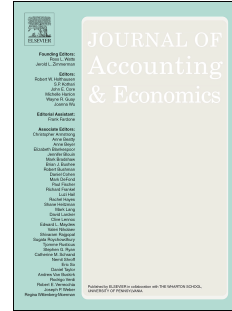


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Do Signatory Auditors with Tax Expertise Facilitate or Curb Tax Aggressiveness?

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Do Signatory Auditors with Tax Expertise Facilitate or Curb Tax Aggressiveness?

Abstract:

Prior research concludes that tax-expert auditors facilitate tax aggressiveness. However, these studies examine auditors who also provide non-audit tax services to their clients, creating conflicting incentives. We predict that tax-expert auditors, who do not provide non-audit tax services, reduce tax aggressiveness, because tax aggressiveness imposes costs on them. We test our prediction using Chinese data, allowing us to identify Certified Tax Agents as tax-expert auditors. We find that companies are less tax aggressive when their signatory auditor is a tax-expert who does not provide non-audit tax services. Consistent with a causal relation, a decrease in tax rates, which reduces clients' incentives to be tax aggressive, weakens the effect of tax-expertise on tax aggressiveness. Moreover, tax-expert auditors attenuate the type of tax aggressiveness that results in tax-related misstatements. Overall, by examining auditors who do not provide non-audit tax services, we find that tax-expert auditors curb tax aggressiveness, contrary to prior research.

Keywords: Signatory auditor, tax expertise, tax aggressiveness, tax-related restatements.

Do Signatory Auditors with Tax Expertise Facilitate or Curb Tax Aggressiveness?

1. Introduction

Prior research finds that some potential monitors of tax aggressiveness, including tax-expert auditors, facilitate aggressive tax avoidance (McGuire, Omer, and Weaver, 2012; Bianchi, Falsetta, Minutti-Meza, and Weisbrod, 2019). These studies, however, examine auditors who also provide non-audit tax services to their clients. Performing both audit and non-audit tax services creates conflicting incentives for auditors, making it difficult to interpret their results. As providers of assurance services, auditors have incentives to reduce clients' tax aggressiveness, because tax aggressiveness increases the risk of adverse outcomes that impose costs on auditors. As providers of non-audit tax services, auditors have incentives to act as advocates for clients' aggressive tax positions. The purpose of this study is to examine whether signatory auditors with tax expertise, who only perform audit services, curb tax aggressiveness.

Signatory auditors have incentives to curb tax aggressiveness because it is associated with adverse outcomes, including earnings management, fraud, scrutiny from regulators, poor earnings quality, audits by tax authorities, financial reporting opacity and misstatements, and higher crash risk.¹ These adverse outcomes can impose costs on signatory auditors through regulatory scrutiny, sanctions, litigation, reputational harm, reduced compensation, loss of clients, and impaired career advancement.² Consistent with tax aggressiveness imposing costs on auditors, prior studies find that tax aggressiveness is associated with a higher incidence of auditor resignations (Goh, Lim, Shevlin, and Zang, 2013) and higher audit fees (Donohoe and Knechel, 2014).

¹ See Frank, Lynch and Rego (2009), Tang and Firth (2011), Ettredge, Sun, Lee and Anandarajan (2008), Kubrick, Lynch, Mayberry and Omer (2016), Hanlon (2005), Blaylock, Shevlin and Wilson (2012), Li, Pittman and Wang (2019), Desai and Dharmapala (2008), Badertcher, Philips, Pincus and Rego (2009), Kim, Li, and Zhang (2011).

² See Kubick et al. (2016), Firth, Mo and Wong (2005), Chu, Fang, Kim and Zhou (2019), Knechel, Niemi, and Zerni (2013), Li et al. (2019), Knechel, Mao, Qi, and Zhuang (2021), Chen, Chen, Han, and Yuan (2021).

While signatory auditors have incentives to curb tax aggressiveness, their ability to detect and prevent client tax aggressiveness is likely to vary. Auditors with tax expertise should have a greater ability to identify aggressive tax strategies that are likely to result in adverse outcomes, and thus are likely to be more effective at curbing aggressive tax planning than auditors without tax expertise. Therefore, we hypothesize that clients of signatory auditors with tax expertise are less tax-aggressive than clients of auditors who lack tax expertise.

Several factors may work against our prediction. Many tax strategies involve real activities management which are beyond the scope of the auditor to challenge. Moreover, client retention incentives may lead tax-expert auditors to condone aggressive tax behavior, as suggested by prior research that examines auditors who provide both audit and non-audit services (McGuire et al., 2012; Bianchi et al., 2019). Finally, clients' tax aggressiveness often results from tax planning performed by in-house tax professionals and outside tax consultants, whose skills and knowledge may surpass those of signatory auditors with tax expertise.

We test our prediction using Chinese data, which provides information on whether a signatory auditor is a Certified Tax Agent (CTA). CTA status requires the auditor to have deep knowledge of China's tax system and pass a rigorous two-day examination with an average pass rate of 20%. To maintain their status, CTAs must also obtain a minimum of 72 hours of continuing professional education annually. Thus, as compared with tax expertise measures used in prior studies, which rely on subjectively chosen client characteristics, CTA designation is a more direct measure based on an objectively observable characteristic of the auditor.³ Moreover, the market for non-audit services (NAS) in China is relatively underdeveloped, with NAS fees representing only a small component of

³ We find that CTA designation is largely orthogonal to client-characteristics-based measures of tax expertise used in the literature, and to industry expertise which is often strongly correlated with key client characteristics drivers of financial reporting quality, such as size and profitability.

audit firms' total revenues (Macve, 2020). Further, CTAs can only prepare tax returns if they practice with a tax preparation agency (Chinese State Administration of Taxation Decree No. 14, 2006). Thus, the China setting removes the confounding incentives that arise when signatory auditors also prepare their clients' tax returns (e.g., Bianchi et al., 2019) or when audit firms also provide non-audit tax advisory services (e.g., McGuire et al., 2012).

Following prior studies, we use two proxies for tax aggressiveness: the difference between book income and taxable income (Mills 1998, Wilson 2009, McGuire, Rane, and Weaver 2018) and the current effective tax rate (Rego 2003, Hope, Ma, and Thomas 2013, Graham, Hanlon, Shevlin, and Shroff 2014). We obtain signatory auditors' identities and clients' financial information from Wind Infor and the China Securities Markets & Accounting Research (CSMAR) databases from 2003 to 2016.⁴ We obtain proprietary data from the CICPA on whether the auditor is a CTA from the China Institute of Certified Public Accountants (CICPA) and also manually collect auditors' personal information from CICPA (www.cicpa.org.cn). Our final sample consists of 18,924 company-year observations for the book-tax difference (*BTD*) analysis and 17,076 observations for the current effective tax rate (*ETR*) analysis. Approximately 21% of our observations have signatory auditors who are CTAs.

As hypothesized, we find that clients of tax-expert auditors have lower book-tax differences and higher current effective tax rates, consistent with tax-expert signatory auditors reducing tax aggressiveness among their clients. These effects are economically significant, with clients of tax-expert auditors having 0.6 percentage points lower *BTD* and 2.1 percentage points higher *ETR* than clients of auditors without tax expertise, which equals a 40% reduction of the sample mean *BTD* and an 11% increase in the sample mean *ETR*. We find these results after controlling for industry

⁴ In China, two auditors sign the audit report. The engagement auditor conducts the fieldwork, and the review auditor reviews the audit work papers (Ministry of Finance of the People's Republic of China 1995, 2001).

expertise, suggesting that our tax expertise measure does not simply capture industry expertise.

A threat to our analysis is that tax-expert auditors may be endogenously chosen. In particular, tax-aggressive clients may intentionally select non-tax-expert auditors in order to avoid scrutiny. However, doing so would subject tax-aggressive clients to the costs that arise from tax aggressiveness, including misstatement risk and scrutiny from tax authorities. Thus, tax-aggressive clients may prefer tax-expert auditors to constrain the costs of tax aggressiveness while maximizing their tax savings. Similarly, audit firms likely benefit from assigning tax-expert auditors to more aggressive clients because it should attenuate the costs of tax aggressiveness. If both clients and auditors have incentives to match tax-aggressive clients with tax-expert auditors, the effect of tax-expertise on tax aggressiveness we document may be understated.⁵ Nevertheless, we perform six analyses to attenuate endogeneity concerns.

Our first test exploits regulations in China that require signatory auditors to rotate every five years. Consistent with a causal relation, we find a decline in tax aggressiveness following the replacement of a non-tax-expert with a tax-expert auditor; and a weak increase in tax aggressiveness following the replacement of a tax-expert with a non-tax-expert auditor. We conjecture that the weaker results for the loss of a tax expert auditor occur because it takes time for clients to formulate and implement aggressive tax positions.

Our second test examines the effects of a regulatory shock that reduces corporate tax rates, thereby weakening the incentives to engage in aggressive tax planning. Consistent with a causal relation, we find that the effect of auditors' tax expertise on curbing tax aggressiveness declines following the tax rate cut. We also perform a placebo test by replacing auditor tax expertise with industry expertise and find that industry expertise has no effect on tax aggressiveness.

⁵ In untabulated analysis, we find that clients pay a modest fee premium for tax-expert signatory auditors, ranging from 2.6% to 3.4%. This suggests that clients value the additional expertise provided by CTA auditors.

Our third test finds that tax-expert auditors attenuate the positive association between tax-aggressiveness and tax-related misstatements. This is consistent with tax-expert auditors having incentives to reduce the types of tax aggressive behavior that results in tax misstatements. We also perform placebo tests that find that tax-expert auditors are not associated with a reduction in *non-tax-related* misstatements, indicating that tax-expert auditors are not simply more competent in reducing misstatement risk.

Our fourth test finds that clients of tax-expert auditors report higher taxable income but not lower pre-tax book income, consistent with tax-expert auditors lowering *BTDs* by reducing tax aggressiveness rather than by reducing earnings management. We also find that tax-expert auditors are associated with a higher likelihood of year-end audit adjustments that increase taxable income, but not with audit adjustments that affect non-taxable income, consistent with year-end adjustments being a channel through which tax-expert auditors constrain aggressive tax reporting.

Our fifth test comprises two cross-sectional analyses. We find that tax-expert auditors have a weaker effect on reducing tax aggressiveness for state-owned enterprises (SOEs), consistent with privately-owned companies having greater incentives to reduce taxes than SOEs (Chan, Mo, and Zhou, 2013; Bradshaw, Liao, and Ma, 2019). We also find that auditors with both tax expertise and industry expertise have a larger effect on curbing tax aggressiveness than auditors with tax expertise alone, consistent with industry expertise enhancing the effect of tax expertise. In our sixth test we find that our main results continue to hold after including client company-fixed effects, indicating that our results are not explained by time-invariant differences across client companies.

Our study makes several contributions to the literature. First, we fill a gap in the literature that examines the effect of auditors' tax expertise on clients' tax aggressiveness. Specifically, we are the first to test whether engagement auditors with tax expertise, who do not also provide non-

audit tax services, reduce tax aggressiveness. Prior studies are unable to address this question because the engagement auditors they study also prepare and sign their audit clients' tax returns (Bianchi et al., 2019) or the audit firms they study also provide advisory tax services for their audit clients (McGuire et al., 2012). Acting in this dual role creates conflicting incentives for auditors. The results in these prior studies have led to the conclusion that auditors, whom we expect to monitor tax aggressiveness, facilitate tax aggressiveness among their clients (Wilde and Wilson, 2018). By examining auditors who do not provide non-audit tax services, we find that tax-expert auditors actually curb tax aggressiveness, contrary to inferences drawn from prior research.

