# THE IMPORTANCE OF TOPICAL CONTENT IN UNDERSTANDING EXPANDED AUDIT REPORTING: EVIDENCE FROM TAX-RELATED KEY AUDIT MATTERS

Dan Lynch*
University of Wisconsin – Madison
daniel.lynch@wisc.edu

Aaron Mandell
University of Wisconsin – Milwaukee
amandell@uwm.edu

Linette M. Rousseau
University of Wisconsin – Madison
lmrousseau@wisc.edu

January 2021

## ABSTRACT

This study examines determinants and consequences of auditors' tax-related key audit matter (KAM) disclosures. We argue that to investigate whether KAMs provide information and affect firm behavior it is important to examine determinants and consequences that map into the specific topic of the KAM. Tax KAMs provide an excellent setting for such investigation because tax expense is material to most firms' financial statements, there is substantial risk associated with the tax function, and tax KAMs are prevalent and discuss a diverse range of issues. Consistent with tax complexity increasing the difficulty of auditing tax expense, we find that firms with greater tax avoidance, more volatile effective tax rates (ETRs), and larger deferred tax asset (DTA) balances with greater estimation uncertainty (market discounting) are more likely to receive tax-related KAMs. With respect to the consequences of tax KAMs, we find that firms that stop receiving tax KAMs increase their future purchases of auditor-provided tax services, consistent with economic bond incentives threatening auditor independence. We find that, in general, firms do not change their tax avoidance in response to receiving tax KAMs, but that firms that stop receiving tax KAMs increase their tax avoidance in subsequent years. Overall, we provide evidence that tax KAMs contain information about the tax activities of the firm and that firms and auditors significantly change their behavior in response to tax-related KAMs.

# I.    INTRODUCTION

This study investigates the determinants and consequences of auditors' disclosure of tax-related key audit matters (KAMs). KAMs are audit report disclosures in which the auditor describes the most challenging audit issues and how the auditor addressed them. KAMs relate to significant risks, transactions, events, and/or estimates and are intended to provide engagement-specific information to enhance the decision usefulness of audit reports over the traditional pass/fail audit opinion (IAASB ISA 701). The UK implemented KAM disclosure requirements in 2013, and the PCAOB adopted similar critical audit matter (CAM) standards in 2019.[1] Despite the intention of KAM standards, there is widespread doubt that KAMs contain information incremental to firms' existing annual report disclosures (Bochkay, Chychyla, George, Minutti-Meza, and Schroeder 2020; Minutti-Meza 2020), and a body of archival evidence indicating that the adoption of KAM reporting regimes did not affect audit outcomes or investor decision making (Bédard, Gonthier-Besacier, and Schatt 2019; Gutierrez, Minutti-Meza, Tatum, and Vulcheva 2018; Liao, Minutti-Meza, Zhang, and Zou 2019). However, much of this prior literature treats all KAMs the same without exploring differential effects across topical areas. We argue that to investigate if KAMs reflect specific firm characteristics and affect firm behavior, it is important to examine determinants and consequences that map into the specific KAM topics. We contribute to this debate by examining the tax-related determinants and consequences of tax KAMs.

Tax KAMs provide an excellent setting to examine whether KAM disclosures contain information and affect firm behavior because tax KAMs are prevalent, tax expense is material to most firms' financial statements, there is substantial risk associated with the tax function, and tax KAMs discuss a diverse range of issues. Taxes are among the most common types of KAMs,

---

[1] PCAOB Critical Audit Matter (CAM) standards are similar to IAASB KAMs. For clarity and because we use European data, we use the acronym KAMs throughout this paper.

accounting for 43% of KAMs issued for FTSE 350 firms (FRC 2016b). The risk and subjectivity inherent in accounting for income tax (Bauer 2016; Kumar and Visvanathan 2003) and the proprietary and political costs associated with tax-related disclosures drawing scrutiny from regulators and the public (Dyreng, Hoopes, Langetieg, and Wilde 2020; Dyreng, Hoopes, and Wilde 2016; Deng, Gaertner, Lynch, and Steele 2020) provide auditors and managers ample incentive to modify their behaviors in response to tax KAM reporting *if* they believe tax KAMs are meaningful to audit report users. This incentive environment, combined with the diversity of tax issues tax KAMs address and our ability to observe tax complexity measures and auditor-provided tax service engagements, allows us to investigate the effect of KAM reporting in a manner tightly-mapped to the content of the KAMs.

To understand whether tax KAMs contain information about firms' tax activities, we focus our determinants analyses on the tax complexity of the firm. Prior research suggests that the complex nature of tax planning strategies, such as income-shifting to tax havens, increase organizational and financial reporting complexity (Blouin and Krull 2018; Balakrishnan, Blouin, and Guay 2019; Frank, Lynch, and Rego 2009). We predict that this increase in financial reporting complexity makes the tax function more difficult to audit, increasing the likelihood that the auditor discloses a tax KAM. We also examine deferred tax assets (DTAs) as a measure of the estimation uncertainty the auditor faces in the tax account. DTAs are future deductible amounts that are not realized unless the firm is able to generate sufficient future taxable income. This leads to significant subjectivity and uncertainty in the valuation of DTAs (Edwards 2016). To understand whether tax KAMs reflect uncertainty in the realizability DTAs, we examine the size and market valuation of deferred tax assets (DTAs) as a determinant of tax KAMs.

We investigate the consequences of tax KAM disclosure to firms' future behavior along two dimensions: the firms' future relationship with the auditor that issued the tax KAM and changes in the tax avoidance of the firm. We examine consequences to the auditor-client relationship by investigating changes in auditor-provided tax services (APTS). Prior literature finds that KAMs decrease investment intentions (Christensen et al. 2014; Dennis et al. 2019) and that tax-related disclosures impose proprietary and political costs (Robinson and Schmidt 2013; Wilde and Wilson 2018), suggesting incentives for management to avoid receiving, or to attempt to resolve, tax KAMs to the extent possible. We predict that increasing APTS purchases enhances firms' ability to resolve (stop receiving) tax KAMs, either through enhanced auditor knowledge of the tax accounts (knowledge spillovers) or by reducing auditor independence. We test these competing possibilities by examining the timing of the APTS increase relative to the resolution of the tax KAM. We further predict that firms that are unable to resolve (start or continue to receive) tax KAMs decrease their purchases of APTS, consistent with the presence of a KAM reporting regime chilling relations between the auditor and management (Cade and Hodge 2014; Gay and Ng 2015).

We also investigate whether firms modify their tax avoidance in response to tax KAMs. Tax-related disclosure can impose proprietary and political costs by revealing firms' tax strategies to tax authorities, competitors, and the public (Scholes et al. 2014; Osswald 2020; Verrecchia 1983). Existing literature finds that firms respond to these proprietary costs by reducing their tax avoidance following negative tax-related disclosures (Deng et al. 2020; Graham et al. 2014; Dyreng et al. 2016). Conversely, if tax KAMs prompt firms to invest to improve the quality of the tax function, such investments can result in increased tax avoidance (Bauer 2016; Mills, Erickson,

and Maydew 1998). Finally, firms may delay increases in tax avoidance until the tax KAM is resolved due to potential proprietary/political costs of tax KAMs.

To perform our analyses, we use a sample of 4,321 firm-year observations from firms traded on the London Stock Exchange from 2013-2019; 659 of these observations (15%) disclose a tax KAM. We use the UK setting because their early adoption of KAM reporting provides the time-series data required to investigate the determinants and consequences of tax KAMs, in contrast to the one and a half years of data available since the June 2019 adoption of CAM reporting in the U.S.[2] Further, selecting an English-speaking setting allows us to manually review the tax KAMs and hand-code them based on the specific tax issues they address. This allows us to better identify the extent to which tax KAMs provide information about firms' specific tax activities and to overcome errors in Audit Analytics' classification scheme.

We measure firms' tax complexity along the dimensions of tax avoidance, tax risk, DTA size, and tax haven use. We find that tax complexity is positively associated with tax KAM disclosure. Specifically, firms with lower and more volatile book ETRs, larger DTAs, and which are incorporated in tax havens are more likely to receive a tax KAM. Our results imply that moving from the 25th to 75th percentile of one-year book ETR increases the probability of receiving a tax KAM by roughly two percentage points (from 15.3 percent to 17.4 percent, a 14 percent proportional increase). In our investigation of the extent to which tax KAMs reflect estimation uncertainty about the realizability of DTAs, we find that the market discounts DTAs for tax KAM firms, consistent with the KAM reflecting information investors impound. Collectively, these results suggest that it is more challenging for auditors to gain assurance over tax expense for firms with greater tax complexity and uncertainty, resulting in a greater incidence of tax KAMs.

---

[2] The COVID-19 pandemic could potentially confound any results in the U.S. setting if data were available.

To examine whether tax KAMs reflect specific attributes of firms' tax activities, we separately examine the specific issues cited in each tax KAM. Our hand collection efforts yield four primary and non-mutually exclusive reasons for tax KAMs: 1) uncertain tax positions (74%); 2) deferred tax assets (36%); 3) multijurisdictional complexity (54%); and 4) other (4%). Among our tax-related variables of interest, we find that firms' tax avoidance (lower ETR) is the strongest predictor of receiving an uncertain tax position KAM. We find that higher ETR volatility and larger deferred tax asset balances are positively associated with receiving KAMs related to deferred tax assets. Finally, firms receiving tax KAMs related to multijurisdictional complexity are more likely to locate their headquarters in a tax haven country. Together, these results illustrate that tax KAMs contain specific information about firms' tax activities.

In our consequences analyses, we find that firms that resolve (stop receiving) tax KAMs have no significant change in APTS in the year the tax KAM is resolved, but increase their purchases of APTS by 18 percent the following year. This timing suggests that the economic incentive to earn future APTS fees introduces a self-interest threat to the auditor's independence. This timing is not consistent with APTS resolving tax KAMs through quality-increasing knowledge spillovers or self-review threats to the auditors' independence because the APTS engagement does not begin until *after* the tax KAM is already resolved. We also find that firms that do not resolve their tax KAMs decrease their APTS fees by about six percent, consistent with the client economically punishing the auditor for issuing the tax KAM.

We find no significant changes in firms' tax avoidance in the years in which they start, continue to receive, or resolve tax KAMs. This suggests that, on average, firms do not decrease their tax avoidance in response to tax KAMs. However, we find that firms increase their tax avoidance (decrease ETRs) by about seven percent the year *after* resolving a tax KAM, which may

suggest that firms wait to pursue more aggressive tax avoidance strategies until they can avoid potential scrutiny accompanying the KAM (i.e., proprietary/political costs). Collectively, our consequences results show that tax KAMs prompt changes in firm behavior with respect to APTS purchases and tax avoidance.

Our study makes numerous contributions to research and practice. First, our results will be of interest to policymakers as they evaluate the effectiveness of expanded audit reporting requirements. We reveal that a potential unintended consequence of KAM reporting is to increase firms' demand for auditor-provided advisory services in a manner detrimental to auditor independence. The potential of non-audit service (NAS) fees to impair auditor independence is an area of renewed concern for regulators and other stakeholders in the UK and the US (FRC 2019; Rapoport 2018). While many studies conducted in the wake of Sarbanes-Oxley suggested that NAS do not impair audit quality (Ashbaugh, LaFond, and Mayhew 2003; Chung and Kallpur 2003; Defond, Raghunandan, and Subramanyam 2002; Reynolds, Deis and Francis 2004), more recent research suggests that the revival of large advisory practices in audit firms impedes audit independence and quality (Carcello et al. 2020; Blay and Geiger 2013; Causholli, Chambers, and Payne 2014). We extend this literature by documenting how one of the few NAS still permitted for audit clients – APTS – affects auditor independence in KAM disclosures.

Second, we contribute to the literature on whether KAMs contain information and affect firm behavior by examining a specific type of KAM and the information within those KAMs. Existing studies reach contradictory conclusions about whether the adoption of KAM reporting regimes affect market and audit outcomes (Bédard et al. 2019; Gutierrez et al. 2018; Liao et al. 2019; Lennox, Schmidt, and Thompson 2019; Reid, Carcello, Li, Neal, and Francis 2019; Goh, Li, and Wang 2020). Our study illustrates that the institutional setting relevant to investigating the

effects of KAM reporting varies in the subject-matter of the KAM. We also demonstrate the importance of using variables that are tightly mapped to the subject area of the KAM in making valid inferences about whether KAMs affect firms, their auditors, and their audit report users. This answers the call in Minutti-Meza (2020 p.42) for research "determining whether common KAMs and CAMs topics have unique effects on complex aspects of financial reporting."

Third, we extend the limited concurrent research that examines KAM disclosures by topical areas. We find that tax-related KAMs are associated with the market's valuation of deferred tax assets and prompt real changes in managers' and auditors' actions, furthering existing literature that documents changes in managers' financial reporting and disclosure for KAM-related accounts (Andreicovici, Jeny, and Lui 2020; Drake, Goldman, Lusch, and Schmidt 2020). Our determinants analysis reveals that tax complexity significantly predicts tax KAMs, even after controlling for the materiality of tax expense, which prior literature suggests is a primary determinant of K/CAMs (Burke, Hoitash, Hoitash, and Xiao 2020).

Fourth, we extend the literature on the proprietary and political costs of tax-related disclosure to the KAM setting. In contrast to prior studies indicating that managers decrease tax avoidance after negative tax-related disclosures such as internal control material weaknesses, SEC comment letters, or public criticism (Bauer 2016; Kubick, Lynch, Mayberry, and Omer 2016; Dyreng et al. 2016; Lee, Ng, Shevlin, and Venkat 2020), we find no decrease in tax avoidance in response to tax KAMs. However, we find that firms increase their tax avoidance *after* resolving tax KAMs, suggesting firms may be delaying aggressive tax avoidance until the proprietary costs associated with the KAM are no longer present.

## II.    LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

**Institutional Setting**

KAMs are audit report disclosures where the auditor describes the most significant issues they encountered in the audit and how the auditor addressed them (IAASB ISA 701-8). KAMs typically relate to significant risks, transactions, events, and/or estimates (IAASB ISA 701-9). [3] James Gunn, Managing Director of Professional Standards for the IAASB, summarizes the purpose of KAM reporting model as to: "enable auditors to be as entity-specific and audit-specific as possible in describing each KAM so that they continue to be relevant and useful to investors and other users," as opposed to the former audit reporting model in which the auditor used standardized language to convey a pass/fail opinion. KAMs are designed to increase the informativeness of the audit opinion to users, but do not change or disclaim the auditor's overall pass/fail opinion on the financial statements. The Financial Reporting Council (FRC) regulates auditors in the UK and began requiring auditors to report KAM-like risk of material misstatement (RMM) disclosures in 2013 and revised those disclosures for greater conformity with IAASB KAM standards in 2017. Almost all firms trading on the London Stock Exchange receive at least one KAM, with the average audit opinion containing three KAMs.

There is a significant literature on the effects of KAMs on various investor and audit outcomes. These papers investigate whether the adoption of KAM reporting regimes affects investor decision making, financial reporting quality, audit quality, audit fees, and audit report delay. The results are mixed. Bédard et al. (2019), Gutierrez et al. (2018), Liao et al. (2019), and Burke et al. (2020) find that KAM reporting regimes in France, the UK, China/ Hong Kong, and the U.S., respectively, do not affect investors' market activity, audit quality, or audit pricing.

---

[3] See Appendix A for an example of a KAM from PwC's 2017 audit report for GlaxoSmithKline.

Conversely, other studies using UK data find that KAM reporting prompts stock market reactions over long windows (Lennox et al. 2019), affects loan contracting (Porumb et al. 2019), and improves financial reporting quality without affecting audit fees or report delay (Reid et al. 2019). Similarly, Goh et al. (2020) and Zhou (2019) find that KAM reporting in China and Hong Kong prompts investor reactions and higher cost of capital, respectively.

One possible reason for this mixed evidence is that prior work tends to treat all KAMs the same regardless of the specific issue a KAM cites. We argue that the effect of the KAM reporting regime will vary in the topical content of KAMs, and that in order to explore if KAMs provide information and affect managers and users it is important to identify variables that map directly into the topical content of the KAM. We choose to examine tax related KAMs both because they are important in their own right, and because they provide a powerful setting in which to gain a more granular understanding of the KAM reporting regime. Tax expense is a material and complex account to audit, and tax issues are primary drivers of restatements and internal control weaknesses due to the complexity and subjectivity inherent in calculating tax expense (Bauer 2016). Due to this complexity and related risk, it is unsurprising that taxes are among the most prevalent KAM topics, accounting for 43% of KAMs issued for FTSE 350 firms (FRC 2016b).

There is limited concurrent research that examines KAMs by topical area. Rousseau and Zehms (2020) use a fixed-effects approach to document the unique styles of UK audit partners in KAM reporting topical diversity, and show that those styles are associated with partners' ability to command audit fee premia. Andreicovici et al. (2020) find that firms receiving goodwill-related KAMs expand management's disclosures around goodwill risks and make more timely goodwill impairments the next year. Burke et al. (2020) use a generalized determinants model to examine the predictors of various topics of US CAMs, and generally find that the materiality of CAM-

related financial statement line items and the receipt of CAM topic-related SEC comment letters are the most important CAM determinants. Drake et al. (2020) find that firms receiving a tax CAM are less likely to manage earnings via tax expense, but do not examine tax CAM determinants or consequences to firms' tax avoidance or relationships with their auditors.

**Determinants of Tax-Related KAMs**

To understand whether tax KAMs are associated with firms' tax complexity, we examine the association between the tax attributes of the firm and the likelihood of receiving a tax-related KAM. Research suggests auditing tax expense for firms that engage in more tax avoidance will be more difficult due to the increased financial reporting complexity, decreased information quality, and more complex organizational structures associated with tax planning (Blouin and Krull 2018; Osswald 2020; Chen et al. 2018; Balakrishnan et al. 2019). We proxy for tax complexity of the firm using the tax avoidance, tax risk, and level of deferred tax assets of the firm. Tax avoidance and tax risk capture the tax planning activities of the firm. Deferred tax assets capture the complexity of the tax provision. Deferred taxes are one of the most complicated areas of accounting in general with deferred tax provision issues cited as leading causes of tax-related restatements, ICWs and SEC comment letters (Bauer 2016; Kubick et al. 2015). We expect that the increased financial reporting complexity and decreased transparency resulting from risky tax planning and the presence of large DTAs makes it more difficult for auditors to provide assurance over income tax expense and therefore propose the following hypothesis:

**H1a:** *Tax complexity is positively associated with the disclosure of tax-related key audit matters.*

We may fail to find support for H1a if tax KAMs arise from issues other than tax complexity. Specifically, the auditor could judge income tax expense as significant to the audit based on its materiality relative to financial statement income. That is, the auditor may disclose a

tax KAM simply because tax expense is large relative to other expenses or to the overall size/income of the issuer. Burke et al. (2020) generally support this notion, finding in the U.S. setting that specific types of CAMs are positively associated with the magnitude of the relevant financial statement accounts. In this case, firms with a *higher* effective tax rate (less tax avoidance) could be more likely to receive a tax KAM as they report larger tax expense amounts.

