Decoding Unrecognized Tax Benefits: An Analysis of Critical Audit Matter Reports

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May 2024

Abstract: We investigate whether an additional tax-related disclosure, a critical audit matter (CAM) report citing the tax accounts, improves the salience of reported unrecognized tax benefits (UTBs) and is associated with future UTB settlements. Uncertain tax positions have significant implications for firm risk and value, but the results of prior research suggest UTB disclosures do not provide as much information about the true uncertainty of these positions as standard setters had hoped. We posit that supplemental information from the audit team can enhance UTB disclosures and identify firms whose reported UTBs are associated with more uncertain tax positions. Consistent with this notion, we find that, for a given level of UTB additions, the appearance of tax accounts in the CAM report is associated with increases in the likelihood and magnitude of future UTB settlements. These results suggest that tax-related CAM reports improve the salience of reported UTBs, providing an ex ante signal to identify firms that are more likely to incur future tax settlements. In additional tests, we find purchasing tax services from the auditor or hiring a tax expert auditor alleviates this effect, indicating that auditors' abilities to assess the uncertainty of the underlying positions plays an important role in our findings. Our results suggest that the CAM report improves the informativeness of UTB disclosures and provides a better roadmap to audit for revenue authorities. Moreover, our study extends research on the potential benefits of CAM reports by demonstrating that this disclosure helps identify firms that are more likely to have future tax settlements.

Keywords: Unrecognized tax benefits, ASC 740, Critical audit matters, IRS settlements

JEL Codes: G10; M41; H26

We thank Nathan Goldman, Tom Omer, Junwei Xia, and several anonymous reviewers for their helpful comments. We are grateful to the University of Memphis and the University of Missouri for financial support.

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I. INTRODUCTION

FASB Accounting Standards Codification Topic 740 (ASC 740, formerly FIN 48) requires firms to book a reserve, or unrecognized tax benefit (UTB), for tax positions that are more likely than not to be challenged by revenue authorities. Although conjecture suggested ASC 740 might provide a roadmap for tax authority audits (e.g., Blouin and Robinson 2014; Mills, Robinson, and Sansing 2010), the mixed empirical evidence suggests that UTB disclosures alone are not necessarily an indicator of the uncertainty underlying firms' tax positions (e.g., Bozanic, Thornock, and Williams 2017; Gupta, Mills, and Towery 2014; Robinson, Stomberg, and Towery 2016). Beginning in 2019, the Public Company Accounting Oversight Board (PCAOB) requires audit firms to disclose the client accounts that require the most subjective or complex judgment in a critical audit matter (CAM) report. Tax matters often appear in CAM reports (Drake, Goldman, Lusch, and Schmidt 2023) because tax positions are complex and determining the income effects of various tax issues can be difficult (e.g., see Microsoft's 2020 CAM report).[1] In this study, we investigate whether this additional tax-related disclosure increases the informativeness of reported UTBs and identifies firms whose UTBs are related to more uncertain tax positions. Specifically, we examine if, for a given level of UTB additions, the appearance of tax accounts in the CAM report is associated with increases in the likelihood and magnitude of future UTB settlements.

This research question is important for two reasons. First, uncertain tax positions have significant implications for firm risk and value, but managements' UTB disclosures do not clearly

[1] Microsoft's 2020 CAM report mentions the income tax liability related to a transfer pricing issue and states, "the Company remains under IRS audit, or subject to IRS audit, for tax years subsequent to 2003. While the Company has settled a portion of the IRS audits, resolution of the remaining matters could have a material impact on the Company's financial statements." Other tax-related CAM reports in our sample use similar language, suggesting tax accounts appear in CAM reports because of uncertainty about their potential effect on firms' financial positions.

convey the true uncertainty of firms' tax positions (e.g., Ciconte, Donohoe, Lisowsky, and Mayberry 2023; Guenther, Matsunaga, and Williams 2017). This study aims to determine whether supplemental information from the audit team can improve financial statement users' abilities to interpret these disclosures and identify firms with uncertain tax positions susceptible to audit. Second, we extend research that examines the value relevance of CAM reports. While still early, research provides little evidence that *investors* respond to CAM reports (e.g., Anding, Blay, and Bozanic 2022; Burke, Hoitash, Hoitash, and Xiao 2021); in contrast, our study examines whether these reports provide information that is useful beyond the stock market. Specifically, we test whether CAM reports identify firms with more uncertain tax positions, information which could be useful to both financial statement users and tax authorities.

Conceptually, the UTB represents the amount of claimed tax benefits managers expect to lose upon revenue authority audit, which should be associated with increased risk and negative firm outcomes. However, prior empirical research on UTBs does not consistently link UTBs with risk or negative firm outcomes (e.g., Guenther et al. 2017; Koester 2012; Lisowsky, Robinson, and Schmidt 2013; Robinson and Schmidt 2013), suggesting that differences in firms' interpretation of the standard may reduce this account's informativeness. Moreover, ASC 740 provides no mechanism to differentiate between UTBs booked for positions that are almost certain to be challenged successfully and UTBs booked by conservative managers for positions that are very unlikely to be overturned upon audit. In contrast, tax-related CAMs are unaffected by management's interpretation and application of ASC 740 because they are issued by the independent auditor. In addition, these reports indicate that the tax accounts require management

and auditors to make significant subjective or complex judgments.[2] Thus, CAM reports could differentiate between UTBs related to conservative accounting and UTBs related to more uncertain positions. If these reports identify firms with tax positions that are more uncertain or readily challenged, we expect firms with tax-related CAM reports to be associated with a higher likelihood and magnitude of future UTB settlements.

However, whether the appearance of tax accounts in the CAM report is associated with future UTB settlements is unclear for at least two reasons. First, prior research demonstrates that financial reporting policies affect the recording of tax reserves, leading to inconsistencies in the treatment of similar tax positions across firms (De Simone, Mills, and Stomberg 2014). Thus, for a particular level of UTB additions, it may be difficult to determine the actual uncertainty of tax positions, even using the CAM report. Second, CAM reports are required, annual disclosures of the financial statement accounts that the auditor deems to involve the most subjective or complex judgment. Because of the discretion and judgement required to interpret the tax law, the tax accounts may be referenced in the CAM report, even when tax positions are not very uncertain. In either case, we would not expect to find an association between future UTB settlements and tax-related CAM reports.

Following prior literature, we examine the initial release of required CAM reports in 2019 (e.g., Hollie and Yu 2021; Burke et al. 2021). Specifically, we select observations from 2019 at the intersection of the Compustat and Audit Analytics databases that report an increase in UTBs in 2017, 2018, and/or 2019. Our main variable of interest is the interaction between increases in

[2] For example, Microsoft's 2020 CAM report pertaining to the income tax liability says, "given the complexity and the subjective nature of the transfer pricing issues that remain unresolved with the IRS, evaluating management's estimates relating to their determination of uncertain tax positions required extensive audit effort and a high degree of auditor judgment, including involvement of our tax specialists." A brief survey of our sample reveals that other CAM reports use similar language.

UTBs from 2017 – 2019 and an indicator variable equal to one if the firm's 2019 CAM report references a tax account (Drake et al. 2023).[3] We focus on the interaction term to hold constant the effect of the level of firms' reported UTBs on revenue authorities' audit selection and procedures and to study how tax-related CAM reports affect the mapping of prior UTB additions into future UTB settlements. To examine whether the appearance of a tax account in the CAM report provides information about the true uncertainty of firms' tax positions, we investigate the association between the incidence of a tax-related CAM and the likelihood and magnitude of future UTB settlements for a given level of prior UTB additions.

Our results are consistent with tax-related CAMs providing an ex ante signal of firms whose reported level of UTBs is indicative of tax positions that are more uncertain. Specifically, we find that, for a given level of prior UTB additions, the appearance of a tax account in the CAM report increases both the likelihood of prior UTB additions resulting in future settlements with revenue authorities and the magnitude of prior UTB additions that result in future tax settlements. These results suggest that tax-related CAM reports provide new information about firms' uncertain tax positions that is useful for identifying firms that are likely to incur future tax settlements. In contrast, we do not find a significant, direct association between prior UTB additions and the likelihood or magnitude of future tax settlements, suggesting that the information provided by UTB disclosures alone is insufficient to identify truly uncertain tax positions. This result is consistent with previous inconclusive evidence regarding whether the level of UTBs conveys information about the uncertainty/risk of firms' tax positions (e.g., Guenther et al. 2017; Hutchens and Rego 2015; Koester 2012). In combination, our findings suggest that tax-related CAM reports,

[3] CAM reports can reference specific tax accounts (e.g., the UTB) or the tax accounts more generally. Because there is no clear guidance with respect to the level of granularity that these reports must use for a particular account, we follow Drake et al. (2023) and include all CAM reports that reference the tax accounts in our sample to ensure that we capture every report that could provide a signal about the uncertainty of firms' tax positions.

an additional tax-related disclosure provided by the independent auditor, improve the salience of UTB disclosures and are relevant and useful to financial statement users and tax authorities.

Because these reports are generated by the auditor, whose characteristics could affect the signal provided by the tax-related CAM report, we explore whether features of the auditor (e.g., tax expertise) and audit firm-client relationship (e.g., the purchase of audit-provided tax services, APTS) impact our results. When we split our sample on these two dimensions, we continue to find that, for a given level of prior UTB additions, the presence of a tax-related CAM is associated with a higher likelihood and larger magnitude of future UTB settlements when the client does *not* purchase tax services from their auditor or does *not* hire a tax-expert auditor. For all other firms, the incidence of a tax-related CAM does not affect the likelihood or magnitude of future UTB settlements. These results suggest that, when the auditor likely has more difficulty assessing the uncertainty of, and estimating the reserve required for, clients' tax positions, this additional tax-related disclosure is a stronger signal of situations where a revenue audit could be more successful.

