2007) by showing that CAMs are associated more with account-level ICMW, and that CAM reporting may be a useful mechanism to help improve ICMW related to revenue recognition. Additionally, our work adds to the literature on the real effects of financial statement auditing (Wallace 2004) by showing that CAM disclosures are associated with a reduction in ICMW. Because we show that CAM disclosures lead to early reporting of ICMWs in quarterly reports, we conclude that our findings are of a *real* reduction in ICMW (not just fewer ICMW being reported.) Moreover, our results using Section 302 reports shows that CAM reporting is associated with early disclosure of ICMW. That is, while CAM reporting is associated with an

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[6] Both of these studies precede CAM reporting requirements.

overall reduction in ICMW, those issuers that *do* have an ICMW tend to report it earlier when under the CAM regime than other issuers.

Finally, we contribute to the growing research on expanded auditor reporting models adopted in the US and internationally.[7] We find an important benefit of CAM reporting—improvements in internal controls—that has not been shown in the literature. This finding should be of interest to regulators, auditors and investors, because it provides important new insights on the potential positive impact of CAM reporting.

II. BACKGROUND AND PRIOR LITERATURE

Over the past 70 years, traditional audit reporting has been criticized as boilerplate because it has failed to provide information about the auditor's view about the risks and uncertainties surrounding financial statements (PCAOB 2017). In response to the increasing demand for greater transparency in financial statements and audit reports, auditing regulatory bodies worldwide have implemented expanded audit reporting models. In 2015, the IAASB required auditors to disclose "key audit matters" (KAMs) in the audit report (IAASB 2015; ISA 701). Similarly, in 2017 the PCAOB implemented the requirement to include "critical audit matters" (CAMs) in the audit reports of large accelerated filers issued on or after June 30, 2019, and in the audit reports of other filers issued on or after December 15, 2020.

A CAM refers to any audit matter that involves especially challenging, subjective, or complex auditor judgment related to accounts or disclosures that are material to the financial statements and that is (or is required to be) communicated to the audit committee (PCAOB 2017). In their written discussion of each CAM in the audit report, auditors are required to (a) describe the principal considerations that lead them to determine the matter is a CAM, (b) explain how the

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[7] We discuss this literature in more depth in the next section of the paper.

CAM was addressed in the audit, and (c) refer to the relevant financial statement accounts and/or disclosures that relate to the CAM (PCAOB 2017).

Market Relevance of Expanded Auditor Reporting

Although CAM reporting is expected to "provide audit-specific information that is meaningful to investors and other financial statement users" (PCAOB 2019), recent academic research has shown mixed results on whether financial statement users find the expanded audit report useful.[8] On one hand, many studies have failed to observe market reactions to expanded auditor reporting and its related CAM or KAM disclosures. Gutierrez et al. (2018) find no evidence that expanded audit reporting is relevant to investors in the U.K. Lennox et al. (2021) have similar findings to Gutierrez et al. (2018) and attribute this to the market already being aware of the information related to risk included in the expanded audit report. Similarly, studies in the U.S. (Burke et al. 2022) and in Hong Kong (Liao et al. 2019) fail to find evidence that expanded audit reports communicate incremental information to investors.

In contrast, other studies find that CAM or KAM reporting is informative to investors. For example, Reid et al. (2019) show that expanded audit reporting in the U.K. is associated with an increase in earnings response coefficients. Bens, Chang, and Huang (2019) find that expanded audit reporting decreases information asymmetry in the U.K. and thus provides meaningful information to the market. Goh, Li, and Wang (2020) also find the expanded audit reports in China to be informative to investors. Further, experimental evidence by Christensen, Glover, and Wolfe (2014) and Elliott, Fanning, and Peecher (2020) shows that the presence of a CAM paragraph

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[8] Bedard et al. (2016) provide an early review of some of this literature.

changes nonprofessional investors' investment decisions. Klevak, Livnat, Pei, and Suslava (2020) show that CAM reporting is informative to investors and analysts in the U.S. market.

Audit Quality Effects of Expanded Audit Reports

The evidence from prior studies is inconclusive on whether the new requirements for CAM reporting significantly influence the behavior of auditors and managers and, as a result, actual financial reporting quality. One potential benefit of CAM reporting is that it might increase the level of scrutiny and efforts from auditors and managers on areas with high risk, either because they anticipate higher scrutiny from the PCAOB or investors in those areas (Bhaskar 2020) or auditors perceive CAM reporting as increasing their litigation risk (Backof, Bowlin, and Goodson 2019; Gimbar, Hansen, and Ozlanski 2016). Consistent with this view, Chen, Jiang, and Zhang (2019) develop a theoretical model that shows increased disclosure on audit quality can motivate auditors to increase audit effort. Reid et al. (2019) find improvement in financial reporting quality in the U.K. after implementing the new regulation that expands audit reports. Kang (2019) shows that audit committees start to conduct more significant oversight in the post-CAM period. Fuller, Joe, and Luippold (2021) find that in response to CAM disclosures, managers issue more sensitive external disclosures such as accounting estimates. Drake, Goldman, Lusch, and Schmidt (2021) find that reporting of tax-related CAMs increases auditor and management scrutiny and thus helps constrain earnings management through the tax accounts.

However, others have found no evidence that expanded audit reports improves audit quality. For example, in contrast to Reid et al. (2019), Gutierrez et al. (2018) find no association between regulatory change on expanding audit reports in the U.K. and audit quality. Similarly, Bedard et al. (2016), Liao et al. (2019) and Burke et al. (2022), examine expanded audit reports in France, Hong Kong and the U.S., respectively; all fail to find an association between expanded audit

reports and audit quality. The mixed findings from prior studies call for more research that could directly test the association between expanded audit reports and financial reporting outcomes. Our study focuses on internal control over financial reporting, an essential element of CAM disclosures, and examines whether the reporting of CAMs leads to improved internal control quality.

III. HYPOTHESIS DEVELOPMENT

Section 404 of the Sarbanes-Oxley Act of 2002 (SOX) requires both management and the company's audit firm to assess the efficacy of internal control over financial reporting for all accelerated filers and large accelerated filers. In its Auditing Standard (AS) 2201, the PCAOB defines "Internal control over financial reporting" as "a process … effected by the company's board of directors, management, and other personnel, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with GAAP…" (PCAOB 2007). In AS 2201, the PCAOB notes (emphases in the original) that "If one or more **material weaknesses** exist, the company's internal control over financial reporting cannot be considered effective" and defines **material weakness** as "a deficiency, or a combination of deficiencies, in internal control over financial reporting, such that there is a **reasonable possibility** that a material misstatement of the company's annual or interim financial statements will not be prevented or detected on a timely basis."[9] Thus, the PCAOB's definition of material weakness suggests that internal control deficiencies may result in less reliable financial information and a higher likelihood of financial statement misstatements.

Effectively identifying and remediating internal control deficiencies requires extensive expertise and effort by both the auditor and the client. Although correcting ICMWs is the clients'

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[9] In AS 2201, the PCAOB writes (emphasis in original) "There is a **reasonable possibility** of an event, as used in this standard, when the likelihood of the event is either 'reasonably possible' or 'probable, as those terms are used in Financial Accounting Standards Board Statement No. 5, Accounting for Contingencies ('FAS 5')".

responsibility, there is evidence suggesting auditors assist the client with detecting and remediating ICMWs by conducting tests and evaluations and continually communicating and providing recommendations to management, audit committees, and internal auditors (De Simone, Ege, and Stomberg 2015; Ettredge et al. 2011; Klamm et al. 2012). Prior studies find evidence that high-quality audit committees and boards of directors as well as auditors who possess more internal control knowledge are associated with lower likelihood of internal control material weaknesses (De Simone et al. 2015; Haislip, Peters, and Richardson 2016; Krishnan 2005; Lisic, Myers, Seidel, and Zhou 2019; Naiker and Sharma 2009). Specifically, De Simone et al. (2015) show that auditor-provided tax services can improve internal control quality, because performing tax services allows the auditor to identify and the client to remediate material weaknesses related to financial reporting in a timely manner.

In its preliminary review of CAM reporting, staff of the PCAOB (2019) point out that some audit teams begin the process of determining and describing CAMs as early as the second or third quarter of the fiscal year, to allow for timely communication with management and audit committees. They also note that audit teams have found it "helpful to involve a firm's national office as well as experts in tax, information technology, and other areas early and throughout the CAM determination and drafting process." For clients, they have incentives to coordinate early with external auditors in order to understand the matters that may be CAMs, and how CAMs are addressed in the audit. Thus, we conjecture that the requirements of CAM reporting lead the audit team to look into high-risk areas early and effectively communicate potential issues with management and the audit committee. This involves obtaining a thorough understanding of the client's internal controls over financial reporting related to high-risk areas. For example, to determine whether revenue recognition is a potential CAM, the auditors must understand the

client's revenue-generating transactions and revenue recognition policies, and test the effectiveness of controls over revenue recognition. As internal control material weaknesses are more likely to exist in areas with high risk and complexity (Doyle et al. 2007b) we expect CAM reporting to increase the auditor's and client's awareness of weakness in internal control early in the year, which should lead to early identification and remediation of potential material weaknesses in internal control.

In addition to timely identification and remediation of internal control material weaknesses, CAM reporting reveals more information about audit procedures and client risks to investors, and this disclosure has the potential to discipline the behavior of auditors, management and audit committees. The PCAOB (2017) notes that one potential benefit of CAM reporting is increased incentives for auditors, management and audit committees to change their behavior in ways that may enhance financial reporting quality. In other words, CAM reporting may incentivize auditors to increase audit effort on, and clients to pay more attention to, areas with high risk. Consistent with this view, Drake et al. (2021) show that CAMs constrain earnings management related to tax accounts and Reid et al. (2019) find that CAMs are associated with improved financial reporting quality and less earnings management. Kang (2019) shows that audit committees perceive greater oversight duty in the present of CAM disclosures. Fuller et al. (2021) document that managers increase financial statement disclosures when both (a) the audit committee is more effective, and (b) the audit report includes CAM reporting. Identifying and addressing CAMs almost always involves the evaluation and assessment of internal control; therefore, CAM reporting is likely to lead to increased auditor effort and scrutiny related to internal controls. As a result, management and audit committees, with the awareness of increased scrutiny of their internal controls, are likely to increase their efforts in ensuring effective internal control.