Further, it is possible that it may be *easier* for auditors to provide assurance over tax expense for firms that engage in more aggressive tax planning because of the high level of internal information quality and tax-related internal control required to successfully tax plan (Gallemore and Labro 2015; Bauer 2016). The quality of the client's financial reporting system is a key input to the auditor's ability to provide high-quality assurance (DeFond and Zhang 2014). Hogan and Wilkins (2008) find that auditors charge higher fees when internal information quality is low, consistent with the audit being riskier, more complex, and requiring greater effort. If high tax complexity firms provide better information about their tax activities to the auditor, then auditing income tax may require less auditor subjectivity and professional judgment, resulting in a lower likelihood of receiving a tax-related KAM. See Figure 1, Panel A for a conceptual framework describing the competing possibilities for the determinants of tax KAMs.

We also investigate if tax KAMs are associated with audit report users' perceptions of firm tax attributes by studying the market valuation of deferred tax assets. DTAs are future tax deductions arising from current period book-tax differences where book income exceeds taxable income. The most common source of DTAs is net operating loss carryovers and, in general, the stock market positively values deferred tax assets consistent with their expected future value to the firm (Guenther and Sansing 2000). However, firms' ability to realize these future tax deductions is contingent upon their ability to generate future taxable income. Therefore, if it is uncertain

whether the firm will generate taxable income in the (near) future to effectively use these tax deductions, the stock market will discount DTAs (Guenther and Sansing 2000; Laux 2013).

Tax KAMs could reflect this uncertainty in the realizability of DTAs by revealing the nature and extent of complex estimates examined by the auditor in gaining assurance over the DTA balance. For example, many tax KAMs use language to the effect that the estimation uncertainty inherent in valuing tax accounts means that tax balances have: "a potential range of reasonable outcomes greater than our materiality for the financial statements as a whole" (KPMG 2018 p.69). If the auditor's decision to issue tax KAMs reflects uncertainty in the realizability of DTAs we expect that DTAs for tax KAM firms will be discounted by the market. We therefore predict:

> **H1b:** *The presence of a tax KAM negatively moderates the association between deferred tax assets and firm value.*

We will fail to find support for H1b if the auditors' decision to issue a tax KAM does not take into consideration estimation uncertainty in its realizability. Namely, if the inputs to the auditors' KAM decisions are divorced from the information the market finds relevant when evaluating firms' tax accounts, we will not observe market discounting of DTAs for tax KAM firms. See Figure 1, Panel B for a conceptual framework describing the potential association between market valuation of DTAs and tax KAMs.

**Consequences of Tax-Related KAMs**

The consequences of tax KAMs to firm behavior will depend on management's perception of how audit report users will respond to the tax KAM disclosure. Ex ante, it is unclear that management will expect KAMs to effect users' perceptions, as KAMs are not intended to communicate original information about the firm. Instead, the purpose of KAMs is to provide additional detail about the auditor's work on financial matters that management has *already* disclosed in the financial statements (FRC ISA 701 A34). Accordingly, existing archival research

finds no significant investor (stock market) reaction to KAM disclosure (Bédard et al. 2019; Gutierrez et al. 2018; Liao et al. 2019; Burke et al. 2020), and stakeholders criticize KAM reporting as redundant to management's disclosures (Bochkay et al. 2020). However, experimental evidence suggests that auditor's second-order discussions of the original information in management disclosures can affect investor judgments by emphasizing estimation uncertainty (Dennis, Griffin, and Johnstone 2018; Kelton and Montague 2018; Christensen, Glover, and Wolfe 2014). Related literature finds that KAM disclosures increase participant perceptions of financial reporting risk and decrease their investment intentions (Christensen et al. 2014; Kipp and Gaynor 2020; Rapley, Robertson, and Smith 2019; Ozlanski 2019; Dennis et al. 2018). This suggests there are management incentives to receive as few KAMs as possible and to potentially resolve existing KAMs.

In addition to the potential for negative market consequences, the proprietary and political costs of tax KAMs provide managers with incentives to resolve the underlying issues that give rise to the tax KAM (Kubick et al. 2016; Scholes et al. 2014). We define proprietary costs as the costs associated with disclosing private information which may be useful to regulators, competitors, or other stakeholders "in a way which is harmful to a firm's prospects" (Verrecchia 1983, 181). Tax-related KAMs could impose proprietary costs by exposing the challenges the auditor faces in gaining comfort over the client's tax accounting to tax authorities or by emphasizing uncertainty in the potential outcomes of material ongoing tax audits. Prior literature suggests tax authorities and competitors react to firms' tax-related financial statement disclosures (Kubick et al. 2016; Bozanic, Hoopes, Thornock, Williams 2017), and that firms adjust their behavior in response to proprietary disclosure costs (Deng et al. 2020; Robinson and Schmidt 2013).

Firms can also face significant political costs when determining their optimal tax avoidance level (Scholes et al. 2014; Wilde and Wilson 2018). Political costs of tax avoidance arise in our setting from the potential for tax KAMs to draw the attention of politicians, employees, and the public to aggressive tax avoidance strategies. For example, in 2013 Starbucks, Google, and Amazon were accused of not paying their "fair share" of taxes in the U.K. (Barford and Holt 2013). In response to the political backlash, Starbucks voluntarily paid 20 million pounds in corporate income tax. Consistent with this theory and with anecdotal evidence, prior archival work finds a negative association between firm size and tax avoidance (Zimmerman 1983; Omer, Molloy, and Ziebart 1993). Furthermore, recent survey work finds that executives are aware of and react to political costs when making tax avoidance decisions (Graham et al. 2014). Descriptive evidence from audit partners (Griffith, Rousseau, and Zehms 2020) suggests that these costs are a concern in the tax KAMs setting, with one partner saying "my biggest fear is that people are making inaccurate assumptions that causes some sort of reputational damage to the company ... that someone could read into that [tax KAM] and say … 'they're not a good tax paying citizen.'"

### *Consequences of Tax-Related KAMs to the Auditor-Client Relationship*

The proprietary and political costs of tax-related disclosure could create incentives for managers to (1) invest in additional tax services in the hopes of resolving the tax KAM, (2) economically punish the auditor that issued the tax KAM, and/or (3) reduce tax complexity. We therefore investigate the consequences of tax KAMs to management's future relationship with the auditor that issued the KAM; we measure this relationship by observing purchases of auditor-provided tax services (APTS).[4] Prior literature suggests two potential avenues whereby firms could

---

[4] FRC standards during our sample period of 2013-2019 permit audit firms to provide tax-related services including advice on specific issues, tax planning, compliance, and structures subject to certain limitations and safeguards designed to preserve auditor independence (FRC 2016c 5.79-5.102). We note that the FRC's 2019 Revised Ethical Standard effective March 15th, 2020, reduces the scope of permitted auditor-provided tax services.

resolve tax KAMs through APTS. First, APTS could create knowledge spillovers that reduce the complexity of auditing the tax account "by accelerating audit firm awareness of transactions material to the financial statements" (De Simone et al. 2015, 1472). Consistent with APTS creating quality-increasing audit efficiencies, existing research shows that APTS are negatively associated with internal control material weaknesses disclosures (De Simone et al. 2015), restatements (Kinney et al. 2004; Paterson and Valencia 2011), and earnings management (Gleason and Mills 2011), and are positively associated with accurate going concern opinion reporting (Robinson 2008) and with the use of more effective audit procedures (Joe and Vandervelde 2007).

Conversely, APTS purchases could resolve tax KAMs by compromising the auditor's independence via self-interest and self-review bias (Sun and Habib 2020). The fees from current and possible future APTS engagements create an economic bond between the auditor and the client that incentivizes the auditor to acquiesce to the client's preferred reporting. Accordingly, prior literature finds that non-audit service fees are associated with lower actual and perceived audit quality (Alsadoun et al. 2018; Causholli et al. 2014; Srinidhi and Gul 2007). Additionally, given the close relation between tax planning and accounting for income tax provision, APTS can introduce self-review bias by obliging the auditor to audit work performed by members of its own firm. The auditor may be less willing to issue a KAM stating that tax activities their firm advised on are especially risky, complex, and subjective. Consistent with this view, Choudhary, Koester and Pawlewicz (2017) find that clients with material APTS purchases have lower tax accruals quality, and that this effect is concentrated in audit offices where self-review threats are strongest. Figure 1, Panel C presents a conceptual framework describing these competing possibilities. As both knowledge spillovers and threats to independence occur via heightened APTS, we predict:

> **H2a:** *Resolving a tax-related KAM is positively associated with firms' future purchases of auditor-provided tax services.*

It follows from H2a that firms that fail to resolve (start or continue to receive) tax related KAMs may decrease their purchases of APTS to punish the auditor. Specifically, the client could experience frustration that the auditor considers the tax account to be especially risky in spite of the audit firm's involvement with the tax function, or want to impose a more intentional economic punishment for the auditor. Management may also be concerned that the additional insight and information the auditor gains through the APTS engagement is contributing to their decision to issue a tax KAM. Consistent with this view, Cade and Hodge (2014) and Gay and Ng (2015) provide experimental evidence that management and the audit committee, respectively, communicate less openly with the auditor under KAM reporting regimes. We therefore predict:

> *H2b: Continuing to receive a tax-related KAM is negatively associated with firms' future purchases of auditor-provided tax services.*

There are several reasons we may fail to find support for H2a&b. First, the complexity that gave rise to the tax KAM could resolve organically without any action by the auditor or management. For example, the statute of limitations could expire on an uncertain tax position that led to a tax KAM. Further, Asbahr and Ruhnke (2019) find a substitution effect whereby auditors trade-off KAM disclosures and the reasonableness of financial statement account balances, suggesting that changes in tax avoidance strategies may be sufficient to resolve a tax-related KAM issue *without* investing in outside tax services. Finally, the client may seek to resolve the tax KAM by investing in their in-house tax function or an external provider other than the auditor. Figure 1, Panel D provides a visual depiction of H2a&b.

### Tax-Related KAMs and Firms' Future Tax Avoidance

Next, we examine the consequences of tax KAMs to firms' future tax avoidance strategies. If managers believe that tax KAMs generate political and proprietary costs, they could reduce the

firm's tax avoidance activities in order to mitigate that risk. These decisions are likely to vary in whether the tax KAM resolves or persists, as scrutiny may grow more intense the longer the tax KAM recurs. Prior literature suggests firms react to regulatory scrutiny related to taxes. Dyreng et al. (2016) find firms' compliance with geographic segment reporting significantly increases after facing public criticism about tax haven use from nonprofit activists. Kubick et al. (2016) show that firms react to SEC comment letters requiring more tax related disclosure by reducing tax avoidance. In the US CAMs setting, Drake et al. (2020) find that receiving a tax-related CAM significantly reduces earnings management through the tax account, and Burke et al. (2020) find that management significantly increases their disclosures surrounding accounts related to KAMs.

At the same time, if tax KAMs arise from poor tax function quality the firm may invest in the tax function in order to resolve the issue that gave rise to the tax-related KAM. This may lead to an increase in tax avoidance following the issuance of a tax-related KAM, consistent with prior research finding that firms that invest in the tax function earn significant returns on their investments via lower tax payments (Bauer 2016; Mills et al. 1998). Given these competing costs and benefits we propose the following non-directional hypothesis:

> **H3:** *Receiving a tax-related KAM is associated with changes in firms' future tax avoidance.*

We will fail to find support for H3 if managers do not react to tax KAMs because they believe tax KAM disclosures do not generate proprietary or political costs. Unlike tax-related internal control weaknesses, SEC comment letters, or public criticism, tax KAMs do not comment on the quality of the firm's tax related financial reporting or tax aggressiveness. Recall that tax-related KAMs are not intended to provide original information about the firm's tax activities and do not modify or disclaim the auditor's clean opinion on the financial statements. Almost all UK firms receive at least one KAM, and the average firm receives three. Therefore, KAMs are different

from relatively rare and negative events such as modified or adverse audit opinions, internal control material weaknesses, or SEC comment letters. We present a conceptual framework describing these competing possibilities in Figure 1, Panel E.

## III.    RESEARCH DESIGN

**Sample Selection**

Our starting sample includes London Stock Exchange firms with at least one KAM during the period 2013 to 2019 in Audit Analytics, resulting in 7,339 firm-year observations.[5,6,7] We exclude firms that lack FactSet International data required to compute effective tax rates, audit fees, and/or our financial statement controls. Because we require positive pre-tax income in our computations of effective tax rates and tax rate volatility, as in Guenther, Matsunaga, and Williams (2017), we exclude loss year observations. This results in a final sample of 4,321 firm/year observations, including 659 observations with at least one tax-related key audit matter. Table 1 provides details on our sample construction.[8]

Table 2 describes the distribution of tax-related KAMs over time and by industry classification. Audit Analytics classifies tax KAMs into three sub-categories: uncertain tax positions, deferred income taxes, and other income taxes. However, upon manual review of the

---

[5] This number includes Risk of Material Misstatement (RMM) disclosures, which the Financial Reporting Council required beginning in 2013 and revised for greater conformity with IAASB standards in 2017. RMM and KAM requirements are similar, and considering them together is the standard in existing literature examining expanded audit reporting in the UK (Rousseau and Zehms 2020; Gutierrez et al. 2018; Reid et al. 2019).

[6] Only 27 audit opinions for LSE firms during our sample period report zero KAMs.

[7] We note that while the U.S. Tax Cuts and Jobs Act (TCJA) was introduced during our sample period, it did not significantly affect the frequency of tax-related KAMs (See Table 2, Panel A). A review of the text of our tax KAMs show that only nine KAMs specifically mention the TCJA. Eight of these KAMs also describe unrelated complexities arising from transfer pricing and UTPs in non-U.S. jurisdictions, indicating that the TCJA was not the sole basis for issuing the tax KAM.

[8] The U.K. tax system is relatively stable during our sample period of 2014-2019. The corporate tax rate is 20% for years 2014-2016 and 19% from 2017 onward. The U.K. implemented a territorial tax system in 2009. Furthermore, there were no significant accounting for income tax changes under IFRS or U.S. GAAP during our sample period.

text of tax-related KAMs, we found these categorizations to be unreliable.[9] As a result, we read all tax-related KAM disclosures, identifying and cataloguing four primary subtypes: (1) uncertain tax positions, (2) realizability of deferred tax assets, (3) multijurisdictional complexity, and (4) other tax KAMs. See Appendix C for a detailed description of our hand-coding process. Because firms can receive more than one tax-related KAM, and because a single tax-related KAM frequently relates to more than one tax issue, a firm-year observation can report multiple types of tax-related KAMs.[10] Panel A of Table 2 lists the number, and type(s), of tax KAMs by year. Tax KAMs, and each subtype of tax KAM, are roughly evenly distributed across time, with the exception of 2013— the first, partial year of expanded disclosure. Panel B of Table 2 provides detail on the distribution of tax-related KAMs across Fama French 12 industries.

**Determinants Analysis**

  To analyze the determinants of the auditor's decision to report tax-related KAMs, we use the following probit regression model, which includes industry ($\mu_{ind}$) and year ($\tau_t$) fixed effects:

$$\begin{aligned} TaxKAM_{i,t} = {} & \gamma_0 + \gamma_1 ETR_{i,t} + \gamma_2 ETR\_VOL_{i,t} + \gamma_3 NET\_DTA/DTL_{i,t} + \gamma_4 HAVEN_{i,t} + \\ & \gamma_5 MATERIALITY_{i,t} + \gamma_6 FOREIGN_{i,t} + \gamma_7 LN\_AUDIT\_FEES_{i,t} + \\ & \gamma_8 LN\_TAX\_FEES_{i,t} + \gamma_9 ASSETS_{i,t} + \gamma_{10} PTI_{i,t} + \gamma_{11} BIG\_4_{i,t} + \gamma_{12} NUM\_KAMS_{i,t} + \\ & \gamma_{13} KAM\_REGPERIOD_{i,t} + \mu_{ind} + \tau_t + \varepsilon_{i,t} \end{aligned} \quad (1).$$

*TaxKAM* is an indicator variable equal to one if the firm receives a tax KAM in year t, and zero otherwise. In additional testing, we partition this dependent variable into four different types of tax KAMs related to: (1) uncertain tax positions (*UTP_KAM*), (2) deferred tax assets (*DTA_KAM*), (3) multijurisdictional complexity (*COMP_KAM*), and (4) other tax issues (*OTHER_KAM*). We compute the one-year book effective tax rate (*ETR*) as income tax expense divided by pretax book

---

[9] For example, PwC's 2018 audit report for G4S PLC includes a key audit matter titled "Uncertain tax positions and deferred tax assets," which was categorized as "Other Income Taxes" by Audit Analytics. Prior periods included nearly identical KAMs, which were properly coded as "Uncertain Tax Position" (UTP) KAMs.
[10] For example, we classify the KAM presented in Appendix A both as a UTP KAM and as a Complexity KAM, as the auditor discusses both specific tax positions and overall complexity as creating challenges in the audit.

income.[11] We also compute 3-year book ETR using total income tax expense from year t-2 through year t, scaled by pretax income over the same window.[12] ETR volatility (*ETR_VOL*) is the standard deviation of ETR over the period t-2 through t. *NET_DTA/DTL* is total deferred tax assets less total deferred tax liabilities, scaled by total assets. *HAVEN* is an indicator variable equal to one if the issuer is headquartered in one of 15 tax haven countries, as designated by Oxfam (2016).

We control for several potential determinants of tax KAMs. Concurrent research suggests that materiality of the account is the primary determinant of the type of CAM disclosed in the U.S. setting (Burke et al. 2020). Therefore, we include *MATERIALITY*, which is a measure of the size of income tax expense in relation to firm size (assets).[13] To control for complexities related to foreign operations, we include the indicator *FOREIGN*, which is equal to one if the firm has income from foreign sources, and zero otherwise. We control for auditor effort and economic bond with the natural log of audit fees (*LN_AUDIT_FEES)* and the natural log of tax-related fees (*LN_TAX_FEES)*. We also include controls for firm size (*ASSETS*), profitability (*PTI*), auditor size (*BIG_4*), and the total number of KAMs in the firm's audit report (*NUM_KAMS*).[14] Finally, we control for the alignment of risk of material misstatement disclosures with KAM reporting under IAASB regulations after June 15, 2017 (*KAM_REGPERIOD*). All continuous variables are

---

[11] Effective tax rate measures are constrained to values between zero and one.

[12] Results of determinants testing are qualitatively similar when using long-run cash ETR as our measure of tax avoidance activities. However, because cash tax payments are presented as supplemental information in the financial statements and are not subject to the same level of auditor scrutiny as is income tax expense, we focus solely on book effective tax rate in this study.

[13] We acknowledge that our independent variables of *ETR* and *MATERIALITY* are related constructs as they both include tax expense. Any collinearity biases against finding statistically significant results. All determinant model results are robust to omitting *MATERIALITY* (untabulated).

[14] Despite the international nature of our sample, we do not control for auditor location. This is because of the limited variation of this characteristic—over 90 percent of opinions in our sample are issued by auditors in the United Kingdom, mostly in London. Only about three percent of opinions are issued from locations outside the U.K., Ireland, and the Channel Islands.

winsorized at 1% and 99%. Appendix B details the computation of these variables.[15] We cluster standard errors by firm.