A common challenge of audit-related research is selection bias resulting from differences in client characteristics (Lawrence, Minutti-Meza, And Zhang 2011; Minutti-Meza 2013; DeFond et al. 2017). To mitigate this concern within our sample, following DeFond and Lennox (2017), we also examine an entropy-balanced sample, which is balanced on all covariates, and continue to find that, for a given level of prior UTB additions, tax-related CAMs are associated with a higher likelihood and greater magnitude of future UTB settlements. We also conduct two other tests to mitigate potential alternative explanations. First, to determine whether our results are due to the issuance of a tax-related CAM report rather than some other simultaneous event, we conduct a placebo test where we randomly assign firms to the tax-related CAM treatment group. Second, to demonstrate that our results are due to the issuance of a tax-related CAM report, rather than a CAM

report in general, we conduct a falsification test using non-tax-related CAM reports. We do not find significant results in either setting, which provides additional evidence that our findings relate to the signal provided by the tax-related CAM report about the uncertainty of firms' tax positions.

This study contributes to the literature and practice in several ways. First, this study extends the literature on ASC 740 and UTBs by examining the impact of a new tax-related disclosure on the likelihood of settlement with tax authorities. Our results suggest that tax-related CAM reports improve the informativeness of UTB disclosures, providing an ex ante signal to identify firms that are more likely to incur future tax settlements. Thus, our findings identify a disclosure that can be used to discern when reported UTBs are related to more uncertain tax positions.

Second, we contribute to research that examines the benefits of CAM reports. Early work finds that the initial CAM reports lack value relevance (e.g., Brasel, Doxey, Grenier, and Reffett 2016; Burke et al. 2021), but recent research finds that the information content within CAM reports could be useful to investors (Anding et al. 2022). We extend this line of inquiry and demonstrate that an element of the CAM reports, the mention of tax accounts, enables financial statement users to identify firms that are more likely to incur future tax settlements. Thus, auditors should be mindful of the impact of the CAM report, and shareholders should be aware that CAM reports serve as an ex ante method to gauge the true uncertainty of firms' tax positions.

Finally, our results also inform the PCAOB about an unintended consequence of expanded audit disclosure. While this disclosure was intended to benefit financial statement users, because these disclosures provide information about the uncertainty of firms' tax positions, our results may also be useful to tax authorities seeking to identify firms with tax positions that could be more easily challenged. The PCAOB might consider expanding the list of parties it references when developing new standards and regulations.

II. BACKGROUND AND HYPOTHESIS DEVELOPMENT

2.1 Background on ASC 740 and Uncertain Tax Benefits

As enacted, ASC 740 (formerly FIN 48) standardizes firms' accounting for uncertain tax positions, which are positions that are likely to be challenged by tax authorities and for which some (or all) of the tax benefit may be disallowed. Prior to ASC 740, there was significant variation in how firms accounted for these positions; thus, this standard seeks to improve "relevance and comparability in the financial reporting of income taxes" (FASB 2006), ultimately providing financial statement users with a more accurate picture of firms' potential tax liabilities. Under this standard, firms' tax positions must meet two criteria for their tax benefits to be recognized in the financial statements. First, a tax position must meet the recognition threshold (i.e., the position is more likely than not to be sustained upon revenue authority audit). If the tax position fails this threshold, firms cannot record any of the tax benefit associated with the position in the financial statements (i.e., the firm records the full amount of tax benefit claimed on the tax return as a UTB). If the tax position meets the recognition threshold, the firm proceeds to the measurement phase and records a tax benefit in the financial statements equal to the greatest amount that is more than 50 percent likely to be upheld if challenged. Any remaining tax benefit from the position claimed on the tax return is recorded as a UTB. Thus, under ASC 740, firms report tax positions on the financial statements at the value that is likely to be upheld by taxing authorities (FASB 2006).

Uncertain tax positions arise because the tax law must generalize to a wide variety of situations and taxpayers. Thus, managers use judgement to determine how to apply the relevant statutes to specific transactions. While the application of the tax law to some transactions is straightforward (e.g., the treatment of municipal bond interest), it can be more subjective in other circumstances (e.g., the tax classification of research and development expenditures). In these

nuanced situations, differences in the interpretation of the tax law by revenue authorities and taxpayers cause disagreement about the treatment of a tax position, generating an uncertain tax position and the possibility that the tax benefit will be denied. Firms that undertake uncertain tax positions have a higher risk of incurring a larger future tax liability if the tax position is successfully challenged. Under ASC 740, financial statement users must be alerted in advance of these potential situations. That is, UTBs should provide financial statement users with information about firms' potential future tax liabilities and the riskiness of eventual tax settlements. Moreover, the level of reported UTBs could serve as a signal to tax authorities that the firm is engaging in risky tax positions that it believes may not be upheld.

2.2 Prior Research on the Discretion in Recording Unrecognized Tax Benefits

Perhaps surprisingly, evidence regarding whether the level of UTBs provides a benefit to tax authorities for challenging tax positions is mixed. For example, although Gleason, Markle, and Song (2023) document that the reporting requirements of FIN 48 (ASC 740) improved the relevance of income tax expense for some firms, Robinson et al. (2016) find that only about a quarter of UTBs result in tax settlements. Moreover, some studies find that UTBs are associated with an increase in firm value (Koester 2012; Koester, Lim, and Vigeland 2015). These results are inconsistent with the notion that UTBs identify firms with more uncertain tax positions, and thus, that UTB disclosures aid IRS revenue audits (e.g., Blouin and Robinson 2014).

One potential reason for the disconnect between our expectations of the information that UTB disclosures should provide and the empirical results is that prior research finds that, even after the implementation of ASC 740, firms continue to exercise considerable discretion when booking tax reserves (i.e., De Simone et al. 2014; Cazier, Rego, Tian, and Wilson 2015; Towery 2017). For example, despite the FASB's objective of increased comparability in accounting for

income taxes, De Simone et al. (2014) find significant differences in financial reporting decisions for a subset of firms that all face the same tax situation. Specifically, they find wide variation in the amount of tax benefits included on the financial statements, as well as in the tax reserve (UTB) recorded, for a particular tax credit claimed by paper manufacturers. De Simone et al.'s (2014) results highlight why it might be difficult for investors and taxing authorities to use the tax reserve to identify risky or uncertain tax positions – UTBs are subject to managers' accounting preferences. Because UTBs can vary with the level of reporting conservatism or aggression applied by the manager, financial statement users have an incomplete picture of the underlying uncertainty of firms' tax positions.

2.3 Prior Research on Critical Audit Matter Reports

Beginning in 2019, the PCAOB requires audit firms to publicly disclose the client accounts that require the most subjective or complex judgment in a CAM report (AS 3101). The primary goal of this new reporting standard is to provide useful, incremental audit-related information to financial statement users (PCAOB 2019). However, the PCAOB also suggests that this additional disclosure might improve the audit and financial reporting quality of the accounts discussed in the CAM reports (PCAOB 2017).

Prior to the adoption of AS 3101, other countries, such as the United Kingdom, Hong Kong, and China, implemented expanded audit reporting standards. Empirical evidence from these settings suggests that expanded reporting does not provide incremental information to investors, but it may have alternative benefits. For example, Guitierrez et al. (2018) do not find evidence that expanded audit reports in the U.K. benefit investors, and Lennox, Schmidt, and Thompson (2023) determine that the reason for their result is that investors are already aware of the financial reporting risks. Thus, auditors' disclosures were not helpful to investors because they did not

contain new information. Similarly, Liao et al. (2019) do not find evidence that expanded audit reports in Hong Kong and China provide incremental benefits to investors, nor do they improve audit quality. However, Reid, Carcello, Li, and Neal (2019) document an increase in financial reporting quality following the implementation of expanded audit reports in the U.K., suggesting that the standard's implementation may yield secondary benefits.

As in the other countries, the initial empirical evidence in the U.S. suggests that the adoption of AS 3101 and the associated CAM disclosures do not provide incremental information to the market (Burke et al. 2021). Moreover, evidence on their effect on financial reporting quality is mixed. For example, Dee, Luo, Wang, and Zhang (2023) find that firms that receive a CAM have a lower likelihood of having an internal control weakness, and Drake et al. (2023) find that tax-related CAMs issued in 2019 are associated with an increase in tax accrual quality and tax reserves. However, Tan and Yeo (2022) find that firms with a closer (more distant) auditor-client relationship report more (less) aggressive estimates when a CAM is disclosed, suggesting that the nature of the auditor-client relationship may determine whether the CAM is viewed as a forewarning to investors or a constraint on managers. Similarly, Lynch, Mandell, and Rousseau (2022) show that, when firms purchase more auditor-provided tax services, they receive fewer tax-related CAMs. Thus, the benefit of CAM reports to financial statement users is still unclear.

Most early studies on CAMs (discussed above) examine the existence of expanded audit reporting or the presence of a CAM report, not the information included in the report. In contrast, Anding et al. (2022) examine the *content* of the CAM report and find that diversity in the topics and text included within the CAM report is associated with increased audit effort and an equity market reaction. Their work suggests that considering the specific accounts disclosed within the CAM report could yield important information. Thus, to examine a potential benefit of these

disclosures, our study focuses on a specific account mentioned in the CAM reports (i.e., the tax accounts) to investigate a setting where financial statement users and other third parties could benefit from additional information about firm activities (i.e., uncertain tax positions).