Overall, we expect CAM reporting will allow for the prevention or early detection and remediation of internal control weakness due to earlier auditor and client awareness of material weakness, and increased auditor and client efforts at ensuring effective internal control. Therefore, we predict that CAM reporting leads to an improvement in internal control quality. We propose our first hypothesis below, stated in alternative form:

Hypothesis 1: *There is a negative association between CAM reporting and the probability of a material weakness in internal controls.*

Next, we consider the association between CAM reporting and the type of material weakness in internal control. Prior research (Donelson, Ege, and McInnis 2017; Jonas, Rosenberg, and Gale 2006; Kim, Song, and Zhang 2011) broadly classifies ICMWs into two types: account- or process-level, and entity-level. An account-level ICMW is related to controls over specific account balances or transaction-level processes, while an entity-level ICMW is related to the overall control environment or the financial reporting process. By the PCAOB's (2017) definition, CAMs are matters that relate to *specific* accounts or disclosures that are material to the financial statements (e.g., revenue recognition, asset impairment, income taxes). Thus, we propose that CAM reporting is more likely to prevent or detect material weaknesses related to *specific* accounts rather than material weakness related to the entity's overall control environment (e.g., tone at the top, senior management competency, or audit committee effectiveness), because in order to be a CAM, an item must relate to an identifiable material account or disclosure in the financial statements. In other words, a CAM is less likely to be associated with the entity's overall control environment and more likely to be associated with specific processes or accounts that are material to the financial statements. This leads to our second hypothesis, stated in alternative form:

Hypothesis 2: *The negative association between CAM reporting and the probability of a material weakness in internal controls is more pronounced for account-level ICMWs than for entity-level ICMWs.*

IV. RESEARCH DESIGN

To see if there is an association between CAM disclosure and internal control material weaknesses (ICMW), we take advantage of the staggered introduction of CAM reporting requirements in the US. We use a difference-in-difference method to compare the likelihood of having an ICMW before and after the year (fiscal 2019) when mandatory disclosure of CAM was implemented between treatment companies and control companies.[10] We estimate the following models:

$$(ICMW_{it} \text{ or } ICMW\_NUM_{it})$$
$$= f\{CAMREP_i, POST_t, CAMREP_i \times POST_t, CONTROLS_{it}, INDFE, \varepsilon_{it}\};$$

where $CONTROLS = SIZE_{it} + LEV_{it} + ROA_{it} + BM_{it} + AGGLOSS_{it} + TAXFEE_{it} + RESTRUCT_{it} + M\&A_{it} + FOR\_NI_{it} + FOR\_TRAN_{it} + EX\_GROWTH_{it} + SEGNUM_{it} + BIG4_{it}$

(1)

The subscripts *i* and *t* denote client and time, respectively. The dependent variable *ICMW* is an indicator variable that equals one if the client receives an ineffective internal control opinion under SOX 404 for that year, and zero otherwise. We estimate the model with *ICMW* as the dependent variable using logistic regression. The dependent variable *ICMW_NUM* is the number of material weakness the client has; it is set to zero when *ICMW* is equal to zero. We estimate the model with *ICMW_NUM* as the dependent variable using ordered logistic regression.

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[10] For purpose of robustness, we expand the number of years in the pre-CAM period and find that our results remain similar.

CAMREP is a dummy variable, which equals one for clients whose auditors reported a CAM in the audit report of 2019 (i.e., treatment companies), and zero for clients for which there was no CAM included in the audit report of 2019 (i.e. control companies). The majority of the treatment companies are large accelerated filers because the requirement of CAM reporting in the auditors' report is effective for large accelerated filers for years ending on or after June 30, 2019. *POST* is a dummy variable that equals one for observations in fiscal year 2019 and zero for observations in fiscal year 2018. The variable of interest is $CAMREP \times POST$, which captures the relation between CAM reporting and internal control material weaknesses. This method essentially compares the change in the likelihood of having an *ICMW* for treatment companies before and after the mandated reporting of CAMs and compares this change with control companies over the same period. Control companies are non-large accelerated filers because mandated reporting of CAMs does not impact them during our sample period. We predict the coefficient on $CAMREP \times POST$ to be negative and significant, which would suggest that CAM reporting increases audit firm and client effort in evaluating the quality of internal control and identifying potential weaknesses, thus leading to timely remediation of internal control weaknesses and better internal control quality.

Consistent with prior literature (Ashbaugh-Skaife, Collins, and Kinney 2007; De Simone et al. 2015; Doyle et al. 2007a), we control for several client-specific characteristics that are associated with the quality of internal control. More specifically, we include *SIZE*, measured as the natural log of total assets, because smaller companies are more likely to have internal control weaknesses. We include *LEV* (the ratio of total debt to total assets), *ROA* (the ratio of net income to total assets), and *AGGLOSS* (an indicator for aggregated losses over the prior two years) to control for financial distress. De Simone et al. (2015) show that auditor-provided tax services are

associated with improvements in internal control quality. Therefore, we include *TAXFEE*, the ratio of tax fees to total audit fees, in the model. To control for financial reporting complexity, we include *M&A*, an indicator for merger and acquisition activities; *FOR_NI*, the ratio of foreign income to total assets; *FOR_TRAN*, an indicator for the presence of foreign current translation; and *SEGNUM*, the number of segments reported by the client. To control for client growth, we include *BM*, the book to market ratio; *EX_GROWTH*, an indicator for extreme growth; and *RESTRUCT*, the ratio of restructuring cost to total assets. Last, we also include a Big 4 indicator, *BIG4*, to capture auditor quality. All company-specific variables are winsorized at the top and bottom one percent. In all regressions, we include industry fixed effects *INDFE*. We use standard errors clustered at the client level to correct for time-series dependence.

To test whether the impact of CAM disclosures on the quality of internal control is affected by the type of the material weaknesses, we estimate equation (1) for both account-level ICMWs and entity-level ICMWs. An account-level ICMW is related to controls over specific account balances or transaction-level processes, while an entity-level ICMW is related to the overall control environment or the overall financial reporting process. Hypothesis 2 proposes that the negative association between CAMs and ICMW will be more pronounced for account-level ICMWs rather than entity-level ICMWs. An entity-level ICMW has a pervasive effect on a company's financial reporting; therefore, it is more difficult to remediate in a timely manner. Furthermore, because CAMs must relate to material accounts or disclosures in the financial statements, it is less likely that a CAM will lead auditors to early detection (and clients to early remediation) of entity-level ICMWs (since they are not associated with a specific item in the financial statements).

To determine whether the ICMW is at the entity or account level, we read descriptions in Audit Analytics regarding the reasons behind each ICMW. Following Kim et al. (2011), we consider ICMWs such as (a) senior management competency, tone, reliability issues, and (b) an ineffective, non-existent, or understaffed audit committee to be entity-level control deficiencies. On the other hand, we classify deficiencies such as (a) untimely or inadequate account reconciliations, and (b) journal entry control issues to be account-level control deficiencies[11]. Appendix A provides a complete list of the items in each category.

V. SAMPLE

We use Python programing to collect a sample of companies whose audit report included a CAM section in its 2019 10-K filing.[12] We also extract the details of CAM reporting from Form 10-K or other files, including the number of CAMs, the type of CAM and how the auditor addressed the CAM or CAMs. We further collect information on SOX 404 internal control opinions from Audit Analytics and client-level characteristics from COMPUSTAT.

Table 1 Panel A presents the sample selection process. We begin with 14,527 client-year observations in fiscal years 2018 and 2019. Our sample period starts in 2018 because CAM reporting was effective for large accelerated filers with fiscal years ending on or after June 30, 2019, and our goal is to compare the first year of CAM reporting with the prior year. We exclude companies with no SOX 404 internal control audit report, which reduces the sample by 2,222. We also exclude 5,010 non-accelerated filers to make the treatment companies and control companies more comparable. Removing observations with missing control variables further reduces the

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[11] As an alternative way of classifying entity-level ICMWs, we follow the methodology outlined in Donelson, Ege, and McInnis (2017), and the tenor of our results remains unchanged.

[12] As reported in Table 1, eight of our observations have a CAM section but report zero CAMs. Eleven accelerated filers reported CAMs in their audit reports for 2019 (before it was required for these issuers). Our results are unchanged if we exclude these eleven observations.

sample by 392. As our tests look at the change in the likelihood of ICMWs before and after the mandatory CAM reporting, we exclude 639 companies that appear only once during the sample period. Last, we exclude companies that experienced a change in auditor to make sure the same auditor was used in the pre- and post-periods. Our final sample comprises 5,996 client-year observations. The treatment sample consists of clients with a CAM section included in the audit report in 2019—4,036 client-years (2,018 clients for two years). The control sample is made up of clients whose audit reports did not include a CAM section—1,960 client-years, or 980 clients for two years.

[Insert Table 1 about Here]

Panel B of Table 1 shows that among the companies with CAM sections in their audit reports, 99.5% are large accelerated filers, while only 0.5% are accelerated filers. In Panel C of Table 1, we show the distribution of companies with audit reports including a CAM section. Eight clients with a CAM section report zero CAMs.[13] Roughly half of the companies with CAMs report one CAM, and 34.7% report two CAMs. Eleven clients (0.5%) report five CAMs. Panel D of Table 1 provides the distribution of CAMs based on the related accounting topic. We read each CAM report and classify each CAM topic into the appropriate category. As shown in Panel D, the five most frequent CAM categories are impairment, revenue recognition, accruals and reserves, tax, and business combinations and discontinued operations.

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[13] Audit reports of large accelerated filers are required to include a CAM section, even if they report zero CAMs. For clarity, hereafter we may refer to treatment clients as "clients with CAMs" or similar wording, even though they may be one of the eight clients whose CAM section reports zero CAMs. Excluding these eight clients does not change our results.

VI. RESULTS

Univariate Analysis

Table 2, Panel A presents the summary statistics of all the variables we use in models (1) and (2). The total number of client-year observations is 5,996, with an average *ICMW* of 0.054; this indicates that 5.4 percent of client-years have an audit report indicating an internal control material weakness under SOX 404. About 2 percent of client-years report entity-level ICMWs and 3.4 percent report account-level ICMWs. The average number of material weaknesses (*ICMW_NUM*) is 1.687 for ICMW companies (untabulated) and 0.091 for the entire sample. About 67.3 percent or 4,036 are treatment companies whose audit reports include a CAM section in 2019, and the remaining 32.7 percent or 1,960 observations are control firms whose 2019 audit reports have no CAM section. On average, the sample firms have a leverage ratio of 0.293, a return on assets ratio of −0.011, a book to market ratio of 0.554, a tax fees to total audit fees ratio of 0.093, a foreign income to total assets ratio of 0.008, and a restructuring cost to total assets ratio of 0.003. Around 38.7 percent of the sample firms have merger and acquisition activities. In addition, 8.6 percent of the sample firms have rapid sales growth (i.e., in the top decile of the year), 24.9 percent have experienced aggregate losses during the past two years, and 36 percent report non-zero foreign currency translation. Lastly, the average number of operating and geographic segments is 4.826, and about 79.5 percent of the sample clients use Big 4 audit firms.

[Insert Table 2 about Here]

In Panels B and C of Table 2, we report a univariate comparison between treatment companies (companies with CAMs in the audit report) and control companies (companies without CAMs in the audit report) in the pre- and post-CAM years, respectively. Treatment companies have lower likelihood of having ICMW and fewer material weaknesses (ICMW_NUM) compared

to control companies during both pre- and post-CAM years, but the difference is larger in the post-CAM year. Overall, treatment companies experience a decrease in the likelihood of an ICMW of 0.016 (0.044−0.028) from 2018 to 2019, while control companies' likelihood of ICMW decreases by 0.001 (0.091−0.090). This is illustrated in Panel A of Figure 1, where we plot the ratio of having ICMW for treatment and control companies before and after CAM disclosures. Visually, we see a downward trend in the occurrence of ICMW from 2018 to 2019 for treatment companies and a much smaller change in ICMW occurrence for control companies.

[Insert Figure 1 about Here]

In addition, Panels B and C of Table 2 show significant differences in many company characteristics between the two groups. For example, treatment companies have more debt and are larger, more profitable, more complex, and more likely to hire Big 4 auditors. These differences indicate the importance of controlling for numerous company characteristics in multivariate tests.

Table 3 provides Pearson correlations between our variable of interest and other control variables used in model (1). The correlations among our control variables are generally small, suggesting that the results are unlikely to be subject to multicollinearity. Nonetheless, we check the variance inflation factor (VIF) in all of our tests and we find that each individual control variable has a VIF of less than 4, which is below the threshold suggested by Kennedy (2008).