To test whether tax KAMs reflect market uncertainty in the realizability of DTAs (H1b), we examine the association between firm value and net DTAs using the following OLS regression:

$$Tobinsq_{i,t} = \gamma_0 + \gamma_1 TaxKAM_{i,t} + \gamma_2 NET\_DTA_{i,t} + \gamma_3 TaxKAM_{i,t} * NET\_DTA_{i,t} + \gamma_4 ETR_{i,t} + \gamma_5 ETR\_VOL_{i,t} + \gamma_6 HAVEN_{i,t} + \gamma_7 MATERIALITY_{i,t} + \gamma_9 W_{i,t} + \mu_{ind} + \tau_t + \varepsilon_{i,t} \qquad (2).$$

We use Tobin's Q to proxy for firm value. $TaxKAM_{i,t}$ is an indicator equal to 1 if the audit report contains a tax-related KAM at time t. $NET\_DTA_{i,t}$ is total deferred tax assets less deferred tax liabilities scaled by total assets. We predict a positive and significant coefficient for $NET\_DTA_{i,t}$ consistent with the market positively valuing DTAs on average (Laux 2013). Our main variable of interest is $TaxKAM_{i,t} * NET\_DTA_{i,t}$. A negative and significant coefficient on this interaction term would suggest the market discounts the deferred tax assets of tax KAM firms consistent with H1b. $W$ denotes a vector of control variables from Model (1) and additional controls for cash, PPE, research and development expense, and accruals.

**Consequences Analysis**

We adapt methodology from Ashbaugh-Skaife, Collins, Kinney, and LaFond (2008) to examine the consequences of tax-related KAMs to firms' future purchases of APTS (H2a&b). We use the following ordinary least squares regression:

$$\%\Delta FEE_{i,t-1,t} / \%\Delta FEE_{i,t,t+1} = \beta_0 + \beta_1 TAXKAM\_FIRM_{i,t\,t-1} + \beta_2 RESOLVE\_TAXKAM_{i,t} + \Delta X_{i,t-1,t} / \Delta X_{i,t,t+1} + \mu_{ind} + \tau_t + \varepsilon_{i,t} \qquad (3).$$

$TAXKAM\_FIRM_{i,t\,t-1}$ is an indicator variable equal to one if the firm receives a tax KAM at time $t$, time $t-1$, or both. $RESOLVE\_TAXKAM_{i,t}$ is an indicator variable equal to one if the firm

---

[15] Our results are robust to the inclusion of controls commonly associated with tax avoidance, including research and development, capital expenditures, leverage, and intangible asset intensity. Further, our results are not sensitive to partitioning NUM_KAMs into indicator variables for the specific topics of non-tax KAMs. For brevity and because the link between these variables and tax KAM is unclear, we excluded these controls from our tabulated analyses.

received a tax KAM at time *t-1* but does not receive a tax KAM at time *t*. We operationalize the dependent variable, *%ΔFEE* is the percent change in audit fees (*%ΔAUDFEE)*, the percent change in APTS (*%ΔAPTS)*, and the percent change in APTS scaled by total fees paid to the auditor (*%ΔAPTS/TOTFEE)*. We examine the fee consequences of tax KAMs both in the year of the tax KAM (*%ΔFEE$_{i,t-1,t}$* ) and the year after (*%ΔFEE$_{i,t,t+1}$)*. If knowledge spillovers from APTS engagements reduce the complexity of auditing the tax account or raise a self-review threat to auditor independence, we will find a contemporaneous association between increase in APTS fees (*%ΔFEE$_{i,t-1,t}$)* and *RESOLVE_TAXKAM$_{i,t.}$* If APTS contribute to resolving tax KAMs through self-interest threats to auditor independence, we may not see a change in APTS until a future year (*%ΔFEE$_{i,t,t+1}$)*. As Coffee (2006, 66) states "the real conflict lies not in the actual receipt of high fees, but in their expected receipt. Even the client currently paying low consulting revenues to its auditor might reverse this pattern if the auditor proved more cooperative." Consistent with the potential of future fees to compromise auditor independence, existing studies find that that high non audit service fee growth from t to t+1 is associated with lower audit quality at time t*, before* any money has changed hands (Causholli et al. 2014; Blay and Geiger 2013).

*ΔX* is a vector of control variables consisting of important tax KAM determinants and other fee controls following Carcello and Li (2013) and McGuire, Omer, and Wang (2012). See Appendix A for variable definitions. In supplemental tests, we implement Model (3) in a sub-sample of only those firms that receive a tax KAM at least once during the sample. In these tests, firms that receive a tax KAM during the sample period but do not do so at time *t* or *t-1* serve as the comparison group for which *TAXKAM_FIRM* equals zero.

To further understand how the consequences of tax KAMs to future APTS vary in the persistence of tax KAMs, we implement the following OLS regression following Ashbaugh-Skaife et al. (2008):

$$\%\Delta FEE_{i,t-1,t} \ / \ \%\Delta FEE_{i,t,t+1} = \beta_0 + \beta_1 CONT\_TAXKAM_{i,t} + \beta_2 START\_TAXKAM_{i,t} +$$
$$\beta_3 STOP\_TAXKAM_{i,t} + \Delta X_{i,t,t+1} / \Delta X_{i,t,t+1} + \ \mu_{ind} + \ \tau_t + \ \varepsilon_{i,t} \tag{4}.$$

Our independent variables *CONT_TAXKAM, START_TAXKAM,* and *STOP_TAXKAM* are indicator variables equal to one if the client continues to receive, receives for the first time, or stops receiving a tax KAM in year *t*. As such, Model (4) separates the *TAXKAM_FIRMs* from Model (3) into those firms starting versus continuing to receive tax KAMs. Like many other financial statement and risk disclosures (Brown and Tucker 2011; Kravet and Muslu 2013), tax KAMs are "sticky;" as depicted in Figure 2, once a firm receives a tax KAM they are likely to continue to do so.[16],[17] Accordingly, our sample includes 91 observations of firms that stop receiving tax KAMs.[18]

We examine the consequences of tax-related KAMs to firms' future tax avoidance (H3) using the following ordinary least squares regressions:

$$\Delta ETR_{i,t-1,\ t} / \Delta ETR_{i,t,\ t+1} = \beta_0 + \ \beta_1 TAXKAM\_FIRM_{i,t\ t-1} + \ \beta_2 RESOLVE\_TAXKAM_{i,t} + \Delta Z_{i,t-1,}$$
$$/ \ \Delta Z_{i,t,t+1} + \ \mu_{ind} + \ \tau_t + \ \varepsilon_{i,t} \tag{5}.$$

$$\Delta ETR_{i,t-1,\ t} / \Delta ETR_{i,t,\ t+1} = \beta_0 + \ \beta_1 CONT\_TAXKAM_{i,t} + \ \beta_2 START\_TAXKAM_{i,t} +$$
$$\beta_3 STOP\_TAXKAM_{i,t} + \Delta Z_{i,t-1,} / \Delta Z_{i,t,t+1} + \ \mu_{ind} + \ \tau_t + \ \varepsilon_{i,t} \tag{6}.$$

---

[16] To frame this distinction within the KAMs setting, recall that KAMs relate to those issues that were the *most* significant to the audit. Thus, continuing to receive a tax KAM suggests that the significance associated with auditing the tax account has not changed, ceasing to receive a tax KAM indicates the tax account is no longer considered among the *most* significant, and starting to receive a tax KAM indicates the account is newly considered among the *most* significant to the audit.

[17] KAMs on subjects other than taxes (ex. revenue, inventory, etc.) are likewise persistent, except for those relating to nonrecurring economic events such as business combinations, impairments, and accounting policy changes (untabulated).

[18] We do not test interactions between starting, stopping, and continuing tax KAMs and the specific issues cited in the tax KAM (UTP, DTA, complexity) because the small sample sizes within these groups yields insufficient statistical power and induces perfect collinearity issues with some year and industry fixed effect controls. We note that the results are in the predicted direction with these smaller sample sizes but statistically insignificant illustrating the reduced power of these tests.

We measure the dependent variable *ΔETR* as the change in the book ETR from year t-1 to year t and from year t to t+1. We examine both concurrent and future ETR changes because the scrutiny and accompanying proprietary costs of receiving a tax KAM may decrease in the amount of time that has passed since resolving the tax KAM and it may take significant time for firms to adjust their tax planning strategies (Kim et al. 2019). To avoid correlated omitted variables issues we include the control vector *ΔZ* comprised of changes in variables from the determinants model, as well as other controls for changes in tax avoidance (Kubick et al. 2016). These controls include the change in intangibles, change in capital expenditures, change in SG&A, and the change in research and development expenses.

## IV.    RESULTS

**Descriptive Statistics**

We present descriptive statistics for our sample in Table 3. Panel A describes the data in aggregate, while Panel B divides the sample based on the presence of a tax KAM. For the full sample, average book ETR is 15.9 percent. Big 4 auditors issue roughly 77 percent of the audit reports in our sample, and these reports contain, on average, about three KAMs. Panel B reports several notable differences between firms receiving and not receiving tax-related KAMs. Audit fees and APTS are higher for tax KAM firms, and tax KAM firms are larger, more likely to have foreign operations, and more likely to employ a Big 4 auditor. Consistent with expectations, ETR volatility is higher among tax KAM firms. The net balance of deferred tax assets/liabilities does not appear to differ significantly across the two sub-samples.

Unexpectedly, book ETRs are higher for firms receiving a tax KAM than for firms not receiving a tax KAM, inconsistent with H1. This result is not present after controlling for audit fees in multivariate testing. We argue the audit fee control is important because the auditor decides

KAMs at the engagement level and audit fees are a measure of overall engagement complexity and the subsequent increase in required effort. As tax KAMs reflect engagement complexity with respect to tax *relative to other challenging audit issues*, it is important to control for audit fees when examining the determinants of tax KAMs. In other words, whether a challenging tax issue will rise to the level of a KAM is sensitive to the nature and extent of *other* audit challenges the auditor faced in the engagement, as proxied by audit fees. We present correlations among our testing variables in Table 4.[19]

**Determinants of Tax KAMs**

We present determinants results in Table 5. Our determinants model performs well in predicting tax KAMs, with the area under curve of 0.90 suggesting excellent discriminatory power (Hosmer and Lemeshow 2004). We find one-year book ETRs are negatively associated with tax KAM disclosure *(column (4), β=-0.594, p≤0.05)*, suggesting that higher levels of tax avoidance increase the likelihood of receiving a tax KAM. These results are robust to using a 3-year book ETR measure (*column (5))*. Marginal effects (untabulated) suggest that a decrease in the one-year ETR from the 75th percentile (23.1%) to the 25th percentile (0.4%) increases the probability of receiving a tax KAM by roughly 2 percentage points (from 15.3% to 17.4%). We also find a positive association between ETR volatility and tax KAMs *(column (4), β=0.429, p≤0.05)*, consistent with firms with higher tax risk being more likely to receive tax KAMs.

Across all specifications, larger net deferred tax asset balances are positively associated with tax KAM issuance, consistent with DTAs increasing audit complexity. Among our control

---

[19] Because the correlations identify several high correlation coefficients *(r≥0.05)*, we verify that multicollinearity is not an issue by examining variance inflation factors (VIFs). Among independent variables, only *KAM_REGPERIOD* has a VIF greater than 5 (7.28). All other independent variables have VIFs under 5.00, with only three exceeding 2.0: materiality (2.49), assets (3.91), and audit fees (4.98). Our results are robust to the exclusion of *KAM_REGPERIOD*.

variables, we find that firms incorporated in tax havens, with higher audit fees, and firms engaging a Big 4 auditor are all more likely to receive a tax KAM. Our results support H1, providing evidence that it is more difficult to audit tax expense when firms' tax complexity is high, increasing the likelihood the auditor will issue a tax KAM.[20] In contrast to Burke et al.'s (2020) investigation of KAM determinants in the U.S. setting, we find little association between the materiality of tax expense and receiving a tax KAM after controlling for firms' tax complexity.

We present the determinants results for specific types of tax related KAMs in Table 6. We find that firms' tax avoidance predicts receiving an uncertain tax position KAM, with a negative coefficient on ETR *(β=-0.980, p≤0.01)*. Marginal effects show that the probability of receiving a UTP KAM increases by three percent when one-year ETR decreases from the 75th to the 25th percentile of our sample. We find that higher ETR volatility, indicative of higher tax risk, is positively associated with receiving DTA KAMs *(β=1.391, p≤0.01)*. In economic terms, a one standard deviation increase in *ETR_VOL* increases the likelihood of receiving a DTA KAM by two percentage points. Additionally, we find that the positive relation between DTA balances and tax KAM issuance in Table 5 is concentrated among DTA-related tax KAMs; *NET_DTA/DTL* is positively associated with *DTA_KAM (β=6.956, p≤0.01)* but not with other types of tax KAMs. Firms headquartered in a tax haven country are 5.4 percent more likely to receive tax KAMs related to multijurisdictional complexity *(β=-0.538, p≤0.01)*. Our tax-related variables do not predict the issuance of "other" tax KAMs that do not fit into the above categories, consistent with these KAMs arising from idiosyncratic issues. Collectively, these results for H1a show that auditors tailor the

---

[20] We also performed determinants testing using *START_TAXKAM, CONT_TAXKAM,* and *STOP_TAXKAM* as dependent variables, consistent with our consequences testing. Because we derived no inferences incremental to those presented under the current specification, we omit that testing in the interest of brevity and clarity.

content of tax KAMs to specific drivers of the firms' tax complexity rather than using generic descriptions across all tax KAMs.

We present our tests of the valuation of DTAs (H1b) in Table 7. In column (1) we find a positive and significant coefficient on $NET\_DTA_{i,t}$ ($\beta=5.751$; $p{\leq}0.001$), consistent with the market positively valuing firms' DTAs, ceteris paribus. Consistent with H1b, we find a negative and significant coefficient on the interaction $TaxKAM_{i,t} * NET\_DTA_{i,t}$ ($\beta=-5.957$; $p{\leq}0.001$).[21] In columns (2) and (3) we present a fully interacted model where we compare the valuation of DTAs for non-tax KAM firm-years (column 2) versus tax KAM firm-years (column 3). We find that the positive valuation of DTAs is completely attenuated for tax KAM firms (test of difference in coefficients $p{\leq}0.01$). These results illustrate that the market discounts DTAs for tax KAM firms, supporting H1b and implying that tax KAMs meaningfully reflect estimation uncertainty in DTA realizability.[22]

**Consequences of Tax KAMs**

We present results for our audit fee tests in Table 8, Panels A and C. We find no associations significant at $p{\leq}0.05$ level between resolving, starting, or continuing to receive tax KAMs and changes in future audit fees, consistent with the findings of Gutierrez et al. (2018), Bédard et al. (2019), and Liao et al. (2019). In Table 8, Panel B, we find that firms that resolve a tax KAM at time t increase purchases of APTS by 18 percent from time t to t+1 *(Column 5, $\beta=18.132$, $p{\leq}0.01$)* as compared to firms that never receive a tax KAM. Columns 6 through 8 of Table 8, Panel B illustrate that this result is robust to examining only the subsample of firms that

---

[21] In untabulated testing, we measure Tobin's q at time t+1 to reflect that the market may use information from the annual report containing the tax KAM when valuing the firm's DTAs. Our results are robust to this change, with the coefficient on $TaxKAM_{i,t} * NET\_DTA_{i,t}$ continuing to be negative and significant ($\beta=-6.961$; $p{\leq}0.001$).

[22] In untabulated testing, we replace $TaxKAM$ with $DTA\_KAM$ and find qualitatively similar results. We present our results as specified in model (2) in order to draw inferences about a larger, more diverse set of KAMs.

receive a tax KAM at least once during the sample period and to operationalizing the change in APTS as APTS scaled by total fees paid to the auditor.[23] We find no significant contemporaneous associations between resolving a tax KAM and changes in APTS from t-1 to t (Columns one through four), suggesting that APTS fees do not increase until the year *after* the tax KAM is resolved. This timing supports the theory that the economic incentive of *future* APTS creates a self-interest threat to the auditor's independence in issuing the KAM. This timing is inconsistent with knowledge spillovers or self-review threats contributing to KAM resolution, as the APTS engagement does not begin until the year *after* the tax KAM is resolved.

We find that firms with new and continued tax KAMs (*TAXKAM_FIRM)* pay six percent lower APTS fees in the year the KAM is issued (*Column 1, β=-5.8, p≤0.05)* and seven percent lower APTS fees the next year (*Column 5, β=-7.06, p≤0.01)*, consistent with the client economically punishing the auditor for issuing and continuing to issue the tax KAM. Table 8, Panel D, yields similar inference with respect to *STOP, START,* and *CONTINUE* tax KAMs, with firms continuing to receive tax KAMs paying about 7 percent lower APTS fees (Columns 1 and 5), and firms that stop receiving tax KAMs paying 11 percent higher APTS fees in the year *after* the auditor stops issuing the tax KAM (Column 5).

We present our tests of H3 in Table 9. We find that firms that resolve tax KAMs at time *t* significantly increase their tax avoidance from time t to t+1. Specifically, the results imply that firms that resolve tax KAMs decrease their ETRs by about seven percentage points *(β=-0.077, p≤0.05 for RESOLVE_TAXKAM in Panel A, Column 3; β=-0.070, p≤0.05 for STOP_TAXKAM in Panel B, Column 3)* as compared to firms that never receive a tax KAM. Column (4) of Table 9 illustrates that these results are robust to the subsample of firms that receive a tax KAM at least

---

[23] In untabulated analyses, we find this result is robust to measuring the dependent variable as APTS scaled by total assets, the square root of total assets, SG&A expense, audit fees, and audit and related fees.

once during the sample period.[24] We find no contemporaneous association between resolving a tax KAM and tax avoidance, and no association between starting or continuing a tax KAM and ETR changes. These results suggest that, in general, firms that receive tax KAMs do not adjust their tax avoidance strategy in response to the KAM. However, the results imply that firms that resolve their tax KAMs increase their tax avoidance in subsequent years. Our results showing important APTS and tax avoidance consequences with no change in audit fees further illustrate the importance of granularly examining specific KAM subject areas and their tightly-mapped determinants and consequences to gain a full understanding of the KAM reporting regime.

**Supplemental Tests**

In light of prior literature suggesting that knowledge spillovers from APTS engagements can result in increased tax avoidance (Klassen et al. 2016; Omer et al. 2016), we conduct supplemental tests to examine whether APTS fees are driving the increase in tax avoidance among firms that resolve tax KAMs. We explore this possibility descriptively due to small within-group sample sizes when partitioning *RESOLVE_TAXKAM* by increase, decrease, and no change in APTS (untabulated). We find that all firms that resolve a tax KAM in the prior year decrease their ETRs regardless of changes in APTS. These decreases range from three percentage points for firms with no change in APTS, 13 percentage points for firms that increase APTS, and 18 percentage points for firms that decrease their APTS. T-tests of mean differences show that the differences in $\Delta ETR_{i,t,t+1}$ between the APTS groups are not statistically significant (untabulated). Collectively, these results suggest that APTS are not driving the increase in tax avoidance for

---

[24] Variance inflation factors (VIFs) reveal that collinearity is not an issue in our tests of H2&3, with average VIFs of 2.37. We find no VIFs over 5.0 except for on the year fixed effects for 2017, 2018, and 2019 and the *KAM_REGPERIOD* control.

*RESOLVE_TAXKAM* firms, providing further evidence that independence threats rather than knowledge spillovers drive the resolution of tax KAMs.