2.4 Hypothesis Development

Conceptually, the UTB represents the amount of claimed tax benefits managers expect to lose upon revenue authority audit. Thus, the expectation is that the level of UTBs reflects the uncertainty of firms' tax positions, which should be associated with higher future tax settlements and increased firm risk. However, prior empirical research finds that only about one-quarter of reported UTBs are ultimately converted to settlements (Robinson et al. 2016). Moreover, the level of UTBs is not consistently associated with firm risk or other negative firm outcomes. For example, Lisowsky et al. (2013) find that the level of UTBs is associated with tax shelters, but Guenther et al. (2017) and Hutchens and Rego (2015) do not find an association between the level of UTBs and future firm risk or current firm risk, respectively. Ciconte et al. (2023) show that UTBs predict future cash tax outflows, but Koester (2012) and Koester et al. (2015) find a positive association between firm value and the level of UTBs. These inconsistent results imply that the uncertainty indicated by the level of UTBs varies by firm, making these disclosures challenging to evaluate. However, these results are interesting because they imply that differences in firms' interpretations of ASC 740, due to managers' accounting preferences and allowed discretion in reporting, could reduce this account's informativeness.

Tax-related CAMs could be useful for interpreting firms' UTBs because they provide more information about firms' tax positions. These reports offer two primary benefits. First, they signal that there is a significant amount of judgment and discretion required to determine the impact of the tax accounts on income. For example, Apple Inc.'s 2020 CAM report includes a CAM for

uncertain tax positions which states, “Apple Inc. uses significant judgment in the calculation of tax liabilities in estimating the impact of uncertainties in the application of technical merits and complex tax laws.” Therefore, tax-related CAM reports are issued in situations where the tax positions are more uncertain because their ultimate outcome is difficult to determine.

Second, these reports are generated by the independent audit firm, which means they offer an unbiased assessment of the difficulty of reporting the results of a particular account and are unaffected by management’s interpretation and application of ASC 740. Moreover, tax-related CAMs might provide information to differentiate between UTBs reported due to conservatism and UTBs reported due to uncertain tax positions. Specifically, it is possible that the accounting policy surrounding the tax accounts could affect the likelihood of the auditor choosing to include the tax accounts in the CAM report. For example, an auditor may be less likely to identify the tax accounts as an area that requires significant judgment and discretion for an audit client that takes a conservative approach and routinely over-reserves for uncertain tax positions. If the appearance of tax accounts in CAM reports indicates that the firm has tax positions that are more uncertain or easily challenged, we expect firms with tax-related CAM reports to be associated with a higher likelihood and magnitude of future UTB settlements.

However, whether the appearance of tax accounts in the CAM report is indicative of more uncertain tax positions is unclear for at least two reasons. First, prior research demonstrates that financial reporting policies affect the recording of tax reserves, leading to inconsistencies in the treatment of similar tax positions across firms (De Simone et al. 2014). These inconsistencies indicate that reporting aggressiveness or conservatism could affect the UTB disclosure, which likely contributes to the insignificant association between the level of UTBs and tax uncertainty or risk documented by other studies (e.g., Guenther et al. 2017; Hutchens and Rego 2015). Thus, it

is difficult to determine the actual uncertainty of tax positions based on the level of reported UTBs. If tax-related CAM reports do not improve our ability to identify firms with relatively more uncertain tax positions, then we would not expect to find an association between future UTB settlements and tax-related CAM reports.

Second, CAM reports are a required disclosure that references the accounts that involve the most subjective judgement. When firms have few complex or risky accounts, the auditor does not have many options for completing the required disclosure. In these situations, the tax accounts are a reasonable choice for the auditor to include in the CAM report due to the discretion and judgement required to interpret the tax law. Thus, the CAM report may reference the tax accounts, even if the firm's tax positions are not particularly uncertain. In these instances, the tax-related CAM reports are unlikely to provide information about the true uncertainty of the underlying tax positions associated with reported UTBs, and thus, we would not expect to find an association between tax-related CAM reports and future UTB settlements.

Given the competing predictions discussed above, we state our hypothesis in the null form:

H1: The presence of a tax-related CAM report will not affect the likelihood or magnitude of future UTB settlements, given the level of firms' prior UTB additions.

III. RESEARCH DESIGN

3.1 Measuring Tax-Related CAM Reports and Unrecognized Tax Benefits

To address our research question, we are interested in the effect of the incidence of a tax-related CAM report, given the prior level of reported UTBs. We identify firms with tax-related CAM reports using *TAX CAM*, an indicator variable equal to one when a tax account appears in the initial CAM report in 2019 (Drake et al. 2023). Consistent with prior research on CAM reports (e.g., Burke et al. 2021; Drake et al. 2023), we focus on the initial CAM report because it offers

the most salient signal of the subjectivity or complexity of the accounting for a specific item within the financial statements. The repeated inclusion of an account in CAM reports in subsequent years is less meaningful to financial statement users because they had been previously made aware of the risks associated with that account. Moreover, by focusing on the 2019 CAM reports, we examine a clean sample of accelerated filers, whereas in subsequent periods, nonaccelerated filers must also receive a CAM report from their auditors (AS 3101). The CAM reports can reference specific tax accounts (e.g., the UTB) or tax accounts more generally. There is no clear guidance regarding the level of granularity of accounts to include in a CAM report. Thus, following concurrent research on tax accounts in the CAM reports (Drake et al. 2023; Lynch et al. 2022), we examine all CAM reports that reference the tax accounts to ensure that we capture every report that could provide a signal about the true uncertainty of firms' tax positions.

We measure the firm's potential exposure to uncertain tax positions using the level of UTB additions in prior years, following Dyreng, Hanlon, and Maydew (2019). Specifically, *PYUTBADDS* is measured as the sum of UTB additions from 2017 – 2019 scaled by total assets at the beginning of 2019. The variable of interest in our analysis is the interaction between *TAX CAM* and *PYUTBADDS.* This term allows us to examine whether the incidence of a tax-related CAM report affects the informativeness of UTB disclosures about future UTB settlements, while controlling for the effect of the level of prior UTBs on revenue authority audit processes. In addition to controlling for previously reported UTBs, this design allows us to examine how the appearance of a tax account in the CAM report affects the mapping of prior UTB additions into future UTB settlements. Prior work finds that only a small percentage of UTBs are ultimately settled (Robinson et al. 2016); however, our study can shed light on whether additional tax-related disclosures are associated with future UTB settlements.

3.2 Empirical Design

To test our hypothesis, we examine how the presence of a tax-related CAM report affects the likelihood and magnitude of future UTB settlements using the following model:

$$SETTLEMENTS_{it+1} = \beta_0 + \beta_1 PYUTBADDS_{it} + \beta_1 TAX\ CAM_{it} + \beta_1 PYUTBADDS*TAX\ CAM_{it} + \sum \beta_m Controls_{mit} + Industry\ FE + \varepsilon_{it}. \quad (1)$$

SETTLEMENTS represents one of two dependent variables. First, we examine the existence of a future UTB settlement using *SETTLEMENT IND*, an indicator variable equal to one for firms that settle a UTB in 2020 and equal to zero otherwise. Second, we examine the amount of future UTB settlements reported using *SETTLEMENTS*, which is measured as reported UTB settlements for 2020 scaled by beginning of the year total assets.[4] Together, these variables allow us to investigate both the likelihood and magnitude of firms' future UTB settlements.

The variable of interest in our model is the interaction between *TAX CAM* and *PYUTBADDS*, both of which are defined above. If tax-related CAM reports provide a signal identifying firms with more uncertain tax positions, then we expect, for a given level of prior UTB additions, firms with tax-related CAMs will be associated with a higher likelihood and magnitude of future UTB settlements than firms without tax-related CAMs. However, if CAM reports do not signal the true uncertainty of firms' tax positions, then we should not find an association between the disclosure of a tax-related CAM and the likelihood and magnitude of future UTB settlements.

To isolate the effect of the tax-related CAM report, we control for a variety of other factors that could affect future UTB settlements. Specifically, we control for the effect of prior UTB settlements on future UTB settlements by including *PRIOR SETTLEMENTS*, the sum of UTB settlements from 2017-2019 scaled by beginning of the year total assets. Including *PRIOR*

[4] In Section 5, we extend the window of measurement for future settlements to account for the time lag present in the revenue audit/negotiation process. Our inferences using alternative windows are the same.

SETTLEMENTS helps us mitigate concerns about the pre-disposition of firms' tax strategies to UTB settlements. In other words, we control for the likelihood that prior UTB settlements are an indicator of future UTB settlements, which helps us rule out the alternative explanation that tax accounts appear in CAM reports due to prior settlements as opposed to the actual uncertainty of current tax positions. We also include *GAAP ETR* to control for the influence of tax avoidance on revenue audit decisions and settlements with tax authorities.

In addition, we control for characteristics could affect firms' tax planning using firm size (*SIZE*) and performance (*PTROA*). Because foreign activity can increase firms' exposure to uncertain tax positions, we control for the presence of the firm in a foreign country (*MULTINATIONAL*), as well as the amount of income the firm earns in foreign jurisdictions (*FOREIGN INCOME*). Because losses can affect tax planning, we control for the presence of tax loss carryforwards (*NOL*) and the change in tax loss carryforwards relative to the prior year (*CHANGE NOL*). Moreover, our model includes controls for firm characteristics that prior work has shown are associated with tax planning and tax avoidance (e.g., Mills, Erickson, and Maydew 1998), such as the market-to-book ratio (*MTB*), leverage (*LEVERAGE*), and research and development expense (*R&D*). We also control for capital intensity (*PPE*), the amount of capital expenditures (*CAPEX*), and intangible intensity (*INTANGIBLES*).