Second, we also extend the literature on auditor expertise. Prior research focuses almost exclusively on industry expertise measured at the audit firm-level. While recent studies examine audit firms' expertise in auditing fair value, SOX 404, or multinational clients (Ahn, Hoitash, Hoitash, 2020; Anantharaman and Wans 2019; Gunn and Michas, 2018;), we are the first to examine the effects of tax expertise among signatory auditors who only provide audit services. Our study also extends the literature which finds that audit partner characteristics help explain the variation in audit outcomes (Gul, Wu and Zang, 2013). While this literature generally finds that demographic characteristics, such as gender and education, explain a small proportion of this variation (Lennox and Wu, 2018; Camaran, Campa, and Francis, 2020), we identify an auditor characteristic that has a substantive effect on audit outcomes. Moreover, while most studies of auditor expertise examine its effect on audit quality, we examine its effect on client tax aggressiveness. Our focus on tax aggressiveness also extends our contribution to the broad literature on the value of auditing and the channels through which this value arises.

Third, we also add to the growing line of studies that use China's unique institutional features to examine research questions that are difficult to address in other settings. While a major challenge

in the auditor expertise literature is the ability to identify convincing proxies, particularly at the audit partner level, China's distinctive setting allows us to identify a novel measure of partners' tax expertise, as well as a setting that removes the conflicting incentives that arise when engagement auditors also provide non-audit services to their clients. The China setting also allows us to improve identification using tax policy changes, mandatory auditor rotation, and proprietary data on tax-related audit adjustments.

Finally, our findings add to the large literature on the determinants of tax avoidance. Prior research concludes that some monitors of tax aggressiveness actually facilitate or encourage aggressive tax planning, including tax-expert auditors that provide non-audit services (McGuire, Omer, and Wang 2012; Bianchi et al. 2019), directors (Brown and Drake 2014), hedge fund activists (Cheng, Huang, Li, Stanfield 2012) and institutional investors (Khan, Srinivasan, and Tan 2017). In contrast, some monitors constrain tax aggressiveness, such as labor unions (Chyz, Leung, Li, and Rui 2013) and employee whistleblowers (Wilde 2017). We find evidence that auditors with tax expertise, who only provide audit services to their clients, act as monitors who curb their clients' tax aggressiveness.

2. Motivation and Hypothesis Development

2.1 Motivation and background

Tax avoidance is broadly defined as a reduction in explicit taxes and generally viewed as a continuum, with activities such as the investment in municipal bonds at the lower end of the spectrum, and noncompliance, evasion and aggressiveness at the higher end (Dyreng, Hanlon, and Maydew 2008; Hanlon and Heitzman 2010).⁶ Prior studies examine the effects of auditors' tax expertise on tax aggressiveness, and conclude that auditors with tax expertise are associated with

⁶ Prior literature examines companies' incentives to avoid taxes, including those provided by equity-based compensation, ownership structure, profit-centered tax departments, compensation contracts, and top executive characteristics (Desai and Dharmapala, 2006, 2008; Chen, Chen, Cheng, and Shevlin 2010; Robinson, Sikes, and Weaver, 2010; Armstrong, Blouin, and Larcker, 2015; Dyreng, Hanlon, and Maydew, 2010).

increased tax aggressiveness among their clients (McGuire et al., 2012; Bianchi et al., 2019).

Bianchi et al. (2019) examine private Italian clients whose signatory auditor not only signs the audit report but also prepares and signs their clients' tax returns.⁷ Tax expertise is measured using the auditor's centrality within its network of peer auditors, where network centrality is assumed to capture the auditor's ability to acquire and apply tax expertise across clients. They find that tax-expert auditors are associated with clients who are relatively more tax aggressive. McGuire et al. (2012) examine clients whose audit firm both signs the audit report and performs non-audit tax services (although the type of service is unstated). Tax expertise is measured using the market share of the non-audit tax services provided by the audit firm. They also find that tax expert auditors are associated with clients who are relatively more tax aggressive.

The results in these studies have led to the conclusion that auditors, whom we expect to monitor tax aggressiveness, facilitate tax aggressiveness among their clients (Wilde and Wilson, 2018). However, both studies examine settings in which the auditor provides both audit services *and* non-audit tax services to their clients, which provides auditors conflicting incentives. On the one hand, signatory auditors have incentives to reduce their client's tax aggressiveness, because it increases the risk of adverse outcomes that impose costs on the auditor. On the other hand, providers of non-audit tax services have incentives to act as advocates for their clients' aggressive tax positions. Thus, the findings may not be due the independent auditor's tax expertise, but rather to the incentives that arise from providing non-audit services.

Our study differs from Bianchi et al. (2019) and McGuire et al. (2012) in that the auditors in our setting do not provide non-audit tax services to their clients. Our proxy for the signatory

⁷ Examining private companies in Italy may make the results in Bianchi et al. (2019) difficult to compare with studies that examine auditors of public companies (e.g., McGuire et al., 2012). Auditor incentives to assure fair presentation are not as strong for private companies. In addition, Italian companies are subjective to heavy tax burdens, which may increase tax-preparer's incentives to help clients reduce their tax burden.

auditors' tax expertise also differs from theirs. Bianchi et al. (2019) use network centrality, where auditors with higher centrality in their social networks are assumed to have more tax expertise. McGuire et al. (2012) use market share of non-audit tax services provided by the audit firm to measure tax expertise. By comparison, CTA designation is a more direct and objective proxy for the auditors' competence in understanding complex tax matters. We also find that CTA-designation is also largely orthogonal to client-characteristic-based measures of tax expertise, and to industry expertise which is often strongly correlated with drivers of financial reporting quality, such as size and profitability.

Two prior studies also examine the effects of tax expertise on tax-related earnings quality. Christensen, Olson and Omer (2015) find that tax-expert auditors constrain the ability of clients to manipulate tax-related accounts to meet or beat analysts' forecasts.⁸ Goldman, Harris and Omer (2022) find that tax-expert auditors reduce the incidence of tax-related misstatements, which are obtained from the Audit Analytics and consist of "errors or irregularities in approach, understanding, or calculations associated with various forms of tax obligations or benefits."

Our paper differs from the above two studies in that our outcome variable is tax aggressiveness, not tax-related earnings quality. While tax aggressiveness is associated with tax-related earnings quality, they are different constructs. Poor tax-related earnings quality can arise in many settings that are unrelated to tax aggressiveness, and tax aggressiveness can result in negative consequences unrelated to tax-related earnings quality. For example, tax-related misstatements can arise from tax complexity, poor internal controls and changes in tax laws (Seetharaman, Sun, and Wang, 2011;

⁸ Managing tax accounts to achieve financial reporting objectives is referred to as "last chance" earnings management and is documented in a large body of literature, beginning with Dhaliwal, Gleason, and Mills (2004). This literature concludes that managers exploit the complexity in these accounts to manage earnings to opportunistically meet financial reporting objectives. This is consistent with the notion that tax-related misstatements are generally related to firm's difficulty in dealing the complexities related to the tax accounts (Whitehouse, 2009).

Graham and Bedard, 2015).⁹ And the negative consequences of tax aggressiveness include fraud, audits by tax authorities, financial reporting opacity, and higher crash risk.¹⁰ Thus, evidence of poor tax-related earnings quality cannot be used to infer the presence of tax aggressiveness.

CTA designation is also a more objective and direct measure of tax expertise than the measures used in these two prior studies: the market share of non-audit tax services provided by audit offices (Christensen et al. 2015) and the extent to which audit offices' clients engage in complex tax transactions (Goldman et al. 2022). We also note that Christensen et al. (2015) and Goldman et al. (2022) examine auditor tax expertise at the audit-firm and audit-office level, respectively, while we measure expertise at the signatory auditor-level.

Another related study is Klassen, Lisowsky, and Mescall (2016), which examines audit firms that prepare tax returns (with only 20% also providing audit services), and finds they are associated with lower tax aggressiveness when compared to self-preparers or non-auditor preparers. Their study concludes that this is because signing a client's tax return exposes the preparer-auditor to financial penalties if the tax liability is understated, which incentivizes the auditor to reduce tax aggression. We differ from Klassen et al. (2016) in that we examine the effect of tax expertise on clients' tax aggressiveness for signatory auditors who do not prepare clients' tax return, while they focus on the effects of tax preparers that do not provide audit services. Because Klassen et al. (2016) do not examine auditors' tax expertise, their study is difficult to compare with ours.

2.2 The advantages of the China setting

A barrier to research on auditor expertise is identifying convincing proxies at the individual auditor level. The unique data available in China helps us overcome this by providing information

⁹ Graham and Bedard (2015) find tax-related internal control deficiencies that involve accruals are over five times greater relative to other accounts. Seetharaman et al. (2011) provides several examples of tax-related misstatements.

¹⁰ See Frank et al. (2009); Tang and Firth (2011); Ettredge et al. (2008); Hanlon (2005); Blaylock, Shevlin and Wilson (2012); Li, Pittman and Wang (2019); Kim, Li, and Zhang (2011).

on Certified Tax Agents (CTA), a professional designation granted by the China State Tax Administration. The CTA test is administered annually over two days and covers five subjects, each with a test lasting 150 minutes. Applicants must pass all five subjects within a rolling five-year window to obtain CTA certification. Pass rates average 20%, which is comparable to the 20%-25% pass rate for the CPA exam in China, but much lower than the 50% pass rate for the U.S. CPA exam. In addition, CTAs are required to obtain a minimum of 72 hours of continuing professional education each year. This compares with the 40 hours per-year required for CPAs in the US and China. Because of the competitive Chinese labor market, it is not uncommon for CPAs to also obtain CTA certification.

In our sample, 21% of the company-year observations have at least one signatory auditor who is a CTA. Among the CTAs in our sample, 6.16% are from Big 4 audit firms, 28.65% from domestic Big 6 audit firms, and 65% from small domestic audit firms.¹¹ The auditor's average age when becoming a CTA in our sample is 33.36 years and the median age is 32 years. The 25th and 75th percentile are 28 and 37 years, respectively. Thus, on average, auditors obtain their CTA qualification ten years after they start their career, assuming that they start immediately after obtaining a bachelor's degree at 22-23 years of age.

According to the Chinese State Administration of Taxation (2006), CTAs are only allowed to provide tax services, including the preparation of tax returns, when the CTA practices with a tax preparation firm (Decree No. 14, Chapter 1, Item 3). Because the CTAs in our study practice with audit firms, they are prohibited from preparing their clients' tax returns, which we have confirmed in conversations with audit partners, audit committee members, and tax practitioners in China. Furthermore, the Chinese Certified Public Accountant's Code of Professional Ethics forbids

¹¹ The larger proportion of CTAs among local audit firms is consistent with a deep knowledge to Chinese taxes being more beneficial in servicing local Chinese clients, than it is in servicing the large international cross-listed clients.

outside auditors from performing tax work that impacts their clients' financial statements.¹² Thus, the China setting allows us to remove the conflicting incentives that arise when engagement auditors also prepares their clients' tax returns (e.g., as in Bianchi et al., 2019).

An additional advantage of the China setting is that it is relatively unusual for Chinese audit firms to provide non-audit services to their clients. Because the stock exchanges in China have only been open since 1992, financial statement audits are relatively recent compared to many jurisdictions, and audit firms have focused primarily on developing their auditing practices (Hua, Georgakopoulos, Sotiropoulos and Galanou, 2010). While the Chinese Institute of Certified Public Accountants has encouraged audit firms to develop non-audit services (CICPA, 2014, 2016), Chinese firms find it difficult to expand their non-audit services because there is little demand among clients, who are very price sensitive (Macve, 2020). Our conversations with audit partners and tax practitioners support this observation, suggesting that non-audit services do not pose an independence threat in China. This helps mitigate the confounding incentives that are inherent when auditors provide non-audit tax advisory services, such as in McGuire et al. (2012). Finally, the unique institutions in China allow us to improve identification using tax policy changes, mandatory auditor rotation, and proprietary data on tax-related audit adjustments.