## V. CONCLUSION

This study leverages a prevalent and economically important type of KAM to make inferences about the KAM reporting regime. Our results suggest that firms with higher tax complexity (greater tax avoidance, tax risk, and larger DTAs) are more likely to receive a tax KAM. We hand-collect data on the specific issues each KAM discusses, finding that tax avoidance predicts uncertain tax position KAMs and that ETR volatility predicts receiving a KAM referencing deferred tax assets. Further, we find that the market discounts DTAs of tax KAM firms, consistent with tax KAMs reflecting estimation uncertainty in the realizability of DTAs. Our consequences analyses demonstrate that managers and auditors change their behavior in response to tax KAMs. We find that auditors are more likely to stop issuing tax KAMs for firms that subsequently increase their APTS fees, suggesting a detrimental effect of economic bond incentives on the auditor's independence. We show that firms that continue to receive tax KAMs decrease their APTS purchases, consistent with the auditor facing economic disincentives to issue tax KAMs. Finally, we find that firms that resolve tax KAMs subsequently increase their tax avoidance, which may suggest that firms wait to pursue more aggressive tax avoidance strategies until they can avoid the scrutiny accompanying the KAM.

Our study makes numerous contributions to research and practice. First, we reveal that a potential unintended consequence of KAMs is to increase clients' demand for APTS in a manner detrimental to auditor independence. This finding enhances the profession's understanding of two recent regulatory priorities: expanded audit reporting and the resurgence of auditors' advisory services. Second, we provide insight into the conflicted literature on whether KAMs provide

information and affect firm behavior. We illustrate that the answers to these questions will vary in the subject matter of the KAMs and demonstrate the need to use variables that tightly map to topical area of the KAM. Third, we extend the limited concurrent research that does examine specific subject areas of KAMs by conducting a determinants analysis that goes beyond the materiality of the related financial statement accounts and showing that KAMs have consequences to managements' and auditors' real actions. Finally, we extend the literature on tax-related disclosure, showing that firms' tax avoidance is responsive to tax KAMs, but that the response differs from firms' reactions to more negative disclosures such as internal control weaknesses and SEC comment letters.

Our inferences are subject to several caveats. First, while our determinants tests reveal that tax KAMs contain information about firms' tax complexity and uncertainty in the realizability of DTAs, we recognize that KAM information is not necessarily incremental to other information the firm has already made public.[25] Second, we cannot completely rule out self-selection issues related to KAM disclosures. We alleviate these concerns by illustrating the robustness of our consequence findings to a fully saturated model and a sub-sample of only those firms that receive tax KAMs, but we cannot completely rule out this issue. We also acknowledge our findings with respect to U.K. KAM reporting may not generalize to the U.S. due to differences in KAM and CAM standards and the broader regulatory environment. Finally, our findings illustrate that one prominent type of KAM contains information and affects firm behavior, but we cannot unequivocally state that this is true for KAMs that address all topical areas.

---

[25] The quantity and varied forums of firms' public disclosures means it would be extremely costly to attempt to hand-collect data to test whether tax KAMs contain incremental information, and that attempting to do so is unlikely to yield sufficient controls to permit valid causal inference. Further, the contribution associated with such efforts is ambiguous given the large number of existing studies examining stock market reactions to KAM disclosure (Bédard et al. 2019; Gutierrez et al. 2018; Liao et al. 2019; Burke et al. 2020; Lennox et al. 2019; Goh et al. 2020).

Our study motivates further research into the determinants and consequences of other KAM topics. We urge future research to explore the literature relevant to why a specific type of KAM may be heterogeneous from other KAMs, and leverage that literature in selecting variables tailored to the KAM's topic. Further, our results suggest there is opportunity for future research with respect to the implications of KAM reporting for demand for auditor-provided advisory services and auditor independence.

# REFERENCES

Alsadoun, N., V. Naiker, F. Navissi, and D. S. Sharma. 2018. Auditor-Provided Tax Nonaudit Services and the Implied Cost of Equity Capital. *Auditing: A Journal of Practice & Theory* 37 (3):1-24.

Andreicovici, I., A. Jeny, and D. Lui. 2020. Do firms respond to auditors' red flags? Evidence from the expanded audit report. *Working Paper, Frankfurt School of Finance and Management*.

Asbahr, K., and K. Ruhnke. 2019. Real effects of reporting key audit matters on auditors' judgment and choice of action. *International Journal of Auditing* 23 (2): 165-180.

Ashbaugh, H., R. LaFond, and B. W. Mayhew. 2003. Do nonaudit services compromise auditor independence? Further evidence. *The Accounting Review* 78 (3): 611-639.

Ashbaugh-Skaife, H., D. W. Collins, W. R. Kinney, and R. LaFond. 2008. The Effect of SOX Internal Control Deficiencies and Their Remediation on Accrual Quality. *The Accounting Review* 83 (1): 217-250.

Balakrishnan, K., J. L. Blouin, and W. R. Guay. 2019. Tax aggressiveness and corporate transparency. *The Accounting Review* 94 (1): 45-69.

Barford, V., and G. Holt. 2013. Google, Amazon, Starbucks: The rise of 'tax shaming'. In *BBC News Magazine*.

Bauer, A. M. 2016. Tax avoidance and the implications of weak internal controls. *Contemporary Accounting Research* 33 (2):449-486.

Bédard, J., N. Gonthier-Besacier, and A. Schatt. 2019. Consequences of expanded audit reports: Evidence from the justifications of assessments in France. *Auditing: A Journal of Practice & Theory* 38 (3): 23-45.

Blay, A. D., and M. A. Geiger. 2013. Auditor fees and auditor independence: Evidence from going concern reporting decisions. *Contemporary Accounting Research* 30 (2): 579-606.

Blouin, J. L., and L. K. Krull. 2018. Does tax planning affect organizational complexity: Evidence from Check-the-Box. *Working Paper, University of Pennsylvania*.

Bochkay, K., R. Chychyla, E. D. George, M. Minutti-Meza, and J. Schroeder. 2020. Re: Interim analysis No. 2020-01, Critical audit matter requirements. *PCAOB Comment Letter*. https://pcaobus.org/EconomicAndRiskAnalysis/pir/PostImplementationReviewAS3101U nqualifiedOpinion/18_Miguel-Minutti-Meza.pdf

Bozanic, Z., J. L. Hoopes, J. R. Thornock, and B. M. Williams. 2017. IRS Attention. *Journal of Accounting Research* 55 (1): 79-114.

Brown, S. V., and J. W. Tucker. 2011. Large-sample evidence on firms' year-over-year MD&A modifications. *Journal of Accounting Research* 49 (2): 309-346.

Burke, J. J., R. Hoitash, U. Hoitash, and S. X. Xiao. 2020. The determinants, textual properties, and consequences of U.S. critical audit matter disclosures. *Working Paper, University of Colorado Denver*.

Cade, N., and F. Hodge. 2014. The effect of expanding the audit report on managers' communication openness. *Working Paper, University of Washington*.

Carcello, J. V. C., and C. Li. 2013. Costs and benefits of requiring an engagement partner signature: Recent experience in the United Kingdom. *The Accounting Review* 88 (5): 1511-1546.

Carcello, J. V., T. L. Neal, L. C. Reid, and J. E. Shipman. 2020. Auditor independence and fair value accounting: An examination of nonaudit fees and goodwill impairments. *Contemporary Accounting Research* 37 (1): 189-217.

Causholli, M., D. J. Chambers, and J. L. Payne. 2014. Future Nonaudit Service Fees and Audit Quality. *Contemporary Accounting Research* 31 (3):681-712.

Chen, C.-W., B. F. Hepfer, P. J. Quinn, and R. J. Wilson. 2018. The effect of tax-motivated income shifting on information asymmetry. *Review of Accounting Studies* 23 (3): 958-1004.

Choudhary, P., A. Koester, and R. Pawlewicz. 2017. auditor-provided tax services and income tax estimation error. *Working Paper, University of Arizona*.

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 (4): 71-93.

Chung, H., and S. Kallapur. 2003. Client importance, nonaudit services, and abnormal accruals. *Accounting Review* 78 (4): 931-955.

Coffee Jr, J. C. 2006. *Gatekeepers : The Professions and Corporate Governance*. Oxford, United Kingdom: Oxford University Press, Incorporated.

De Simone, L., M. S. Ege, and B. Stomberg. 2015. Internal control quality: The role of auditor-provided tax services. *The Accounting Review* 90 (4): 1469-1496.

Defond, M. L., K. Raghunandan, and K. R. Subramanyam. 2002. Do non-audit service fees impair auditor independence? Evidence from going concern audit opinions. *Journal of Accounting Research* 40 (4): 1247-1274.

DeFond, M., and J. Zhang. 2014. A review of archival auditing research. *Journal of Accounting and Economics* 58 (2): 275-326.

Deng, Z., F. Gaertner, D. Lynch, and L. Steele. 2020. Proprietary costs and the reporting of segment-level tax expense. *Journal of the American Taxation Association, Forthcoming*.

Dennis, S. A., J. B. Griffin, and K. M. Zehms. 2019. The value relevance of managers' and auditors' disclosures about material measurement uncertainty. *The Accounting Review* 94 (4): 215-243.

Drake, K. D., N. C. Goldman, S. J. Lusch, and J. J. Schmidt. 2020. Have critical audit matter disclosures indirectly benefitted investors by constraining earnings management? Evidence from tax accounts. *Working Paper, University of Arizona*.

Dyreng, S. D., J. L. Hoopes, P. Langetieg, and J. H. Wilde. 2020. Strategic subsidiary disclosure. *Journal of Accounting Research* 58 (3): 643-692.

Dyreng, S. D., J. L. Hoopes, and J. H. Wilde. 2016. Public pressure and corporate tax behavior. *Journal of Accounting Research* 54 (1): 147-186.

Dyreng, S. D., M. Hanlon, and E.L. Maydew. 2019. When does tax avoidance result in tax uncertainty? *The Accounting Review* 94 (2): 179-203.

Financial Reporting Council (FRC). 2016a. International standard on auditing (UK) 701: Communicating key audit matters in the independent auditor's report.

———. 2016b. Extended Auditor's reports: A further review of experience.

———. 2016c. Revised Ethical Standard 2016.

———. 2019. Revised Ethical Standard 2019.

Francis, J., D. Philbrick, and K. Schipper. 1994. Shareholder litigation and corporate disclosures. *Journal of Accounting Research* 32 (2): 137-164.

Frank, M. M., L. J. Lynch, and S. O. Rego. 2009. Tax reporting aggressiveness and its relation to aggressive financial reporting. *The Accounting Review* 84 (2): 467-496.

Gallemore, J., and E. Labro. 2015. The importance of the internal information environment for tax avoidance. *Journal of Accounting and Economics* 60 (1): 149-167.

Gay, E. H. T., and T. B.-P. Ng. 2015. Effects of key audit matter standard and audit committee proactiveness on auditors' communication to the audit committee and decisions on client's accounting estimates. *Working Paper, Nanyang Business School.*

Gleason, C. A., and L. F. Mills. 2011. Do auditor-provided tax services improve the estimate of tax reserves? *Contemporary Accounting Research* 28 (5): 1484-1509.

Goh, B. W., D. Li, and M. Wang. 2020. Informativeness of the expanded audit report: Evidence from China. *Working Paper, Singapore Management University.*

Graham, J.R., M. Hanlon, T. Shevlin, and N. Shroff. 2014. Incentives for tax planning and avoidance: Evidence from the field. *The Accounting Review* (89) 3: 991-1023.

Griffith, E. E., L. M. Rousseau, and K. M. Zehms. 2020. How do partners make critical audit matter reporting decisions? Evidence from field interviews. . *Working paper, University of Wisconsin – Madison.*

Guenther, D. A., S. R. Matsunaga, and B. M. Williams. 2017. Is tax avoidance related to firm risk? *Accounting Review* 92 (1): 115-136.

Guenther, D. A., R. J. Wilson, and K. Wu. 2019. Tax uncertianty and incremental tax avoidance. *The Accounting Review* 94 (2): 229-247.

Gunn, J. 2016. The new auditor's report: Speech to the 6th Brazilian conference on accounting and independent auditing. Sao Paolo, Brazil.

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 (4): 1543-1587.

Hogan, C. E., and M. S. Wilkins. 2008. Evidence on the audit risk model: Do auditors increase audit fees in the presence of internal control deficiencies? *Contemporary Accounting Research* 25 (1): 219-242.

Hosmer, D., & Lemeshow, S. (2000). The multinomial logistic regression model. *Applied Logistic Regression. New York: John Wiley & Sons*, 260-287.

IAASB. 2016. International standard on auditing 701: Communicating key audit matters in the independent auditor's report.

Joe, J. R., and S. D. Vandervelde. 2007. Do Auditor-Provided Nonaudit Services Improve Audit Effectiveness? *Contemporary Accounting Research* 24 (2): 467-487.

Kelton, A. S., and N. R. Montague. 2018. The unintended consequences of uncertainty disclosures made by auditors and managers on nonprofessional investor judgments. *Accounting, Organizations and Society* 65: 44-55.

Kim, J., McGuire, S. T., Savoy, S., Wilson, R., & Caskey, J. (2019). How quickly do firms adjust to optimal levels of tax avoidance?. *Contemporary Accounting Research*, 36 (3): 1824-1860.

Kinney, W. R., Z.-V. Palmrose, and S. Scholz. 2004. Auditor independence, non-audit services, and restatements: Was the U.S. government right? *Journal of Accounting Research* 42 (3): 561-588.

Kipp, P., and L. M. Gaynor. 2020. The effect of audit report specificity regarding critical audit matters on investors' judgments and decisions. *Working Paper, University of North Texas.*

Klassen, K. J., P. Lisowsky, and D. Mescall. 2016. The role of auditors, non-auditors, and internal tax departments in corporate tax aggressiveness. *The Accounting Review* 91 (1): 179-205.

KPMG. 2018. Independent Auditors' Reports for Unilever PLC. https://www.unilever.com/Images/unilever-annual-report-and-accounts-2018_tcm244-534881_en.pdf

Kravet, T., and V. Muslu. 2013. Textual risk disclosures and investors' risk perceptions. *Review of Accounting Studies* 18 (4): 1088-1122.

Kubick, T. R., D. P. Lynch, M. A. Mayberry, and T. C. Omer. 2016. The effects of regulatory scrutiny on tax avoidance: An examination of SEC comment letters. *Accounting Review* 91 (6): 1751-1780.

Lee, Y., S. Ng, T. Shevlin, and A. Venkat. 2020. The Effects of Tax Avoidance News on Employee Perceptions of Managers and Firms: Evidence from Glassdoor.com Ratings. *The Accounting Review, Forthcoming*.

Lennox, C. S., J. J. Schmidt, and A. M. Thompson. 2019. Are expanded audit reports informative to investors? Evidence from the U.K. *Working Paper, University of Southern California*.

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. *Working Paper, Southwestern University of Finance and Economics*.

McGuire, S. T., T. C. Omer, and D. Wang. 2012. Tax Avoidance: Does Tax-Specific Industry Expertise Make a Difference? *The Accounting Review* 87 (3): 975-1003.

Mills, L., M. M. Erickson, and E. L. Maydew. 1998. Investments in tax planning. *Journal of the American Taxation Association* 20 (1):1.

Minutti-Meza, M. 2020. The art of conversation: The expanded audit report. *Working Paper, University of Miami*.

Nesbitt, W. 2014. Unrecognized tax benefits: Disentangling the effects of tax aggressiveness and financial reporting discretion. *Working Paper, Michigan State University*.

Omer, T. C., J. C. Bedard, and D. Falsetta. 2006. Auditor-provided tax services: The effects of a changing regulatory environment. *The Accounting Review* 81 (5): 1095-1117.

Osswald, B. 2020. Does tax risk attenuate the positive association between internal and external information quality? *Working paper, University of Illinois-Urbana Champaign*.

Oxfam. 2016. Oxfam ranks world's worst corporate tax havens. https://www.oxfamamerica.org/press/oxfam-ranks-worlds-worst-corporate-tax-havens/.

Ozlanski, M. E. 2019. Bright lines vs. blurred lines: When do critical audit matters influence investors' perceptions of management's reporting credibility? *Advances in Accounting* 45.

Paterson, J. S., and A. Valencia. 2011. The effects of recurring and nonrecurring tax, audit-related, and other nonaudit services on auditor independence. *Contemporary Accounting Research* 28 (5): 1510-1536.

PCAOB. 2017. AS 3101: The auditor's report on an audit of financial statements when the auditor expresses an unqualified opinion.

Porumb, V.-A., Y. Zengin-Karaibrahimoglu, G. J. Lobo, R. Hooghiemstra, and D. d. Waard. 2019. Is more always better? disclosures in the expanded audit report and their impact on loan contracting. *Working Paper, University of Groningen*.

Rapoport, M. 2018. How Did the Big 4 Auditors Get $17 Billion In Revenue Growth? Not from Auditing. *The Wall Street Journal*.

Rapley, E. T., J. C. Robertson, and J. L. Smith. 2019. The effects of disclosing critical audit matters and auditor tenure on investors' judgments. *Working Paper, Colorado State University*.

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 (3): 1501-1539.

Reynolds, J. K., J. D. R. Deis, and J. R. Francis. 2004. Professional service fees and auditor objectivity. *Auditing: A Journal of Practice & Theory* 23 (1): 29-52.

Robinson, D. 2008. Auditor independence and auditor-provided tax service: Evidence from going-concern audit opinions prior to bankruptcy filings. *Auditing: A Journal of Practice & Theory* 27 (2): 31-54.

Robinson, L. A., and A. P. Schmidt. 2013. Firm and investor responses to uncertain tax benefit disclosure requirements. *Journal of the American Taxation Association* 35 (2): 85-120.

Rousseau, L. M., and K. M. Zehms. 2020. Audit partner style in key audit matter reporting decisions. *Working Paper, University of Wisconsin-Madison*.

Scholes, M., M. Wolfson, M. Erickson, M. Hanlon, E. Maydew, T. Shevlin. 2014. Taxes and Business Strategy: A Planning Approach. 5th Edition. Pearson Publishing.

Srinidhi, B. N., and F. A. Gul. 2007. The Differential Effects of Auditors' Nonaudit and Audit Fees on Accrual Quality. *Contemporary Accounting Research* 24 (2):595-629.

Sun, X., and A. Habib. 2020. Determinants and consequences of auditor provided tax services: A systematic review of the international literature. *Working Paper, Massey University*.

Verrecchia, R. E. 1983. Discretionary disclosure. *Journal of Accounting and Economics* 5: 179-194.

Wilde, J. H., & Wilson, R. J. (2018). Perspectives on corporate tax planning: observations from the past decade. *The Journal of the American Taxation Association*, *40*(2), 63-81.

Zhou, M. 2019. The effect of key audit matters on firms' capital cost: Evidence from Chinese market. *Working Paper, Peking University*.