[Insert Table 3 about Here]

The Effect of the CAM Disclosure on Internal Control Quality

Table 4 reports the multivariate results on the relation between CAM reporting and client internal control quality. In column 1, we measure internal control quality based on whether the company has received an ineffective internal control opinion under SOX 404. In column 2, we use

the number of material weaknesses (*ICMW_NUM*) to proxy for internal control quality, with greater numbers of material weaknesses indicating poorer internal control quality. As the reporting of consecutive ICMWs might be different from that of first-time ICMWs, we restrict our full sample to include only first time-ICMW in columns 3 and 4. In all four columns, we find the coefficients on *CAMREP×POST* are negative and significant, indicating that compared to control companies, treatment companies experience a significant decrease in both the likelihood of having an ICMW and the number of material weaknesses after the CAMs are reported. This indicates a positive association between CAM reporting and the quality of clients' internal controls. Economically, we observe a relative decrease in the likelihood of ICMWs by 0.012 after CAM reporting for treatment companies, compared to control companies. These findings are consistent with the prediction of Hypothesis 1 that CAM reporting increases auditors and managers' efforts in evaluating internal controls and identifying potential weakness, thus leading to timelier remediation of internal control weaknesses by the client and improved quality of internal control.

With respect to the control variables, we find that internal control material weaknesses (both *ICMW* and *ICMW_NUM*) are positively associated with the company's merger and acquisition activities (*M&A*), restructuring activities (*RESTRUCT*), extreme growth (*EX_GROWTH*), and number of segments (*SEGNUM*), while they are negatively associated with company size (*SIZE*), tax fees (*TAXFEE*), and foreign income (*FOR_NI*).

[Insert Table 4 about Here]

Account- versus Entity-Level ICMW

Table 5 presents the results for the association between CAM reporting and ICMW, disaggregated by the type of material weakness (i.e., account-level or entity-level ICMWs). Account-level ICMWs relate to controls over specific accounts, while entity-level ICMWs relate

to broader problems such as the overall control environment or financial reporting process, which are more challenging to remediate and less specifically associated with a CAM. As a result, we predict the impact of CAM reporting on the quality of internal control to be concentrated in account-level ICMWs. Consistent with our expectation, the coefficients on *CAMREP×POST* are significantly negative for the account-level ICMWs in column 2 (coefficient estimate −0.671, t-stat −2.454), but insignificant for the entity-level ICMWs as shown in Column 1 (coefficient estimate −0.073, t-stat −0.247). That is, after CAM reporting, we observe a significant decrease in the likelihood of account-level material weaknesses, but we find no evidence of a decrease in the likelihood of entity-level material weaknesses, providing support for Hypothesis 2. We propose two reasons for this. First, in order to be a CAM, an item must relate to an identifiable material account or disclosure in the financial statements; this makes it more likely that CAM reporting will be associated with a decrease in account-level ICMWs. Second, account-level ICMWs, being less severe than the entity-level ICMWs, are more likely to be identified and remediated in a timely manner.

[Insert Table 5 about Here]

VII. ADDITIONAL ANALYSIS

Revenue Recognition CAMs

To provide further evidence that the negative association between CAM disclosures and the likelihood of having an ICMW is due to increased auditors' and managers' efforts in assessing internal control issues in areas identified as CAMs, we examine whether there is a significant association between the specific matters identified as CAMs and the specific matters related to ICMWs. We use data provided by Audit Analytics to determine the account issues that were associated with ICMWs. Panel A of Table 6 shows that, for the 323 observations in our sample

with ICMWs, 38.7% mention revenue recognition issues. Revenue recognition is the most commonly reported ICMW and the second most commonly reported CAM in our sample. In addition, a study completed by Audit Analytics shows that revenue recognition is the most frequently reported KAM in the UK, and the second most commonly reported CAM/KAM in the U.S. and the European Union (Coleman et al. 2021). Thus, we examine whether *revenue-recognition* related CAMs are associated with a reduction in the likelihood of having a *revenue-recognition* related ICMW.[14]

[Insert Table 6 about Here]

We estimate the following model using logistic regression:

$$ICMW\_REV = f\{CAM\_REV_i, CAM\_NoREV_i, POST_t, CAM\_REV_i \\ \times POST_t, CAM\_NoREV_i \times POST_t, CONTROLS_{it}, INDFE, \varepsilon_{it}\}; \quad (2)$$

Where *ICMW_REV* is an indicator variable that equals one if the client has an ICMW and the material weakness is associated with revenue recognition, and zero if the client has an ICMW that is not related to revenue recognition or has effective internal control (i.e., has no ICMW).[15] *CONTROLS* are the same as in equation (1). *CAM_REV* is a dummy variable, which equals one for clients whose auditors include a *revenue- recognition* related CAM in the audit report of 2019, and zero otherwise. The dummy variable *CAM_NOREV* equals one for client-years whose auditors disclosed CAMs that do not involve revenue recognition in the audit report of 2019, and zero otherwise. All other variables are as previously defined. The variables of interest are *CAM_REV×POST* and *CAM_NOREV×POST*.

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[14] Revenue recognition is the only category with enough observations to perform a meaningful analysis. For example, there are 48 observations with an ICMW in the "Tax expense/benefit/deferral" category, which is less than 1% of our sample of 5,996 observations.

[15] When we exclude clients with ICMWs that do not affect revenue recognition in the sample our results remain qualitatively the same.

As shown in Panel B of Table 6, the coefficient on *CAM_REV×POST* is negative and significant, while the coefficient on *CAM_NOREV×POST* is insignificant. This result suggests that the likelihood of having a *revenue-recognition* related ICMW is reduced significantly for companies with revenue recognition related CAM; we find no evidence of a reduction in *revenue-recognition*-related ICMW for companies whose audit reports include other types of CAMs. These results are consistent with our prediction that the revenue recognition related material weakness is likely detected and remediated through evaluating revenue recognition CAMs. We believe this finding provides strong support for the underlying mechanism through which CAM disclosures affects internal control quality.

Financial Restatements

Improved internal control over financial reporting is expected to reduce the risk of accounting misstatements. We therefore go one step further to investigate whether CAM reporting leads to a lower likelihood of financial restatements. We obtain non-reliance restatement data from Audit Analytics and estimate the following logistic regression:

$$RESTATEMENT = f\{CAMREP_i,\ POST_t, CAMREP_i \times POST_t, CONTROLS_{it}, INDFE, \varepsilon_{it}\}; \quad (3)$$

RESTATEMENT is an indicator variable that equals one if there was an accounting misstatement during the year, and zero otherwise. All other variables are as previously defined. We keep accounting related misstatements only and remove misstatements due to clerical or other errors. The average ratio of accounting misstatements (untabulated) is 0.031 (0.032) for the treatment (control) group in fiscal year 2018, and 0.012 (0.025) in fiscal year 2019. Table 7 presents the regression results. We find the coefficient on *CAMREP×POST* is negative and significant, which suggests that treatment companies experience a significant decrease in the likelihood of having an accounting misstatement after the CAM is reported. Economically, the

likelihood of having an accounting misstatement is decreased by 0.005 after CAM reporting for treatment companies, compared to control companies. These findings are consistent with our main results and suggest that CAM reporting not only improves quality of internal control, but also reduces the likelihood of accounting misstatements.

[Insert Table 7 about Here]

Adoption of CAM Reporting by Small Accelerated Filers

Our main analysis uses the sample period of 2018 to 2019 to examine the impact of CAM reporting adopted by large accelerated filers on internal control quality. To ensure that our results are not sensitive to sample period, we conduct our analysis using an alternative sample period of 2019 to 2020. Large accelerated filers are required to report CAMs in the audit reports issued on or after June 30, 2019, while other filers must report CAMs in the audit reports issued on or after December 15, 2020. That means all large accelerated filers reported CAMs in fiscal year 2019 and most of the non-large accelerated filers first started reporting CAMs in fiscal year 2020. Therefore, with the alternative sample period, non-large accelerated filers which did not voluntarily report CAM in 2019 become our treatment group and large accelerated filers serve as control group. We again use a difference-in-difference method to compare the likelihood of having an ICMW before and after fiscal year 2020 between treatment companies and control companies. We estimate the following models:

$$
\begin{aligned}
(ICMW_{it} \text{ or } ICMW_{NUM_{it}}) \\
= f\{SMALLFILER_i, POST_t, SMALLFILER_i \\
\times POST_t, CONTROLS_{it}, INDFE, \varepsilon_{it}\};
\end{aligned}
\tag{4}
$$

Where *SMALLFILER* equals to 1 for non-large accelerated filers which started reporting CAMs in audit reports of 2020, and 0 for large accelerated filers[16]. *CONTROLS* are the same as in equation (1). *POST* is an indicator for fiscal year 2020. Figure 1, Panel B plots the ratio of having ICMW for large accelerated filers and non-large accelerated filers from 2018 to 2020. We observe a relatively steeper decrease in ICMW ratio for large accelerated filers from 2018 to 2019, compared to non-large accelerated filers. From 2019 to 2020, we observe a relatively steeper decrease in ICMW ratio for non-large accelerated filers compared to large accelerated filers. This figure provides visual evidence that implementation of CAM reporting improves the quality of internal control.

Table 8 presents the results of model (4). We find the coefficient on *SMALLFILER×POST* is negative and significant, when either *ICMW* or *ICMW_NUM* is the dependent variable. This which suggests that non-large accelerated filers experience a significant decrease in the likelihood of having ICMW after their first year of CAM reporting. These findings further support our main results and suggest that our main results remain robust for using different sample period and different adopting companies.

[Insert Table 8 about Here]

Evidence on Early Identification of Internal Control Problems

One potential explanation behind the negative association between CAM reporting and ICMW is that CAM reporting forces auditors to look into high-risk areas early and frequently communicate potential risks with clients, which then leads to early identification and prompt remediation of ICMW by clients. To provide further support for this explanation, we examine the

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[16] The 11 non-large accelerated filers which voluntarily reported CAMs in 2019 are removed in this test.

subsample of 323 observations that reported at least one ICMW during our sample period.[17] For this subsample, we examine the association between CAM reporting and the quarterly disclosures by management of ineffective internal control under SOX section 302 that are made before yearend. If CAM reporting leads to early identification of internal control problems, then for the subsample of ICMW issuers, we expect to see a positive relation between CAM reporting and the early disclosure of an ICMW (that is, a quarterly report that discloses the ICMW before yearend). We re-estimate equation (1) using logit regression on the subsample of 323 ICMW issuers, using as the dependent variable *302Disclosure*. *302Disclosure* is an indicator variable that equals one if the company reports ineffective internal control under SOX302 during the year—before the year end SOX 404 disclosure—and zero otherwise.

Table 9 provides the results of the logit model where the dependent variable, *302Disclosure*, is an indicator for the disclosure of ineffective internal control under SOX 302. The variable of interest is the interaction term, *CAMREP×POST*. All other variables, including *CONTROLS*, are as previously defined. We find the coefficient on *CAMREP×POST* is positive and significant, which suggests that for companies that had ICMWs, the likelihood of reporting the internal control problems in the quarterly SOX 302 report increases with CAM reporting. This finding provides empirical evidence that CAM reporting contributes to early identification and communication of internal control problems.