2.3 Literature on the effect of individual auditors on audit quality

Gul, Wu and Zang (2013) finds that there is greater variation in audit quality across individual auditors than across audit firms or audit offices, and this variation is in part explained by the demographic characteristics of individual auditors. Similarly, Camaran, Campa, and Francis (2020)

¹² Specifically, the Code of Professional Ethics states “accounting firms are not allowed to calculate current income tax or deferred income tax to be used for preparing accounting entries that would have a significant impact on the financial statements on which the accounting firm will express an opinion” (Chinese Certified Public Accountants Code of Professional Ethics No. 4 – Requirements for Independence in Audit and Review Engagements).

find that inter-partner variation is the single most important auditor characteristic in explaining audit quality. The effects of signatory auditors on audit outcomes has long been recognized in the literature (DeFond and Francis 2005; Nelson and Tan 2005; Nelson 2009) and recent studies have identified several auditor-level characteristics that affect audit outcomes, including industry expertise, gender, education, and work experience (Chi and Chin, 2011; Ittonen, Vähämaa, and Vähämaa. 2013; Knechel, Vansraelen, and Zerni, 2015). Auditor expertise in taxation is interesting because most literature exploring auditor expertise focuses on industry expertise. Moreover, most of this literature examines its effect on audit quality, while we examine the effect of individual auditors' tax expertise on clients' tax aggressiveness.

2.4 Tax aggressiveness in China

Several studies find evidence that Chinese companies respond to incentives to engage in tax avoidance. For example, Tang, Mo, and Chan (2017) find that conflicts between central and local governments due to tax sharing reforms in 2002 led to increased tax avoidance by local government-controlled firms. Similarly, Chan, Lin, and Mo (2010) find that when China shifted from a tax-based accounting system to IFRS in 2007, the increase in opacity around tax reporting resulted in increased tax avoidance. There is also evidence that political incentives in China play a role in reducing tax avoidance. Bradshaw et al. (2019) find significantly lower tax avoidance by SOEs relative to non-SOEs, consistent with tax payments by SOEs being the equivalent of a dividend paid to the state. Chen, Tang, Wu, and Yang (2021) find that locally administered SOEs decreases tax avoidance after newly appointed local leaders take office, and that these firms in turn receive more government contracts. Finally, several studies find evidence that tax aggressiveness is associated with adverse outcomes in China. Tang and Firth (2011) find that Chinese firms with higher BDTs are more likely to manage earnings and Li et al. (2019) find that Chinese firms with

higher BTDs and lower ETRs are more likely to be audited by the tax authorities. Further, Chan et al. (2013) find that BTDs are higher for firms' that engage in tax noncompliance.

2.5 Hypothesis development: The role of tax-expert auditors in curbing tax aggressiveness

While aggressive tax planning may potentially reduce tax costs and maximize profits, its negative consequences are generally viewed as outweighing its potential benefits. By its nature, tax aggressiveness requires management to engage in activities that obscure the underlying intent of transactions in order to avoid detection (McGill and Outslay, 2004). This obfuscation provides a shield for managers to engage in a variety of activities that are not in the best interests of shareholders. For example, tax aggressive schemes allegedly have facilitated much of the malfeasance associated with the scandals at Enron, Tyco, Xerox and WorldCom (Desai, 2005; Desai and Dharmapalao, 2006). Thus, it is not surprising that tax aggressive firms are associated with adverse outcomes, including fraud (Ettredge et al., 2008), poor financial reporting quality (Hanlon 2005; Blaylock et al., 2012), earnings management (Frank et al., 2009; Tang and Firth, 2022), earnings misstatements (Badertscher et al., 2009), litigation (Hanlon and Slemrod, 2009), stock price declines (Hanlon and Heitzman, 2010), tax non-compliance (Chan et al., 2010; Tang and Firth, 2011), financial reporting opacity (Desai and Dharmapala, 2009), and higher crash risk (Kim et al., 2011).

Tax authorities and regulators are well-aware of the negative consequences of tax aggressiveness. For example, partially in response to the Enron scandal, the PCAOB adopted rules that prohibit accounting firms from providing highly aggressive tax services to their SEC-regulated clients (PCAOB 2006, 2006). Of about 800 comment letters received by the SEC in response to the new rule, 740 were from investors who expressed strong support due primarily to concerns about the financial statement impact of tax aggressiveness. Increased regulatory scrutiny explains

why tax aggressive firms are more frequently audited by tax authorities (Li et al., 2019), and are more likely to receive tax-related SEC Comment Letters (Kubick et al., 2016).

The negative consequences associated with tax aggressiveness provide incentives for auditors to curb tax aggressiveness among their clients. Auditors of clients who are scrutinized by regulators and tax authorities are themselves likely to come under scrutiny, which can potentially trigger auditor litigation (Chu et al., 2019; DeFond Zhang 2014), the issuance of AAERs (Kedia, 2018), regulatory sanctions against auditors (Firth et al 2014), and the receipt of SEC Comment letters (Kubick et al. 2016). Further, auditors who receive regulatory sanctions suffer a loss in clients and reduced fees (Firth, 1990), and auditors whose clients misreport can suffer a loss of clients and career downgrades (Hennes, Leone, and Miller, 2014; Chen et al., 2021). These costs are likely to explain why tax aggressiveness is associated with an increased likelihood of auditor resignations (Goh et al., 2013) and higher audit fees (Donohoe and Knechel 2014).

While auditors have incentives to curb tax aggressiveness, their ability to do so is likely to vary. The auditing of tax accounts “requires research, specialized procedures, documentation, and consultations with outside tax professionals” (Donohoe and Knechel 2014, p.285).¹³ When compared to auditors without tax expertise, tax-expertise auditors are expected to better understand the complexities of tax planning, and thus should be better at curbing aggressive tax planning. This leads to the following hypothesis (in alternative form):

Hypothesis: Clients of signatory auditors with tax expertise exhibit less tax aggressiveness than clients of signatory auditors without tax expertise.

We emphasize that there is tension in our prediction. Many aggressive tax strategies involve real activities management, which is beyond the scope of the audit as long as GAAP is not violated. Second, clients often invest significant resources in developing and executing aggressive tax

¹³ This is consistent with informal conversations we have had with over two dozen signatory auditors in China.

strategies, which can result in considerable tax savings, giving clients incentives to disagree with tax-expert auditors who challenge their strategies. Because auditor-client disagreements can result in auditor dismissals, tax-expert auditors may yield to management's wishes. This is consistent with auditors who provide both audit and non-audit tax services to their clients being associated with higher tax aggressiveness (McGuire et al, 2012; Bianchi et al, 2019). Finally, clients' tax aggressiveness is often facilitated by highly competent tax experts, including in outside tax consultants, whose skills and knowledge may surpass that of signatory auditors with tax expertise.

3. Sample, Measures and Descriptive Statistics

3.1 Sample

Our sample period is from 2003 to 2016, which begins shortly after a major tax policy change (that did not affect tax rates) became effective in 2002.¹⁴ We end the sample period in 2016 because the issuance of a new accounting standard in 2017 potentially changes how Chinese companies account for aggressive tax positions (IFRIC 23, *Uncertainty over Income Tax Treatments*). We obtain financial and stock market data from Wind Infor and the China Stock Market & Accounting Research (CSMAR) databases. We manually collect the identities of audit firms, the names and profiles of signatory auditors, and audit opinions from data compiled by the China Securities Regulatory Commission (CSRC), the Chinese Institute of Certified Public Accountants (CICPA) and the China Certified Tax Agents Association (CCTAA).

We begin with 28,411 observations and remove: 628 observations in the financial sector; 3,729 observations with zero or negative taxable income (Chen, Chen, Cheng, and Shevlin 2010; Manzon and Plesko 2001); 708 observations that lack the identity of the signatory auditor or audit firm; 4,422 (4,068) observations with missing data to compute *BTD (ETR)* and control variables;

¹⁴ Since 2002, local governments in China were required to remit a substantial portion of their corporate tax revenues to the central government (Tang, Mo, and Chan 2017; Lennox and Wu 2022).

and 2,202 observations to restrict *ETR* to the range [0,1] (Chen et al., 2010). Our final sample comprises 18,924 observations for the *BTD* analysis and 17,076 observations for the *ETR* analysis.

3.2 Tax avoidance measures

Following prior studies (Chan et al., 2013; Bradshaw et al., 2019; Tang et al., 2017), we use the book-tax difference (*BTD*) and current effective tax rate (*ETR*) to measure tax avoidance.^{15, 16} Higher *BTD* and lower *ETR* indicate potentially aggressive tax strategies.

BTD is measured as book minus taxable income, scaled by lagged total assets:

$$BTD_{i,t} = \frac{Pre-tax\ book\ income_{i,t} - \frac{Income\ tax\ expense_{i,t} - Deferred\ tax_{i,t}}{Applicable\ tax\ rate_{i,t}}}{Total\ assets_{i,t-1}} \quad (1)$$

Our second measure is current *ETR*, measured as total income tax expense minus the net change in deferred tax liabilities and assets, scaled by pre-tax book income, where deferred tax assets and liabilities are coded as zero if unreported. Compared with alternative measures, an advantage of current *ETR*, which adjusts for deferred taxes, is that it reflects both permanent and deferred tax strategies (Hanlon and Heitzman, 2010). However, in robustness tests we also examine a measure of overall *ETR* and a measure of *ETR* adjusted for applicable tax rates and find our conclusions unchanged.

3.3 Descriptive statistics

Table 2 Panel A presents descriptive statistics for the variables used in our analyses. We winsorize all continuous variables at the top and bottom 1%. The mean value of *TAX_EXP* indicates that 21% of the observations are audited by signatory auditors who are CTAs.¹⁷ Mean

¹⁵ Alternative measures of tax aggressiveness are not available in China. For example, Chinese firms do not report unrecognized tax benefits until 2019 after IFRS issued IFRIC 23. There is also no public disclosure of intentional tax planning behavior as captured by tax shelter activities in China.

¹⁶ Tang and Firth (2011) find that tax avoidance explains 27.8% of abnormal *BTD* in China. Chan et al. (2010) find that firms' tax noncompliance increases as book-tax reporting conformity decreases. Chan Luo and Mo (2016) find that higher quality auditors are associated with lower noncompliance.

¹⁷ Given the high level of effort associated with attaining CTA designation it is not surprising that a relatively small

(median) *BTD* is 0.015 (0.005) for our sample of 18,924 Chinese A-share firm-year observations during 2003-2016. This compares with Chen, Huang, Liu, and Wang (2019), which reports a mean (median) *BTD* of -0.002 (-0.003) for 10,984 Chinese A-share firm-year observations during 2003-2014. The difference is likely explained by more restrictive sample selection criteria used in Chen et al. (2019). Mean (median) *ETR* is 0.189 (0.157) for our sample. Bradshaw et al. (2019) report that during 1999-2012, Chinese SOEs' mean (median) *ETR* is 0.222 (0.18), and non-SOEs' mean (median) *ETR* is 0.21 (0.169). Our lower *ETRs* are likely due to a 2008 tax law change that reduced top marginal tax rates from 33% to 25%. The mean value of *BIG4* indicates that 6.5% of the listed companies in China are audited by Big4 audit firms. The mean value of *TENURE* indicates that the average tenure of signatory auditors is 2.154 years. We also partition the sample by *CTA*=1 and *CTA*=0 in Panel A of Table 2. We find that *BTD* (*ETR*) is significantly lower (higher) when *CTA*=1 than when *CTA*=0, consistent with our prediction. We also find that the subsample with *CTA*=1 is significantly different from the subsample with *CTA*=0 for several firm characteristics such as abnormal accruals, book-to-market, PP&E, and ROA, suggesting it is necessary to control for these characteristics in the multivariate analysis.