# APPENDICES

## Appendix A
## Example of a KAM from PwC's 2017 Audit Report for GlaxoSmithKline

<u>Title:</u> Uncertain tax positions, transfer pricing and the impact of US tax reform

<u>Description:</u>
The Group operates in a complex multinational tax environment and there are open tax and transfer pricing matters with UK and overseas tax authorities. In addition, from time to time the Group enters into commercial transactions with complicated accounting and tax consequences. Judgement is required in assessing the level of provisions required in respect of uncertain tax positions. At 31 December 2017, the Group has recorded provisions of £1,175 million in respect of uncertain tax positions (2016 – £1,892 million). There have also been a number of changes in tax law in the US and Switzerland that have resulted in a material impact on the Group's current and deferred tax balances at 31 December 2017. The most significant impact has been in respect of the US Tax Cuts and Jobs Act which was substantively enacted before year-end. In aggregate, the total adjusting item to account for the impact amounts to £1,078 million in the tax line. The main changes include a reduction in the corporate tax rate that should be applied to deferred taxation balances and the introduction of a toll tax for the deemed repatriation of certain deferred foreign earnings. Some of the changes are complex and there are a number of areas of uncertainty relating both to the manner in which the law will apply and to the accounting in certain areas.

<u>Response:</u>
In conjunction with our UK, US, international tax and transfer pricing specialists, we evaluated and challenged management's judgements in respect of estimates of tax exposures and contingencies in order to assess the adequacy of the Group's tax provisions. This included obtaining and evaluating certain third party tax advice that the Group has obtained to assess the appropriateness of any assumptions used. In understanding and evaluating management's judgements, we considered the status of recent and current tax authority audits and enquiries, the outturn of previous claims, judgemental positions taken in tax returns and current year estimates and developments in the tax environment. We noted that the assumptions and judgements that are required to formulate the provisions mean that the range of possible outcomes is broad. However, based on the evidence obtained, we considered the level of provisioning and related disclosure to be acceptable in the context of the Group financial statements taken as a whole. Deploying our US tax specialists, we evaluated the key judgements, assumptions and interpretations used by management to assess the impact of US tax reform. We have undertaken procedures to validate the material corporate tax rate change adjustments to current and deferred tax balances. With respect to the £348 million toll tax charge for the deemed repatriation of foreign earnings of subsidiaries of US entities in the Group, we have evaluated the documentation prepared by management and assessed the underlying calculations together with advice from third party advisors, undertaken procedures to validate key inputs underpinning the estimated charge and confirmed that the liability is appropriately presented in the Group's balance sheet. Given the complexity and uncertainty relating to US tax reform, we expect that there will be true-ups and updates to the estimates as further guidance is issued. However, we are satisfied that the accounting positions taken by the Group at 31 December 2017 represent management's best estimate of the impact of US tax reform at this time.

| Variable | Definition |
|---|---|
| **Determinants Models** | |
| *TaxKAM* | Indicator variable equal to one if the firm received a tax-related KAM in year t, zero otherwise. |
| *UTP_KAM* | Indicator variable equal to one if the firm received a tax KAM related to uncertain tax positions in year t, zero otherwise. |
| *DTA_KAM* | Indicator variable equal to one if the firm received a tax KAM related to deferred tax assets in year t, zero otherwise. |
| *COMP_KAM* | Indicator variable equal to one if the firm received a tax KAM related to multi-jurisdictional complexity in year t, zero otherwise. |
| *OTHER_KAM* | Indicator variable equal to one if the firm received a tax KAM related to something other than UTPs, DTAs, or multi-jurisdictional complexity in year t, zero otherwise. |
| *ETR* | Income tax expense (ff_inc_tax) divided by pretax book income (ff_ptx_inc). |
| *3YR_ETR* | Income tax expense (ff_inc_tax) over period t-2 through t, scaled by pretax book income (ff_ptx_inc) over period t-2 through t. |
| *ETR_VOL* | Standard deviation of *ETR* over the period t-2 through t. |
| *NET_DTA/DTL* | Total deferred tax assets (ff_dfd_tax_db) less total deferred tax liabilities (ff_dfd_tax_cr) scaled by total assets (ff_assets). |
| *HAVEN* | Indicator variable equal to one if the issuer is headquartered in one of 15 tax haven countries, as designated by Oxfam (2016), zero otherwise. |
| *MATERIALITY* | Income tax expense (ff_inc_tax) scaled by total assets (ff_assets). |
| *TOBIN'S Q* | Market value of assets divided by book value of assets [ff_mkt_val + ff_assets - (ff_bps*ff_com_shs_out)]/ff_assets |
| *FOREIGN* | Indicator variable equal to one if the firm recognizes foreign income. |
| *LN_AUDIT_FEES* | Natural log of audit fees, per Audit Analytics. |
| *LN_TAX_FEES* | Natural log of one plus tax-related service fees. |
| *ASSETS* | Log of total assets (ff_assets). |
| *PTI* | Pretax income (ff_ptx_inc) scaled by total assets (ff_assets). |
| *BIG_4* | Indicator variable equal to one if the firm is audited by a Big 4 auditor in year t, zero otherwise. |
| *NUM_KAMS* | Total number of KAMs the firm receives in year t. |
| *KAM_REGPERIOD* | Indicator variable equal to one if the observation has a year end after June 15th 2017, the effective date of audit regulation conforming existing risk of material misstatement disclosures more closely to IAASB KAMs. |
| *CASH* | Cash and cash equivalents (ff_cash_st) scaled by total assets (ff_assets). |
| *PPE* | Net property, plant, and equipment (ff_ppe_net) scaled by total assets (ff_assets). |
| *R&D* | Research and development costs (ff_rd_exp) scaled by total assets (ff_assets). |
| *ACCRUALS* | Net income before extraordinary items (ff_net_inc – ff_xord) less operating cash flow (ff_oper_cf), scaled by total assets (ff_assets). |

**Consequences Models** (repeated variables defined above)

| | |
|---|---|
| *%ΔFEE* | Percent change in audit fees (*%ΔAUDFEE)*, APTS fees (*%ΔAPTS)*, and APTS fees scaled by total fees paid to the auditor (*%ΔAPTS/TOTFEE)*. |
| *TAXKAM_FIRM* | Indicator variable equal to one if the client receives a tax KAM in year t, year t-1, or both, zero otherwise. |
| *RESOLVE_TAXKAM* | Indicator variable equal to one if the client receives a tax KAM in year t-1 but does not receive a tax KAM in year t, zero otherwise. |
| *CONT_TAXKAM* | Indicator variable equal to one if the client continues to receive a tax-related KAM in year t, zero otherwise. |
| *START_TAXKAM* | Indicator variable equal to one if the client receives a tax-related KAM for the first time in year t, zero otherwise. |
| *STOP_TAXKAM* | Indicator variable equal to one if the client stops receiving a tax-related KAM in year t, zero otherwise. |
| *LEV* | Leverage: total debt (ff_debt_lt+ff_debt_st_tot) scaled by total assets (ff_assets). |
| *ΔAUDITOR* | Indicator variable equal to one if the auditor changed. |
| *BUSY* | Indicator variable equal to one if the firm's year end falls between December and March. |
| *INVREC* | Inventory (ff_inven) plus receivables (ff_receiv_tot) scaled by total assets (ff_assets). |
| *MB* | Market value of outstanding shares (ff_price_close_fp*ff_com_shs_out) scaled by book value of common equity (ff_com_eq). |
| *CFO* | Operating cash flow (ff_oper_cf ) scaled by total assets (ff_assets). |
| *SALES_GROWTH* | Average sales (ff_sales) growth over the past three years. |
| *LITIGATE* | Indicator variable equal to one if the firm's primary operations are in a high litigation industry (biotech, computers, electronics, and retail) following Francis, Philbrick, and Schipper (1994). |
| *TAX_EXPERT* | Indicator variable equal to one if the audit office's tax service market share in a given city and two-digit industry SIC is greater than or equal to 30 percent following McGuire et al. (2012). Market share is defined as total tax fees paid to the audit firm divided by total tax fees paid to all other audit firms in the same industry and city. |
| *INTANGIBLE* | Intangible assets (ff_intang) scaled by total assets (ff_assets). |
| *CAPEX* | Capital expenditures scaled by total assets (ff_assets). |
| *SG&A* | Selling, general, and administrative expense (ff_sga) scaled by total assets (ff_assets). |

*We winsorize all continuous variables at 1% and 99%*

**Appendix C**

**Hand-Coding of Tax Related KAMs**

To inform our investigation of the determinants of specific types of tax-related KAMs we obtained the text of all of the tax-related KAMs in our sample from Audit Analytics Datafeeds. Upon manually reviewing a subset of these tax KAMs, we judged that, while the Audit Analytics KAMs database has a high accuracy for distinguishing tax related KAMs from other types of KAMs, the classification of those tax-KAMs into Audit Analytics' "Uncertain Tax Position," "Deferred Taxes," and "Other Tax KAMs" categories contained errors and inconsistencies. Specifically, we saw that virtually identical Tax KAMs issued by the same auditor for the same client over a period of several years were classified in different categories depending on the year, and that in many cases the Audit Analytics classification of the tax-KAMs differed from the classification the tax scholars on our author team deemed appropriate for that KAM. As a result, we decided to review each in-sample tax KAM and manually classify their sub-category.

To begin, we held a brainstorming session to identify possible sub-categories of tax KAMs based on our reading of the tax KAMs so far, and arrived at the following classifications: materiality, multijurisdictional complexity/ transfer pricing, specific issues (transactions, investigations, penalties, and UTPs), Tax Cuts and Jobs Act, DTAs, deferred taxes other than DTAs, and earnings management through the tax account. Next, each author reviewed the same 60 tax KAMs and coded them into these categories to ensure inter-rater reliability was high and refine our classification scheme further based on the trends we identified in our systematic review. After consulting on this hand coding, we agreed on a final categorization scheme comprising uncertain tax positions, complexity, deferred tax assets, and other tax-KAMs.

Using this scheme, we each coded the same 150 tax KAMs, examined and resolved any differences in our categorization, and developed a list of common words and phrases associated with each category to promote consistency in our coding, as below:

| Uncertain Tax Positions | Complexity | Deferred Tax Assets | Other |
|---|---|---|---|
| - Transactions<br>- Investigations<br>- Penalties<br>- Contingencies<br>- Uncertain tax position<br>- Uncertainty with respect to a transaction<br>- Accruals for tax contingencies<br>- Tax payable amount uncertain<br>- Exposures<br>- Compliance | - Generic uncertainty<br>- Multiple jurisdictions<br>- Transfer pricing<br>- Uncertainty in determining the tax provision | - Net operating loss<br>- Deferred tax assets<br>- Valuation allowance | -Any tax KAM not belonging to the other three categories<br>-Any tax KAM referencing a special issue such as first-time adoption of new regulation |

Finally, two of our authors divided and coded the remaining in-sample tax KAMs using the above list as a guide and consulting with each other as needed to resolve ambiguities and promote consistency.

## FIGURE 1

## Conceptual Model of the Competing Possibilities for the Determinants and Consequences of Tax KAMs

### Panel A: Tax Complexity as a Determinant of Tax KAMs (H1a)

| | Tax Complexity | | Materiality of Tax Accounts |
|---|---|---|---|
| *Competing possibilities for the determinants of tax KAMs:* | | | |
| *Theoretical basis:* | Organizational and financial reporting complexity associated with tax planning makes taxes harder to audit. | High internal information quality required for good tax planning makes taxes easier to audit. | Firms with higher tax rates (less tax avoidance) have more material tax expense balances. |
| *Directional association between tax complexity and tax KAMs:* | Positive | Negative | Negative |
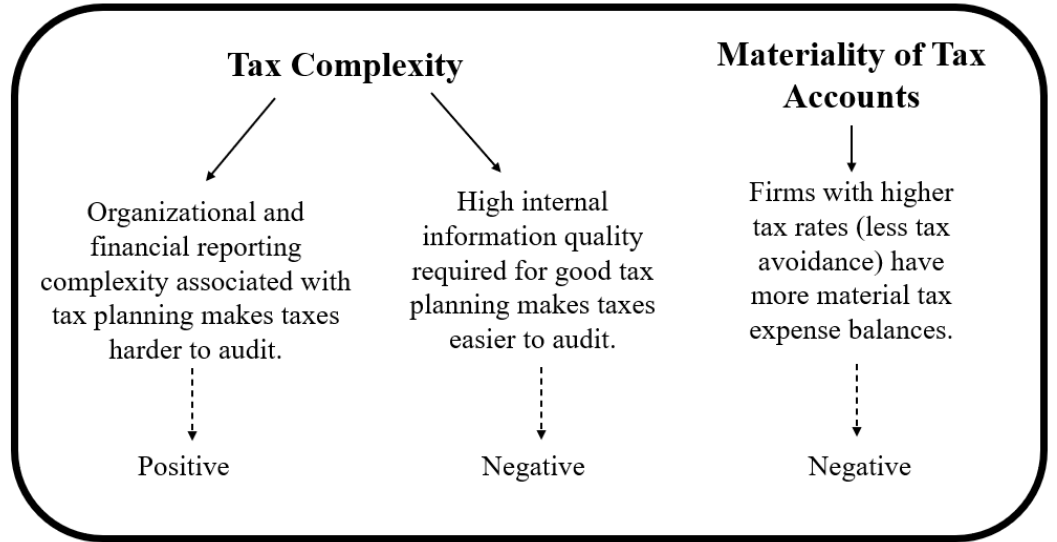
### Panel B: Estimation Uncertainty in DTAs as a Determinant of Tax KAMs (H1b)

| | Tax KAMs Reflect Market-Relevant Information | Tax KAMs do not Reflect Market-Relevant Information |
|---|---|---|
| *Competing possibilities for the association between the market's DTA valuation and tax KAMs:* | | |
| *Theoretical basis:* | Estimation uncertainty in the realizability of DTAs is a key input to the auditors' KAM decision and the market's valuation of DTAs. | The auditors' tax KAM decision is based on factors the market finds irrelevant. |
| *Directional association between tax KAMs and market valuation of DTAs:* | Negative | No Association |
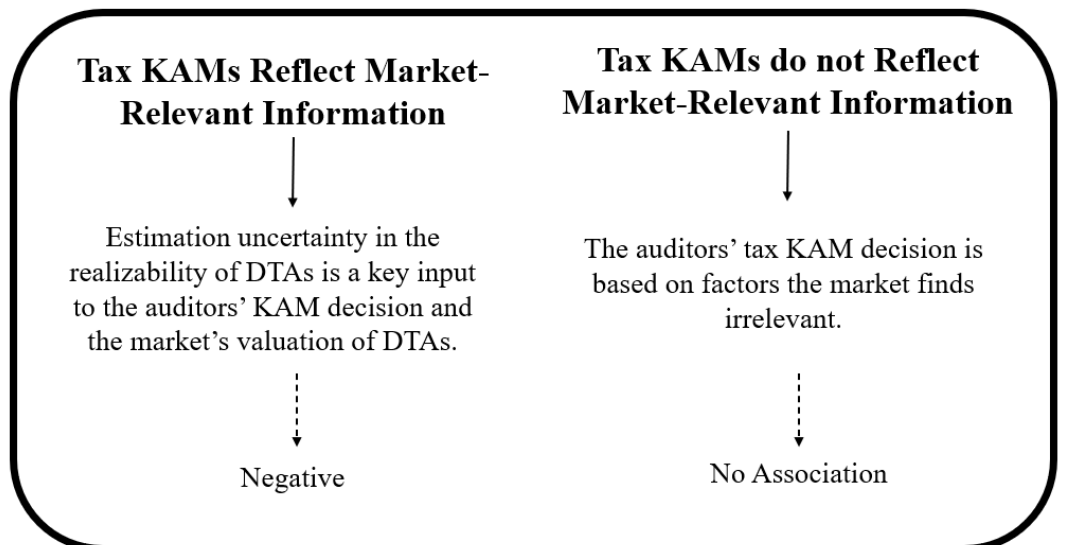
**FIGURE 1 (Continued)**

**Conceptual Model of the Competing Possibilities for the Determinants and Consequences of Tax KAMs**

**Panel C: Mechanisms by which Increasing APTS Could Resolve Tax KAMs (H2a)**

| | **APTS Create Knowledge Spillovers** | **APTS Threaten Auditor Independence** | | |
|---|---|---|---|---|
| *Potential mechanisms whereby increasing APTS could resolve tax KAMs:* | ↓ | | | |
| *Theoretical basis:* | Knowledge gained from the APTS engagement makes auditing the tax account less complex, risky, and/or subjective | Audit firm's involvement in the tax account creates self-review threats | Economic incentives from *current* APTS fees create self-interest threats | Economic incentives from potential *future* APTS fees create self-interest threats |
| *Timing of APTS increase relative to resolution of tax KAM:* | Concurrent | Concurrent | Concurrent | APTS increases *after* tax KAM is resolved |

**Panel D: Consequences of Tax KAMs to the Auditor-Client Relationship (H2a&b)**

| | **Tax-KAMs Tighten Auditor-Client Bonds** | **Tax KAMs Chill Auditor-Client Relations** |
|---|---|---|
| *Competing possibilities for how tax KAMs will affect auditor-client relationships:* | ↓ | ↓ |
| *Theoretical basis:* | Management wants to work closely with the auditor to resolve the tax KAM. | Management wants the auditor less involved in its tax function and is inclined to economically punish the auditor for issuing the tax KAM. |
| *Effect on APTS:* | Increase APTS | Decrease APTS, especially as the KAM continues to recur |

**FIGURE 1 (Continued)**

**Conceptual Model of the Competing Possibilities for the Determinants and Consequences
of Tax KAMs**

**Panel E: Consequences of Tax KAMs to firms' Future Tax Avoidance (H3)**

| *Competing possibilities for how firms will respond to tax KAMs:* | **Avoid Proprietary and Political Costs** | **Increase Tax Function Quality** | **No Response** |
|---|---|---|---|
| | ↓ | ↓ | ↓ |
| *Theoretical basis:* | Managers perceive that tax KAMs alert regulators and the public to aggressive tax avoidance strategies. | Tax KAMs increase upper management's awareness of issues in the tax function; management makes investments to resolve these issues. | Management does not perceive any proprietary or political costs to tax KAMs and/ or lacks resources to invest in the tax function. |
| | ↓ | ↓ | ↓ |
| *Effect on tax avoidance :* | Reduce tax avoidance | Increase tax avoidance | No change |