[Insert Table 9 about here]

Auditor Effort

As argued above, CAM reporting could result in auditors spending more time and effort in evaluating the quality of internal control and identifying potential material weaknesses, thus

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[17] From Table 2, Panel A: The mean for *ICMW* is 0.054; 5,996 observations × 0.054 = 323.

leading to better internal control quality and less occurrence of ICMWs. However, the level of auditor effort is likely to vary across clients. If the impact of CAM disclosures on improving internal control quality is due to auditor effort, we expect the impact to be stronger for clients with more diligent auditors. In this section, we test this conjecture by examining whether the association between CAM disclosures and internal control quality is moderated by the amount of audit effort spent in CAM reporting. We estimate the regression models as follows:

$$
\begin{aligned}
(ICMW_{it} \text{ or } ICMW\_NUM_{it}) \\
= f\{CAM\_MORE_i, CAM\_LESS_i, POST_t, CAM\_MORE_i \\
\times POST_t, CAM\_LESS_i \times POST_t, CONTROLS_{it}, INDFE, \varepsilon_{it}\};
\end{aligned}
\tag{5}
$$

Where *CONTROLS* are the same as in equation (1). As before, we estimate the model with *ICMW* as the dependent variable using logistic regression, and the model with *ICMW_NUM* as the dependent variable using ordered logistic regression.

As auditors' efforts are unobservable, we use auditors' responses to CAMs presented in each CAM reporting section to proxy for the amount of effort auditors expended to address each CAM. In each CAM report, auditors prepare an explanation describing their responses to each CAM and approaches that were most relevant to address the matter. We measure the average length (i.e., number of words) of the auditor response to each CAM using total length of the auditor response divided by the number of CAMs. *CAM_MORE* is equal to one if the auditor response per CAM is longer than the sample median, and zero otherwise. *CAM_LESS* is equal to one if the auditor response per CAM is shorter than the sample median, and zero otherwise. Our variables of interest are *CAM_MORE×POST* and *CAM_LESS×POST*. If the effect of CAM disclosure on the internal control quality is driven by auditor effort, we expect the coefficient estimate on *CAM_MORE×POST* to be larger (in absolute value) than that of *CAM_LESS×POST*.

Table 10 presents the results. Consistent with our prediction, the coefficient estimates on *CAM_MORE×POST* are negative and significant at the one percent levels in both models (1) and (2). The coefficient estimates on *CAM_LESS×POST* are insignificant in both models. An *F*-test shows that the coefficient estimates on *CAM_MORE×POST* are significantly greater (in absolute value) than those on *CAM_LESS×POST* in both models (at the 10% level). This finding suggests that the positive impact of CAM disclosures on internal control quality (that is, the negative association between CAMs and ICMWs) is more pronounced for clients whose auditors put more effort into addressing CAMs. This is consistent with our argument that CAM reporting increases the effort auditors put forth evaluating and testing clients' internal control, leading to better internal control quality.

[Insert Table 10 about Here]

Placebo Test

To rule out the possibility that our findings are driven by some time-varying factors that are not related to the requirement to disclose CAMs starting in 2019, we conduct a placebo test. Specifically, we use year 2018 as a "pseudo-event year", and re-estimate our main regression models from equation (1). As there was no specific event taking place in 2018, we do not expect to find any change in the likelihood of ICMW or the identified number of ICMW from 2017 to 2018 for either treatment companies or control companies. We report the results in Table 9. In both columns, the coefficients on *CAMREP×POST* are positive and statistically insignificant, indicating that there is no similar effect of improved internal control quality around the pseudo-event year. Overall, these results provide some assurance that our main results are not driven by time-varying factors that are unrelated to CAM disclosure.

[Insert Table 11 about Here]

Matched Sample Analysis

In our main analysis, the majority of companies in the treatment group are large accelerated filers, while all companies in the control group are non-large accelerated filers. Therefore, the treatment companies are significantly larger than the control companies. In this section, we construct a matched sample in which each company in the control group is matched with a company in the treatment group in the same industry, with the same type of auditor (i.e. Big 4 or non-Big 4) and the closest in size (measured by total market capitalization).[18] This matching procedure can increase the similarity between the treatment and control companies and can reduce the possibility that some concurrent events are affecting the treatment companies but not the control companies. After matching, we obtain a matched sample of 2,300 observations with 1,150 treatment companies and 1,150 control companies.[19] We then re-estimate the models in equation (1) using this matched sample.

Panel A of Table 12 reports a univariate comparison between the matched treatment companies and control companies. After matching, the average market capitalization is 1,003.436 million for the treatment companies and 974.733 million for the control companies (untabulated). Although the difference in market capitalization is still statistically significant between the two groups, the magnitude of the difference is much smaller. Several important fundamental variables such as *LEV, ROA, AGGLOSS, SEGNUM, BIG4*, are not significantly different, which suggests improved comparability between the two groups. Panel B of the table presents the results of the multivariate tests. In columns 1 and 2, the dependent variables are the overall *ICMW* and *ICMW_NUM*. We then further specify and report the results for entity-level *ICMW* and account-

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[18] We restrict the difference in size between treatment companies and control companies to be within 50% and identify matches with replacement.

[19] The sample size is smaller than in our main analyses, because we fail to find a close match to some of the observations.

level *ICMW* in columns 3 and 4. We observe a negative and significant coefficient on *CAMREP×POST* in columns 1, 2, and 4 and an insignificant coefficient on *CAMREP×POST* in column 3. This suggests a positive impact of CAM disclosure on the overall internal control quality and, more specifically, the *account*-level internal control quality. This result mitigates the concern that our main finding is driven by some confounding contemporaneous event.

[Insert Table 10 about Here]

VIII. CONCLUSION

The new auditor's reporting model with its discussion of critical audit matters (CAMs) was implemented in 2019 for large accelerated filers in the US. We examine whether the introduction of CAM reporting in audit reports in the US is associated with improvements in issuers' internal controls over financial reporting. We hypothesize that increased scrutiny by auditors on CAM-related matters may lead to early identification and client remediation of material weaknesses in internal control. In addition, we propose that any negative association between CAM reporting and ICMWs will be more pronounced for account-level ICMWs than for entity-level ICMWs.

Our results are consistent with our hypotheses. Univariate results show that treatment (control) companies have a decrease of 0.016 (0.001) in reporting an ICMW from 2018 to 2019. Multivariate analyses shows that compared to control companies, treatment companies (those with CAM reporting) experience a statistically significant decrease in both the likelihood of having an ICMW and the number of ICMWs after the CAM(s) is (are) reported. Additional analyses suggest that this result is driven primarily by account-level ICMWs rather than entity-level ICMWs. CAMs have a clearer association with account-level ICMWs than entity-level ICMWs, because by definition CAMs are related to material accounts or disclosures in the financial statements.

In additional analyses, we find that issuers with revenue-recognition CAMs are significantly less likely to have revenue-related ICMWs compared to other issuers (those issuers whose audit reports contain no CAMs and issuers with CAMs unrelated to revenue recognition). This result is consistent with the notion that ICMWs related to revenue recognition are identified and remediated through the auditor's CAM evaluation process. We also find that companies with CAM reporting experience a significant decrease in the likelihood of having accounting misstatements after the CAMs are reported, compared to control companies. Last, the positive association between CAM disclosure and internal control quality—that is, the negative association between CAMs and ICMWs—is more pronounced for audit firms that make greater effort in CAM reporting.

We perform a variety of sensitivity tests. Results using 2018 as the pseudo-event year show no difference between treatment and control companies in the number of or likelihood of ICMW from 2017 to 2018, suggesting that our main results (that CAM reporting is associated with a reduction in the number and likelihood of ICMWs) are not caused by uncontrolled-for differences in treatment and control companies. Our results using a more closely matched sample (an alternative control sample matched by size, auditor type and industry to the treatment sample) are the same as our primary findings: CAM reporting is associated with a reduction in ICMWs reported in 2019; primarily, a reduction in account-level ICMWs as opposed to entity-level ICMWs.

This study contributes to the literature on critical audit matters (and key audit matters) by showing there are real audit effects associated with CAM reporting requirements. Research to date finds little to no evidence that CAM reporting is valued by investors, while research findings on the association between CAM reporting and audit quality are mixed. Our results suggest that, by

focusing auditor attention on areas of potential concern, CAM reporting is associated with improvements in internal control over financial reporting (as measured by a reduction in ICMWs) and a corresponding decrease in misstatement risk. Our results show a positive benefit to CAM reporting not previously found in the literature.

We acknowledge these limitations to our study. Two alternative interpretations of our results could be that (a) the number of ICMWs remains similar after CAM reporting but auditors are finding fewer of them, or (b) auditors are discovering the same number of ICMWs after CAM reporting, but are not reporting them in their opinions on internal controls over financial reporting (indicating a lack of independence). While we cannot completely rule out these two alternative explanations, we see no reason why auditors would detect fewer ICMWs for clients with CAM reporting, nor why auditors would find ICMWs and choose not to report them for our sample companies (but continue to report them for the control companies). Last, although a difference-in-difference design is used to mitigate endogeneity concerns, we are not able to completely rule out the possibility that our findings are confounded by certain events that affect the treatment companies differently than the control companies. Nonetheless, we believe that our study provides important new insights into the potential benefits of CAM reporting.

Appendix A: Entity-level ICMW and Account-level ICMW

Entity-level ICMW:

Senior management competency, tone, reliability issues

Segregation of duties/ design of controls (personnel)

Ineffective, non-existent or understaffed audit committee

Inadequate disclosure controls (timely, accuracy, complete)

Insufficient or non-existent internal audit function

Accounting personnel resources, competency/training

Other entity-level control issue

Account-level ICMW:

Material and/or numerous year-end adjustments including those proposed by the auditor

Ineffective regulatory compliance issues

Untimely or inadequate account reconciliations

Journal entry control issues

Non-routine transaction control issues

Treasury control issues

Accounting documentation, policy and/or procedures

Information technology, software, security & access issues

Appendix B: Variables Definition

Main Variables	Definition
ICMW	Equals 1 if the company report internal control weakness under SOX404 in the year, and 0 otherwise
ICMW_NUM	The number of material weaknesses reported
ICMW_ENT	Equals 1 if the company reports at least one entity-level internal control weakness under SOX404 in the year, and 0 otherwise
ICMW_ACT	Equals 1 if the company reports only account-level internal control weakness under SOX404 in the year, and 0 otherwise
ICMW_REV	Equals 1 if the company reports internal control material weaknesses that affect revenue recognition under SOX404 in the year, and 0 otherwise
CAMREP	Equals 1 if the company's audit report includes a CAM section in fiscal year 2019, and 0 otherwise
POST	Equals 1 for fiscal year 2019, and 0 for fiscal year 2018
CAM_MORE	Equals 1 if the company reported CAM in fiscal year 2019 and the length of auditor response per CAM is above the sample median, and 0 otherwise
CAM_LESS	Equals 1 if the company reported CAM in fiscal year 2019 and the length of auditor response per CAM is below the sample median, and 0 otherwise
CAM_REV	Equals 1 if the company reported CAMs that involve revenue recognition in fiscal year 2019, and 0 otherwise
CAM_NOREV	Equals 1 if the company reported CAMs that do not involve revenue recognition in fiscal year 2019, and 0 otherwise
RESTATEMENT	Equals 1 if the company had accounting misstatements in the year, and 0 otherwise
302DISCLOSURE	Equals 1 if the company had disclosure of a material weakness in a quarterly report before yearend; 0 otherwise.
Control Variables	
SIZE	Natural log of total market capitalization
LEV	The ratio of total debt to total assets
ROA	The ratio of net income to total assets
BM	Book to market ratio
AGGLOSS	Equals one if earnings before extraordinary items in year t and t-1 sum to less than zero, and zero otherwise
TAXFEE	The ratio of tax fee to total audit fees
RESTRUCT	Sum of restructuring amounts reported in year t-1 and t, scaled by total assets.
M&A	Equals 1 if the company reports non-zero acquisition expense in year t, and 0 otherwise
FOR_NI	The absolute value of the ratio of foreign income to total assets
FOR_TRAN	Equals 1 if the company reports non-zero foreign currency translation in year t, and 0 otherwise
EX_GROWTH	Equals 1 if year-over-year industry-adjusted sales growth is in the top decile in year t, and 0 otherwise.
SEGNUM	Number of operating and geographic segments in year t. Consistent with prior literature, SEGNUM equals one for observations missing this variable.
BIG4	Equals 1 if the company's auditor is one of the Big4, and 0 otherwise

References

Ashbaugh-Skaife, H., D. W. Collins, and W. R. Kinney, Jr. 2007. The discovery and reporting of internal control deficiencies prior to SOX-mandated audits. *Journal of Accounting and Economics* 44: 166-192.