Panel B of Table 2 reports the correlations among the variables in Panel A. We find a significantly negative correlation between *BTD* and *ETR*. *TAX_EXP* is negatively (positively) correlated with *BTD* (*ETR*), providing univariate support to our hypothesis. We also find that *SOE* is negatively correlated with *BTD* and positively correlated with *ETR*, consistent with SOEs having less incentive to engage in tax aggressiveness. Further, our measure of tax expertise (*TAX_EXP*) has a relatively weak correlation with the other determinants of tax aggressiveness.

percentage of auditors are both willing and able to pursue *CTA* status. Interestingly, however, the pass rate of the *CTA* exam is also 21%. Thus, if all auditors strive for *CTA* designation, we would expect only around 20% to be successful.

4. Empirical Results

4.1 Signatory auditors' tax expertise and tax aggressiveness

We test our hypothesis by estimating the following OLS regression:

$$\begin{aligned}
 TAXAGG_{i,t} = & \beta_0 + \beta_1 TAX_EXP_{i,t} + \beta_2 SIZE_{i,t} + \beta_3 ABACC_{i,t} + \beta_4 EQINC_{i,t} + \beta_5 FI_{i,t} + \beta_6 LEV_{i,t} + \\
 & \beta_7 BTM_{i,t} + \beta_8 PPE_{i,t} + \beta_{10} ROA_{i,t} + \beta_{11} CASH_{i,t} + \beta_{12} DEP_{i,t} + \beta_{13} ROASTD_{i,t} + \beta_{14} BIG4_{i,t} + \\
 & \beta_{15} TENURE_{i,t} + \beta_{16} IND_EXP_{i,t} + \beta_{17} SOE_{i,t} + Industry \& Year \text{ Fixed Effects} + \varepsilon_{i,t} \quad (2)
 \end{aligned}$$

where *TAXAGG* is either *BTD* or *ETR*. *TAX_EXP* is an indicator variable that equals one if either the engagement or review auditor is a CTA, and zero otherwise. We include industry and year fixed effects, with standard errors clustered at the client-company level. Following prior literature, we control for company characteristics that may explain tax aggressiveness (Chen et al., 2010; Dyreng et al. 2008; Frank et al., 2009; Rego 2003; Graham et al., 2014). We control for companies' incentives to avoid taxes using profitability (*ROA*), the volatility of profitability (*ROASTD*), and cash holdings (*CASH*). We also control for differences in book and tax reporting using capital intensity (*PPE*), income from foreign operations (*FI*), depreciation (*DEP*), and equity method income (*EQINC*). We control for complexity and economies of scale with size (*SIZE*), leverage (*LEV*), and growth opportunities (*BTM*) (Chen et al., 2010; Mills 1998; Rego 2003). We also control for abnormal accruals (*ABACC*) because aggressive financial reporting is positively associated with tax avoidance (Frank et al., 2009). We control for *SOEs* because they have weaker incentives to avoid taxes. Finally, we control for audit firm size (*BIG4*), individual auditor industry expertise (*IND_EXP*) and tenure (*TENURE*).¹⁸ Appendix A defines these variables.

Table 3 reports the results from estimating equation (1). Columns (1)-(3) use *BTD* to proxy for tax aggressiveness. In Column (1), we define *TAX_EXP* as either the engagement or the review

¹⁸ We find no disclosure of fees paid to auditors for non-audit services in the CSMAR and WIND databases, and thus, consistent with other China studies, we do not include a control variable for non-audit services.

auditor possessing a CTA. As predicted, the coefficient on *TAX_EXP* is negative ($p < 1\%$). This indicates that clients of tax-expert auditors have 0.6 percentage points lower *BTD* than clients of non-tax-experts, which equals 40% of the sample mean *BTD* of 1.5 percentage points. Columns (2) and (3) separately examine the effects of engagement and review auditors. The coefficients on *TAX_EXP* are -0.005 in Column (2) and -0.006 in Column (3) (both $p < 1\%$). The Chi-square at the bottom of Table 3 indicates that these two coefficients are not significantly different. This suggests that as long as one of the signatory auditors has tax expertise, clients exhibit lower tax aggressiveness. Thus, we include both engagement and review auditors in our definition of *TAX_EXP* in all subsequent analyses. Columns (4)-(6) report that when *ETR* is the dependent variable, the coefficients on *TAX_EXP* range from 0.015 in Column (5) to 0.021 in Column (4) (all $p < 1\%$). This indicates that clients of tax-expert auditors have *ETRs* that are 2.1 percentage points higher than clients of non-tax-experts, equal to 11% of the sample mean *ETR* of 18.9 percentage points. Notably, our *ETR* coefficients are comparable to those in Bradshaw et al. (2019) for the SOEs (0.014). Together, Table 3 finds that signatory auditors' tax expertise is associated with lower tax aggressiveness.

We also find that the coefficients on *IND_EXP* are insignificant in all regressions, indicating that auditor industry expertise does not affect clients' tax aggressiveness after controlling for *TAX_EXP*. This indicates that signatory auditors' tax expertise is distinctly different from industry expertise, and that *TAX_EXP* does not simply proxy for *IND_EXP*. The sign and magnitude of other control variables are generally consistent with prior studies (Chen et al., 2010; Dyreng et al., 2008; Frank et al., 2009; McGuire et al., 2012; Manzon and Plesko 2002).

4.2 Identification strategies

4.2.1 Mandatory rotation of signatory auditors

China requires mandatory auditor (but not audit firm) rotation every five years (Lennox, Wu, and Zhang, 2014). We use this to examine whether tax aggressiveness decreases (increases) when a non-tax-expert (tax-expert) auditor is replaced by a tax expert (non-tax expert). Unless a client coincidentally changes its tax strategy during the year in which the mandatory five-year rotation occurs, it is unlikely that the change in the auditor's tax expertise is explained by selection. Following prior literature, we infer that a mandatory auditor rotation occurs when the signing auditor audits the same company for five consecutive years and does not audit that company in the sixth year. We examine a three-year window around the rotation and compare tax aggressiveness during the year before the rotation with tax aggressiveness during the year of and the year following the rotation. *ROTIN* equals one if a tax-expert replaces a non-tax-expert, and zero otherwise; *ROTOUT* equals one if a non-tax-expert replaces a tax-expert, and zero otherwise.

Table 4 Panel A presents the results of this analysis. We find a significantly negative (positive) coefficient on *ROTIN* when *BTD* (*ETR*) is the dependent variable (both $p < 5\%$). This indicates that when a tax-expert signing auditor replaces a non-expert, the client's tax aggressiveness declines. In contrast, the coefficient on *ROTOUT* is insignificant for *BTD* and significantly negative for *ETR* ($p < 10\%$). The weaker results for *ROTOUT* suggest that it may take time for companies to implement new aggressive tax strategies after the departure of a tax-expert auditor. In Panel A of Appendix B we verify the validity of parallel trends assumption for the auditor rotation analysis.

4.2.2 An exogenous shock to the demand for tax aggressiveness

We also examine the effects of an exogenous shock that reduces client incentives to engage in tax aggressiveness. While shocks to the treatment variable are commonly used, a shock to the outcome variable may also be used to address causality (Butler and Cornaggia 2011). Effective January 1, 2008, China replaced two separate income tax laws for domestic and foreign-investment

companies with a single tax law. This reduced the top marginal tax rate from 33% to 25% for all companies, reducing the benefits of tax aggressiveness and companies' incentives to engage in aggressive tax avoidance. Thus, we expect the effect of tax-expert signatory auditors on tax aggressiveness to decline following the exogenous tax rate decrease.

We define *POST2008* as one for years after 2008, and zero otherwise. We exclude observations in the transition year 2008. We then regress our tax aggressiveness measures on *TAX_EXP*, *POST 2008*, and *TAX_EXP × Post 2008*. The coefficients on *TAX_EXP × POST 2008* capture the difference-in-difference effect of tax-expert vs. non-tax-expert auditors on tax aggressiveness before and after 2008. Table 4, Panel B reports the results. Columns (1) and (2) find that the coefficients on *TAX_EXP* are significantly negative (positive) in the *BTD (ETR)* model (both $p < 1\%$), consistent with our main finding that tax-expert auditors curb tax aggressiveness. We also find that the coefficients on *POST2008* are significantly negative (positive) for *BTD (ETR)* (both $p < 1\%$), indicating that companies engage in less tax aggressiveness after 2008. Consistent with our expectation, the coefficient on *TAX_EXP × Post 2008* is significantly positive (negative) in the *BTD (ETR)* model (both $p < 5\%$). This indicates that after the 2008 tax cut, the effects of tax-expert auditors on tax aggressiveness are weaker. Finding that an exogenous decrease in tax rates, which reduces clients' incentives to engage in aggressive tax avoidance, weakens the effect of tax-expertise on tax aggressiveness, helps mitigate endogeneity concerns. In Panel B of Appendix B we verify the validity of parallel trends assumption for this analysis.

Columns (3) and (4) of Panel B report placebo tests that replace auditor tax expertise with industry expertise. We regress our tax aggressiveness measures on *IND_EXP*, *POST2008*, and *IND_EXP × POST2008*. Consistent with Table 3, the coefficients on *IND_EXP* are insignificant. In addition, the coefficients on *IND_EXP × POST2008* are also insignificant. However, the

coefficients on *TAX_EXP* are significantly negative in Column (3) and significantly positive in Column (4) (both $p < 1\%$), suggesting that our findings in Panel A are due to tax expertise and not industry expertise. This placebo test also provides comfort that our results in Columns (1) and (2) are not spuriously driven by other concurrent changes in 2008.

A potential limitation of analyzing the change in tax laws is that some companies did not benefit from the decreased statutory tax rate. Specifically, companies with low effective tax rates before 2008 did not experience a tax decline following the top marginal rate decline. Thus, we repeat our analysis after retaining only companies whose actual tax rate declined after 2008. As reported in columns (5) and (6), we continue to find similar results for this subsample.

Taken together, the different-in-difference analysis in Table 4 further attenuates concerns that the client-partner selection or other unobservable client or auditor characteristics explain the effects of tax-expert signatory auditors on tax aggressiveness.

4.2.3 Tax-related misstatements related to tax aggressiveness

We argue that one reason that tax-expert auditors have incentives to reduce tax aggressiveness is that it increases misstatement risk. Thus, finding that tax-expert auditors mitigate the types of tax aggressiveness that lead to misstatements would further strengthen our identification. We manually collect restatement announcements from China Information, a disclosure website provided by the CSRC. We supplement the restatement data using the China Research Data Services Platform to identify a total of 1,354 restatements. After reading each announcement we find 579 restatements that are primarily due to tax-related accounts.¹⁹ We remove 128 restatements

¹⁹ These restatements are primarily due to subsequently discovered errors in a tax account, and from unfavorable rulings from tax authorities that result in additional tax accruals.

that result from changes in tax rules because they do not result from misstatements. Our resulting sample yields 451 tax-related restatements and 791 non-tax-related restatements.

Following Agrawal and Chadha (2005), we match each restatement company to a non-restatement company (1) in the same industry as the restating company (the same two-digit code for manufacturing companies and the same one-digit code for other companies); and (2) with the closest market capitalization to the restating company at the end of the year before the earliest restatement. This yields a matched sample of 902 tax-restatement observations. Before matching, the mean market capitalization is 5,423.366 million RMB for the treatment companies and 10,882.629 million RMB for the control companies, and the difference is significant. After matching, the mean market capitalization is 5,345.959 for the control companies, and the difference is insignificant. Following the same matching procedure for non-tax misstatements, which we use in a placebo test, we obtain a matched sample of 1,582 observations.