Finally, we include *OPCYCLE* to control for the length of the firm's operating cycle, and *BIG4* to control for the potential that the size of the auditor could affect characteristics of the CAM

reports. We also control for differences across industries by including Fama-French 49 industry fixed effects in our models.[5] See Appendix A for detailed descriptions of all variables.[6]

IV. DATA AND EMPIRICAL RESULTS

4.1 Data and Sample

We obtain financial statement data from the Compustat North America Annual database and audit report information from Audit Analytics. AS 3101 applied to U.S. firms beginning in 2019, and, following prior literature, we examine the initial release of CAM reports (e.g., Hollie and Yu 2021; Burke et al. 2021). This research design choice ensures the greatest likelihood that the CAM report provides new information to financial statement users, as subsequent reports mentioning the same accounts are unlikely to have as significant an effect. Moreover, this choice allows us to investigate a sample of accelerated filers before expanded audit reporting applied to nonaccelerated filers as well (AS 3101). To construct our sample, we select all U.S. firm-year observations from 2019 that report an increase in UTBs in 2017, 2018, and/or 2019. We remove observations with insufficient data to calculate our dependent variables and controls. These restrictions yield a final sample of 703 firm-year observations for 2019. Table 1 presents our sample selection procedures.

[INSERT TABLE 1 HERE]

4.2 Descriptive Statistics

Table 2 presents the descriptive statistics for our sample. We find that approximately 24 percent of the sample has a CAM report that mentions at least one tax account, which is similar to the incidence of tax-related CAM reports in concurrent work (e.g., Drake et al. 2023). The mean

[5] We do not include year fixed effects or cluster standard errors by firm because we only examine the first CAM report released in 2019. Thus, our sample includes only one firm-year observation per firm.
[6] Our results are robust to winsorizing all continuous variables at the 1st and 99th percentiles.

(median) additions to UTB over the period 2017-2019 are 0.65 (0.26) percent of total assets, indicating a moderate increase in the tax reserve for firms in our sample. Moreover, almost 40 percent of the firms in our sample report a UTB settlement during 2020, and total settlements related to UTBs scaled by total assets are $9.34 million on average. Consistent with AS 3101 initially applying only to large, accelerated filers, our sample is comprised of large (mean natural logarithm of total assets is 8.22), profitable (average return on pre-tax income of 4.7 percent), multinational firms (97 percent of the sample) that engage a Big Four accounting firm as their auditor (95 percent of the sample).

[INSERT TABLE 2 HERE]

Table 3 displays the Pearson correlations for the variables used in the primary analysis. In univariate analyses, *TAX CAM* is positively associated with both the incidence of a future UTB settlement and the amount of future settlements at the 10 percent significance level, which suggests that tax-related CAM disclosures could provide additional information about the true uncertainty of firms' tax positions. However, we do not find a significant correlation between *PYUTBADDS* and either the incidence or amount of a future settlement, which is consistent with the mixed results in prior literature regarding the information conveyed by the level of UTBs about the uncertainty of firms' tax positions (e.g., Ciconte et al. 2023; Guenther et al. 2017).

[INSERT TABLE 3 HERE]

4.3 Results – The Effect of Tax-Related CAM Reports on Future UTB Settlements

In Table 4, we test our hypothesis and present the results of estimating Eqn. (1). Specifically, we examine whether the presence of a tax account in the CAM report is associated with the likelihood and magnitude of future UTB settlements, for a given level of prior UTB additions. In Column (1), we examine the likelihood of future UTB settlements and find a

significant, positive coefficient estimate on the interaction term, *PYUTBADDS*TAX CAM* (coeff. = 7.1065, $p < 0.10$), after controlling for various other determinants of UTB settlements (e.g., Dyreng et al. 2019). This result suggests that, for a given level of prior UTB additions, firms whose CAM report mentions the tax accounts are more likely to have a future UTB settlement. In Column (2), we examine the magnitude of future UTB settlements and also find a significant, positive coefficient estimate on the interaction term, *PYUTBADDS*TAX CAM* (coeff. = 0.0157, $p < 0.05$). Thus, for a given level of prior UTB additions, the incidence of a tax-related CAM report is associated with a larger magnitude of future UTB settlements. In combination, these results suggest that tax-related CAM reports serve as an ex ante signal for external stakeholders to identify firms with more uncertain tax positions and a greater risk of future tax settlements.

[INSERT TABLE 4 HERE]

It is also important to note that we do not find a significant association between *PYUTBADDS* and the likelihood or magnitude of future tax settlements, which suggests two conclusions.[7] First, these insignificant results are consistent with the inconclusive evidence regarding whether the level of UTBs conveys information about the risk/uncertainty of firms' tax positions (e.g., Guenther et al. 2017; Hutchens and Rego 2015; Koester 2012). Similar to prior work, our results imply that, to identify truly uncertain tax positions, financial statement users need information beyond the reported level of UTBs. That is, if the uncertainty of tax positions could be discerned from the level of UTBs, then the likelihood and magnitude of future UTB settlements should be associated with the level of previously reserved UTBs. Second, the positive association between prior UTB additions and future UTB settlements is only present among firms with a tax-related CAM, which indicates that these tax positions are more uncertain relative to the tax

[7] In untabulated tests, we also document an insignificant association between *PYUTBADDS* and the likelihood and magnitude of future UTB settlements when we remove *TAX CAM* and the interaction term from the model.

positions underlying the UTBs of firms whose CAM reports do not reference the tax accounts. Thus, the tax-related CAM reports appear to improve the salience of UTB disclosures and are associated with the mapping of prior UTB additions into future UTB settlements. In combination, our findings suggest that tax-related CAM reports, an additional tax-related disclosure provided by the independent auditor, strengthen the signal provided by UTB disclosures about the uncertainty of firms' tax positions and are relevant and useful to external stakeholders.

4.4 Results – Characteristics of the Auditor and Audit Firm-Client Relationship

The CAM reports are generated independently of the firm by the audit firm. Therefore, characteristics of the audit firm could impact the signal provided by the tax-related CAM report. To analyze the effect of the audit firm on the information conveyed by the tax-related CAM, we conduct two cross-sectional tests to examine whether our main results vary with features of the auditor or audit firm-client relationship. Specifically, we focus on the provision of auditor-provided tax services (APTS) and auditor tax expertise because these are two characteristics of the audit firm that are likely to affect the auditor's ability to audit the firm's tax accounts and determine the likely effect of firms' tax positions on income.

First, we examine whether our results vary depending on the firm's purchase of tax services from their audit firm. Prior research consistently demonstrates that APTS create synergies, or knowledge spillover, that enhance the financial reporting quality of the tax accounts. For example, Seetharaman, Sun, and Wang (2011) find that firms that purchase tax services from their auditor have fewer tax-related restatements, and Krishnan and Visvanathan (2011) find a negative association between tax fees paid to the incumbent auditor and earnings management. De Simone, Ege, and Stomberg (2015) find evidence of higher internal control quality in the presence of APTS, and they argue that this result is due to accelerated audit firm awareness of material transactions.

Perhaps most relevant to our study, Gleason and Mills (2011) find that APTS improve firms' estimates of tax reserves. Given this evidence, we expect the effect of tax-related CAMs on future UTB settlements to vary with the purchase of APTS due to the audit firm enjoying greater knowledge of the firm's tax positions.

To conduct this analysis, we separately estimate Eqn. (1) for firm-year observations that do and do not purchase tax services from their audit firm. Columns (1) and (3) of Table 5 report the results for firm-year observations that do not purchase tax services from their auditor, while Columns (2) and (4) present the results for the subsample of observations that do hire their audit firm for tax services. We continue to find positive and significant coefficient estimates on the interaction term, *PYUTBADDS*TAX CAM*, in Columns (1) and (3). Thus, for a given level of prior UTB additions, the presence of a tax-related CAM is associated with a higher likelihood and larger magnitude of future UTB settlements for clients that do *not* purchase tax services from the audit firm (i.e., when *APTS* = 0). For firms purchasing tax services, the incidence of a tax-related CAM does not affect the likelihood or magnitude of future UTB settlements. These results indicate that the tax-related CAM disclosure is a more salient signal when the audit firm likely has less knowledge of a firm's tax positions, and therefore, greater difficulty assessing them.

[INSERT TABLE 5 HERE]

Second, we examine whether our results vary when the audit firm is considered a tax expert for the firm's industry. McGuire, Omer, and Wang (2012) provide evidence that auditor tax expertise affects firms' tax avoidance behavior. Specifically, firms that hire tax-expert audit firms engage in greater tax avoidance, which suggests that the expertise of the audit firm is associated with firms' tax planning. Given this prior evidence, we expect the effect of the presence of a tax-

related CAM on future UTB settlements to vary with the tax expertise of the audit firm due to the audit firm enjoying a greater understanding of the firm's tax planning.