# FIGURE 2

## Stickiness of Tax KAM Disclosures

**Panel A: Continuing vs. New Tax KAMs by Year**
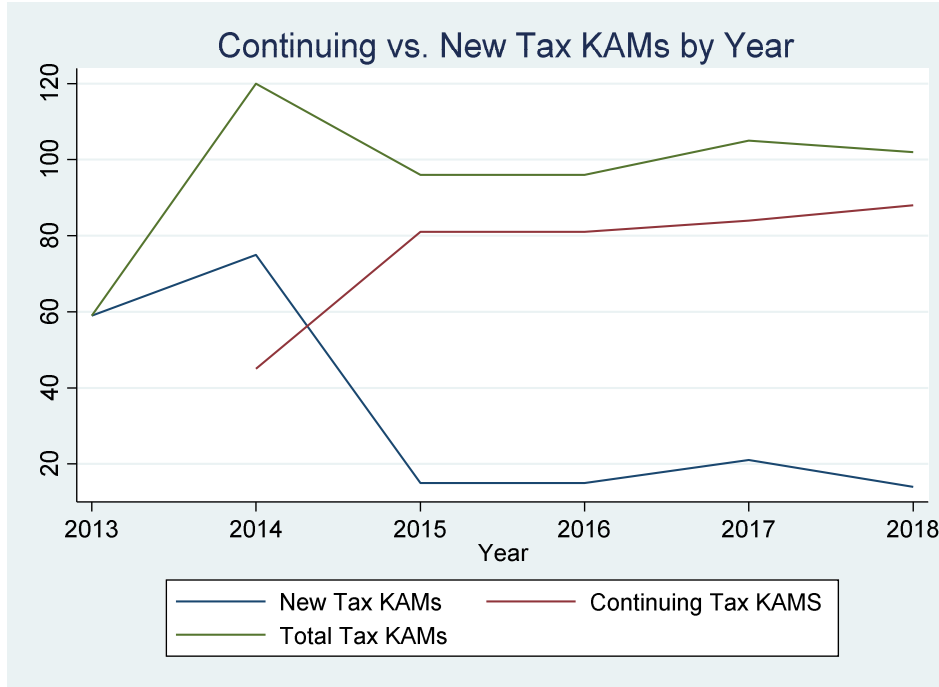


**Panel B: Persistence of Tax KAMs by Year First Issued**
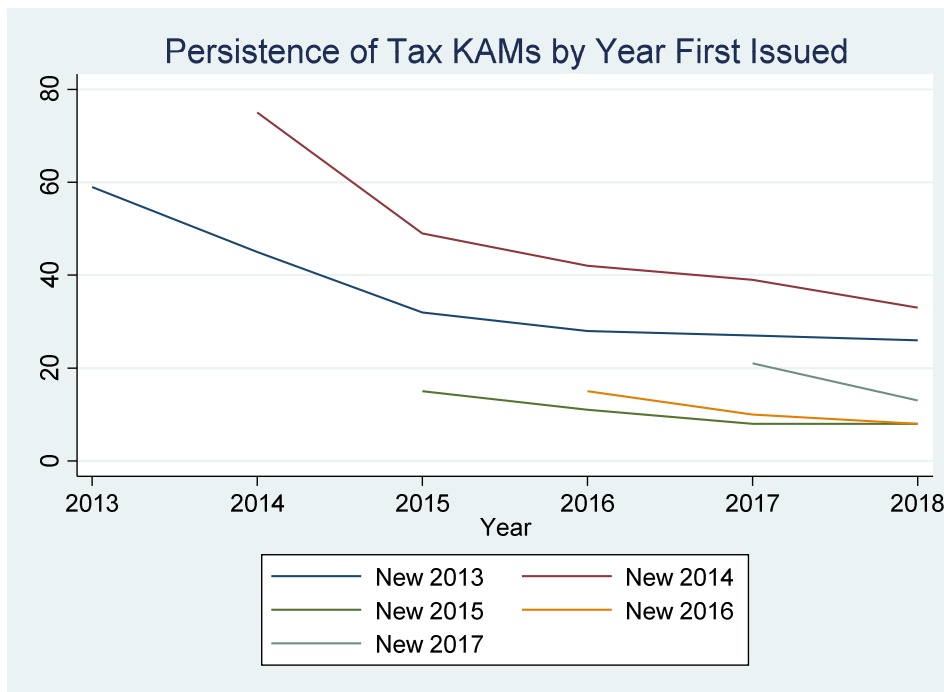
# TABLES

## Table 1
## Sample Selection

| | | |
|---|---|---:|
| Total firm/year KAM observations | | 7,339 |
| Less: | Observations without Factset identifiers | (1,012) |
| | Missing currency conversion data | (61) |
| | Missing Book ETR data | (11) |
| | Missing audit and non-audit fees data | (42) |
| | Missing balance sheet controls | (40) |
| | Loss firm-years | (1,831) |
| Sample for determinants testing | | 4,321 |
| | | |
| Less: | Observations without lagged data required to calculate change variables | (1,497) |
| Sample for consequences testing | | 2,824 |

**Table 2**
**Frequency of Tax KAMs**

**Panel A: Frequency of Tax KAMs by Year**

| Year | Number of tax-related KAMs | | | | |
| --- | --- | --- | --- | --- | --- |
| | Total | UTP | DTA | Complexity | Other |
| 2013 | 59 | 41 | 21 | 22 | 3 |
| 2014 | 120 | 84 | 46 | 53 | 5 |
| 2015 | 96 | 79 | 33 | 54 | 3 |
| 2016 | 96 | 74 | 34 | 59 | 2 |
| 2017 | 105 | 72 | 40 | 64 | 7 |
| 2018 | 102 | 77 | 37 | 63 | 5 |
| 2019 | 81 | 63 | 24 | 54 | 9 |
| Total | 659 | 490 | 235 | 369 | 34 |

**Panel B: Frequency of Tax KAMs by Industry**

| Industry classification | Number of tax-related KAMs | | | | |
| --- | --- | --- | --- | --- | --- |
| | Total | UTP | DTA | Complexity | Other |
| Consumer Non-Durables | 97 | 81 | 29 | 71 | 6 |
| Consumer Durables | 3 | 3 | 3 | 3 | 0 |
| Manufacturing | 64 | 51 | 29 | 41 | 3 |
| Oil, Gas, & Coal | 23 | 13 | 13 | 7 | 1 |
| Chemicals | 36 | 26 | 5 | 29 | 0 |
| Business Equipment | 44 | 33 | 17 | 28 | 2 |
| Telephone & TV | 13 | 9 | 12 | 5 | 0 |
| Utilities | 8 | 8 | 0 | 0 | 0 |
| Wholesale & Retail | 71 | 53 | 16 | 42 | 0 |
| Health, Medical, & Drug | 27 | 22 | 9 | 24 | 2 |
| Finance | 93 | 54 | 38 | 13 | 13 |
| Other | 180 | 137 | 64 | 106 | 7 |
| Total | 659 | 490 | 235 | 369 | 34 |

This table presents counts of tax KAMs from our primary sample of 4,321 firm/year observations. Panel A reports the distribution of KAMs, in total and by type, by year. Panel B reports this count by industry, using Fama and French 12 industry classifications.

Table 3
Descriptive Statistics

**Panel A: Full sample**

| Variable | N | Mean | Std. Dev. | P25 | Median | P75 |
|---|---|---|---|---|---|---|
| TAX_KAM | 4321 | 0.153 | 0.3596 | 0 | 0 | 0 |
| START_TAXKAM | 2840 | 0.018 | 0.133 | 0 | 0 | 0 |
| STOP_TAXKAM | 2840 | 0.032 | 0.176 | 0 | 0 | 0 |
| CONT_TAXKAM | 2840 | 0.151 | 0.359 | 0 | 0 | 0 |
| BOOK_ETR | 4321 | 0.159 | 0.174 | 0.004 | 0.158 | 0.231 |
| 3YR_BOOK_ETR | 3370 | 0.153 | 0.133 | 0.012 | 0.172 | 0.231 |
| ETR_VOL | 3284 | 0.107 | 0.167 | 0.007 | 0.031 | 0.110 |
| NET_DTA/DTL | 4321 | -0.006 | 0.028 | -0.012 | 0 | 0.001 |
| HAVEN | 4321 | 0.111 | 0.314 | 0 | 0 | 0 |
| TAX_MATERIALITY | 4321 | 0.012 | 0.018 | 0.000 | 0.006 | 0.019 |
| FOREIGN | 4321 | 0.183 | 0.388 | 0 | 0 | 0 |
| LN_AUDIT FEES | 4321 | 12.475 | 1.684 | 10.990 | 12.416 | 13.575 |
| LN_TAX FEES | 4321 | 4.144 | 5.376 | 0 | 0 | 10.040 |
| ASSETS | 4321 | 6.372 | 2.102 | 5.000 | 6.312 | 7.596 |
| PTI | 4321 | 0.106 | 0.097 | 0.040 | 0.079 | 0.139 |
| BIG 4 | 4321 | 0.773 | 0.419 | 1 | 1 | 1 |
| NUMBER OF KAMS | 4321 | 2.876 | 1.412 | 2 | 3 | 4 |
| KAM_REGPERIOD | 4321 | 0.551 | 0.497 | 0 | 1 | 1 |
| TOBINS Q | 3971 | 1.718 | 1.477 | 0.953 | 1.227 | 1.942 |
| CASH | 3971 | 0.124 | 0.149 | 0.029 | 0.073 | 0.156 |

| | | | | | | |
|---|---|---|---|---|---|---|
| PPE | 3971 | 0.172 | 0.248 | 0 | 0.047 | 0.253 |
| R&D | 3971 | 0.007 | 0.027 | 0 | 0 | 0 |
| ACCRUALS | 3971 | 0.087 | 0.176 | -0.014 | 0.046 | 0.147 |
| LEV | 2824 | 0.179 | 0.197 | 0.001 | 0.128 | 0.278 |
| ΔAUDITOR | 2824 | 0.097 | 0.296 | 0 | 0 | 0 |
| BUSY | 2824 | 0.684 | 0.465 | 0 | 1 | 1 |
| INVREC | 2824 | 0.216 | 0.232 | 0.016 | 0.145 | 0.342 |
| MB | 2824 | 2.638 | 3.555 | 0.932 | 1.500 | 3.139 |
| CFO | 2824 | 0.079 | 0.086 | 0.020 | 0.066 | 0.121 |
| SALES_GROWTH | 2824 | 0.201 | 1.145 | -0.014 | 0.201 | 0.172 |
| LITIGATE | 2824 | 0.130 | 0.336 | 0 | 0 | 0 |
| TAX_EXPERT | 2824 | 0.225 | 0.148 | 0 | 0 | 0 |
| INTANGIBLE | 2824 | 0.194 | 0.255 | 0 | 0.065 | 0.338 |
| CAPEX | 2824 | 0.038 | 0.054 | 0 | 0.021 | 0.052 |
| SG&A | 2824 | 0.179 | 0.259 | 0.006 | 0.078 | 0.254 |

**Table 3, Continued**
**Descriptive Statistics**

**Panel B: Firms With and Without Tax KAMs**

| | With Tax-Related KAM | | | Without Tax-Related KAM | | | |
|---|---|---|---|---|---|---|---|
| Variable | N | Mean | Std. Dev. | N | Mean | Std. Dev. | p-value |
| BOOK_ETR | 659 | 0.232 | 0.185 | 3662 | 0.145 | 0.169 | 0.000*** |
| 3YR_BOOK_ETR | 545 | 0.214 | 0.139 | 2825 | 0.142 | 0.128 | 0.000*** |
| ETR_VOL | 658 | 0.122 | 0.147 | 3626 | 0.105 | 0.171 | 0.013** |
| NET_DTA/DTL | 659 | -0.006 | 0.037 | 3662 | -0.006 | 0.026 | 0.859 |
| HAVEN | 659 | 0.100 | 0.300 | 3662 | 0.113 | 0.316 | 0.342 |
| TAX_MATERIALITY | 659 | 0.017 | 0.018 | 3662 | 0.011 | 0.018 | 0.000*** |
| FOREIGN | 659 | 0.338 | 0.474 | 3662 | 0.155 | 0.362 | 0.000*** |
| LN_AUDIT FEES | 659 | 14.364 | 1.395 | 3662 | 12.135 | 1.496 | 0.000*** |
| LN_TAX FEES | 659 | 6.221 | 6.173 | 3662 | 3.770 | 5.131 | 0.001*** |
| ASSETS | 659 | 8.026 | 1.926 | 3662 | 6.075 | 1.992 | 0.000*** |
| PTI | 659 | 0.090 | 0.075 | 3662 | 0.108 | 0.101 | 0.000*** |
| BIG 4 | 659 | 0.977 | 0.149 | 3662 | 0.736 | 0.441 | 0.000*** |
| NUMBER OF KAMS | 659 | 4.235 | 1.407 | 3662 | 2.632 | 1.267 | 0.000*** |
| KAM_REGPERIOD | 659 | 0.404 | 0.491 | 3662 | 0.578 | 0.494 | 0.000*** |
| TOBINS Q | 629 | 1.947 | 1.044 | 3342 | 1.675 | 1.542 | 0.000*** |
| CASH | 629 | 0.108 | 0.113 | 3342 | 0.127 | 0.155 | 0.003*** |
| PPE | 629 | 0.254 | 0.241 | 3342 | 0.157 | 0.247 | 0.000*** |
| R&D | 629 | 0.015 | 0.035 | 3342 | 0.006 | 0.025 | 0.000*** |
| ACCRUALS | 629 | 0.017 | 0.119 | 3342 | 0.100 | 0.182 | 0.000*** |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| LEV | 477 | 0.259 | 0.183 | 2347 | 0.163 | 0.196 | 0.000*** |
| ΔAUDITOR | 477 | 0.109 | 0.312 | 2347 | 0.095 | 0.293 | 0.332 |
| BUSY | 477 | 0.751 | 0.433 | 2347 | 0.671 | 0.470 | 0.001*** |
| INVREC | 477 | 0.235 | 0.157 | 2347 | 0.212 | 0.244 | 0.050** |
| MB | 477 | 3.774 | 4.125 | 2347 | 2.407 | 3.382 | 0.000*** |
| CFO | 477 | 0.106 | 0.064 | 2347 | 0.073 | 0.088 | 0.000*** |
| SALES_GROWTH | 477 | 0.037 | 0.127 | 2347 | 0.235 | 1.252 | 0.001*** |
| LITIGATE | 477 | 0.170 | 0.376 | 2347 | 0.121 | 0.327 | 0.004*** |
| TAX_EXPERT | 477 | 0.323 | 0.468 | 2347 | 0.205 | 0.404 | 0.000*** |
| INTANGIBLE | 477 | 0.319 | 0.238 | 2347 | 0.169 | 0.251 | 0.000*** |
| CAPEX | 477 | 0.050 | 0.048 | 2347 | 0.035 | 0.055 | 0.000*** |
| SG&A | 477 | 0.194 | 0.184 | 2347 | 0.176 | 0.271 | 0.162 |

*The symbols ***, **, and * indicate that the differences are significant at the 0.01, 0.05 and 0.10 levels, respectively.*

**Table 4**
**Pearson Correlations Among Test Variables – Determinants Testing**

| Variables | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) | (14) | (15) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Dependent variables** | | | | | | | | | | | | | | | |
| (1) *TAX_KAM* | 1 | | | | | | | | | | | | | | |
| (2) *TOBINS Q* | | 1 | | | | | | | | | | | | | |
| **Independent variables** | | | | | | | | | | | | | | | |
| (3) *BOOK_ETR* | 0.18*** | 0.13*** | 1 | | | | | | | | | | | | |
| (4) *ETR_VOL* | 0.04* | -0.13*** | 0.18*** | 1 | | | | | | | | | | | |
| (5) *NET_DTA/DTL* | 0.00 | 0.11*** | -0.12*** | 0.01 | 1 | | | | | | | | | | |
| (6) *HAVEN* | -0.01 | -0.09*** | -0.10*** | -0.02 | -0.07*** | 1 | | | | | | | | | |
| (7) *MATERIALITY* | 0.11*** | 0.58*** | 0.46*** | -0.08*** | -0.03* | -0.11*** | 1 | | | | | | | | |
| (8) *FOREIGN* | 0.17*** | 0.05*** | 0.19*** | 0.02 | -0.02 | 0.05*** | 0.14*** | 1 | | | | | | | |
| (9) *AUDIT_FEES* | 0.48*** | 0.12*** | 0.44*** | 0.01 | -0.11*** | -0.01 | 0.23*** | 0.30*** | 1 | | | | | | |
| (10) *TAX_FEES* | 0.05*** | 0.06*** | 0.03* | -0.01 | 0.05** | -0.03 | 0.05*** | -0.00 | -0.02 | 1 | | | | | |
| (11) *ASSETS* | 0.33*** | -0.12*** | 0.20*** | 0.03* | -0.11*** | -0.01 | -0.01 | 0.15*** | 0.75*** | -0.08*** | 1 | | | | |
| (12) *PTI* | -0.07*** | 0.50*** | -0.16*** | -0.04** | 0.10*** | -0.03 | 0.48*** | -0.04* | -0.20*** | 0.01 | -0.21*** | 1 | | | |
| (13) *BIG_4* | 0.21*** | 0.01 | 0.11*** | 0.03 | -0.01 | 0.06*** | 0.09*** | 0.11*** | 0.39*** | -0.01 | 0.50*** | -0.05** | 1 | | |
| (14) *NUM_KAMS* | 0.41*** | 0.05*** | 0.28*** | 0.03* | -0.06*** | -0.10*** | 0.10*** | 0.15*** | 0.58*** | -0.00 | 0.43*** | -0.15*** | 0.20*** | 1 | |
| (15) *KAM_REGPERIOD* | -0.13*** | 0.03** | 0.01 | 0.01 | -0.03** | 0.05*** | -0.02 | -0.02 | -0.07*** | -0.23*** | -0.18*** | 0.01 | -0.20*** | -0.13*** | 1 |

*The symbols \*\*\*, \*\*, and \* represent p-values significant at the 0.01, 0.05 and 0.10 levels, respectively.*

**Table 5**
**Predicting Tax-Related KAMs**

| VARIABLES | (1) TAX_KAM | (2) TAX_KAM | (3) TAX_KAM | (4) TAX_KAM | (5) TAX_KAM |
|---|---|---|---|---|---|
| ETR | -0.465** | | | -0.594** | |
| | (0.044) | | | (0.013) | |
| 3YR _ETR | | -0.807** | | | -1.097*** |
| | | (0.029) | | | (0.004) |
| ETR_VOL | | | 0.278 | 0.429** | 0.995** |
| | | | (0.152) | (0.032) | (0.012) |
| NET_DTA/DTL | 3.598*** | 2.746** | 3.318*** | 3.301*** | 2.685** |
| | (0.000) | (0.023) | (0.001) | (0.001) | (0.026) |
| HAVEN | 0.217** | 0.248** | 0.224** | 0.216** | 0.258** |
| | (0.038) | (0.034) | (0.034) | (0.041) | (0.027) |
| MATERIALITY | 2.586 | 1.082 | -0.617 | 3.450 | 2.366 |
| | (0.368) | (0.756) | (0.791) | (0.252) | (0.500) |
| FOREIGN | 0.096 | 0.126* | 0.102 | 0.105 | 0.138* |
| | (0.157) | (0.091) | (0.134) | (0.124) | (0.067) |
| LN_AUDIT FEES | 0.447*** | 0.485*** | 0.443*** | 0.449*** | 0.474*** |
| | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) |
| LN_TAX FEES | 0.002 | 0.001 | 0.002 | 0.003 | 0.002 |
| | (0.663) | (0.862) | (0.710) | (0.654) | (0.802) |
| ASSETS | -0.075** | -0.099*** | -0.077** | -0.076** | -0.091** |
| | (0.014) | (0.006) | (0.010) | (0.012) | (0.011) |
| PTI | -0.181 | 0.474 | 0.458 | -0.176 | 0.518 |
| | (0.755) | (0.483) | (0.343) | (0.767) | (0.444) |
| BIG_4 | 0.635*** | 0.768*** | 0.653*** | 0.642*** | 0.772*** |
| | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) |
| NUM_KAMS | 0.234*** | 0.259*** | 0.234*** | 0.237*** | 0.258*** |
| | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) |
| KAM_REGPERIOD | 0.070 | -0.085 | 0.020 | 0.039 | -0.100 |
| | (0.699) | (0.665) | (0.910) | (0.830) | (0.612) |
| CONSTANT | -6.881*** | -7.488*** | -6.989*** | -6.969*** | -7.446*** |
| | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) |
| | | | | | |
| Year FE | YES | YES | YES | YES | YES |
| Industry FE | YES | YES | YES | YES | YES |
| Observations | 4,321 | 3,370 | 4,284 | 4,284 | 3,370 |
| Area Under Curve | 0.898 | 0.896 | 0.898 | 0.899 | 0.897 |