To examine whether tax-expert signatory auditors reduce tax-related misstatements and attenuate the effects of tax aggressiveness on tax-related misstatements we estimate the following regression:

$$\begin{aligned}
 TAX_MISSTATE_{i,t} \left(NonTAX_MISSTATE_{i,t} \right) = & \beta_0 + \beta_1 TAX_EXP_{i,t} + \beta_2 TAXAGG_{i,t} + \beta_3 TAXAGG_{i,t} \times \\
 TAX_EXP_{i,t} + & \beta_4 TA_{i,t} + \beta_5 SIZE_{i,t} + \beta_6 LEV_{i,t} + \beta_7 ROA_{i,t} + \beta_8 GROWTH_{i,t} + \beta_9 TOP1_{i,t} + \beta_{10} INDEP_{i,t} + \\
 \beta_{11} BIG4_{i,t} + & \beta_{12} PARTENURE_{i,t} + \beta_{13} IND_{EXP}_{i,t} + \beta_{14} SOE_{i,t} + Industry\&Year\ Fixed\ Effects + \varepsilon_{i,t} \quad (3)
 \end{aligned}$$

$TAX_MISSTATE$ ($NonTAX_MISSTATE$) is an indicator variable that equals one for tax-related misstatements (non-tax-related misstatements), and zero otherwise. $TAXAGG$ measures tax aggressiveness as proxied by either BTD or ETR . To test whether tax-expert auditors attenuate the effects of tax aggressiveness on tax-related misstatements, we include the interaction term $TAX_EXP \times BTD$ ($TAX_EXP \times ETR$). Following Burns and Kedia (2006) we also control for

company size (*SIZE*), leverage (*LEV*), profitability (*ROA*), growth opportunity (*GROWTH*), ownership of the largest single shareholder (*TOPI*), board independence (*INDEP*), auditor tenure (*TENURE*) and state ownership (*SOE*). In addition, we include controls for Big 4 auditors (*BIG4*) and industry expertise (*IND_EXP*). All variables are defined in Appendix A.

Columns (1) and (2) of Table 5 present the analysis using *TAX_MISSTATE* as the dependent variable. We expect the coefficient on *BTD* (*ETR*) to be positive (negative) if tax aggressiveness is associated with an increase in tax-related misstatements. As expected, the coefficient on *BTD* (*ETR*) is significantly positive (negative) (both $p < 5\%$), indicating that the likelihood of tax-related misstatements is higher for companies that engage in tax aggressiveness. Also consistent with expectations, we find a significantly negative (positive) coefficient on *TAX_EXP* × *BTD* (*TAX_EXP* × *ETR*), at $p < 10\%$ ($p < 5\%$). This suggests that tax-expert auditors attenuate the type of tax aggressiveness that increases tax-related misstatements. Also as expected, we do not find that industry expertise (*IND_EXP*) reduces tax-related restatements. These results are consistent with tax-expert auditors curbing the type of tax aggressiveness that leads to tax-related misstatements.

Columns (3) and (4) in Table 5 use *NonTAX_MISSTATE* as the dependent variable in a placebo test. We expect the coefficients on *BTD* (*ETR*) to be insignificant, since tax aggressiveness should not affect non-tax-related misstatements. As expected, the coefficients on *TAX_EXP*, *BTD*, *ETR*, *TAX_EXP* × *BTD*, and *TAX_EXP* × *ETR* are insignificant in both tests. Thus, tax aggressiveness and auditor tax expertise do not affect non-tax-related misstatements.²⁰ In contrast, industry expertise (*IND_EXP*) is negatively associated with non-tax-related restatements. This placebo test provides comfort that tax expertise does not simply proxy for greater auditor

²⁰ Badertscher et al. (2009) find that tax aggressiveness (proxied by *BTD*) increases the likelihood of income-increasing misstatements without distinguishing between tax-related and non-tax-related misstatements. Our finding suggests that this effect is likely driven by tax-related misstatements.

competence, and that auditors' tax expertise differs predictably from industry expertise.

4.2.4 Components of the Book-tax Difference, Audit Adjustments, and Cash ETR

We find that the clients of auditors with tax expertise report lower *BTD*. However, lower *BTD* may be caused by a reduction in tax aggressiveness (an increase in taxable income) and/or a reduction in opportunistic earnings management (a decrease in book income). If tax-expert auditors reduce *BTD* by reducing tax aggressiveness, we should find that their effects are associated with increases in taxable income rather than decreases in book income, which would further strengthen our identification.

We follow Armstrong et al. (2015) and partition *BTD* into *PBI* (pre-tax book income) and *TI* (taxable income). We then repeat our analysis using *PBI* and *TI* as dependent variables and use seemingly unrelated regressions to estimate the difference in the coefficients on *TAX_EXP* across the models. Columns (1) and (2) in Table 6 report an insignificant coefficient on *TAX_EXP* when the dependent variable is *PBI*, indicating that tax-expert auditors are not associated with lower pre-tax book income. We also find that the coefficient on *TAX_EXP* is significantly positive ($p < 1\%$) when the dependent variable is *TI*, consistent with tax-expert auditors reducing *BTD* by increasing taxable income, which reduces tax aggressiveness. The chi-square at the bottom of Table 6 shows that the difference between the coefficients on *PBI* and *TI* is significant. These findings indicate that the effect of tax expertise on *BTD* results from a reduction in tax aggressiveness and not a reduction in GAAP earnings management. Finding that tax expertise only impacts taxable income also provides comfort that our tax expertise measure is not simply capturing auditing expertise.

We also investigate whether tax expertise affects the cash-basis effective tax rate (*Cash ETR*). *Cash ETR* is the amount of cash paid for income taxes during the year. While auditors have incentives to monitor accrual-basis taxes, as reflected in the numerator of our *ETR* measure, they

are not expected to monitor *Cash ETR*, which mismatches the numerator and denominator because the cash paid for taxes during a given year may relate to earnings for another period (Hanlon and Heitzman 2010). This is consistent with Armstrong et al. (2012), who find that the tax director's incentive compensation affects GAAP ETR but not cash ETR, providing tax directors with incentives to reduce tax expense rather than cash-basis tax payments. Thus, we do not expect auditors' tax expertise to affect *Cash ETR*. Because cash income taxes paid are not disclosed in the financial statements, we calculate them as current tax expense plus beginning-of-year income taxes payable minus end-of-year income taxes payable. Due to missing data on taxes payable, the number of observations for this analysis reduces to 13,922. Column (3) of Table 6 presents the results from regressing *Cash ETR* on *TAX_EXP*. Consistent with our expectations, we find an insignificant association between tax-expert auditors and *Cash ETR*.

To further investigate the channel through which auditors monitor aggressive tax strategies, we examine tax-related audit adjustments. We obtain proprietary audit adjustment data from the CICPA and manually identify whether an audit adjustment is tax related. *TAXADJ* equals one for tax-related audit adjustments and zero otherwise. *INCADJ* (*DECADJ*) equals one for tax-related audit adjustments that increase (decrease) taxable income and zero otherwise. Columns (4)-(6) in Table 6 reports the results of this analysis. Column (4) reports that tax-expert auditors are associated with a significantly higher likelihood of tax-related audit adjustments (*TAXADJ*) ($p < 10\%$). Columns (5) and (6) indicate that tax-expert auditors are also associated with a higher likelihood of income-increasing tax-related audit adjustments (*INCADJ*) ($p < 5\%$), but not with income-decreasing tax-related audit adjustments (*DECADJ*). As a placebo test, we replace tax-related audit adjustments (*TAXADJ*) with non-tax-related audit adjustments (*NONTAXADJ*) in Column (7) and find that tax-expert auditors are not associated with a higher likelihood of non-

tax-related adjustments. The results in Columns (5)-(7) suggest that one channel through which tax-expert auditors curb tax aggressiveness is by making audit adjustments that increase taxable income, which further improves our identification.

4.2.5 Cross-sectional variation in the effects of auditor tax expertise on tax aggressiveness

This section examines two cross-sectional variables that could moderate the effect of auditor tax expertise on tax aggressiveness: client ownership structure and auditor industry specialization. Because SOEs and non-SOEs have different stakeholders and governance practices, they have different incentives with regard to tax planning (Hanlon and Heitzman, 2010). For SOEs, taxes are an implicit dividend to the controlling shareholder (the government), and less tax avoidance benefits the controlling shareholder by expropriating wealth from other shareholders (Bradshaw et al., 2019). Furthermore, managers of SOEs are usually government officials, whose promotion and career prospects are evaluated by political and social objectives, not just financial objectives such as the maximization of firm value (Chan et al., 2013). Because private companies are expected to engage in more tax aggressiveness, we expect tax-expert signatory auditors to play a relatively greater role in limiting their tax avoidance behavior as compared with SOEs.

We test this prediction in columns (1) and (2) of Table 7. Our full sample comprises SOEs, private enterprises, overseas-funded enterprises, and collectively owned enterprises. For this analysis, we remove overseas-funded and collectively owned enterprises because we do not have a clear prediction of their tax incentives. This results in a modest sample attrition because SOEs and private companies constitute 90.27% $((9,052+8,030) / 18,924)$ of our observations. We then rerun our primary analysis after including the variable *PRIVATE*, which equals one for private companies and zero otherwise, and its interaction with tax expertise ($TAX_EXP \times PRIVATE$). We find that the coefficient on *TAX_EXP* is significantly negative (positive) in the *BTD* (*ETR*)

regression ($p < 5\%$), indicating that for SOEs, tax-expert auditors reduce tax aggressiveness. We also find that the coefficient on *PRIVATE* is significantly positive (negative) in the *BTD* (*ETR*) regression ($p < 10\%$), consistent with private companies being more aggressive relative to SOEs. In addition, we find that the coefficient on $TAX_EXP \times PRIVATE$ is significantly negative in the *BTD* regression ($p < 1\%$) and significantly positive in the *ETR* regression ($p < 5\%$). This is consistent with our prediction that tax-expert auditors have a greater effect on curbing tax aggressiveness among private companies than among SOEs.

While our multivariate analysis in Table 3 finds that industry expertise does not affect clients' tax aggressiveness, industry expertise should help tax-expert auditors better understand their client's business and thus better detect engagement risk related to the tax accounts. We test this prediction by repeating our primary analysis after including the interaction between tax expertise and industry expertise ($TAX_EXP \times IND_EXP$). Columns (3) and (4) in Table 7 report our results. We find that the coefficient on *TAX_EXP* is significantly negative (positive) in the *BTD* (*ETR*) regression ($p < 1\%$), indicating that tax-expert auditors without industry expertise play a significant role in curbing clients' tax aggressiveness. As before, the coefficients on *IND_EXP* are insignificant in both models, which indicates that industry expertise alone does not curb tax aggressiveness. Finally, we find that the coefficient on $TAX_EXP \times IND_EXP$ is significantly negative in the *BTD* regression ($p < 5\%$) and significantly positive in the *ETR* regression ($p < 10\%$), indicating that tax-expert auditors with industry expertise are better at curbing tax aggressiveness than tax-expert auditors without industry expertise.

Taken together, the results in Table 7 show that the effects of tax-expert auditors on tax aggressiveness vary predictably with client and auditor characteristics, which helps alleviate concerns that unobservable company and auditor characteristics explain our results.

4.2.6 Client fixed effects

We repeat our primary analysis after controlling for client company-fixed effects, which effectively examines the association between tax-expert signatory auditors and tax aggressiveness within each client, thus controlling for differences across clients that may explain their tax aggressiveness. As reported in Table 8, our main results in Table 3 continue to hold.²¹

4.3. Auditors incentives to become CTAs and curb tax aggressiveness

4.3.1 Auditors' incentives to become CTAs

Job market competition in China is intense and employees may perceive additional certification as benefiting their job prospects. Thus, we conjecture that engagement auditors have incentives to become CTAs to increase job security and improve their chances for promotion. We test this using manually collected data on auditors' job promotions and migration to larger audit firms. Table 9, Panel A reports the results of regressing engagement auditors' job prospects on their tax expertise after controlling for their other personal traits (gender, age, degree, major, university level and education cohort). Consistent with our expectation, we find that signatory auditors with CTAs are more likely to be promoted within the same audit firm or move to a larger audit firm. This suggests that auditors have career incentives to obtain CTA designation.