To conduct this analysis, we separately estimate Eqn. (1) for firm-year observations that do and do not hire a tax expert audit firm.[8] In Table 6, Columns (1) and (3) report the results for firm-year observations that do not hire a tax expert audit firm, while Columns (2) and (4) present the results for the subsample of observations that do hire a tax expert audit firm. Similar to our previous results, we continue to find positive and significant coefficient estimates on the interaction term, *PYUTBADDS*TAX CAM*, in Columns (1) and (3). These results suggest that, for a given level of prior UTB additions, the presence of a tax-related CAM is associated with a higher likelihood and larger magnitude of future UTB settlements for clients that do *not* hire a tax expert audit firm (i.e., when *TAX EXPERT* = 0). For firms hiring a tax expert audit firm, the incidence of a tax-related CAM does not affect the likelihood or magnitude of future UTB settlements. Thus, consistent with our results in Table 5, Table 6's findings suggest that the additional tax-related disclosure is a more salient signal for stakeholders in settings where the auditor likely has a more difficult time assessing a firm's tax positions due to a lesser understanding of its tax planning.

[INSERT TABLE 6 HERE]

V. ADDITIONAL ANALYSES

5.1 Selection Bias and Alternative Events

We conduct several additional analyses to provide more support for our conclusions. To begin, we conduct three tests to mitigate concerns about alternative explanations for our results. First, a common challenge of audit-related research is selection bias resulting from differences in

[8] Following (McGuire et al. 2012), we determine tax expertise at the industry-city level by the share of tax fees collected within the audit firm's city. Specifically, we define an audit firm as being a tax expert if its share of tax fees within the industry and city is greater than 20 percent of the total tax fees collected.

client characteristics (Lawrence et al. 2011; Minutti-Meza 2013; DeFond et al. 2017). Our study is also subject to these challenges because it is possible that certain firm characteristics influence the likelihood of a tax account appearing in the CAM report. For example, some firms' operations create more complex tax situations, making those firms more likely to receive a tax-related CAM report. Alternatively, other firms, such as manufacturing firms, may have very few accounts that require subjective judgment. In these cases, the audit firm may be more likely to report a tax account in the CAM report because the report is required and, even if the tax positions are not very uncertain, they are likely the most subjective of the firm's accounts. Thus, various firm situations could impact the likelihood of tax accounts being mentioned in the auditor's CAM report.

To mitigate this concern within our sample, we examine an entropy-balanced sample, following DeFond et al. (2017). After the balancing procedure, which incorporates all control variables, we do not find any significant differences in the mean values of the variables included in our model for firms with and without a tax account mentioned in the CAM report. Using this sample, we re-estimate Eqn. (1) and report the results in Table 7. Consistent with our main analysis, we find significant, positive coefficient estimates on the interaction between *TAX CAM* and *PYUTBADDS* (both $p < 0.10$), which suggest that, for a given level of prior UTB additions, tax-related CAMs are associated with a higher likelihood and greater magnitude of prior UTB additions resulting in future settlements. Thus, the potential for selection bias due to differences in observable firm characteristics does not influence our conclusions.

[INSERT TABLE 7 HERE]

Second, to mitigate the possibility that our results are not due to the issuance of a tax-related CAM report, but rather to some other simultaneous, confounding event, we also conduct a placebo test. In this test, we randomly assign firms to the treatment group and re-run our main

analyses. Specifically, 24 percent of firms in our sample have a tax-related CAM. To construct the sample for this test, we randomly assign 24 percent of our sample to the treatment group of having a tax account mentioned in their CAM report. This assignment is determined irrespective of the actual accounts disclosed in the CAM report. Then, we re-estimate Eqn. (1) using this sample where the designation of *TAX CAM* = 1 has been randomly assigned. We report the results of this analysis in Panel A of Table 8.

We do not find a significant coefficient estimate on the interaction term in either column in Table 8, Panel A (both $p > 0.10$). Thus, we fail to find evidence that the appearance of a tax account in the CAM report affects the likelihood or magnitude of future UTB settlements when the treatment effect has been randomly assigned. Our results do not hold for the placebo test, which confirms the conclusions we draw from our main analysis. Specifically, this analysis supports the argument that tax-related CAM reports provide a signal about the uncertainty of firms' tax positions and the likelihood of future tax settlements.

Third, we conduct a falsification test using non-tax-related CAM reports to ensure that our results are due to the issuance of a *tax-related* CAM report, rather than the release of *any* CAM report. Specifically, we substitute *GOODWILL CAM* for *TAX CAM* in our analyses. *GOODWILL CAM* is an indicator variable equal to one when the CAM report references the goodwill account in 2019 and zero otherwise. We select goodwill as the account of interest for this falsification test because the percentage of firms with CAMs related to goodwill is similar to the number of firms with tax-related CAM reports. We re-estimate Eqn. (1) substituting *GOODWILL CAM* for *TAX CAM* and report the results of this analysis in Panel B of Table 8.

As in Table 8, Panel A, we do not find a significant coefficient estimate on the interaction term in either column (both $p > 0.10$). Thus, we fail to find evidence that the appearance of the

goodwill account in the CAM report affects the likelihood or magnitude of future UTB settlements. Because our results do not hold in this sample, this test supports the conclusions we draw from our main analysis and indicates that our findings are due to the incidence of a tax-related CAM report, specifically, rather than the release of a CAM report, in general.

[INSERT TABLE 8 HERE]

5.2 Difference-in-Difference Design

The results presented thus far support our argument that tax-related CAM reports serve as a signal of the uncertainty of firms' tax positions and the likelihood that firms will face future UTB settlements. However, one could argue that prior settlement activity or inherent firm characteristics are contributing to our results. We mitigate these concerns to the extent possible in our main analyses by controlling for prior UTB settlements and observable firm characteristics likely to affect reported UTBs and tax settlements. In this section, we discuss our additional analysis utilizing a difference-in-differences research design that further addresses concerns about firm characteristics driving our results. Specifically, this approach allows us to treat the initial release of the CAM reports as an exogenous shock to the external information environment, thereby permitting examination of how this new information affects the salience of UTB disclosures.

To conduct this analysis, we augment our sample with additional years of data so that our sample period spans from 2017 – 2022, yielding a balanced panel. We create an indicator variable equal to one for firm-years 2020 – 2022 to identify the post-CAM report period. In addition, we modify the definition of *TAX CAM* for this analysis such that it is an indicator variable equal to one for firms that receive a tax-related CAM report at any point during 2019-2022, rather than just the initial report year. We then re-estimate Eqn. (1) using a difference-in-differences approach, where our variable of interest is the three-way interaction term, *PYUTBADDS*TAX CAM* POST*.

The results of our analyses suggest, that on average, firms that receive a tax-related CAM report during our sample period are associated with a higher likelihood and magnitude of incurring a future UTB settlement, relative to firms that do not receive a tax-related CAM report during our sample period. However, in the post-CAM period, these same firms experience a decline in the likelihood of settlements and pay smaller settlement amounts. Thus, we continue to find evidence that tax-related CAM reports are useful for identifying firms whose reported UTBs are associated with more uncertain tax positions. However, when using this design and altering the definition of *TAX CAM*, we find that firms have fewer settlements and pay less in settlements to tax authorities in the post-CAM period, which might be due to firms learning from the initial settlement experiences and altering their approach to interacting with tax authorities after the initial release of the CAM reports.

5.3 Settlement Favorability

In our main analyses, we consider the incidence and reported value of future UTB settlements without regard to whether these settlements are beneficial to the firm. In other words, while a firm may face a UTB settlement, it is possible that the settlement could ultimately be favorable to the firm relative to the amount the firm had initially reserved for the tax position. In this analysis, we consider whether the additional information provided by tax-related CAM reports is associated with the favorability of UTB settlements. UTB settlements are favorable if the firm retains more tax benefits from the tax position than it initially expected (Finley 2019), and settlement favorability is determined by the amount of the settlement and management's UTB reserve. If tax-related CAM reports identify firms with uncertain tax positions that are also under-reserved for the settlement of those positions, these firms could owe larger settlements to the IRS than the firm's tax reserves, resulting in a higher likelihood of unfavorable settlements in the

presence of the tax-related CAM. However, if managers have adequately reserved for uncertain tax positions, the settlements may be more likely to be favorable or may not be associated with the presence of a tax-related CAM report.

To examine this issue, we calculate two measures of settlement favorability and replace our dependent variables in Eqn. (1). First, following Robinson et al. (2016), we use an indicator variable denoting an unfavorable settlement, which is equal to one if actual settlements (i.e., the release of UTBs through settlements plus adjustments to prior year positions) exceed expected settlements (i.e., releases of UTBs through settlements) over the period *t+1* to *t+3*. Second, following Finley (2019), we define settlements as unfavorable when the residual from a regression of interest and penalties related to UTBs on factors unrelated to tax settlements is positive. Using these dependent variables, we fail to find a significant coefficient estimate on *PYUTBADDS*TAX_CAM* (both $p > 0.10$, untabulated), which suggests that the inclusion of the tax accounts in the CAM report is not associated with the favorability of future UTB settlements. Thus, firms with tax-related CAM reports do not appear to be under-reserved for uncertain tax positions relative to firms without tax-related CAM reports.

5.4 Alternative Specification Controlling for the Size of UTB Additions

In this section, we discuss an alternative method for controlling for the effect of the size of prior UTB additions within our analysis. It is possible that future tax settlements could be affected by the amount of tax reserves firms report and their prior settlement history. Thus, in our main analysis, we control for both the size of prior UTB additions using *PYUTBADDS* and the amount of prior settlements with the IRS using *PRIOR SETTLEMENTS*. We also find similar results using an entropy-balanced sample that further controls for the level of prior UTB additions and the amount of prior settlements. Here, we take an additional step to ensure that our results are not

affected by the size of the UTB reserve. Specifically, we rank firms within our sample on the level of prior UTB additions and split our sample into terciles. We then re-estimate Eqn. (1) separately for each subsample. We do not find any evidence to suggest that our main results are driven by a particular subsample of the level of prior UTB additions. Therefore, we conclude that the results that we document in Table 4 hold for firms regardless of the size of prior UTB additions. Thus, the signal that tax-related CAM reports provide about the likelihood and magnitude of future tax settlements does not appear to be impacted by the size of firms' prior UTB additions or the associated revenue audit procedures.