*We use probit regression with robust standard errors clustered on firm. The symbols \*\*\*, \*\*, and \* represent two-tailed p-values significant at the 0.01, 0.05 and 0.10 levels, respectively.*

**Table 6**
**Predicting Types of Tax-Related KAMs**

| VARIABLES | (1) UTP_KAM | | | (2) DTA_KAM | | | (3) COMPLEX_KAM | | | (4) OTHER_KAM | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (1) | (2) | (3) | (1) | (2) | (3) | (1) | (2) | (3) |
| BOOK_ETR | -0.937*** | | -0.980*** | 0.371 | | -0.029 | -0.440 | | -0.331 | 0.157 | | 0.012 |
| | (0.000) | | (0.000) | (0.112) | | (0.902) | (0.119) | | (0.273) | (0.780) | | (0.982) |
| ETR_VOL | | -0.149 | 0.094 | | 1.383*** | 1.391*** | | -0.578** | -0.488 | | 0.378 | 0.375 |
| | | (0.511) | (0.687) | | (0.000) | (0.000) | | (0.044) | (0.105) | | (0.357) | (0.338) |
| NET_DTA/DTL | 1.124 | 0.951 | 0.943 | 7.418*** | 6.952*** | 6.956*** | 1.725 | 1.758 | 1.761 | -0.795 | -0.914 | -0.912 |
| | (0.299) | (0.372) | (0.385) | (0.000) | (0.000) | (0.000) | (0.118) | (0.116) | (0.117) | (0.673) | (0.627) | (0.627) |
| HAVEN | 0.086 | 0.080 | 0.078 | 0.216 | 0.232* | 0.232* | 0.554*** | 0.540*** | 0.538*** | -0.402 | -0.398 | -0.399 |
| | (0.453) | (0.484) | (0.493) | (0.102) | (0.085) | (0.086) | (0.000) | (0.000) | (0.000) | (0.232) | (0.246) | (0.234) |
| MATERIALITY | 6.717** | -0.266 | 6.739** | -3.821 | -0.712 | -0.475 | 3.468 | -0.041 | 2.273 | 6.097 | 7.150 | 7.082 |
| | (0.040) | (0.917) | (0.048) | (0.278) | (0.823) | (0.898) | (0.373) | (0.990) | (0.563) | (0.265) | (0.123) | (0.202) |
| FOREIGN | 0.198*** | 0.196*** | 0.203*** | -0.130 | -0.116 | -0.116 | 0.117 | 0.115 | 0.118 | -0.135 | -0.122 | -0.122 |
| | (0.006) | (0.007) | (0.005) | (0.132) | (0.184) | (0.183) | (0.143) | (0.151) | (0.142) | (0.451) | (0.492) | (0.492) |
| LN_AUDIT FEES | 0.458*** | 0.457*** | 0.465*** | 0.437*** | 0.429*** | 0.429*** | 0.639*** | 0.654*** | 0.656*** | 0.199** | 0.200*** | 0.200*** |
| | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.010) | (0.007) | (0.008) |
| LN_TAX FEES | -0.001 | -0.002 | -0.002 | 0.003 | 0.004 | 0.004 | 0.009 | 0.008 | 0.008 | -0.013 | -0.013 | -0.013 |
| | (0.825) | (0.695) | (0.780) | (0.654) | (0.562) | (0.560) | (0.231) | (0.270) | (0.262) | (0.381) | (0.383) | (0.383) |
| ASSETS | -0.049 | -0.058* | -0.055 | -0.181*** | -0.173*** | -0.173*** | -0.112*** | -0.123*** | -0.123*** | 0.005 | 0.003 | 0.003 |
| | (0.145) | (0.081) | (0.108) | (0.000) | (0.000) | (0.000) | (0.004) | (0.002) | (0.002) | (0.922) | (0.950) | (0.950) |
| PTI | -0.377 | 0.760 | -0.368 | -1.186 | -1.038 | -1.081 | 0.124 | 0.521 | 0.139 | 1.900** | 1.815** | 1.824* |
| | (0.555) | (0.150) | (0.572) | (0.120) | (0.105) | (0.142) | (0.876) | (0.448) | (0.861) | (0.049) | (0.039) | (0.069) |
| BIG_4 | 0.497*** | 0.523*** | 0.497*** | 0.786*** | 0.843*** | 0.843*** | 0.669*** | 0.673*** | 0.661*** | 0.021 | 0.018 | 0.019 |
| | (0.001) | (0.001) | (0.001) | (0.000) | (0.000) | (0.000) | (0.001) | (0.001) | (0.001) | (0.935) | (0.944) | (0.940) |
| NUM_KAMS | 0.189*** | 0.186*** | 0.191*** | 0.138*** | 0.146*** | 0.146*** | 0.104*** | 0.103*** | 0.104*** | 0.134*** | 0.136*** | 0.136*** |
| | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.001) | (0.000) | (0.000) |
| KAM_REGPERIOD | 0.043 | -0.013 | 0.019 | 0.111 | 0.081 | 0.082 | 0.302 | 0.274 | 0.282 | 3.826*** | 3.832*** | 3.830*** |
| | (0.832) | (0.949) | (0.926) | (0.617) | (0.716) | (0.714) | (0.146) | (0.190) | (0.177) | (0.000) | (0.000) | (0.000) |
| CONSTANT | -7.294*** | -7.425*** | -7.364*** | -6.846*** | -7.073*** | -7.071*** | -9.894*** | -10.033*** | -9.992*** | -5.462*** | -5.504*** | -5.504*** |
| | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) | (0.000) |
| | | | | | | | | | | | | |
| Year FE | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| Industry FE | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES | YES |
| Observations | 4,321 | 4,284 | 4,284 | 4,259 | 4,223 | 4,223 | 4,259 | 4,223 | 4,223 | 3,699 | 3,665 | 3,665 |
| Area Under Curve | 0.905 | 0.903 | 0.905 | 0.881 | 0.888 | 0.888 | 0.930 | 0.930 | 0.930 | 0.881 | 0.882 | 0.882 |

*We use probit regression with robust standard errors clustered on firm. The symbols \*\*\*, \*\*, and \* represent two-tailed p-values significant at the 0.01, 0.05 and 0.10 levels, respectively.*

**Table 7**
**Association Between Tax KAMs and Market Valuation of Deferred Tax Assets**

| VARIABLES | (1)<br>Tobin's q<br>t | (2)<br>No Tax KAM<br>Tobin's q<br>t | (3)<br>Tax KAM<br>Tobin's q<br>t |
|---|---|---|---|
| TAX_KAM | -0.092* | | |
| | (0.078) | | |
| NET_DTA | 5.751*** | 6.089*** | 0.422 |
| | (0.000) | (0.000) | (0.648) |
| TAX_KAM*NET_DTA | -5.957*** | | |
| | (0.000) | | |
| BOOK_ETR | -0.555*** | -0.434*** | -0.973*** |
| | (0.001) | (0.005) | (0.000) |
| ETR_VOL | -0.505*** | -0.510*** | -0.449* |
| | (0.000) | (0.000) | (0.066) |
| HAVEN | -0.076 | -0.087 | 0.046 |
| | (0.145) | (0.158) | (0.676) |
| MATERIALITY | 26.451*** | 29.143*** | 16.632*** |
| | (0.000) | (0.000) | (0.000) |
| FOREIGN | -0.114** | -0.141** | 0.010 |
| | (0.013) | (0.010) | (0.892) |
| LN_AUDIT_FEES | 0.119*** | 0.131*** | -0.036 |
| | (0.000) | (0.000) | (0.551) |
| LN_TAX_FEES | -0.002 | -0.003 | 0.002 |
| | (0.517) | (0.414) | (0.731) |
| ASSETS | -0.089*** | -0.091*** | 0.009 |
| | (0.001) | (0.000) | (0.847) |
| PTI | 5.731*** | 5.745*** | 4.571*** |
| | (0.000) | (0.000) | (0.000) |
| BIG_4 | 0.064 | 0.047 | 0.423* |
| | (0.190) | (0.349) | (0.052) |
| NUM_KAMS | -0.009 | -0.023 | 0.007 |
| | (0.573) | (0.199) | (0.791) |
| CASH | 0.542*** | 0.429*** | 1.367*** |
| | (0.001) | (0.002) | (0.000) |
| PPE | -0.347*** | -0.272*** | -0.798*** |
| | (0.000) | (0.005) | (0.000) |
| R&D | 3.727** | 5.116*** | 1.154 |
| | (0.018) | (0.000) | (0.365) |
| ACCRUALS | -0.783* | -0.796*** | -0.517 |
| | (0.076) | (0.000) | (0.197) |
| CONSTANT | 0.547* | 0.490* | 1.651*** |
| | (0.088) | (0.095) | (0.006) |
| | | | |
| Test of difference: NET_DTA | | | 5.667*** |
| Column (2) vs. Column (3) | | | (0.000) |
| | | | |
| Observations | 3,971 | 3,342 | 629 |
| R-squared | 0.517 | 0.528 | 0.499 |
| Year FE | Yes | Yes | Yes |
| Industry FE | Yes | Yes | Yes |

*We use ordinary least squares regression with robust standard errors clustered on firm. The symbols \*\*\*, \*\*, and \* represent two-tailed p-values significant at the 0.01, 0.05 and 0.10 levels, respectively.*

**Table 8**
**Consequences of Tax KAMs for Auditor-Provided Services**

**Panel A: Audit Fees**

| VARIABLES | (1) %ΔAUDFEE$_{i,t-1,t}$ coef | pval | (2) %ΔAUDFEE$_{i,t-1,t}$ coef | pval | (3) %ΔAUDFEE$_{i,t,t+1}$ coef | pval | (4) %ΔAUDFEE$_{i,t,t+1}$ coef | pval |
|---|---|---|---|---|---|---|---|---|
| TAXKAM_FIRM$_{i,t,t-1}$ | -0.957 | (0.321) | 0.330 | (0.805) | -1.018 | (0.293) | 0.327 | (0.799) |
| RESOLVE_TAXKAM$_{i,t}$ | -0.044 | (0.981) | -1.245 | (0.520) | 4.366* | (0.095) | 4.349* | (0.097) |
| ΔETR | 0.585 | (0.773) | 3.434 | (0.408) | 0.714 | (0.725) | 4.233 | (0.308) |
| ΔETR_VOL | 4.767 | (0.121) | 8.065 | (0.216) | 4.690 | (0.127) | 7.971 | (0.224) |
| HAVEN | -0.780 | (0.573) | 0.368 | (0.889) | -0.808 | (0.558) | 0.196 | (0.938) |
| ΔMATERIALITY | -62.445 | (0.159) | -79.775 | (0.278) | -66.042 | (0.138) | -89.798 | (0.235) |
| ΔDTA_NET | -77.776 | (0.149) | 27.315 | (0.710) | -78.588 | (0.146) | 29.961 | (0.682) |
| ΔASSETS | 36.518*** | (0.000) | 37.571*** | (0.000) | 36.530*** | (0.000) | 37.626*** | (0.000) |
| ΔPTI | -12.271*** | (0.010) | -9.681 | (0.396) | -12.128** | (0.011) | -9.834 | (0.403) |
| ΔLEV | 12.082** | (0.013) | 16.091** | (0.034) | 12.031** | (0.013) | 15.943** | (0.032) |
| ΔBIG_4 | 16.799*** | (0.000) | 13.888** | (0.010) | 16.759*** | (0.000) | 13.758*** | (0.010) |
| ΔAUDITOR | -3.166* | (0.053) | -6.394*** | (0.009) | -3.158* | (0.053) | -6.361*** | (0.010) |
| BUSY | 1.064 | (0.197) | -0.967 | (0.485) | 1.049 | (0.203) | -0.975 | (0.479) |
| ΔNUM_KAMS | 1.895*** | (0.001) | 0.387 | (0.526) | 1.915*** | (0.000) | 0.468 | (0.421) |
| ΔINVREC | -0.751 | (0.891) | 7.148 | (0.524) | -0.780 | (0.887) | 7.157 | (0.523) |
| ΔMB | -0.084 | (0.478) | -0.102 | (0.522) | -0.079 | (0.506) | -0.085 | (0.601) |
| ΔCFO | -6.815 | (0.394) | -14.765 | (0.300) | -6.703 | (0.402) | -13.972 | (0.334) |
| ΔSALES_GROWTH | 0.469 | (0.243) | 3.303 | (0.361) | 0.466 | (0.246) | 3.265 | (0.352) |
| LITIGATE | -0.059 | (0.972) | 0.045 | (0.983) | -0.128 | (0.939) | -0.112 | (0.956) |
| FOREIGN | -0.806 | (0.378) | -1.014 | (0.365) | -0.881 | (0.336) | -0.998 | (0.370) |
| KAM_REGPERIOD | 7.632*** | (0.000) | 7.557** | (0.012) | 7.617*** | (0.000) | 7.738** | (0.011) |
| TAX_EXPERT | 1.106 | (0.225) | 3.238** | (0.034) | 1.101 | (0.225) | 3.533** | (0.020) |
| CONSTANT | -2.198 | (0.321) | -3.165 | (0.313) | -2.474 | (0.257) | -2.998 | (0.322) |
| | | | | | | | | |
| Year FE | YES | | YES | | YES | | YES | |
| Industry FE | YES | | YES | | YES | | YES | |
| R-squared | 0.250 | | 0.357 | | 0.250 | | 0.360 | |
| Observations | 2,824 | | 783 | | 2,824 | | 783 | |
| Sample | Full | | Tax KAM Firms | | Full | | Tax KAM Firms | |

*We use ordinary least squares regression with robust standard errors clustered on firm. The symbols \*\*\*, \*\*, and \* represent two-tailed p-values significant at the 0.01, 0.05 and 0.10 levels, respectively.*

**Panel B: Tax Fees**

| VARIABLES | (1) %ΔAPTS$_{i,t-1,t}$ | (2) %ΔAPTS$_{i,t-1,t}$ | (3) %ΔAPTS/ TOTFEE$_{i,t-1,t}$ | (4) %ΔAPTS/ TOTFEE$_{i,t-1,t}$ | (5) %ΔAPTS$_{i,t,t+1}$ | (6) %ΔAPTS$_{i,t,t+1}$ | (7) %ΔAPTS/ TOTFEE$_{i,t,t+1}$ | (8) %ΔAPTS/ TOTFEE$_{i,t,t+1}$ |
|---|---|---|---|---|---|---|---|---|
| TAXKAM_FIRM$_{i,t,t-1}$ | -5.801** | -3.854 | -16.907*** | -7.219 | -7.056*** | -4.602 | -17.661*** | -8.148 |
| RESOLVE_TAXKAM$_{i,t}$ | 5.380 | 6.550 | 10.187 | 8.040 | 18.132*** | 18.465*** | 16.643** | 20.529*** |
| ΔETR | 3.178 | -1.714 | -29.620 | -3.659 | 3.728 | 1.554 | -29.389 | -0.442 |
| ΔETR_VOL | -12.888* | 3.580 | -4.241 | 4.215 | -13.397* | 1.691 | -5.093 | 2.145 |
| HAVEN | 10.524*** | 12.811** | 26.660* | 9.041 | 10.371*** | 12.333** | 26.337* | 8.329 |
| ΔMATERIALITY | -95.767 | 118.467 | 137.514 | -16.737 | -113.505 | 62.581 | 122.641 | -76.078 |
| ΔDTA_NET | 7.028 | 73.683 | 14.772 | 265.409 | 0.196 | 66.286 | 6.712 | 256.572 |
| ΔASSETS | 5.431 | 11.951 | 6.746 | 43.432 | 5.301 | 11.199 | 6.797 | 42.433 |
| ΔPTI | -0.361 | -47.392 | -37.806 | -48.987 | 0.128 | -46.691 | -37.648 | -47.979 |
| ΔLEV | 14.651 | 19.427 | 34.468 | 10.775 | 14.893* | 20.435 | 34.908 | 12.150 |
| ΔBIG_4 | 16.195** | -4.384 | 9.002 | -4.948 | 15.909** | -5.752 | 8.646 | -6.462 |
| ΔAUDITOR | -20.879*** | -31.139*** | -27.939*** | -33.360*** | -20.718*** | -30.055*** | -27.924*** | -32.192*** |
| BUSY | -2.145 | -3.955 | -0.958 | -10.038 | -2.129 | -3.860 | -0.847 | -9.717 |
| ΔNUM_KAMS | -0.094 | 0.545 | -1.048 | 0.030 | -0.168 | 0.150 | -1.139 | -0.367 |
| ΔINVREC | -19.215* | -9.159 | -37.524 | 6.776 | -19.089* | -8.224 | -37.020 | 8.135 |
| ΔMB | -0.162 | 0.297 | 0.383 | 0.970 | -0.135 | 0.369 | 0.376 | 1.032 |
| ΔCFO | -6.394 | -15.960 | 8.160 | -33.265 | -5.993 | -13.719 | 9.150 | -30.290 |
| ΔSALES_GROWTH | -1.135 | -1.271 | -0.363 | -1.828 | -1.134 | -0.996 | -0.362 | -1.387 |
| LITIGATE | -4.252 | -3.350 | 1.158 | 0.874 | -4.596 | -4.130 | 0.737 | 0.089 |
| FOREIGN | 0.065 | -1.637 | 1.194 | 2.218 | -0.095 | -1.752 | 0.859 | 2.053 |
| KAM_REGPERIOD | -14.079*** | -10.803 | -19.771* | -13.642 | -14.131*** | -10.597 | -20.056* | -13.721 |
| TAX_EXPERT | 6.845*** | 7.611* | 10.538** | 11.664* | 6.744*** | 7.770* | 10.072** | 11.577* |
| CONSTANT | -6.700 | -7.764 | 15.775 | 4.192 | -8.260 | -9.107 | 10.646 | 0.660 |
| | | | | | | | | |
| Year FE | YES | YES | YES | YES | YES | YES | YES | YES |
| Industry FE | YES | YES | YES | YES | YES | YES | YES | YES |
| R-squared | 0.072 | 0.098 | 0.031 | 0.103 | 0.074 | 0.107 | 0.031 | 0.108 |
| Observations | 2,824 | 783 | 2,824 | 783 | 2,824 | 783 | 2,824 | 783 |
| Sample | Full | Tax KAM Firms | Full | Tax KAM Firms | Full | Tax KAM Firms | Full | Tax KAM Firms |

*We use ordinary least squares regression with robust standard errors clustered on firm. The symbols \*\*\*, \*\*, and \* represent two-tailed p-values significant at the 0.01, 0.05 and 0.10 levels, respectively.*