Backof, A. G., K. Bowlin, and B. Goodson. 2019. The importance of clarification of auditors' responsibilities under the new audit reporting standards. Working paper, University of Virginia, University of Mississippi, and Clemson University.

Bédard, J., P. Coram, R. Espahbodi, and T. J. Mock. 2016. Does recent academic research support changes to audit reporting standards? *Accounting Horizons* 30: 255-275.

Bens, D. A., W. Chang, and S. Huang. 2019. The association between the expanded audit report and financial reporting quality. Working paper, INSEAD, HEC, and Singapore Management University.

Bhaskar, L. 2020. How do risk-based inspections impact auditor behavior? Experimental evidence on the PCAOB's process. *The Accounting Review* 95: 103-126.

Burke, J., R. Hoitash, U. Hoitash, S. X. Xiao. 2022. The disclosure and consequences of U.S. critical audit matters. *The Accounting Review*, forthcoming.

Chen, Q., X. Jiang, and Y. Zhang. 2019. The effects of audit quality disclosure on audit effort and investment efficiency. *The Accounting Review* 94:189-214.

Christensen, B. E., S. M. Glover, and C. J. Wolfe. 2014. Do critical audit matter paragraphs in the audit report change nonprofessional investors' decision to invest? *Auditing: A Journal of Practice & Theory* 33: 71-93.

Coleman, D., M. Conley, and N. Hallas. 2021. Serving their purpose? Insights on critical and key audit matters." Audit Analytics: Sutton, MA. Available at https://go.auditanalytics.com/Insights-on-Critical-and-Key-Audit-Matters-Report

Cready, W., J. He, W. Lin, C. Shao, D. Wang, and Y. Zhang. 2021. Is there a confidence interval for that? A critical examination of null outcome reporting in accounting research. Working paper, University of Texas at Dallas, University of Texas at Dallas, University of Minnesota, Xiamen University, University of Texas at Dallas, and University of Texas at Dallas, 2021.

De Simone, L., M. Ege, and B. Stomberg. 2015. Internal control quality: The role of auditor-provided tax services. *The Accounting Review* 90: 1469-1496.

Donelson, D., M. Ege, and J. McInnis. 2017. Internal control weaknesses and financial reporting fraud. *Auditing: A Journal of Practice and Theory* 36: 45-69.

Doyle, J., W. Ge, and S. McVay. 2007a. Accruals quality and internal control over financial reporting. *The Accounting Review* 82: 1141-1170.

Doyle, J., W. Ge, and S. McVay. 2007b. Determinants of weaknesses in internal control over financial reporting. *Journal of Accounting and Economics* 44: 193-223.

Drake, K., N. Goldman, S. Lusch, and J. Schmidt. 2021. Do companies manage earnings less after a critical audit matter disclosure? Evidence from tax accounts. Working paper, University of Arizona, North Carolina State University, Texas Christian University, and University of Texas at Austin.

Elliott, W. B., K. Fanning, and M. E. Peecher. 2020. Do investors value higher financial-reporting quality, and can expanded audit reports unlock this value? *The Accounting Review* 95: 141-165.
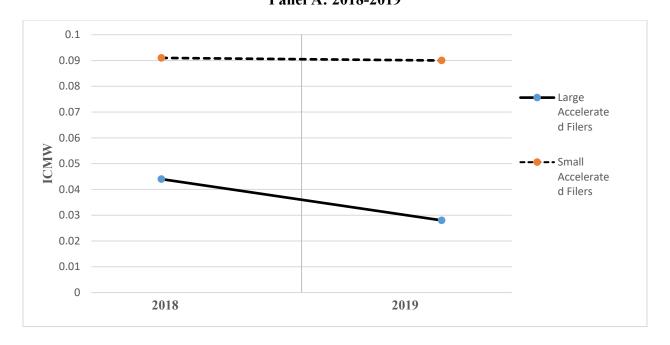
Ettredge, M., J. Heintz, C. Li, and S. Scholz. 2011. Auditor realignments accompanying implementation of SOX 404 ICFR reporting requirements. *Accounting Horizon* 25 (1): 17-39.

Files, R., and P. Gencer. 2020. Investor Response to Critical Audit Matter (CAM) Disclosures. Working paper, University of Texas at Dallas.

Fuller, S. H., J. R. Joe, and B. L. Luippold. 2021. The effect of auditor reporting choice and audit committee oversight on management financial disclosures." *The Accounting Review* 96: 239-274.

Gimbar, C., B. Hansen, and M. E. Ozlanski. 2016. The effects of critical audit matter paragraphs and accounting standard precision on auditor liability. *The Accounting Review* 91: 1629-1646.

Goh, B. W., D. Li, and M. Wang. 2020. Informativeness of the Expanded Audit Report: Evidence from China." Singapore Management University School of Accountancy Research Paper No. 2019-104. Available at https://ssrn.com/abstract=3432107.

Gutierrez, E., M. Minutti-Meza, K. W. Tatum, and M. Vulcheva. 2018. Consequences of adopting an expanded auditor's report in the United Kingdom. *Review of Accounting Studies* 23: 1543-1587.

Haislip, J. Z., G. F. Peters, and V. J. Richardson. 2016. The effect of auditor IT expertise on internal controls. *International Journal of Accounting Information Systems* 20: 1-15.

International Auditing and Assurance Standards Board (IAASB). 2015. *International Standard on Auditing (ISA) 701 (New): Communicating Key Audit Matters in the Independent Auditor's Rep*ort. Available at https://www.iaasb.org/publications/international-standard-auditing-isa-701-new-communicating-key-audit-matters-independent-auditors-4.

Jonas, G., A. Rosenberg, and M. Gale. 2006. Special comment: The second year of Section 404 reporting on internal control. *Moody's Investors Service Global Credit Research*. Available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=959025.

Kang, Y. J. 2019. Are audit committees more challenging given a specific investor base? Does the answer change in the presence of prospective Critical Audit Matter disclosures? *Accounting, Organizations and Society* 77 (2019): 101051.

Kennedy, P. 2008. *A Guide to Econometrics*. Malden, MA: Blackwell Publishing.

Kim, J-B, B. Y. Song, and L. Zhang. 2011. Internal control weakness and bank loan contracting: Evidence from SOX Section 404 disclosures. *The Accounting Review* 86: 1157-1188.

Klamm, B.K., K. Kobelsky, M. W. Watson. 2012. Determinants of the persistence of internal control weaknesses. *Accounting Horizon* 26 (2): 307-333.

Klevak, J., J. Livnat, D. Pei, and K. Suslava. 2020. Are critical audit matters informative? Working paper, Prudential Financial, New York University, University of Warwick, Bucknell University.

Krishnan, J. 2005. Audit committee quality and internal control: An empirical analysis. *The Accounting Review* 80: 649-675.

Lennox, C., J. J. Schmidt, and A. Thompson. 2021. *Why are expanded audit reports not informative to investors? Evidence from the UK*. Working paper, University of Southern California, University of Texas at Austin, and University of Illinois at Urbana-Champaign.

Leuz, C. and P. D. Wysocki. 2016. The economics of disclosure and financial reporting regulation: Evidence and suggestions for future research. *Journal of Accounting Research* 54: 525-622.

Liao, L., M. Minutti-Meza, Y. Zhang, and Y. Zou. 2019. *Consequences of the adoption of the expanded auditor's report: Evidence from Hong Kong*. University of Miami Business School Research Paper No. 3392449.

Lisic, L. L., L. A. Myers, T. A. Seidel, and J. Zhou. 2019. Does audit committee accounting expertise help to promote audit quality? Evidence from auditor reporting of internal control weaknesses. *Contemporary Accounting Research* 36: 2521-2553.

Naiker, V. and D. S. Sharma. 2009. Former audit partners on the audit committee and internal control deficiencies. *The Accounting Review* 84: 559-587.

Public Company Accounting Oversight Board (PCAOB). 2007. AS 2201: *An Audit of Internal Control Over Financial Reporting That Is Integrated with An Audit of Financial Statements*. Washington, DC: PCAOB. Available at https://pcaobus.org/oversight/standards/auditing-standards/details/AS2201#_ftn2.

Public Company Accounting Oversight Board (PCAOB). 2016. *PCAOB Release No. 2016-003: Proposed Auditing Standard—The Auditor's Report on an Audit of Financial Statements when the Auditor Expresses an Unqualified Opinion and Related Amendments to PCAOB Standards*. Washington, DC: PCAOB. Available at https://pcaobus.org/Rulemaking/Docket034/Release-2016-003-ARM.pdf.

Public Company Accounting Oversight Board (PCAOB). 2017. AS 3101: *The Auditor's Report on an Audit of Financial Statements When the Auditor Expresses an Unqualified Opinion*. Washington, DC: PCAOB. Available at https://pcaobus.org/Standards/Auditing/Pages/AS3101.aspx.

Public Company Accounting Oversight Board (PCAOB). 2019. *Staff Guidance: Implementation of Critical Audit Matters: A Deeper Dive on the Determination of CAMs*. Washington, DC: PCAOB. Available at https://pcaobus.org/Standards/Documents/Implementation-of-Critical-Audit-Matters-Deeper-Dive.pdf.

Public Company Accounting Oversight Board (PCAOB). 2020a. *Staff White Paper: Stakeholder Outreach on the Initial Implementation of CAM Requirements*." Washington, DC: PCAOB. Available at https://pcaobus.org/EconomicAndRiskAnalysis/pir/Documents/Stakeholder-Outreach-Initial-Implementation-CAM-Requirements.pdf

Public Company Accounting Oversight Board (PCAOB). 2020b. *Staff White Paper: Econometric Analysis on the Initial Implementation of CAM Requirements*. Washington, DC: PCAOB. Available at https://pcaobus.org/EconomicAndRiskAnalysis/pir/Documents/Econometric-Analysis-Initial-Implementation-CAM-Requirements.pdf

Reid, L. C., J. V. Carcello, C. Li, T. L. Neal, and J. R. Francis. 2019. Impact of auditor report changes on financial reporting quality and audit costs: Evidence from the United Kingdom. *Contemporary Accounting Research* 36: 1501-1539.

Santos K. L., R. B. Guerra, V. A. Marques, and E. M. Junior. 2020. Do critical audit matters matter? An analysis of their association with earnings management. *Journal of Education and Research in Accounting* 14: 55-77.