5.5 Alternative Specification for UTB Settlements

In our main analysis, we examine how UTB additions from the period 2017 – 2019 map into UTB settlements in 2020. The offsetting time periods for these variables approximates the timeline over which prior UTB additions are ultimately settled with the taxing authority. However, we acknowledge that that timeline is not uniform for all recorded UTBs across all firms. Therefore, we also extend the window over which the likelihood and magnitude of future settlements is measured to account for the time lag present in the audit/negotiation process. Specifically, we re-define our dependent variable to measure future UTB settlements one-, two-, and three-years after UTB additions (i.e., over the period 2020 – 2022), separately and in aggregate, to capture a wider range of settlement timing. Our inferences using these alternative variable definitions are similar to those that we obtain in our main analysis, suggesting that our inferences are not sensitive to accounting for additional lags in the timing of settlement.

VI. CONCLUSION

ASC 740 (FIN 48) requires firms to book UTBs for tax positions that are more likely than not to be challenged by revenue authorities; thus, the expectation was that this account would

convey information about the uncertainty of firm's tax positions. However, prior research documents inconsistent evidence regarding the information provided by the level of UTBs (e.g., Koester 2012; Lisowsky et al. 2013; Hanlon, Maydew, and Saavedra 2017; Dyreng et al. 2019). In this study, we investigate whether an additional tax-related disclosure provided by the independent auditor, a tax-related CAM report, improves the salience of reported UTBs and is associated with future tax settlements.

To examine this question, we investigate whether the presence of tax accounts in the CAM report is associated with an increased likelihood and magnitude of future tax settlements for a given level of prior UTB additions. Using a sample of firm-year observations from 2019, we provide evidence that the appearance of tax accounts in CAM reports is associated with a greater likelihood and magnitude of future UTB settlements. These results suggest that tax-related CAM reports provide an ex-ante signal to identify firms with more uncertain tax positions that are more likely to incur future tax settlements. Moreover, we demonstrate that APTS and hiring an auditor with tax expertise both mitigate this effect, likely due to knowledge spillover and an increased understanding of firms' tax planning.

This study makes several contributions to the literature and practice. First, this study contributes to the literature on ASC 740 and UTBs by demonstrating that the new tax-related CAM disclosure improves the salience of the UTB disclosure and provides more information about the underlying uncertainty of firms' tax positions. Second, we extend research that examines the value relevance of CAM reports. In contrast to prior work, we present evidence suggesting these reports are useful to external stakeholders as an ex ante signal about uncertain tax positions and future tax settlements, which may be informative to the PCAOB as it considers whether there were any unintended benefits of expanded audit disclosure. Moreover, CAM reports may be of use to tax

authorities as they determine how to allocate resources for audits. Finally, our study has practical implications for market participants because we provide evidence of an ex ante signal that identifies firms with a higher likelihood of future tax settlements, which suggests that these firms adopt more uncertain tax positions.

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APPENDIX A	
Variable Definitions	
VARIABLE	**DEFINITION**
SETTLEMENT_IND	= 1 for firms with a 2020 settlement with tax authorities, otherwise = 0. ($TXTUBSETTLE_{t+1}$ not missing or equal to zero)
SETTLEMENTS	2020 settlements with tax authorities scaled by beginning of year assets. ($TXTUBSETTLE_{t+1}/AT_t$)
PYUTBADDS	Sum of 2017-2019 increases in unrecognized tax benefits scaled by beginning of year assets. (($TXTUBPOSINC_t$+$TXTUBPOSINC_{t-1}$+$TXTUBPOSINC_{t-2}$)/AT_{t-1}))
TAX CAM	= 1 for firms with a 2019 Tax CAM, otherwise = 0.
PRIOR SETTLEMENTS	Sum of 2017-2019 settlements with tax authorities scaled by beginning of year assets. (($TXTUBSETTLE_t$+$TXTUBSETTLE_{t-1}$+$TXTUBSETTLE_{t-2}$)/AT_{t-1}))
GAAP ETR	Tax expense scaled by pretax income. (TXT_t/PI_t)
SIZE	Natural log of assets. (ln(AT_t)
PTROA	Pretax income scaled by beginning of year assets. (PI_t/AT_{t-1})
MULTINATIONAL	= 1 for firms with nonmissing non-U.S. income ($PIFO_t$) or non-U.S. taxes paid ($TXFO_t$), otherwise = 0.
FOREIGN INCOME	Non-U.S. pretax income scaled by beginning of year assets. ($PIFO_t/AT_{t-1}$)
NOL	= 1 for firms with nonmissing, positive tax loss carry forwards ($TLCF_t$>0), otherwise = 0.
CHANGE NOL	Change in tax tax loss carry forward scaled by beginning of year assets. ($TLCF_t/AT_{t-1}$)
MTB	Ratio of market value of equity to book value of equity. (($CSHO_t$x$PRCC_F_t$/)CEQ_t)
LEVERAGE	Total debt scaled by beginning of year assets. ((DLC_t+$DLTT_t$)/AT_{t-1})
R&D	Research and development expense (set to zero when missing) scaled by beginning of year assets. (XRD_t/AT_{t-1})
INTANGIBLES	Intangible assets (set to zero when missing) scaled by beginning of year assets. ($INTAN_t/AT_{t-1}$)
PPE	Total property, plant, and equipment scaled by beginning of year assets. ($PPENT_t/AT_{t-1}$)
CAPEX	Capital expenditures scaled by beginning of year assets. ($CAPX_t/AT_{t-1}$)
OPCYCLE	Natural log of the firm's operating cycle, calculated as (receivables x 365) scaled by sales plus (inventories x 365) scaled by cost of goods sold. ln(1+(((365x$RECT_t$)/$SALE_t$)+((365x$INVT_t$)/$COGS_t$)))
BIG4	= 1 for firms audited by the Big 4 (AU), otherwise = 0.
GOODWILL_CAM	= 1 for firms with a 2019 Goodwill CAM, otherwise = 0

TABLE 1
Sample Selection

This table provides the sample construction procedure for the full sample. The variables are constructed using data from the Compustat North America Annual and Audit Analytics databases from 2017 – 2020. Our final sample of observations are for fiscal year 2019 to examine how firm characteristics from 2017 – 2019 map into UTB settlements in 2020.

Compustat 2019 firm observations with UTB increases in t, t-1, and/or t-2	1,700
Require a match to Audit Analytics Data	(710)
Require non-missing observations for control variables	(287)
Final Sample	703

TABLE 2
Correlations

This table presents pairwise correlations. Bold print indicates a correlation is significant at at least the 10% level.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
(1) SETTLEMENTS_IND	1.00																			
(2) SETTLEMENTS	**0.19**	1.00																		
(3) PYUTBADDS	0.03	(0.03)	1.00																	
(4) TAX CAM	**0.11**	**0.12**	0.03	1.00																
(5) PRIOR SETTLEMENTS	**0.13**	**0.11**	0.01	**0.13**	1.00															
(6) GAAP ETR	(0.00)	0.03	0.03	(0.03)	(0.01)	1.00														
(7) SIZE	**0.29**	**0.41**	**(0.13)**	**0.23**	**0.11**	0.02	1.00													
(8) PTROA	0.03	**0.13**	**(0.10)**	**0.15**	0.02	(0.01)	**0.21**	1.00												
(9) MULTINATIONAL	**(0.06)**	(0.00)	0.03	(0.00)	0.01	0.01	(0.01)	**0.11**	1.00											
(10) FOREIGN INCOME	0.03	**0.16**	**(0.07)**	**0.26**	**0.10**	(0.02)	**0.19**	**0.48**	**0.07**	1.00										
(11) NOL	0.01	0.03	0.05	**0.09**	0.02	0.01	**0.08**	**(0.20)**	(0.04)	0.02	1.00									
(12) CHANGE NOL	(0.01)	**(0.07)**	**0.09**	(0.06)	0.01	0.00	**(0.16)**	**(0.43)**	(0.04)	**(0.18)**	0.03	1.00								
(13) MTB	0.01	0.05	(0.00)	(0.04)	(0.03)	(0.01)	(0.02)	0.03	(0.00)	0.04	**(0.07)**	0.00	1.00							
(14) LEVERAGE	(0.01)	(0.02)	**0.09**	(0.03)	(0.04)	(0.02)	0.01	0.05	0.05	(0.03)	(0.02)	0.04	**(0.09)**	1.00						
(15) R&D	0.02	**(0.20)**	**0.37**	**(0.13)**	(0.01)	(0.03)	**(0.44)**	**(0.41)**	(0.04)	**(0.21)**	**0.09**	**0.22**	**0.09**	(0.02)	1.00					
(16) INTANGIBLES	(0.02)	**0.12**	(0.05)	0.00	(0.01)	0.01	0.04	(0.00)	**0.09**	0.04	0.05	**0.12**	(0.04)	**0.29**	**(0.12)**	1.00				
(17) PPE	0.03	**(0.09)**	**(0.08)**	(0.06)	(0.05)	(0.02)	0.03	**0.09**	(0.01)	0.02	**(0.11)**	(0.04)	0.01	**0.25**	**(0.15)**	**(0.20)**	1.00			
(18) CAPEX	0.05	(0.05)	(0.04)	**(0.07)**	(0.02)	(0.01)	**(0.07)**	**0.07**	0.02	**0.07**	**(0.13)**	0.01	0.05	**0.12**	(0.02)	**(0.17)**	**0.69**	1.00		
(19) OPCYCLE	0.03	0.06	0.01	**0.07**	0.01	(0.02)	**0.11**	**(0.08)**	(0.00)	(0.02)	**0.07**	**0.08**	(0.02)	**(0.12)**	0.03	(0.05)	**(0.28)**	**(0.22)**	1.00	
(20) BIG4	0.03	0.05	0.02	0.00	0.02	0.01	**0.18**	0.02	(0.04)	0.02	0.04	0.00	(0.01)	**0.07**	(0.02)	(0.00)	0.03	**(0.07)**	(0.03)	1.00

TABLE 3
Descriptive Statistics

This table presents descriptive statistics for the variables used in the main analysis. All variables are defined in Appendix A.