4.3.2 Auditors' incentives to curb clients' tax aggressiveness

To test whether auditors have incentives to curb tax aggressiveness, we examine whether engagement auditors are sanctioned when their clients report tax aggressively. We identify 1,471 sanctions from CSMAR during September 1996 to August 2023, and remove sanctions towards audit firms only, resulting in 1,048 sanctions against engagement auditors. We manually

²¹ The fixed effects model requires within-firm variation in the variable of interest, *TAX_EXP*. In our setting, this variation arises due to changes in the signing auditors, which consist of both mandatory changes (as separately analyzed in Table 4 Panel A) and voluntary changes. We do not include SOE in the control variables because there is almost no variation in a firm's SOE status over time.

identify 97 sanctions that are explicitly related to tax. Although sanctions related to revenue fraud also have tax implications, we only identify sanctions that directly relate to taxes. Among these 97 tax-related sanctions, the mean value of the penalty is 106,000 Yuan, about 14,570 US dollars. Other penalties include warnings, censures, and confiscation of ill-gotten gains from CSRC and stock exchanges (Shanghai and Shenzhen). We then regress the tax-related sanctions imposed on engagement auditors on clients' tax aggressiveness. Table 9 Panel B reports that the coefficient on BTD (ETR) is significantly positive (negative), suggesting that engagement auditors are more likely to be sanctioned for tax-related reasons when their clients are more tax-aggressive, providing them with incentives to curb clients' tax aggressiveness.

5. Additional Analyses (untabulated)

5.1 Do some clients prefer tax-expert signatory auditors?

Clients with higher levels of tax aggressiveness may prefer tax-expert auditors in order to constrain their tax aggressiveness that later results in misstatements. Conversely, clients with lower levels of tax aggressiveness may prefer tax-expert auditors because they have nothing to hide. We examine these questions by regressing *TAX_EXP* on the book-tax difference from the previous period (*LAGBTD*). We find that the coefficient on *LAGBTD* is insignificant, suggesting that existing tax aggressiveness does not explain the clients' choice of a tax-expert auditor. However, we caution that the lack of an association may not provide conclusive evidence. For example, the choice of CTA can still be affected by clients' expected tax aggressiveness in the future.

5.2 Reconciliation with Gallemore and Labro (2015)

Gallemore and Labro (2015) find that companies without financial misstatements (which they argue are companies with high-quality internal information) are more tax aggressive. However, they do not distinguish between tax-related and non-tax-related restatements. To reconcile our

findings, we separately examine tax-related and non-tax-related misstatements. Based on Gallemore and Labro (2015), we expect that companies with non-tax-related misstatements are more likely to take aggressive tax positions. However, based on our analysis in Table 5, we also expect tax aggressiveness to increase tax-related misstatement risk. Thus, the association between tax-related (non-tax-related) misstatements and tax aggressiveness is likely positive (negative). In untabulated analysis, we find that tax-related misstatements are associated with lower *ETR* and lower *Cash ETR* (both $p < 5\%$), i.e., more tax aggressiveness. This is consistent with our finding in Table 5 and supports the key assumption in our hypothesis. In contrast, we find that non-tax-related misstatements are associated with higher *ETR* ($p < 10\%$), but not higher *Cash ETR*, i.e., less tax aggressiveness, consistent with Gallemore and Labro (2015). Thus, our analysis indicates that it is important to differentiate between tax-related and non-tax-related misstatements.

5.3 Robustness tests

5.3.1 An Alternative measure of auditors' tax expertise

Goldman et al. (2022) measures tax expertise at the audit office level using *TAXSCORE*, based on whether a client engages in R&D activities, reports foreign operations, or has tax-loss carryforwards. As such, *TAXSCORE* is a measure that is inferred from clients' characteristics, where the choice of characteristics and how they map into the score are subject to researcher judgement. In contrast, our measure of tax expertise, based on the signatory auditor's CTA designation, is a much more direct measure that is based on an objectively observable characteristic of the auditor. Nevertheless, we also perform an analysis that includes *TAXSCORE* along with *TAX_EXP*. *TAXSCORE* equal to 0 if the client has none of these attributes, one if the client has one, two if the client has two, and three if the client has all three attributes. We then sum the values of *TAXSCORE* across all clients for each signatory auditor and scale it by the sum of the total number of the auditor's clients. Since R&D

expenditures are not available before 2007, we restrict the sample period to 2007 to 2016. We find that *TAX_EXP* is associated with lower *BTD* and higher *ETR* after controlling for *TAXSCORE*. In contrast, *TAXSCORE* is not associated with lower *BTD* or higher *ETR*. Thus, we do not find that client-characteristics-based tax expertise is associated with tax aggressiveness.

5.3.2 An alternative measure of ETR

While we use current ETR in our main analysis, we also use ETR as an alternative measure and find that our results in Table 3 remain unchanged. In addition, Chinese-listed companies are subject to varying applicable tax rates (ATRs) due to various preferential tax policies (Shevlin et al., 2012). Following Tang, Mo, and Chan (2017), we modify our *ETR* measure and construct *METR*, which is *ETR* divided by ATR, where ATR is the statutory tax rate applicable to a listed firm after considering tax preferences (e.g., tax holidays and exemption) and tax rebates. We find that our results in Table 3 remain unchanged using the *METR* measure.

5.3.3 An Alternative measure of book-tax difference

Since the book-tax difference is affected by both tax planning and earnings management, we also regress *BTD* on total accruals in an attempt to remove the portion of the difference related to earnings management (Desai and Dharmapala 2006; Chen et al., 2010).

$$BTD_{i,t} = \alpha_1 Total\ Accruals_{i,t} + \mu_i + \varepsilon_{i,t} \quad (4)$$

$$DD_BTD_{i,t} = \mu_i + \varepsilon_{i,t} \quad (5)$$

Total Accruals equal total accruals scaled by lagged total assets, μ_i is the average value of the residual for company *i* over the sample period, and $\varepsilon_{i,t}$ is the deviation of the residual in year *t* from company *i*'s average residual. We replicate our results in Table 3-7 using *DD_BTD* to replace *BTD* and find the results remain unchanged.

5.3.4 Controlling for other auditor characteristics

Prior literature finds that various individual auditor characteristics affect audit quality, including graduate degrees, accounting major and education cohort (Gul et al., 2013). After adding these variables to our main analysis in Table 3, we find that the coefficient on *TAX_EXP* remains significantly negative (positive) when *BTD* (*ETR*) is the dependent variable. However, including these auditor characteristics reduces our sample size from 18,924 to 4,742 for the *BTD* analysis, and from 17,076 to 4,310 for the *ETR* analysis. Thus, we do not include them in the main analyses.

6. Conclusions

We find that clients audited by tax-expert signatory auditors who only provide audit services are less tax aggressive than clients audited by non-tax experts. Consistent with a causal relation, we find that tax aggressiveness declines when mandatory auditor rotation results in switching to a tax-expert auditor. We also find that after an exogenous decrease in tax rates, which reduces clients' incentives to engage in aggressive tax avoidance, the effect of tax expertise on tax aggressiveness weakens. In addition, while tax aggressiveness increases the incidence of tax-related restatements, tax-expert auditors attenuate this effect, consistent with tax-expert auditors mitigating the type of tax aggressiveness that increases misstatement risk. We also find that higher taxable income and a higher likelihood of tax-related audit adjustments are the channels through which tax-expert auditors constrain clients' tax aggressiveness. Taken together, our findings fill a void in the literature and suggest that when signatory auditors only provide attestation services, their tax expertise reduces clients' tax aggressiveness.

We note that our findings may not be directly generalizable to other settings. However, Lennox and Wu (2022) argue that “whether a study is likely to produce generalizable inferences hinges upon the nature of the theory being tested.” Because our theoretical prediction, which is that the engagement auditor's tax expertise curbs tax aggressiveness, is not contingent upon the availability

of the CTA-designation to capture auditors' tax expertise, the generalizability concern is likely mitigated to some extent.

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References

- Agrawal, A., Chadha, S., 2005. Corporate governance and accounting scandals. *The Journal of Law and Economics* 48(2), 371-406.
- Ahn, J., Hoitash, R., Hoitash, U., 2020. Auditor Task-Specific Expertise: The Case of Fair Value Accounting. *The Accounting Review* 95 (3): 1-32.
- Anantharaman, D., Wans, N., 2019. Audit Office Experience with SOX 404(b) Filers and SOX 404 Audit Quality. *The Accounting Review* 94 (4): 1-43.
- Armstrong, C. S., Blouin, J. L., Jagolinzer, A. D. and Larcker, D. F. (2015). Corporate governance, incentives, and tax avoidance. *Journal of Accounting and Economics*, 60:1–17
- Badertscher, B., Phillips, J., Pincus, M., Rego, S., 2009. Earnings management strategies: to conform or not to conform. *The Accounting Review* 84, 63–98.
- Bianchi, P.A., Falsetta, D., Minutti-Meza, M., Weisbrod E., 2019. Joint Audit Engagements and Client Tax Avoidance: Evidence from the Italian Statutory Audit Regime. *Journal of the American Taxation Association* 41 (1): 31-58.
- Blaylock, B., Shevlin, T., Wilson, R.J., 2012. Tax Avoidance, Large Positive Temporary Book-Tax Differences, and Earnings Persistence. *The Accounting Review* 87(1): 91-120.
- Bradshaw, M. T., Liao, G., Ma, M. S., 2019. Agency Costs and Tax Planning when the Government is a Major Shareholder. *Journal of Accounting and Economics* 67, 255-277.
- Brown, J. L., and K. D. Drake., 2014. Network ties among low-tax firms. *The Accounting Review* 89 (2): 483–510.
- Butler, A.W., and Cornaggia, J. 2011. Does access to external finance improve productivity? Evidence from a natural experiment. *Journal of Accounting and Economics* 99 (1): 184-203.
- Burns, N., Kedia, S., 2006. The impact of performance-based compensation on misreporting. *Journal of Financial Economics* 79(1), 35-67.
- Camaran, M., Campa, D., Francis, J. 2020. The Relative Importance of Auditor Characteristics Versus Client Factors in Explaining Audit Quality. *Journal of Accounting, Auditing and Finance*
- Chan, K. H., Lin, K. Z., Mo, P. L., 2010. Will a departure from tax-based accounting encourage tax noncompliance? Archival evidence from a transition economy. *Journal of Accounting and Economics* 50(1), 58-73.
- Chan, K. H., Luo, K., Mo, P. L. 2016. Auditors' Constraining Effect on Tax Noncompliance at Different Book-Tax Conformity Levels in a Transition Economy. *Journal of International Accounting Research* 15(3), 1-30.
- Chan, K. H., Mo, P. L., Zhou, A. Y., 2013. Government ownership, corporate governance and tax aggressiveness: evidence from China. *Accounting & Finance* 53(4), 1029-1051.
- Chen, S., Chen, X., Cheng, Q., Shevlin, T., 2010. Are family firms more tax aggressive than non-family firms? *Journal of Financial Economics* 95(1), 41-61.
- Chen, K. C. W., Chen, T., Han, W., Yuan, H., 2021. Auditors under fire: The association between audit errors and career setbacks of individual auditors. *Journal of Accounting Research*.
- Chen, Y., Huang, J., Liu, H., and Wang, W., 2019. Regional favoritism and tax avoidance: evidence from China. *Accounting & Finance* 58, 1413-1443.
- Chen, H., Tang, S., Wu, D., and Yang, D., 2021. The Political Dynamics of Corporate Tax Avoidance: The Chinese Experience. *The Accounting Review* 96 (5), 157-180.
- Cheng, C. S. A., H. H. Huang, Y. Li, and J. Stanfield., 2012. The effect of hedge fund activism on corporate tax avoidance. *The Accounting Review* 87 (5): 1493–1526.
- Chi, H., Chin, C., 2011. Firm versus partner measures of auditor industry expertise and effects on auditor quality. *Auditing: A Journal of Practice & Theory* 30 (2), 201-229.
- Chinese State Administration of Taxation Decree No. 14, 2006. Interim Measures for the Administration of Registered Tax Agents (注册税务师管理暂行办法).
- Christensen, B. E., A. J. Olson, T. C. Omer. 2015. The role of audit firm expertise and knowledge spillover in mitigating earnings management through tax accounts. *Journal of the American Tax Association* 37 (1) 3-36.
- CICPA, 2014 & 2016. Overview of the Accountancy Profession in China (Chapter VI Strategy of Developing Non-Audit Services).
- Chu, J., Fang, J., Kim, J. B., Zhao, Y. 2019. Stock price crash risk and auditor-client contracting. *China Journal of Accounting Studies*.