Tysiac, K. 2018. Six tips for developing critical audit matter disclosures. *Journal of Accountancy*. December 21. Available at https://www.journalofaccountancy.com/news/2018/dec/critical-audit-matter-disclosures-201820334.html

Wallace, W. 2004. The economic role of the audit in free and regulated markets: A look back and a look forward. *Research in Accounting Regulation* 17: 267–298.

Figure 1: CAM Reporting and Internal Control Quality

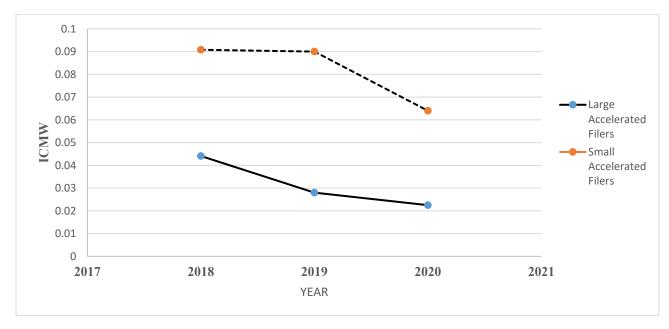## Panel A: 2018-2019

Panel B: 2018-2020

Table 1: Sample and Distribution

Panel A of this table describes the sample selection process. Panel B presents the distribution by filer category; Panel C presents the distribution by the number of CAMs; and Panel D presents the distribution by the type of CAMs.

Panel A: Sample Selection

Firm-year observations in fiscal year 2018 and 2019	14,527
Less: Companies with no reporting of SOX 404 internal control opinions	(2,222)
Less: Non-accelerated filers	(5,010)
Less: Observations with missing control variables	(392)
Less: Companies with only 1 observation in the sample	(639)
Less: Companies with a change of auditor	(268)
Final Sample	5,996
Treatment Companies (2,018 clients for 2 years)	4,036
Control Companies (980 clients for 2 years)	1,960

Panel B: Filer Categories

	Large Accelerated Filers	Accelerated Filers	Total
Clients	2,007	11	2,018
Percentage	99.5%	0.5%	100.0%

Panel C: CAMs per Audit Report

	Number of CAMs per Audit Report						
	0	1	2	3	4	5	Total
Clients (N)	8	1,011	700	234	54	11	2,018
Clients (%)	0.4%	50.1%	34.7%	11.6%	2.7%	0.5%	100.0%
CAMs (N × CAMs)	0	1,011	1,400	702	216	55	3,384

Table 1: Sample and Distribution (cont.)

Panel D: Types of CAMs

CAM Type	N	%
Impairment	883	26.10%
Revenue Recognition	518	15.31%
Accruals and Reserves	412	12.18%
Tax	327	9.66%
Business Combination & Discontinued Operation	305	9.01%
Loan Loss Allowance &Bad Debt Allowance	260	7.68%
Fair Value Estimates of Financial Assets & Liabilities	252	7.45%
Leases	99	2.93%
PPE, Depreciation and Depletion	80	2.36%
Regulation Compliance	67	1.98%
Compensation	59	1.74%
Capitalization of Expenses	43	1.27%
Other	36	1.06%
Convertible Debt	25	0.74%
Consolidation	18	0.53%
Total CAMs	3,384	100%

Table 2: Summary Statistics

Panel A of this table presents descriptive statistics of model variables used in the main analyses. Panel B presents univariate comparison between treatment sample and control sample in pre CAM year and post CAM year. *, **, *** indicate, statistical significance at the 0.10, 0.05, and 0.01 levels, respectively. See Appendix B for variable definitions.

Panel A: Total Sample

Variable	N	Mean	Median	SD	p25	p75
ICMW	5,996	0.054	0.000	0.226	0.000	0.000
ICMW_NUM	5,996	0.091	0.000	0.479	0.000	0.000
ICMW_ENT	5,996	0.020	0.000	0.140	0.000	0.000
ICMW_ACT	5,996	0.034	0.000	0.181	0.000	0.000
CAMREP	5,996	0.673	1.000	0.469	0.000	1.000
POST	5,996	0.500	0.500	0.500	0.000	1.000
SIZE	5,996	7.613	7.527	1.807	6.250	8.791
LEV	5,996	0.293	0.261	0.254	0.084	0.436
ROA	5,996	-0.011	0.021	0.228	-0.002	0.062
BM	5,996	0.554	0.464	0.679	0.219	0.803
AGGLOSS	5,996	0.249	0.000	0.433	0.000	0.000
TAXFEE	5,996	0.093	0.030	0.145	0.000	0.130
RESTRUCT	5,996	0.003	0.000	0.008	0.000	0.000
M&A	5,996	0.387	0.000	0.487	0.000	1.000
FOR_NI	5,996	0.008	0.000	0.030	0.000	0.009
FOR_TRAN	5,996	0.360	0.000	0.480	0.000	1.000
EX_GROWTH	5,996	0.086	0.000	0.280	0.000	0.000
SEGNUM	5,996	4.826	4.000	3.514	2.000	6.000
BIG4	5,996	0.795	1.000	0.404	1.000	1.000

Table 2: Summary Statistics (cont.)

Panel B: Pre CAM Year (2018)

Variable	N	mean	p50	N	mean	p50	Mean Diff.
	Treatment Companies			**Control Companies**			
ICMW	2,018	0.044	0.000	980	0.091	0.000	-0.047***
ICMW_NUM	2,018	0.080	0.000	980	0.159	0.000	-0.079***
ICMW_ENT	2,018	0.015	0.000	980	0.039	0.000	-0.024***
ICMW_ACT	2,018	0.029	0.000	980	0.052	0.000	-0.023***
SIZE	2,018	8.424	8.186	980	5.736	5.732	2.688***
LEV	2,018	0.295	0.275	980	0.231	0.132	0.064***
ROA	2,018	0.026	0.034	980	-0.080	0.009	0.106***
BM	2,018	0.523	0.422	980	0.660	0.631	-0.137***
AGGLOSS	2,018	0.173	0.000	980	0.393	0.000	-0.220***
TAXFEE	2,018	0.111	0.044	980	0.076	0.007	0.035***
RESTRUCT	2,018	0.003	0.000	980	0.002	0.000	0.001
M&A	2,018	0.436	0.000	980	0.299	0.000	0.137***
FOR_NI	2,018	0.013	0.000	980	0.002	0.000	0.011***
FOR_TRAN	2,018	0.390	0.000	980	0.310	0.000	0.080***
EX_GROWTH	2,018	0.073	0.000	980	0.106	0.000	-0.033***
SEGNUM	2,018	5.345	5.000	980	3.745	2.000	1.600***
BIG4	2,018	0.912	1.000	980	0.552	1.000	0.360***

Panel C: Post CAM Year (2019)

Variable	N	Mean	Median	N	Mean	Median	Mean Diff.
	Treatment Companies			**Control Companies**			
ICMW	2,018	0.028	0.000	980	0.090	0.000	-0.062***
ICMW_NUM	2,018	0.044	0.000	980	0.142	0.000	-0.098***
ICMW_ENT	2,018	0.011	0.000	980	0.031	0.000	-0.020***
ICMW_ACT	2,018	0.017	0.000	980	0.059	0.000	-0.042***
SIZE	2,018	8.596	8.364	980	5.793	5.780	2.803***
LEV	2,018	0.327	0.316	980	0.279	0.177	0.048***
ROA	2,018	0.020	0.031	980	-0.083	0.007	0.103***
BM	2,018	0.485	0.392	980	0.657	0.612	-0.173***
AGGLOSS	2,018	0.170	0.000	980	0.424	0.000	-0.254***
TAXFEE	2,018	0.098	0.036	980	0.065	0.000	0.033***
RESTRUCT	2,018	0.003	0.000	980	0.002	0.000	0.001
M&A	2,018	0.429	0.000	980	0.287	0.000	0.142***
FOR_NI	2,018	0.011	0.000	980	0.001	0.000	0.011***
FOR_TRAN	2,018	0.381	0.000	980	0.308	0.000	0.072***
EX_GROWTH	2,018	0.091	0.000	980	0.081	0.000	0.011
SEGNUM	2,018	5.335	5.000	980	3.792	2.000	1.543***
BIG4	2,018	0.912	1.000	980	0.552	1.000	0.360***

Table 3: Correlation

This table presents the Pearson Correlation between variable of interest and control variables. Coefficients in bold indicate statistical significance at the 0.10 level. See Appendix B for variable definitions.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
(1)CAMREP×POST	1													
(2)SIZE	0.388	1												
(3)LEV	0.096	0.093	1											
(4)ROA	0.098	0.279	0.024	1										
(5)BM	-0.073	-0.168	-0.184	0.035	1									
(6)AGGLOSS	-0.130	-0.328	0.028	-0.509	-0.010	1								
(7)TAXFEE	0.022	0.126	0.059	0.089	-0.035	-0.087	1							
(8)RESTRUCT	0.027	0.026	0.088	0.016	-0.048	0.109	0.084	1						
(9)M&A	0.062	0.104	0.012	0.072	-0.041	-0.042	0.064	-0.175	1					
(10)FOR_NI	0.069	0.277	-0.001	0.307	-0.098	-0.298	0.129	-0.123	0.114	1				
(11)FOR_TRAN	0.030	0.118	-0.008	0.026	-0.025	0.065	0.052	-0.160	0.082	0.197	1			
(12)EX_GROWTH	0.013	-0.044	0.089	-0.010	0.018	0.013	0.017	0.075	-0.011	-0.062	-0.101	1		
(13)SEGNUM	0.103	0.296	0.081	0.144	-0.012	-0.094	0.069	-0.164	0.145	0.280	0.338	-0.088	1	
(14)BIG4	0.208	0.431	0.189	0.061	-0.057	0.003	0.141	-0.100	0.046	0.099	0.146	-0.058	0.201	1

Table 4: CAM Disclosure and Internal Control Quality

This table presents the results of model (1). *ICMW* equals 1 if the company reports internal control weakness under SOX404 in the year, and 0 otherwise. *ICMW_NUM* is the number of material weakness reported. *CAMREP* is equal to 1 if the company's audit report includes a CAM section in fiscal year 2019 (i.e. treatment companies), and 0 otherwise. *POST* is equal to 1 for fiscal year 2019, and 0 for fiscal year 2018. Our variable of interest is, *CAMREP×POST*, the interaction between *CAMPREP* and *POST*. In column (3) and (4), recurring ICMW observations are excluded. *, **, and *** indicate, respectively, statistical significance at the 0.10, 0.05, and 0.01 levels for a two-tailed test. Reported *t*-values are based on standard errors clustered at company level. See Appendix B for other variable definitions.