	Mean	SD	P25	Median	P75
SETTLEMENTS_IND	0.398	0.490	0.000	0.000	1.000
SETTLEMENTS	9.344	59.557	0.000	0.000	1.063
PYUTBADDS	0.006	0.016	0.001	0.003	0.007
TAX CAM	0.242	0.428	0.000	0.000	0.000
PRIOR SETTLEMENTS	0.002	0.012	0.000	0.000	0.001
GAAP ETR	0.539	8.496	0.046	0.183	0.238
SIZE	8.218	1.613	7.076	8.067	9.226
PTROA	0.047	0.157	0.010	0.057	0.107
MULTINATIONAL	0.972	0.166	1.000	1.000	1.000
FOREIGN INCOME	0.024	0.057	0.000	0.011	0.042
NOL	0.939	0.240	1.000	1.000	1.000
CHANGE NOL	0.035	0.322	-0.006	0.000	0.012
MTB	4.141	19.042	1.921	3.233	6.357
LEVERAGE	0.380	0.346	0.160	0.324	0.495
R&D	0.063	0.109	0.000	0.016	0.080
INTANGIBLES	0.347	0.369	0.096	0.282	0.525
PPE	0.242	0.236	0.089	0.155	0.320
CAPEX	0.038	0.036	0.014	0.027	0.050
OPCYCLE	4.744	0.924	4.248	4.780	5.207
BIG4	0.946	0.226	1.000	1.000	1.000

TABLE 4
Tax CAMs and Future UTB Settlements

This table presents regression results from examining the impact of *TAX CAM* on the association between *PYUTBADDS* and our two UTB settlement variables, *SETTLEMENT_IND* and *SETTLEMENTS*. Column (1) presents the results of a logistic regression examining *SETTLEMENT_IND*. Column (2) presents the results of an OLS regression examining *SETTLEMENTS*. *T*-statistics are reported in parentheses, and symbols ***, **, and * denote *p*-value significance at the 1%, 5%, and 10% level, respectively.

	(1) *SETTLEMENT_IND*	(2) *SETTLEMENTS*
PYUTBADDS	0.4737	0.0003
	(0.396)	(0.104)
TAX CAM	-0.0540	0.0002
	(-1.073)	(1.466)
PYUTBADDS x TAX CAM	7.1065*	0.0157**
	(1.853)	(1.986)
PRIOR SETTLEMENTS	2.0735	0.0127***
	(1.420)	(4.213)
GAAP ETR	0.0005	0.0000
	(0.233)	(0.028)
SIZE	0.1227***	0.0001***
	(9.285)	(2.981)
PTROA	0.0153	0.0001
	(0.105)	(0.366)
MULTINATIONAL	-0.0796	-0.0010***
	(-0.733)	(-4.616)
FOREIGN INCOME	0.4274	-0.0005
	(1.190)	(-0.703)
NOL	0.0011	-0.0001
	(0.015)	(-0.519)
CHANGE NOL	-0.0047	-0.0000
	(-0.081)	(-0.215)
MTB	0.0016*	0.0000
	(1.804)	(1.312)
LEVERAGE	0.0010	-0.0000
	(0.017)	(-0.234)
R&D	0.0641	-0.0005
	(0.266)	(-1.031)
INTANGIBLES	0.0878	0.0001
	(1.636)	(0.665)
PPE	-0.2731**	0.0000
	(-2.195)	(0.146)
CAPEX	1.0806	0.0006
	(1.564)	(0.442)
OPCYCLE	-0.0030	-0.0000
	(-0.130)	(-0.582)
BIG4	-0.0343	-0.0001
	(-0.438)	(-0.699)
CONSTANT	-0.8733*	-0.0004
	(-1.871)	(-0.409)
Fixed Effects	FF49	FF49
Observations	703	703
Adjusted R^2	0.292	0.173

TABLE 5
Cross Sectional Split on APTS

This table presents the results from examining whether the effect of tax-related CAMs on future UTB settlements varies depending on whether the firm purchases APTS. Columns (1) and (2) display the results for the regressions of *SETTLEMENT_IND* for subsamples of firms that do not and do purchase APTS, respectively. Columns (3) and (4) present the results for the regressions of *SETTLEMENTS* for subsamples of firms that do not and do purchase APTS, respectively. *T*-statistics are reported in parentheses, and symbols ***, **, and * denote *p*-value significance at the 1%, 5%, and 10% level, respectively.

	(1)	(2)	(3)	(4)
	SETTLEMENT_IND	*SETTLEMENT_IND*	*SETTLEMENTS*	*SETTLEMENTS*
APTS	=0	>0	=0	>0
PYUTBADDS	0.3211	2.1982	0.0002	0.0015
	(0.256)	(0.760)	(0.082)	(0.258)
TAX CAM	-0.2256	-0.0667	-0.0015***	0.0001
	(-1.125)	(-1.187)	(-3.470)	(0.986)
PYUTBADDS x TAX CAM	43.2370*	5.3409	0.3378***	0.0067
	(1.920)	(1.125)	(7.037)	(0.712)
PRIOR SETTLEMENTS	121.8689***	1.8032	0.2384***	0.0125***
	(3.614)	(1.203)	(3.316)	(4.194)
GAAP ETR	-0.0093	0.0009	-0.0000	0.0000
	(-1.575)	(0.373)	(-0.836)	(0.004)
SIZE	0.0653*	0.1236***	-0.0000	0.0001***
	(1.762)	(8.091)	(-0.035)	(2.990)
PTROA	-0.1042	0.0195	0.0001	0.0001
	(-0.336)	(0.102)	(0.211)	(0.197)
MULTINATIONAL	0.0016	-0.1787	-0.0008*	-0.0013***
	(0.009)	(-1.281)	(-1.987)	(-4.710)
FOREIGN INCOME	0.2690	0.5932	-0.0004	-0.0003
	(0.458)	(1.294)	(-0.309)	(-0.350)
NOL	-0.0149	0.0033	0.0005	-0.0002
	(-0.060)	(0.037)	(0.906)	(-1.157)
CHANGE NOL	-0.1205	0.0043	-0.0001	-0.0000
	(-0.668)	(0.066)	(-0.321)	(-0.149)
MTB	0.0022	0.0019*	0.0000	0.0000
	(1.192)	(1.704)	(0.946)	(1.160)
LEVERAGE	-0.0487	0.0355	0.0001	-0.0001
	(-0.493)	(0.446)	(0.567)	(-0.445)
R&D	0.2122	-0.1779	-0.0002	-0.0011*
	(0.549)	(-0.529)	(-0.300)	(-1.680)
INTANGIBLES	0.0659	0.0739	0.0002	0.0001
	(0.343)	(1.219)	(0.431)	(0.459)
PPE	-0.2371	-0.2159	-0.0003	0.0002
	(-0.794)	(-1.475)	(-0.508)	(0.835)
CAPEX	0.6455	0.4040	0.0028	-0.0015
	(0.440)	(0.467)	(0.891)	(-0.854)
OPCYCLE	0.0168	-0.0004	0.0000	-0.0000
	(0.347)	(-0.014)	(0.297)	(-0.275)
BIG4	0.2449*	-0.1673	0.0005*	-0.0002
	(1.824)	(-1.448)	(1.857)	(-0.946)
CONSTANT	0.0168	-0.7702	-0.0000	-0.0003
	(0.030)	(-1.569)	(-0.033)	(-0.318)
Fixed Effects	FF49	FF49	FF49	FF49
Observations	135	568	135	568
Adjusted R^2	0.561	0.294	0.601	0.206

TABLE 6

Cross Sectional Split on Auditor Industry Expertise

This table presents the results from examining whether the effect of tax-related CAMs on future UTB settlements varies depending on whether the firm hires a tax expert auditor. Columns (1) and (2) display the results for the regressions of *SETTLEMENT_IND* for subsamples of firms that do not and do hire a tax expert auditor, respectively. Columns (3) and (4) present the results for the regressions of *SETTLEMENTS* for subsamples of firms that do not and do hire tax expert auditors, respectively. *T*-statistics are reported in parentheses, and symbols ***, **, and * denote *p*-value significance at the 1%, 5%, and 10% level, respectively.