**Panel C: Audit Fees and Stop, Start, Continue Tax KAMs**

| | (1) | | (2) | | (3) | | (4) | |
|---|---|---|---|---|---|---|---|---|
| | %$\Delta$AUDFEE$_{i,t-1,t}$ | | %$\Delta$AUDFEE$_{i,t-1,t}$ | | %$\Delta$AUDFEE$_{i,t,t+1}$ | | %$\Delta$AUDFEE$_{i,t,t+1}$ | |
| VARIABLES | coef | pval | coef | pval | coef | pval | coef | pval |
| CONT_TAXKAM$_{i,t}$ | -1.415 | (0.141) | -0.642 | (0.672) | -1.179 | (0.231) | 0.605 | (0.682) |
| START_TAXKAM$_{i,t}$ | -2.096 | (0.426) | -0.770 | (0.798) | -0.982 | (0.476) | 1.220 | (0.490) |
| STOP_TAXKAM$_{i,t}$ | -1.120 | (0.517) | -1.544 | (0.487) | 3.257 | (0.208) | 5.027* | (0.061) |
| $\Delta$ETR | 0.583 | (0.773) | 3.537 | (0.394) | 0.704 | (0.728) | 4.332 | (0.296) |
| $\Delta$ETR_VOL | 4.765 | (0.122) | 7.991 | (0.225) | 4.713 | (0.126) | 7.987 | (0.225) |
| HAVEN | -0.768 | (0.579) | 0.486 | (0.852) | -0.794 | (0.565) | 0.045 | (0.986) |
| $\Delta$MATERIALITY | -62.978 | (0.156) | -81.489 | (0.268) | -65.241 | (0.145) | -92.871 | (0.220) |
| $\Delta$DTA_NET | -76.857 | (0.153) | 27.358 | (0.710) | -78.465 | (0.147) | 31.065 | (0.671) |
| $\Delta$ASSETS | 36.448*** | (0.000) | 37.239*** | (0.000) | 36.497*** | (0.000) | 37.698*** | (0.000) |
| $\Delta$PTI | -12.254*** | (0.010) | -9.574 | (0.403) | -12.161** | (0.011) | -9.551 | (0.416) |
| $\Delta$LEV | 12.062** | (0.013) | 16.232** | (0.032) | 12.077** | (0.013) | 15.874** | (0.032) |
| $\Delta$BIG_4 | 16.850*** | (0.000) | 13.911** | (0.010) | 16.763*** | (0.000) | 13.785*** | (0.009) |
| $\Delta$AUDITOR | -3.112* | (0.057) | -6.353** | (0.010) | -3.137* | (0.055) | -6.369*** | (0.010) |
| BUSY | 1.076 | (0.192) | -0.991 | (0.481) | 1.055 | (0.201) | -0.918 | (0.505) |
| $\Delta$NUM_KAMS | 1.931*** | (0.000) | 0.413 | (0.503) | 1.901*** | (0.000) | 0.513 | (0.376) |
| $\Delta$INVREC | -0.711 | (0.897) | 7.236 | (0.519) | -0.771 | (0.888) | 7.214 | (0.520) |
| $\Delta$MB | -0.084 | (0.480) | -0.099 | (0.537) | -0.077 | (0.519) | -0.088 | (0.587) |
| $\Delta$CFO | -6.809 | (0.394) | -15.296 | (0.283) | -6.769 | (0.398) | -13.385 | (0.357) |
| $\Delta$SALES_GROWTH | 0.477 | (0.234) | 3.333 | (0.358) | 0.467 | (0.244) | 3.303 | (0.343) |
| LITIGATE | -0.025 | (0.988) | -0.029 | (0.989) | -0.109 | (0.948) | -0.108 | (0.958) |
| FOREIGN | -0.734 | (0.422) | -0.978 | (0.384) | -0.839 | (0.361) | -1.002 | (0.369) |
| KAM_REGPERIOD | 7.682*** | (0.000) | 7.619** | (0.012) | 7.642*** | (0.000) | 7.647** | (0.012) |
| TAX_EXPERT | 1.159 | (0.205) | 3.347** | (0.029) | 1.126 | (0.217) | 3.513** | (0.021) |
| CONSTANT | -1.927 | (0.387) | -2.334 | (0.487) | -2.157 | (0.337) | -3.889 | (0.225) |
| | | | | | | | | |
| Year FE | YES | | YES | | YES | | YES | |
| Industry FE | YES | | YES | | YES | | YES | |
| R-squared | 0.250 | | 0.357 | | 0.251 | | 0.360 | |
| Observations | 2,824 | | 783 | | 2,824 | | 783 | |
| | | | Tax KAM | | | | Tax KAM | |
| Sample | Full | | Firms | | Full | | Firms | |

*We use ordinary least squares regression with robust standard errors clustered on firm. The symbols \*\*\*, \*\*, and \* represent two-tailed p-values significant at the 0.01, 0.05 and 0.10 levels, respectively*

**Table 8 (Continued)**
**Consequences of Tax KAMs for Auditor-Provided Services**

**Panel D: Tax Fees and Stop, Start, Continue Tax KAMs**

| VARIABLES | (1) $\%\Delta APTS_{i,t-1,t}$ | (2) $\%\Delta APTS_{i,t-1,t}$ | (3) $\%\Delta APTS/$ $TOTFEE_{i,t-1,t}$ | (4) $\%\Delta APTS/$ $TOTFEE_{i,t-1,t}$ | (5) $\%\Delta APTS_{i,t,t+1}$ | (6) $\%\Delta APTS_{i,t,t+1}$ | (7) $\%\Delta APTS/$ $TOTFEE_{i,t,t+1}$ | (8) $\%\Delta APTS/$ $TOTFEE_{i,t,t+1}$ |
|---|---|---|---|---|---|---|---|---|
| $CONT\_TAXKAM_{i,t}$ | -6.889*** | -7.176** | -18.354*** | -10.852 | -7.111*** | -1.972 | -18.092*** | -5.925 |
| $START\_TAXKAM_{i,t}$ | -11.364* | -9.188 | -17.913** | -11.653 | 0.577 | 7.544 | -10.256 | 5.209 |
| $STOP\_TAXKAM_{i,t}$ | -0.764 | 0.299 | -7.182 | -1.847 | 11.115** | 16.577** | -1.705 | 14.507* |
| $\Delta ETR$ | 3.155 | -1.382 | -29.700 | -3.351 | 3.732 | 2.158 | -29.529 | -0.010 |
| $\Delta ETR\_VOL$ | -12.941* | 2.698 | -4.403 | 3.039 | -13.428* | 1.738 | -4.844 | 2.127 |
| HAVEN | 10.575*** | 13.418** | 26.728* | 9.732 | 10.288*** | 11.156* | 26.437* | 7.334 |
| $\Delta MATERIALITY$ | -99.208 | 105.971 | 134.869 | -30.204 | -114.480 | 43.371 | 131.512 | -89.962 |
| $\Delta DTA\_NET$ | 11.109 | 76.160 | 21.098 | 268.684 | 1.737 | 77.517 | 9.107 | 267.667 |
| $\Delta ASSETS$ | 5.212 | 10.706 | 6.454 | 42.052 | 5.321 | 12.101 | 6.597 | 43.301 |
| $\Delta PTI$ | -0.191 | -45.851 | -37.660 | -47.213 | 0.310 | -43.984 | -37.820 | -45.330 |
| $\Delta LEV$ | 14.446 | 19.507 | 34.211 | 10.837 | 14.900* | 19.742 | 35.275 | 11.550 |
| $\Delta BIG\_4$ | 16.485** | -3.716 | 9.446 | -4.125 | 15.917** | -5.400 | 8.736 | -6.094 |
| $\Delta AUDITOR$ | -20.598*** | -30.605*** | -27.482*** | -32.670*** | -20.720*** | -30.083*** | -27.713*** | -32.197*** |
| BUSY | -2.134 | -4.268 | -0.939 | -10.424 | -2.145 | -3.605 | -0.855 | -9.600 |
| $\Delta NUM\_KAMS$ | 0.100 | 0.916 | -0.743 | 0.504 | -0.149 | 0.452 | -1.270 | -0.139 |
| $\Delta INVREC$ | -19.101* | -8.844 | -37.307 | 7.174 | -19.041* | -7.985 | -37.024 | 8.273 |
| $\Delta MB$ | -0.162 | 0.304 | 0.384 | 0.978 | -0.136 | 0.346 | 0.394 | 1.015 |
| $\Delta CFO$ | -6.282 | -16.876 | 8.445 | -33.981 | -5.949 | -9.492 | 8.473 | -27.031 |
| $\Delta SALES\_GROWTH$ | -1.096 | -0.731 | -0.305 | -1.126 | -1.136 | -0.785 | -0.352 | -1.255 |
| LITIGATE | -4.073 | -3.479 | 1.444 | 0.775 | -4.605 | -4.016 | 0.960 | 0.211 |
| FOREIGN | 0.324 | -1.527 | 1.530 | 2.315 | -0.098 | -1.775 | 1.203 | 2.045 |
| KAM_REGPERIOD | -13.889*** | -10.579 | -19.482* | -13.384 | -14.182*** | -11.244 | -19.876* | -14.247 |
| TAX_EXPERT | 7.027*** | 8.042** | 10.782** | 12.130* | 6.743*** | 7.646* | 10.278** | 11.497* |
| CONSTANT | -5.609 | -3.816 | 17.437 | 8.777 | -8.548 | -14.811 | 13.915 | -3.417 |
| | | | | | | | | |
| Year FE | YES | YES | YES | YES | YES | YES | YES | YES |
| Industry FE | YES | YES | YES | YES | YES | YES | YES | YES |
| R-squared | 0.073 | 0.101 | 0.032 | 0.105 | 0.074 | 0.109 | 0.032 | 0.108 |
| Observations | 2,824 | 783 | 2,824 | 783 | 2,824 | 783 | 2,824 | 783 |
| Sample | Full | Tax KAM Firms | Full | Tax KAM Firms | Full | Tax KAM Firms | Full | Tax KAM Firms |

*We use ordinary least squares regression with robust standard errors clustered on firm. The symbols \*\*\*, \*\*, and \* represent two-tailed p-values significant at the 0.01, 0.05 and 0.10 levels, respectively*

**Table 9**
**Consequences of Tax KAMs for Tax Avoidance**

## Panel A: ETR Change and Resolve Tax KAMs

| | (1) | | (2) | | (3) | | (4) | |
|---|---|---|---|---|---|---|---|---|
| | $\Delta ETR_{i,t-1,t}$ | | $\Delta ETR_{i,t-1,t}$ | | $\Delta ETR_{i,t,t+1}$ | | $\Delta ETR_{i,t,t+1}$ | |
| VARIABLES | coef | pval | coef | pval | coef | pval | coef | pval |
| $TAXKAM\_FIRM_{i,t,\,t-1}$ | 0.003 | (0.792) | 0.017 | (0.261) | 0.008 | (0.406) | 0.007 | (0.662) |
| $RESOLVE\_TAXKAM_{i,t}$ | 0.022 | (0.322) | 0.022 | (0.321) | -0.077** | (0.014) | -0.088*** | (0.006) |
| HAVEN | -0.000 | (0.981) | -0.034 | (0.126) | 0.000 | (1.000) | -0.029 | (0.207) |
| FOREIGN | -0.006 | (0.554) | 0.010 | (0.451) | -0.005 | (0.614) | 0.010 | (0.443) |
| ΔMATERIALITY | 6.306*** | (0.000) | 8.226*** | (0.000) | 6.342*** | (0.000) | 8.267*** | (0.000) |
| ΔDTA_NET | -0.052 | (0.914) | -1.645* | (0.065) | -0.060 | (0.900) | -1.726* | (0.054) |
| ΔASSETS | 0.039 | (0.231) | 0.110* | (0.066) | 0.040 | (0.222) | 0.107* | (0.070) |
| ΔPTI | -1.013*** | (0.000) | -1.263*** | (0.000) | -1.013*** | (0.000) | -1.244*** | (0.000) |
| ΔLEV | 0.071 | (0.188) | 0.020 | (0.874) | 0.074 | (0.167) | 0.030 | (0.804) |
| ΔINTANGIBLE | 0.009 | (0.866) | 0.018 | (0.845) | 0.005 | (0.927) | -0.004 | (0.970) |
| ΔCAPEX | 0.178 | (0.124) | 0.162 | (0.579) | 0.174 | (0.133) | 0.137 | (0.633) |
| ΔSG&A | 0.103 | (0.303) | 0.111 | (0.342) | 0.107 | (0.284) | 0.138 | (0.251) |
| ΔR&D | -0.469 | (0.226) | -0.776 | (0.274) | -0.470 | (0.222) | -0.812 | (0.234) |
| ΔBIG_4 | 0.020 | (0.513) | 0.015 | (0.860) | 0.020 | (0.504) | 0.017 | (0.827) |
| ΔAUDITOR | -0.008 | (0.615) | -0.010 | (0.645) | -0.007 | (0.619) | -0.010 | (0.653) |
| ΔNUM_KAMS | 0.007 | (0.180) | 0.012 | (0.123) | 0.006 | (0.226) | 0.010 | (0.185) |
| ΔINVREC | 0.019 | (0.778) | -0.256 | (0.164) | 0.019 | (0.776) | -0.255 | (0.158) |
| ΔMB | -0.001 | (0.395) | 0.002 | (0.385) | -0.001 | (0.355) | 0.001 | (0.442) |
| ΔCFO | 0.211* | (0.091) | -0.217 | (0.190) | 0.209* | (0.094) | -0.241 | (0.135) |
| ΔSALES_GROWTH | -0.003 | (0.653) | -0.016 | (0.484) | -0.003 | (0.659) | -0.016 | (0.440) |
| LITIGATE | -0.010 | (0.497) | -0.005 | (0.792) | -0.009 | (0.537) | -0.004 | (0.846) |
| KAM_REGPERIOD | 0.028 | (0.234) | 0.040 | (0.187) | 0.027 | (0.239) | 0.038 | (0.204) |
| CONSTANT | -0.004 | (0.883) | -0.085** | (0.021) | -0.003 | (0.916) | -0.072** | (0.048) |
| | | | | | | | | |
| Year FE | YES | | YES | | YES | | YES | |
| Industry FE | YES | | YES | | YES | | YES | |
| R-squared | 0.252 | | 0.387 | | 0.254 | | 0.394 | |
| Observations | 2,824 | | 783 | | 2,824 | | 783 | |
| Sample | Full | | Tax KAM Firms | | Full | | Tax KAM Firms | |

*We use ordinary least squares regression with robust standard errors clustered on firm. The symbols \*\*\*, \*\*, and \* represent two-tailed p-values significant at the 0.01, 0.05 and 0.10 levels, respectively.*

**Table 9**

**Consequences of Tax KAMs for Tax Avoidance**

## Panel B: ETR Change and Stop, Start, Continue Tax KAMs

| VARIABLES | (1) $\Delta ETR_{i,t-1,t}$ coef | (1) pval | (2) $\Delta ETR_{i,t-1,t}$ coef | (2) pval | (3) $\Delta ETR_{i,t,t+1}$ coef | (3) pval | (4) $\Delta ETR_{i,t,t+1}$ coef | (4) pval |
|---|---|---|---|---|---|---|---|---|
| $CONT\_TAXKAM_{i,t}$ | 0.000 | (0.982) | 0.016 | (0.354) | 0.007 | (0.496) | -0.002 | (0.892) |
| $START\_TAXKAM_{i,t}$ | -0.003 | (0.909) | 0.022 | (0.459) | -0.012 | (0.504) | -0.030 | (0.189) |
| $STOP\_TAXKAM_{i,t}$ | 0.024 | (0.263) | 0.040 | (0.156) | -0.070** | (0.020) | -0.091*** | (0.009) |
| HAVEN | -0.000 | (0.983) | -0.035 | (0.119) | 0.000 | (0.980) | -0.025 | (0.286) |
| FOREIGN | -0.006 | (0.572) | 0.010 | (0.444) | -0.005 | (0.649) | 0.010 | (0.439) |
| $\Delta$MATERIALITY | 6.305*** | (0.000) | 8.249*** | (0.000) | 6.351*** | (0.000) | 8.317*** | (0.000) |
| $\Delta$DTA_NET | -0.050 | (0.918) | -1.653* | (0.064) | -0.064 | (0.893) | -1.768** | (0.049) |
| $\Delta$ASSETS | 0.039 | (0.235) | 0.110* | (0.066) | 0.039 | (0.227) | 0.104* | (0.076) |
| $\Delta$PTI | -1.013*** | (0.000) | -1.267*** | (0.000) | -1.014*** | (0.000) | -1.249*** | (0.000) |
| $\Delta$LEV | 0.071 | (0.188) | 0.021 | (0.864) | 0.074 | (0.163) | 0.033 | (0.786) |
| $\Delta$INTANGIBLE | 0.009 | (0.865) | 0.018 | (0.848) | 0.004 | (0.935) | -0.005 | (0.953) |
| $\Delta$CAPEX | 0.178 | (0.124) | 0.168 | (0.562) | 0.173 | (0.136) | 0.123 | (0.665) |
| $\Delta$SG&A | 0.103 | (0.304) | 0.112 | (0.341) | 0.106 | (0.290) | 0.126 | (0.295) |
| $\Delta$R&D | -0.469 | (0.225) | -0.772 | (0.276) | -0.463 | (0.230) | -0.755 | (0.266) |
| $\Delta$BIG_4 | 0.020 | (0.512) | 0.013 | (0.879) | 0.020 | (0.504) | 0.016 | (0.841) |
| $\Delta$AUDITOR | -0.007 | (0.620) | -0.012 | (0.601) | -0.007 | (0.629) | -0.010 | (0.652) |
| $\Delta$NUM_KAMS | 0.007 | (0.184) | 0.011 | (0.165) | 0.006 | (0.239) | 0.008 | (0.239) |
| $\Delta$INVREC | 0.019 | (0.776) | -0.256 | (0.163) | 0.019 | (0.772) | -0.252 | (0.163) |
| $\Delta$MB | -0.001 | (0.396) | 0.002 | (0.383) | -0.001 | (0.364) | 0.001 | (0.418) |
| $\Delta$CFO | 0.211* | (0.091) | -0.221 | (0.181) | 0.208* | (0.096) | -0.256 | (0.113) |
| $\Delta$SALES_GROWTH | -0.003 | (0.655) | -0.018 | (0.427) | -0.003 | (0.661) | -0.017 | (0.409) |
| LITIGATE | -0.010 | (0.498) | -0.006 | (0.760) | -0.009 | (0.547) | -0.004 | (0.843) |
| KAM_REGPERIOD | 0.028 | (0.232) | 0.040 | (0.188) | 0.028 | (0.232) | 0.041 | (0.169) |
| CONSTANT | -0.003 | (0.916) | -0.087** | (0.028) | 0.002 | (0.947) | -0.051 | (0.174) |
| | | | | | | | | |
| Year FE | Yes | | Yes | | Yes | | Yes | |
| Industry FE | Yes | | Yes | | Yes | | Yes | |
| R-squared | 0.252 | | 0.387 | | 0.254 | | 0.396 | |
| Observations | 2,824 | | 783 | | 2,824 | | 783 | |
| Sample | Full | | Tax KAM Firms | | Full | | Tax KAM Firms | |

*We use ordinary least squares regression with robust standard errors clustered on firm. The symbols \*\*\*, \*\*, and \* represent two-tailed p-values significant at the 0.01, 0.05 and 0.10 levels, respectively.*