- Chyz, J. A., W. S. C. Leung, O. Z. Li, and O. M. Rui., 2013. Labor unions and tax aggressiveness. *Journal of Financial Economics* 108 (3): 675–698.
- DeFond, M.L., Francis, J.R., 2005. Audit research after Sarbanes-Oxley. *Auditing: A Journal of Practice & Theory* 24 (Supplement), 5-30.
- Desai, M.A., 2005. The Degradation of Reported Corporate Profits. *Journal of Economic Perspectives*, 19 (4): 171-192.
- Desai, M., Dharmapala, D., 2006. Corporate tax avoidance and high-powered incentives. *Journal of Financial Economics* 79 (1): 145-179.
- Desai, M., Dharmapala, D., 2008. Tax and corporate governance: an economic approach. In: Schon, W. (Ed.), *Tax and Corporate Governance*. Springer- Verlag, Berlin, pp.13–30.
- Dhaliwal, D., Gleason, C., Mills, L., 2004. Last-chance earnings management: using the tax expense to meet analysts' forecasts. *Contemporary Accounting Research* 21, 431–459.
- Donohoe, M. P., Robert Knechel, W., 2014. Does corporate tax aggressiveness influence audit pricing? *Contemporary Accounting Research* 31(1), 284-308.
- Dyreng, S. D., Hanlon, M., Maydew, E. L., 2008. Long-run corporate tax avoidance. *The Accounting Review* 83(1), 61-82.
- Dyreng, S., Hanlon, M., Maydew, E., 2010. The effects of executives on corporate tax avoidance. *The Accounting Review* 85, 1163–1189.
- Ettredge, M.L., Sun, L., Lee, P., Anandarajan, A. A., 2008. Is earnings fraud associated with high deferred tax and/or book minus tax levels? *Auditing: A Journal of Practice & Theory* 27(1), 1-33.
- Firth, Mo, Wong. 20025. Financial Statement Frauds and Auditor Sanctions: An Analysis of Enforcement Actions in China. *Journal of Business Ethics* 62, 367-381.
- Frank, M. M., Lynch, L. J., Rego, S. O., 2009. Tax reporting aggressiveness and its relation to aggressive financial reporting. *The Accounting Review* 84(2), 467-496.
- Gallemore, J., Labro, E., 2015. The importance of the internal information environment for tax avoidance. *Journal of Accounting and Economics* 60, 149-167.
- Goh, B.W., Lim, C.Y., Shevlin, T.J., Zang, Y., 2013. Tax aggressiveness and auditor resignation. Singapore Management University, Working Paper.
- Goldman, N., Harris, M., Omer, T.C. 2022. Does Task-Specific Knowledge Improve Audit Quality: Evidence from Audits of Income Tax Accounts. *Accounting, Organization and Society* 99, 1-22.
- Graham, L., and Bedard, J. C., 2015. Internal control deficiencies in tax reporting: A detailed view. *Accounting Horizons*, 29(4), 917–942.
- Graham, J. R., Hanlon, M., Shevlin, T., Shroff, N., 2014. Incentives for tax planning and avoidance: Evidence from the field. *The Accounting Review* 89(3), 991-1023.
- Gul, F. A., Wu, D., Yang, Z., 2013. Do individual auditors affect audit quality? Evidence from archival data. *The Accounting Review* 88(6), 1993-2023.
- Gunn, J.L., Michas, P.N., 2018. Auditor Multinational Expertise and Audit Quality. *The Accounting Review* 93 (4), 203-224.
- Hanlon, M., 2005. The persistence and pricing of earnings, accruals, and cash flows when firms have large book-tax differences. *The Accounting Review* 80, 137–166.
- Hanlon, M., Heitzman, S., 2010. A review of tax research. *Journal of Accounting and Economics* 50, 127-178.
- Halon, M., Slemrod, J., 2009. What does tax aggressiveness signal? Evidence from stock price reactions to news about tax shelter involvement. *Journal of Public Economics* 93(1-2): 126-141.
- Hennes, K.M., Leone, A.J., Miller, B.P., 2014. Determinants and market consequences of auditor dismissals after accounting restatements. *The Accounting Review* 89(3): 1051-1082.
- Hope, O.K., Ma, S., Thomas, W., 2013. Tax avoidance and geographic earnings disclosure. *Journal of Accounting & Economics* 56 (2-3), 170-189.
- Hua L.W., Georgakopoulos G., Sotiropoulos, I., and Galanou, E., 2010. Main Principles and Practices of Auditing Independence in China: A Multifaceted Discussion. *Asian Social Science* 6 (7), 3-11.
- Ittonen, K., Vähämaa, E., Vähämaa, S., 2013. Female auditors and accruals quality. *Accounting Horizon* 27 (2), 205-228.

- Khan, M., S. Srinivasan, and L. Tan., 2017. Institutional ownership and corporate tax avoidance: New evidence. *The Accounting Review* 92 (2): 101–122.
- Kim, J., Li, Y., Zhang, L., 2011. Corporate tax avoidance and stock price crash risk: Firm-level analysis. *Journal of Financial Economics* 100: 639-662.
- Klassen, K.J., Lisowsky, P., Mescall, D. 2016. The Role of Auditors, Non-auditors, and Internal Tax Departments in Corporate Tax Aggression. *The Accounting Review* 91(1): 179-205.
- Knechel, W. R., Vansraelen, A. Zerni, M., 2015. Does the identity of engagement partners matter? An analysis of audit partner reporting decisions. *Contemporary Accounting Research* 32: 1443-1478.
- Knechel, W. R., Mao, J., Qi, B., Zhuang, Z. 2021. Is There a Brain Drain in Auditing? The Determinants and Consequences of Auditors' Leaving Public Accounting. *Contemporary Accounting Research*, 2021, 38 (4): 2461-2495.
- Knechel, W. R., Niemi, L. Zerni, M., 2013. “Empirical Evidence on the Implicit Determinants of Compensation in Big 4 Audit Partnerships.” *Journal of Accounting Research* 51: 349-87.
- Kubick, T., Lynch, D., Mayberry, M., Omer, T. 2016. “The effects of regulatory scrutiny on tax avoidance: An examination of SEC Comment letters.” *The Accounting Review* 91(6): 1751-1780.
- Lennox, C., Wu, X., and Zhang, T., 2014. Does mandatory rotation of audit partners improve audit quality? *The Accounting Review* 89 (5): 1775-1803.
- Lennox, C., Wu, J.S., 2022. A Review of China-Related Accounting Research in the Past 25 Years. *Journal of Accounting and Economics* 74(2-3).
- Li, W., Pittman, J.A., Wang, Z., 2019. The Determinants and Consequences of Tax Audits: Some Evidence From China. *Journal of the American Taxation Association* 41(1): 91-122.
- Manzon, G.B., and Plesko, G.A. 2001. The Relation between financial and tax reporting measures of income. *Tax L. Rev* 55: 175-195.
- Macve, R., 2020. Perspectives from mainland China, Hong Kong and the UK on the development of China’s auditing firms: implications and a research agenda. *Accounting and Business Research* 50 (7), 641-692.
- McGill and Outslay, 2004. Lost in translation: Detecting tax shelter activity in financial statements. *National Tax Journal* 57(3).
- McGuire, S. T., Omer, T. C., Wang, D., 2012. Tax avoidance: Does tax-specific industry expertise make a difference? *The Accounting Review* 87(3), 975-1003.
- McGuire, S. T., Rane, S.G., Weaver, C.D., 2018. Internal information quality and tax-motivated income shifting. *Journal of The American Taxation Association*, 40 (2): 25-44.
- Mills, L. F., 1998. Book-tax differences and Internal Revenue Service adjustments. *Journal of Accounting research* 36(2), 343-356.
- Nelson, M., 2009. A model and literature review of professional skepticism in auditing. *Auditing: A Journal of Practice & Theory* 28 (2): 1-34.
- Nelson, M., and Tan, H., 2005. Judgment and decision-making research auditing: A task, person, and interpersonal interaction perspective. *Auditing: A Journal of Practice & Theory* 24: 41-71.
- Rauter, T. 2020. The Effect of Mandatory Extraction Payment Disclosures on Corporate Payment and Investment Policies Abroad. *Journal of Accounting Research* 58 (5),1075-1116.
- Rego, S.O., 2003. Tax-avoidance activities of US multinational corporations. *Contemporary Accounting Research* 20(4), 805-833.
- Robinson, J., Sikes, S., Weaver, C., 2010. Performance measurement of corporate tax departments. *The Accounting Review* 85, 1035–1064.
- Seetharaman A., Sun Y., Wang W., 2011. Tax-related financial statement restatements and auditor-provided tax services. *Journal of Accounting, Auditing & Finance*, 26, 677-698.
- Tang, T., Firth, M., 2011. Can book-tax differences capture earnings management and tax management? Empirical evidence from China. *International Journal of Accounting* 46, 175–204.
- Tang, T., Mo, P. L. L., Chan, K. H., 2017. Tax collector or tax avoider? An investigation of intergovernmental agency conflicts. *The Accounting Review* 92(2), 247-270.
- Tang, T., 2020. A review of tax avoidance in China. *China Journal of Accounting Research* 13, 327–338
- Whitehouse, T. 2009. Tax, Complexity, Restatements. *Compliance Week*. August 10.

- Wilde, J., 2017. The deterrent effect of employee whistleblowing on firms' financial misreporting and tax aggressiveness. *The Accounting Review* 92 (5): 247–280.
- Wilde, J. Wilson, R., 2018. Perspectives on corporate tax planning: Observations from the past decade. *The Journal of the American Tax Association* 40: 63-81.
- Wilson, R., 2009. An examination of corporate tax shelter participants. *The Accounting Review* 84, 969-999.