	(1) *SETTLEMENT_IND* Non-Tax Expert	(2) *SETTLEMENT_IND* Tax Expert	(3) *SETTLEMENTS* Non-Tax Expert	(4) *SETTLEMENTS* Tax Expert
PYUTBADDS	-1.4435	0.6052	0.0006	0.0011
	(-0.356)	(0.461)	(0.077)	(0.383)
TAX CAM	-0.2341*	-0.0654	-0.0003	0.0001
	(-1.835)	(-1.066)	(-1.335)	(0.503)
PYUTBADDS x TAX CAM	36.2671**	4.4120	0.1242***	0.0142
	(2.524)	(0.882)	(4.432)	(1.360)
PRIOR SETTLEMENTS	29.1814**	1.8953	0.0727**	0.0125***
	(2.024)	(1.247)	(2.586)	(3.939)
GAAP ETR	-0.0029	0.0013	-0.0000	0.0000
	(-0.576)	(0.547)	(-0.235)	(0.093)
SIZE	0.1410***	0.1143***	0.0001	0.0001**
	(5.170)	(6.861)	(0.961)	(2.282)
PTROA	0.0562	-0.0031	0.0002	0.0000
	(0.181)	(-0.018)	(0.353)	(0.103)
MULTINATIONAL	0.0841	-0.1432	-0.0010**	-0.0012***
	(0.408)	(-1.017)	(-2.530)	(-4.235)
FOREIGN INCOME	0.1677	0.7544	-0.0008	-0.0004
	(0.301)	(1.515)	(-0.714)	(-0.416)
NOL	-0.1130	0.0156	0.0001	-0.0002
	(-0.846)	(0.153)	(0.349)	(-1.052)
CHANGE NOL	-0.0030	-0.0038	-0.0001	-0.0001
	(-0.017)	(-0.059)	(-0.324)	(-0.439)
MTB	0.0005	0.0021*	0.0000	0.0000
	(0.356)	(1.657)	(0.119)	(1.253)
LEVERAGE	-0.0403	0.0506	-0.0000	-0.0001
	(-0.497)	(0.549)	(-0.009)	(-0.453)
R&D	0.6644	-0.2906	0.0008	-0.0013**
	(1.600)	(-0.932)	(0.955)	(-2.047)
INTANGIBLES	0.0123	0.0748	-0.0000	0.0001
	(0.116)	(1.053)	(-0.020)	(0.570)
PPE	-0.2129	-0.2194	-0.0005	0.0004
	(-0.858)	(-1.386)	(-1.020)	(1.105)
CAPEX	0.2682	0.7440	0.0036	-0.0011
	(0.208)	(0.856)	(1.441)	(-0.602)
OPCYCLE	0.0049	-0.0138	-0.0000	0.0000
	(0.136)	(-0.444)	(-0.541)	(0.132)
BIG4	-0.0279	-0.0676	0.0000	-0.0003
	(-0.298)	(-0.362)	(0.248)	(-0.772)
CONSTANT	-0.1624	-0.7609	0.0008	-0.0003
	(-0.410)	(-1.433)	(1.030)	(-0.260)
Fixed Effects	FF49	FF49	FF49	FF49
Observations	214	489	214	489
Adjusted R^2	0.443	0.304	0.360	0.212

TABLE 7
Entropy Balancing

This table presents regression results from examining the impact of *TAX CAM* on the association between *UTB* and our two UTB settlement variables, *SETTLEMENT_IND* and *SETTLEMENTS*, using an entropy balanced sample. Column (1) presents the results of a logistic regression examining *SETTLEMENT_IND*. Column (2) presents the results of an OLS regression examining *SETTLEMENTS*. *T*-statistics are reported in parentheses, and symbols ***, **, and * denote *p*-value significance at the 1%, 5%, and 10% level, respectively.

	(1) *SETTLEMENT_IND*	(2) *SETTLEMENTS*
PYUTBADDS	1.0961	-0.0040
	(0.957)	(-1.215)
TAX CAM	-0.0734	0.0000
	(-1.598)	(0.323)
PYUTBADDS x TAX CAM	5.3064*	0.0240*
	(1.721)	(1.688)
PRIOR SETTLEMENTS	1.7517**	0.0135***
	(2.158)	(8.677)
GAAP ETR	-0.0046	-0.0000
	(-0.735)	(-0.938)
SIZE	0.1424***	0.0001*
	(11.685)	(1.835)
PTROA	-0.1324	-0.0004
	(-0.728)	(-0.844)
MULTINATIONAL	-0.2390*	-0.0011*
	(-1.872)	(-1.881)
FOREIGN INCOME	0.6927	-0.0022
	(1.574)	(-1.079)
NOL	0.0945	0.0001
	(1.006)	(0.224)
CHANGE NOL	-0.0135	-0.0001
	(-0.143)	(-0.371)
MTB	0.0016***	0.0000
	(2.927)	(1.020)
LEVERAGE	0.0658	0.0002
	(0.750)	(0.794)
R&D	0.1039	0.0018
	(0.221)	(0.987)
INTANGIBLES	0.1953***	0.0000
	(2.597)	(0.111)
PPE	-0.0932	0.0002
	(-0.460)	(0.334)
CAPEX	0.5753	-0.0019
	(0.530)	(-0.533)
OPCYCLE	-0.0186	-0.0001**
	(-0.681)	(-2.271)
BIG4	-0.0840	-0.0002
	(-0.962)	(-1.203)
CONSTANT	-1.1020***	0.0000
	(-5.611)	(0.027)
Fixed Effects?	FF49	FF49
Observations	703	703
Adjusted R^2	0.389	0.279

TABLE 8

Panel A - Placebo Test

This table presents the results for the regression examining the impact of *PLACEBO* and *GOODWILL_CAM* on the association between *UTB* and our two UTB settlement variables, *SETTLEMENT_IND* and *SETTLEMENTS*. Columns (1) and (2) present the results for *SETTLEMENT_IND* and *SETTLEMENTS*, respectively. Panel A presents results for *PLACEBO*, which is equal to one for the randomized placebo variable. *PLACEBO* is distributed randomly within the sample for the same percentage of the sample as *TAX CAM*. Panel B presents results for variable of interest *GOODWILL_CAM*, which is equal to one if Goodwill appears in the initial CAM report. *T*-statistics are reported in parentheses, and symbols ***, **, and * denote *p*-value significance at the 1%, 5%, and 10% level, respectively.

	(1) *SETTLEMENT_IND*	(2) *SETTLEMENTS*
PYUTBADDS	0.0002	0.3968
	(0.121)	(0.316)
PLACEBO	-0.0000	-0.0511
	(-0.257)	(-0.975)
PYUTBADDS x PLACEBO	0.0018	-0.8562
	(0.312)	(-0.229)
PRIOR SETTLEMENTS	0.0753***	29.7768***
	(5.461)	(3.376)
GAAP ETR	0.0000	0.0007
	(0.074)	(0.327)
SIZE	0.0000*	0.0955***
	(1.733)	(5.841)
PTROA	0.0001	0.0232
	(0.392)	(0.144)
MULTINATIONAL	-0.0008***	-0.0081
	(-4.083)	(-0.064)
FOREIGN INCOME	0.0005	0.5111
	(0.727)	(1.209)
NOL	-0.0002	-0.0172
	(-1.281)	(-0.209)
CHANGE NOL	-0.0001	-0.0356
	(-0.607)	(-0.583)
MTB	0.0000**	0.0018
	(1.983)	(1.507)
LEVERAGE	-0.0001	-0.0227
	(-0.638)	(-0.357)
R&D	-0.0005	0.1160
	(-1.173)	(0.408)
INTANGIBLES	0.0000	0.0653
	(0.389)	(1.135)
PPE	0.0002	-0.2605*
	(1.136)	(-1.921)
CAPEX	-0.0008	0.6585
	(-0.627)	(0.854)
OPCYCLE	0.0000	0.0017
	(0.066)	(0.069)
BIG4	0.0000	-0.0067
	(0.075)	(-0.073)
CONSTANT	-0.0003	-0.6647
	(-0.401)	(-1.380)
Fixed Effects	FF49	FF49
Observations	533	533
Adjusted R^2	0.178	0.276

TABLE 8 (continued)

Panel B – Non-Tax-Related CAM Test

	(1) *SETTLEMENT_IND*	(2) *SETTLEMENTS*
PYUTBADDS	0.0021	0.9665
	(0.872)	(1.068)
GOODWILL_CAM	0.0000	0.0321
	(0.163)	(0.630)
PYUTBADDS x GOODWILL_CAM	0.0011	3.1798
	(0.111)	(0.877)
PRIOR SETTLEMENTS	0.0136***	2.1640*
	(4.471)	(1.718)
GAAP ETR	-0.0000	0.0002
	(-0.157)	(0.160)
SIZE	0.0001***	0.1239***
	(3.787)	(10.066)
PTROA	0.0001	0.0415
	(0.480)	(0.347)
MULTINATIONAL	-0.0011***	-0.0895
	(-4.686)	(-0.945)
FOREIGN INCOME	-0.0001	0.4490
	(-0.191)	(1.468)
NOL	-0.0001	-0.0039
	(-0.469)	(-0.046)
CHANGE NOL	-0.0000	0.0015
	(-0.110)	(0.040)
MTB	0.0000	0.0016***
	(1.191)	(2.633)
LEVERAGE	-0.0000	-0.0094
	(-0.373)	(-0.192)
R&D	-0.0006	0.0949
	(-1.154)	(0.469)
INTANGIBLES	0.0001	0.0894**
	(0.694)	(2.075)
PPE	0.0000	-0.2588**
	(0.167)	(-2.244)
CAPEX	0.0004	1.1217
	(0.290)	(1.525)
OPCYCLE	-0.0000	-0.0063
	(-0.666)	(-0.313)
BIG4	-0.0001	-0.0315
	(-0.780)	(-0.397)
CONSTANT	-0.0005	-0.8737***
	(-0.546)	(-5.345)
Fixed Effects	FF49	FF49
Observations	533	533
Adjusted R^2	0.178	0.276