VARIABLES	(1) ICMW	(2) ICMW_NUM	First-time ICMW (3) ICMW	(4) ICMW_NUM
CAMREP	-0.027	-0.002	0.469	0.493
	(-0.113)	(-0.008)	(1.467)	(1.518)
POST	0.006	0.003	0.389	0.396
	(0.042)	(0.024)	(1.535)	(1.568)
CAMREP×POST	-0.458**	-0.472**	-1.010***	-1.026***
	(-2.331)	(-2.415)	(-2.937)	(-2.986)
SIZE	-0.291***	-0.292***	-0.265***	-0.272***
	(-4.151)	(-4.174)	(-3.298)	(-3.299)
LEV	0.124	0.143	-0.006	0.003
	(0.441)	(0.494)	(-0.015)	(0.009)
ROA	-0.273	-0.220	-0.225	-0.246
	(-1.322)	(-1.281)	(-1.024)	(-1.109)
BM	-0.229	-0.225*	-0.033	-0.053
	(-1.637)	(-1.741)	(-0.315)	(-0.474)
AGGLOSS	0.163	0.187	-0.040	-0.044
	(0.940)	(1.058)	(-0.188)	(-0.208)
TAXFEE	-1.986***	-1.961***	-1.236*	-1.199*
	(-3.020)	(-2.924)	(-1.744)	(-1.679)
RESTRUCT	8.193	7.83	26.002***	25.935***
	(1.115)	(1.077)	(3.174)	(3.210)
M&A	0.434***	0.429***	0.356**	0.360**
	(2.934)	(2.899)	(2.049)	(2.066)
FOR_NI	-5.526**	-5.460**	-6.260**	-6.395**
	(-1.966)	(-2.000)	(-2.001)	(-2.083)
FOR_TRAN	0.063	0.068	0.141	0.138
	(0.379)	(0.408)	(0.769)	(0.754)
EX_GROWTH	0.716***	0.693***	0.764***	0.760***
	(3.312)	(3.214)	(2.688)	(2.671)
SEGNUM	0.065***	0.065***	0.028	0.030
	(3.117)	(3.159)	(1.193)	(1.280)
BIG4	-0.209	-0.219	-0.358*	-0.366*
	(-1.197)	(-1.277)	(-1.868)	(-1.936)
Constant	-0.164		-1.489	
	(-0.200)		(-1.573)	
Industry FE	Yes	Yes	Yes	Yes
Observations	5,996	5,996	5,818	5,818
Pseudo R^2	0.134	0.105	0.101	0.083

Table 5: Account-level ICMWs vs. Entity-level ICMWs

This table presents the results of the impact of CAM reporting on the likelihood of having Account-level or Entity-level ICMWs. *ICMW_ENT* equals 1 if the company reports at least one entity-level internal control material weakness under SOX404 in the year, and 0 otherwise. *ICMW_ACT* equals 1 if the company reports only account-level internal control material weakness under SOX404 in the year, and 0 otherwise. *CAMREP* is equal to 1 if the company's audit report includes a CAM section in fiscal year 2019 (i.e. treatment companies), and 0 otherwise. *POST* is equal to 1 for fiscal year 2019, and 0 for fiscal year 2018. Our variable of interest is, *CAMREP×POST*, the interaction between *CAMPREP* and *POST*. *, **, and *** indicate, respectively, statistical significance at the 0.10, 0.05, and 0.01 levels for a two-tailed test. Reported *t*-values are based on standard errors clustered at company level. See Appendix B for other variable definitions.

VARIABLES	(1) Entity-level ICMWs (ICMW_ENT)	(2) Account-level ICMWs (ICMW_ACT)
CAMREP	**-0.380**	**0.168**
	(-0.998)	**(0.586)**
POST	**-0.237**	**0.162**
	(-1.182)	**(0.853)**
CAMREP×POST	**-0.073**	**-0.671****
	(-0.247)	**(-2.454)**
SIZE	-0.196*	-0.313***
	(-1.691)	(-3.783)
LEV	0.129	0.035
	(0.337)	(0.098)
ROA	-0.210	-0.186
	(-0.972)	(-0.793)
BM	-0.495***	0.062
	(-3.222)	(0.616)
AGGLOSS	0.361	0.061
	(1.156)	(0.321)
TAXFEE	-2.137**	-1.715**
	(-1.964)	(-2.283)
RESTRUCT	-7.066	14.734*
	(-0.493)	(1.740)
M&A	0.142	0.601***
	(0.585)	(3.519)
FOR_NI	-4.289	-4.710
	(-1.113)	(-1.336)
FOR_TRAN	0.099	0.039
	(0.363)	(0.205)
EX_GROWTH	0.944***	0.488*
	(3.225)	(1.738)
SEGNUM	0.058*	0.055**
	(1.894)	(2.232)
BIG4	0.007	-0.315
	(0.025)	(-1.585)
Constant	-4.112	-0.080
	(-3.273)	(-0.093)
Industry FE	Yes	Yes
Observations	5,996	5,996
Pseudo R^2	0.130	0.132

Table 6: Revenue-specific ICMW and CAM

This table presents the results of model (2). Panel A presents the distribution by the type of ICMWs. Panel B present the multivariate results. *ICMW_REV* equals 1 if the company reports internal control material weaknesses that affect revenue recognition under SOX404 in the year, and 0 otherwise. *CAM_REV* equals 1 if the company reported CAMs that involve revenue recognition in fiscal year 2019, and 0 otherwise. *CAM_NOREV* equals 1 if the company reported CAMs that do not involve revenue recognition in fiscal year 2019, and 0 otherwise. *POST* is equal to 1 for fiscal year 2019, and 0 for fiscal year 2018. Our variable of interest are, *CAM_REV×POST* and *CAM_NOREV×POST* the interaction between *CAM_REV or CAM_NOREV* and *POST*. *,**, and *** indicate, respectively, statistical significance at the 0.10, 0.05, and 0.01 levels for a two-tailed test. Reported *t*-values are based on standard errors clustered at company level. See Appendix B for other variable definitions.

Panel A: Descriptions of Internal Control Material Weaknesses

Accounts affected by ICMW	Number	Percentage (out of 323 ICMWs)
Revenue recognition	125	38.70%
Unspecified issues	93	28.79%
Liabilities, payables, reserves and accrual estimate	50	15.48%
Tax expense/benefit/deferral	48	14.86%
PPE/Depreciation	30	9.29%
Expense recording issues	27	8.36%
Foreign subsidiary issues	23	7.23%
Debt, quasi-debt, warrants	19	5.88%
Mergers and acquisitions	17	5.26%
Balance sheet classification	14	4.33%
Deferred stock-based compensation	14	4.33%
Lease, legal, contingency	12	3.72%
Cash flow classification	8	2.48%
Intercompany transaction	4	1.24%
Footnote and segment disclosure	2	0.62%
Pension and post-retirement benefit	2	0.62%
Capitalization of expenditures	2	0.62%
Financial derivatives	2	0.62%
Incomplete section 302 assessment	1	0.31%

This table presents the material weakness accounting matters reported for the 323 observations that reported a material weakness in internal control (ICMW). Data are from Audit Analytics. The total number reported is greater than 323 because an ICMW may relate to more than one accounting matter.

Panel B: Logistic Regression of Revenue-specific ICMW on CAMs and other variables

VARIABLES	(1) ICMW_REV
CAM_REV	**0.805****
	(2.008)
CAM_NOREV	**0.486**
	(1.406)
POST	**-0.006**
	(-0.027)
CAM_REV×POST	**-0.946****
	(-1.992)
CAM_NOREV×POST	**-0.368**
	(-1.083)
SIZE	-0.373***
	(-4.150)
LEV	0.564
	(1.454)
ROA	-0.074
	(-0.311)
BM	0.349**
	(2.247)
AGGLOSS	0.619**
	(2.449)
TAXFEE	-1.503
	(-1.540)
RESTRUCT	10.222
	(1.000)
M&A	0.385*
	(1.686)
FOR_NI	-5.072
	(-1.197)
FOR_TRAN	0.224
	(0.882)
EX_GROWTH	0.459
	(1.242)
SEGNUM	0.084***
	(2.916)
BIG4	-0.172
	(-0.651)
Constant	-1.046
	(-0.984)
Industry FE	Yes
Observations	5,996
Pseudo R^2	0.167

Table 7: CAM Disclosure and Accounting Misstatements

This table presents the results of model (3). *RESTATEMENT* equals 1 if the company had accounting misstatements in the year, and 0 otherwise. *CAMREP* is equal to 1 if the company's audit report includes a CAM section in fiscal year 2019 (i.e. treatment companies), and 0 otherwise. *POST* is equal to 1 for fiscal year 2019, and 0 for fiscal year 2018. Our variable of interest is, *CAMREP×POST*, the interaction between *CAMPREP* and *POST*. *, **, and *** indicate, respectively, statistical significance at the 0.10, 0.05, and 0.01 levels for a two-tailed test. Reported *t*-values are based on standard errors clustered at company level. See Appendix B for other variable definitions.

VARIABLES	(1) RESTATEMENT
CAMREP	**0.283**
	(0.986)
POST	**-0.288**
	(-1.184)
CAMREP×POST	**-0.644****
	(-2.029)
SIZE	-0.118
	(-1.442)
LEV	0.041
	(0.101)
ROA	-0.204
	(-0.902)
BM	-0.008
	(-0.042)
AGGLOSS	0.168
	(0.690)
TAXFEE	-0.396
	(-0.578)
RESTRUCT	-25.037**
	(-2.372)
M&A	0.574***
	(2.795)
FOR_NI	1.699
	(0.439)
FOR_TRAN	0.273
	(1.287)
EX_GROWTH	-0.369
	(-1.013)
SEGNUM	-0.013
	(-0.414)
BIG4	-0.449
	(-1.599)
Constant	-2.175**
	(-2.169)
Industry FE	Yes
Observations	5,971
Pseudo R2	0.077

Table 8: Disclosure of CAMs by Small Accelerated Filers

This table presents the results of model (4). *ICMW* equals 1 if the company reports internal control weakness under SOX404 in the year, and 0 otherwise. *ICMW_NUM* is the number of material weakness reported. *SMALLFILER* is equal to 1 if the company is a non-large accelerated filer (i.e. treatment companies), and 0 otherwise. *POST* is equal to 1 for fiscal year 2020, and 0 for fiscal year 2019. Our variable of interest is, *SMALLFILER×POST*, the interaction between *SMALLFILER* and *POST*. *, **, and *** indicate, respectively, statistical significance at the 0.10, 0.05, and 0.01 levels for a two-tailed test. Reported *t*-values are based on standard errors clustered at company level. See Appendix B for other variable definitions.

VARIABLES	(1) ICMW	(2) ICMW_NUM
SMALLFILER	**0.624****	**0.627****
	(2.386)	**(2.411)**
POST	**-0.135**	**-0.106**
	(-0.622)	**(-0.492)**
SMALLFILER×POST	**-0.447***	**-0.455***
	(-1.679)	**(-1.726)**
SIZE	-0.266***	-0.260***
	(-3.382)	(-3.305)
LEV	0.257	0.221
	(0.939)	(0.817)
ROA	-0.278	-0.246
	(-0.672)	(-0.617)
BM	-0.296*	-0.286*
	(-1.774)	(-1.829)
AGGLOSS	0.219	0.239
	(1.012)	(1.115)
TAXFEE	-2.393***	-2.318**
	(-2.710)	(-2.561)
RESTRUCT	-10.183	-9.994
	(-1.095)	(-1.100)
M&A	0.545***	0.538***
	(2.908)	(2.917)
FOR_NI	-1.352	-1.344
	(-0.398)	(-0.409)
FOR_TRAN	0.360*	0.341*
	(1.885)	(1.803)
EX_GROWTH	0.198	0.221
	(0.497)	(0.547)
SEGNUM	0.033	0.040
	(1.165)	(1.380)
BIG4	-0.404*	-0.399*
	(-1.875)	(-1.890)
Constant	-0.098	
	(-0.116)	
Industry FE	Yes	Yes
Observations	5,350	5,350
Pseudo R2	0.149	0.119

Table 9: Evidence on Early Identification of Internal Control Problems

This table presents the results of estimating equation (1) using logistic regression with *302Disclosure* as the dependent variable. *302Disclosure* equals 1 if the company reports ineffective internal control under SOX302 during the year, before the year end SOX404 disclosure, and 0 otherwise. *CAMREP* is equal to 1 if the company's audit report includes a CAM section in fiscal year 2019 (i.e. treatment companies), and 0 otherwise. *POST* is equal to 1 for fiscal year 2019, and 0 for fiscal year 2018. Our variable of interest is, *CAMREP×POST*, the interaction between *CAMPREP* and *POST*. *, **, and *** indicate, respectively, statistical significance at the 0.10, 0.05, and 0.01 levels for a two-tailed test. Reported *t*-values are based on standard errors clustered at company level. See Appendix B for other variable definitions.

VARIABLES	(1) 302 Disclosure
CAMREP	**-0.920***
	(-1.661)
POST	**0.166**
	(0.541)
CAMREP×POST	**1.433****
	(2.572)
SIZE	-0.149
	(-0.758)
LEV	0.408
	(0.583)
ROA	0.515
	(1.126)
BM	-0.364**
	(-2.247)
AGGLOSS	0.822**
	(2.202)
TAXFEE	-1.591
	(-1.060)
RESTRUCT	50.976**
	(2.287)
M&A	0.381
	(1.206)
FOR_NI	1.823
	(0.324)
FOR_TRAN	-0.304
	(-0.836)
EX_GROWTH	0.280
	(0.698)
SEGNUM	0.057
	(1.380)
BIG4	0.467
	(1.134)
Constant	0.498
	(0.294)
Observations	323

Robust z-statistics in parentheses

Table 10: Effect of Auditor Efforts

This table presents the results of model (4). *ICMW* equals 1 if the company reports internal control material weaknesses under SOX404 in the year, and 0 otherwise. *CAM_MORE* equals 1 if the company reported CAM in fiscal year 2019 and the length of auditor response per CAM is above the sample median, and 0 otherwise. *CAM_LESS* equals 1 if the company reported CAM in fiscal year 2019 and the length of auditor response per CAM is below the sample median, and 0 otherwise. *POST* is equal to 1 for fiscal year 2019, and 0 for fiscal year 2018. Our variable of interest are, *CAM_MORE×POST* and *CAM_LESS×POST* the interaction between *CAM_MORE or CAM_LESS* and *POST*. *, **, and *** indicate, respectively, statistical significance at the 0.10, 0.05, and 0.01 levels for a two-tailed test. Reported *t*-values are based on standard errors clustered at company level. See Appendix B for other variable definitions.

VARIABLES	(1) ICMW	(2) ICMW_NUM
CAM_MORE	0.015	0.027
	(0.060)	(0.106)
CAM_LESS	-0.064	-0.017
	(-0.229)	(-0.059)
POST	0.006	0.004
	(0.047)	(0.029)
CAM_MORE×POST	**-0.615*****	**-0.616*****
	(-2.701)	**(-2.727)**
CAM_LESS×POST	**-0.170**	**-0.211**
	(-0.640)	**(-0.786)**
SIZE	-0.296***	-0.297***
	(-4.226)	(-4.246)
LEV	0.122	0.142
	(0.435)	(0.490)
ROA	-0.276	-0.223
	(-1.332)	(-1.294)
BM	-0.227	-0.223*
	(-1.629)	(-1.728)
AGGLOSS	0.159	0.183
	(0.916)	(1.030)
TAXFEE	-1.975***	-1.948***
	(-3.016)	(-2.921)
RESTRUCT	7.989	7.598
	(1.094)	(1.052)
M&A	0.438***	0.434***
	(2.956)	(2.925)
FOR_NI	-5.558**	-5.489**
	(-1.978)	(-2.014)
FOR_TRAN	0.066	0.071
	(0.399)	(0.430)
EX_GROWTH	0.720***	0.697***
	(3.321)	(3.221)
SEGNUM	0.066***	0.066***
	(3.131)	(3.174)
BIG4	-0.204	-0.214
	(-1.162)	(-1.235)
Constant	-0.135	
	(-0.164)	
Industry FE	Yes	
Observations	5,996	5,996
Pseudo R^2	0.134	0.106

Table 10: Effect of Auditor Efforts (continued)

VARIABLES	(1) ICMW	(2) ICMW_NUM
F-test **CAM_MORE×POST−** **CAM_LESS×POST**	-0.445*	-0.405*

Table 11: Pseudo Event Year

This table presents the results of model (1) using year 2018 as a "pseudo-event year". *ICMW* equals 1 if the company reports internal control weakness under SOX404 in the year, and 0 otherwise. *ICMW_NUM* is the number of material weakness reported. *CAMREP* is equal to 1 if the company's audit report includes a CAM section in fiscal year 2019 (i.e. treatment companies), and 0 otherwise. *POST* is equal to 1 for fiscal year 2018, and 0 for fiscal year 2017. Our variable of interest is, *CAMREP×POST*, the interaction between *CAMPREP* and *POST*. *,**, and *** indicate, respectively, statistical significance at the 0.10, 0.05, and 0.01 levels for a two-tailed test. Reported *t*-values are based on standard errors clustered at company level. See Appendix B for other variable definitions.

VARIABLES	(1) ICMW	(2) ICMW_NUM
CAMREP	**-0.747*****	**-0.791*****
	(-3.362)	**(-3.435)**
POST	**0.223***	**0.213***
	(1.889)	**(1.800)**
CAMREP×POST	**0.200**	**0.257**
	(1.002)	**(1.271)**
SIZE	-0.147***	-0.149***
	(-2.586)	(-2.589)
LEV	0.128	0.092
	(0.506)	(0.354)
ROA	-0.084	-0.044
	(-0.357)	(-0.205)
BM	-0.303**	-0.283**
	(-2.066)	(-2.123)
AGGLOSS	0.515***	0.511***
	(3.117)	(3.057)
TAXFEE	-0.771	-0.800
	(-1.415)	(-1.386)
RESTRUCT	-4.872	-5.246
	(-0.700)	(-0.759)
M&A	0.350***	0.366***
	(2.622)	(2.703)
FOR_NI	-3.749	-3.949*
	(-1.571)	(-1.677)
FOR_TRAN	0.042	0.036
	(0.275)	(0.233)
EX_GROWTH	0.490**	0.504**
	(2.383)	(2.433)
SEGNUM	0.074***	0.073***
	(3.519)	(3.095)
BIG4	-0.238	-0.230
	(-1.306)	(-1.278)
Constant	-2.064**	
	(-2.124)	
Industry FE	Yes	Yes
Observations	6,342	6,342
Pseudo R^2	0.103	0.078

Table 12: Matched Sample Analysis

This table presents the results of model (1) using size, auditor type and industry matched sample. Panel A presents the univariate comparison between treatment companies and control companies. Panel B presents the multivariate regression results. *ICMW* equals 1 if the company reports internal control weakness under SOX404 in the year, and 0 otherwise. *ICMW_NUM* is the number of material weakness reported. *CAMREP* is equal to 1 if the company's audit report includes a CAM section in fiscal year 2019 (i.e. treatment companies), and 0 otherwise. *POST* is equal to 1 for fiscal year 2019, and 0 for fiscal year 2018. Our variable of interest is, *CAMREP×POST*, the interaction between *CAMPREP* and *POST*. *, **, and *** indicate, respectively, statistical significance at the 0.10, 0.05, and 0.01 levels for a two-tailed test. Reported *t*-values are based on standard errors clustered at company level. See Appendix B for other variable definitions.

Panel A: Descriptive Statistics

Variable	Treatment Companies			Control Companies			Diff.
	N	Mean	Median	*N*	Mean	Median	
ICMW	1150	0.059	0.000	1150	0.068	0.000	-0.009
ICMWNUM	1150	0.111	0.000	1150	0.120	0.000	-0.009
ICMW_ENT	1150	0.008	0.000	1150	0.023	0.000	-0.016***
ICMW_ACT	1150	0.051	0.000	1150	0.044	0.000	0.007
SIZE	1150	6.504	6.416	1150	6.188	6.113	0.316***
LEV	1150	0.253	0.183	1150	0.274	0.190	-0.021
ROA	1150	-0.067	0.008	1150	-0.092	0.008	0.025
BM	1150	0.704	0.642	1150	0.640	0.580	0.064**
AGGLOSS	1150	0.388	0.000	1150	0.422	0.000	0.040
TAXFEE	1150	0.106	0.000	1150	0.079	0.010	0.028***
RESTRUCT	1150	0.004	0.000	1150	0.003	0.000	0.001
M&A	1150	0.424	0.000	1150	0.299	0.000	0.125***
FOR_NI	1150	0.005	0.000	1150	0.002	0.000	0.003**
FOR_TRAN	1150	0.361	0.000	1150	0.323	0.000	0.038*
EX_GROWTH	1150	0.050	0.000	1150	0.096	0.000	-0.045***
SEGNUM	1150	3.916	3.000	1150	3.812	2.000	0.103
BIG4	1150	0.697	1.000	1150	0.697	1.000	0.000

Table 12: Matched Sample Analysis (continued)

Panel B: Regression Analyses

VARIABLES	(1) ICMW	(2) ICMW_NUM	(3) ICMW_ENT	(4) ICMW_ACT
CAMREP	**-0.082**	**0.024**	**-1.219***	**0.305**
	(-0.202)	**(0.052)**	**(-1.663)**	**(0.661)**
POST	**-0.462****	**-0.464****	**-0.470**	**-0.463**
	(-2.016)	**(-1.984)**	**(-1.363)**	**(-1.479)**
CAMREP×POST	**-0.726***	**-0.747***	**0.218**	**-1.043****
	(-1.679)	**(-1.672)**	**(0.202)**	**(-2.129)**
SIZE	-0.126	-0.200	0.439*	-0.416
	(-0.666)	(-0.854)	(1.949)	(-1.628)
LEV	-0.252	-0.335	0.356	-0.765
	(-0.344)	(-0.412)	(0.522)	(-0.811)
ROA	-0.532	-0.496	-0.432	-0.365
	(-1.060)	(-1.102)	(-1.327)	(-1.373)
BM	0.107	0.062	-0.243	0.385
	(0.325)	(0.195)	(-1.292)	(1.032)
AGGLOSS	0.554*	0.530	0.794	0.585
	(1.675)	(1.613)	(1.261)	(1.511)
TAXFEE	-4.929***	-5.063***	-2.183	-6.297**
	(-2.861)	(-2.807)	(-1.367)	(-2.530)
RESTRUCT	21.057*	22.869*	11.438	21.173
	(-1.757)	(-1.889)	(-0.588)	(-1.556)
M&A	1.009***	1.035***	0.318	1.261***
	(3.123)	(3.079)	(0.831)	(3.269)
FOR_NI	-4.052	-4.463	1.911	-7.713
	(-0.773)	(-0.831)	(0.187)	(-1.391)
FOR_TRAN	-0.420	-0.441	0.248	-0.596
	(-0.994)	(-1.039)	(0.428)	(-1.346)
EX_GROWTH	-0.295	-0.320	0.091	-0.521
	(-0.570)	(-0.620)	(0.138)	(-0.759)
SEGNUM	0.159***	0.159***	0.153**	0.138***
	(3.828)	(3.606)	(2.252)	(3.127)
BIG4	-0.102	-0.043	-0.336	-0.191
	(-0.263)	(-0.111)	(-0.460)	(-0.461)
Constant	-2.913**		-6.966***	-1.929
	(-2.547)		(-5.709)	(-1.251)
Industry FE	Yes	Yes	Yes	Yes
Observations	2,300	2,300	2,300	2,300
Pseudo R^2	0.198	0.164	0.124	0.285