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Appendix A: Variable definitions

<i>Vars</i>	Definitions
<i>ETR</i>	Effective tax rate, equal to total tax expense minus changes in deferred tax assets or liabilities, deflated by pre-tax income (Rego 2003; Dyreng et al., 2010; Robinson et al., 2010). $ETR_{i,t} = \frac{Income\ tax\ expense_{i,t} - Deferred\ tax_{i,t}}{Pre-tax\ book\ income_{i,t}}$
<i>BTD</i>	Book-tax difference, equal to pre-tax net income minus taxable income, deflated by total assets at the beginning of year t (Mills 1998; Wilson 2009; McGuire et al., 2012). $BTD_{i,t} = \frac{Pre-tax\ book\ income_{i,t} - \frac{Income\ tax\ expense_{i,t} - Deferred\ tax_{i,t}}{Applicable\ tax\ rate_{i,t}}}{Total\ assets_{i,t-1}}$
<i>TAX_EXP</i>	Equals 1 if the signing auditor is designated as a Certified Tax Agent, and zero otherwise.
<i>SIZE</i>	Natural log of total assets of client company at the end of year t.
<i>ABACC</i>	Absolute value of discretionary accruals estimated using the modified Jones Model (Dechow et al., 1995).
<i>EQINC</i>	Equity income for year t scaled by total assets at the beginning of year t.
<i>FI</i>	Pre-tax foreign income for year t scaled by total assets at the beginning of year t.
<i>LEV</i>	Long-term-debt to asset ratio at end of year t, measured as long-term debt / total assets at the end of year t
<i>BTM</i>	Book-to-market ratio, measured as book value of equity / market value of equity at the end of year t.
<i>PPE</i>	Net property plant and equipment at the end of year t scaled by total assets at beginning of year t.
<i>ROA</i>	Return on assets for year t, measured as the ratio of income before extraordinary items to the average of total assets for the year.
<i>CASH</i>	Cash holdings at the end of year t, divided by total assets at the beginning of year t.
<i>DEP</i>	Depreciation and amortization expense for year t, divided by total assets at the beginning of the year.
<i>ROASTD</i>	3 year rolling standard deviation of <i>ROA</i> .
<i>BIG4</i>	Equals 1 if a company is audited by a Big 4 auditor, and zero otherwise.
<i>TENURE</i>	Average tenure of the review and engagement partner with the client.
<i>GROWTH</i>	Growth in sales, measured as change in sales in year t scaled by sales in year t-1.
<i>TOPI</i>	Share ownership of largest single shareholder.
<i>INDEP</i>	The numbers of independent directors scaled by total number of board directors.
<i>SOE</i>	Equals 1 if the company is a state-owned enterprise, and zero otherwise.
<i>ROTIN</i>	Equals 1 if the new signing auditor is a tax expert, and zero otherwise.
<i>ROTOU</i>	Equals to 1 if the departing signing auditor is a tax expert, and zero otherwise.
<i>POST2008</i>	Equals 1 for year 2009 and after, and zero for 2007 and before.
<i>IND_EXP</i>	Equals total assets audited by the signing auditor divided by total assets of companies in the same industry.
<i>TAX_RESTATE</i>	Equals 1 for tax-related restatements, and zero otherwise.
<i>NonTAX_RESTATE</i>	Equals 1 for non-tax-related restatements, zero otherwise.
<i>Cash ETR</i>	Cash income taxes paid divided by pretax income. Cash income taxes paid equal current tax expense plus beginning-of-year income taxes payable minus end-of-year income taxes payable.
<i>TAXADJ</i>	Equals 1 for tax-related audit adjustments, and zero otherwise.
<i>INCADJ</i>	Equals 1 for tax-related audit adjustments that increase taxable income, and zero otherwise.
<i>DECADJ</i>	Equals 1 for tax-related audit adjustments that decrease taxable income, and zero otherwise.
<i>NONTAXADJ</i>	Equals 1 for non-tax-related audit adjustments, and zero otherwise.
<i>PRIVATE</i>	Equals 1 if a company ownership is private, and zero otherwise.

Appendix B: Parallel Trend Analyses

Panel A: Parallel Trend in the Mandatory Rotation Analysis

<i>Variables</i>	(1) <i>BTD</i>	(2) <i>ETR</i>
<i>BEFORIN</i>	0.002 (0.861)	-0.006 (-0.708)
<i>CURRENTIN</i>	-0.004* (-1.708)	0.012* (1.945)
<i>AFTERIN</i>	-0.007** (-2.012)	0.015** (2.148)
<i>TAX_EXP</i> × <i>BEFORIN</i>	0.003 (0.677)	-0.005 (-0.875)
<i>TAX_EXP</i> × <i>CURRENTIN</i>	-0.005** (-2.353)	0.010** (2.505)
<i>TAX_EXP</i> × <i>AFTERIN</i>	-0.009** (-2.545)	0.014** (2.286)
<i>SIZE</i>	-0.000 (-0.069)	0.008* (1.818)
<i>ABACC</i>	0.036 (1.447)	-0.192*** (-3.214)
<i>EQINC</i>	0.548*** (8.511)	-0.602*** (-5.014)
<i>FI</i>	0.002 (1.383)	0.000 (0.263)
<i>LEV</i>	0.012 (0.860)	-0.016 (-0.338)
<i>BTM</i>	0.019*** (3.732)	-0.031 (-1.539)
<i>PPE</i>	0.003 (0.408)	-0.007 (-0.305)
<i>ROA</i>	0.224*** (5.203)	-0.465*** (-5.151)
<i>CASH</i>	0.003 (0.211)	-0.046* (-1.862)
<i>DEP</i>	0.145** (2.051)	-0.313** (-2.111)
<i>ROASTD</i>	0.168*** (3.705)	-0.315*** (-3.197)
<i>BIG4</i>	0.002 (0.524)	0.015 (1.021)
<i>TENURE</i>	-0.001 (-0.901)	-0.002 (-0.403)
<i>IND_EXP</i>	-0.113 (-0.375)	0.359* (1.753)
<i>SOE</i>	-0.006** (-2.522)	0.014* (1.878)
Industry/Year FE	YES	YES
Observations	4,383	3,870
Adj R ²	0.317	0.212

Panel B: Parallel Trend in the Tax Reform Analysis

<i>Vars</i>	<i>BTD</i>	<i>ETR</i>
<i>BEFORE2</i>	0.006** (2.132)	-0.019* (-1.796)
<i>BEFORE1</i>	0.002 (0.645)	-0.006 (-0.471)
<i>CURRENT</i>	-0.020*** (-5.656)	0.081*** (6.366)
<i>AFTER1</i>	-0.011*** (-2.602)	0.033*** (2.820)
<i>AFTER2</i>	-0.010*** (-2.745)	0.015* (1.703)
<i>BEFORE2</i> × <i>TAX_EXP</i>	-0.027*** (-3.932)	0.051** (2.376)
<i>BEFORE1</i> × <i>TAX_EXP</i>	-0.010* (-1.823)	0.017* (1.779)
<i>CURRENT</i> × <i>TAX_EXP</i>	0.012** (1.980)	-0.020** (-2.391)
<i>AFTER1</i> × <i>TAX_EXP</i>	0.009** (2.130)	-0.012 (-1.577)
<i>AFTER2</i> × <i>TAX_EXP</i>	0.004 (1.596)	-0.009* (-1.767)
<i>SIZE</i>	-0.000 (-0.085)	0.001 (0.218)
<i>ABACC</i>	0.004 (0.309)	-0.089*** (-2.756)
<i>EQINC</i>	0.612*** (13.265)	-0.641*** (-8.171)
<i>FI</i>	0.002 (1.476)	0.001 (0.228)
<i>LEV</i>	0.005 (0.605)	-0.060** (-2.100)
<i>BTM</i>	0.015*** (4.463)	-0.033** (-2.293)
<i>PPE</i>	0.015*** (2.901)	-0.017 (-1.157)
<i>ROA</i>	0.289*** (8.763)	-0.509*** (-7.418)
<i>CASH</i>	0.018** (1.970)	-0.053*** (-3.192)
<i>DEP</i>	0.088** (2.260)	-0.124 (-1.218)
<i>ROASTD</i>	0.145*** (4.724)	-0.138** (-1.983)
<i>BIG4</i>	-0.005 (-1.555)	0.005 (0.462)
<i>TENURE</i>	-0.000 (-0.671)	-0.000 (-0.168)
<i>IND_EXP</i>	-0.113 (-0.329)	0.638 (0.541)
<i>SOE</i>	-0.004** (-2.211)	0.002 (0.335)
Industry/Year FE	YES	YES
Observations	6,683	5,932
Adj R ²	0.304	0.220

Panel A of Appendix B examines the validity of parallel trends assumption for the auditor rotation analysis by estimating a dynamic regression model (Rauter 2020). Specifically, we define indicator variables *BEFOREIN*, *CURRENTIN*, and *AFTERIN* as one for years -1, 0, and 1, where year 0 is the year of mandatory rotation, and zero otherwise. We replace *ROTIN* in Panel A of Table 4 with these indicator variables and include the interactions between *TAX_EXP* and these indicator variables. We find that the coefficients of *TAX_EXP*×*BEFOREIN* are insignificant in both columns, supporting the parallel trends assumption. However, the coefficients of *TAX_EXP* × *CURRENTIN* and *TAX_EXP*×*AFTERIN* are significantly negative (positive) for *BTD* (*ETR*), suggesting that the tax aggressiveness of companies that replaces a non-expert with an expert partner increase after the partner rotation over the two-year period.

Panel B of Appendix B examines the parallel trends assumption for the tax reform analysis. We define indicator variables *BEFORE2*, *BEFORE1*, *CURRENT*, *AFTER1*, and *AFTER2* equal to one for years -2, -1, 0, 1, and 2, where year 0 is the year of 2008 tax reform, and zero otherwise. We replace *POST2008* in Panel B of Table 4 with these indicator variables and include interactions between *TAX_EXP* and the indicator variables. We find that the coefficients on *BEFORE2*×*TAX_EXP* and *BEFORE1*×*TAX_EXP* are significantly negative (positive) for *BTD* (*ETR*). This is consistent with our main finding that before the tax reform, clients with tax-expert partners have lower tax aggressiveness than clients of non-tax-expert partners. However, the coefficients on *CURRENT*×*TAX_EXP* and *AFTER1*×*TAX_EXP* are significantly positive for *BTD*, and the coefficients of *CURRENT* *TAX_EXP* and *AFTER2*× *TAX_EXP* are significantly negative for *ETR*, indicating that the difference in tax aggressiveness between the clients of tax-expert partners and the clients of non-tax-expert partners decreases after the tax reform. Overall, the pattern in Panel B supports the parallel trends assumption.

Table 1: Sample selection

Procedures:	Observations
Chinese Publicly Listed Companies (A Share) over the period 2003-2016	28,411
Less:	
Observations in the Financial Industry	-628
Observations with negative or zero taxable income	-3,729
Observations without information to identify auditor's signature	-708
Full Sample	23,346
Full Sample	23,346
Less:	
Observations with missing data for <i>BTD</i> and control variables	-4,422
<i>BTD</i> Sample	18,924
Full Sample	23,346
Less:	
Observations with missing data to calculate <i>ETR</i> and control variables	-4,068
Observations with <i>ETR</i> larger than 1 or less than 0	-2,202
<i>ETR</i> Sample	17,076

This table summarizes the sample selection procedure. Following Manzon and Plesko (2002), Chen, Chen, Cheng and Shevlin (2010), we remove observations with zero or negative taxable income and truncate *ETR* to the range [0,1].

Table 2: Descriptive statistics and correlation table

Panel A Descriptive statistics

<i>Vars</i>	N	Mean	Std.	25th	50th	75th	CTA=1 (N=3,974)	CTA=0 (N=14,950)	Diff.
<i>TAX_EXP</i>	18,924	0.210	0.407	0.000	0.000	0.000			
<i>BTD</i>	18,924	0.015	0.060	-0.008	0.005	0.026	0.011	0.016	-0.005***
<i>ETR</i>	17,076	0.189	0.157	0.089	0.157	0.255	0.207	0.185	0.022***
<i>SIZE</i>	18,924	21.748	1.162	20.939	21.624	22.393	21.729	21.753	-0.025
<i>ABACC</i>	18,924	0.069	0.076	0.020	0.046	0.088	0.065	0.070	-0.005***
<i>EQINC</i>	18,924	0.018	0.036	0.000	0.003	0.020	0.016	0.018	-0.002***
<i>FI</i>	18,924	0.121	0.963	0.000	0.000	0.094	0.103	0.125	-0.023
<i>LEV</i>	18,924	0.065	0.095	0.000	0.014	0.099	0.066	0.064	0.001
<i>BTM</i>	18,924	0.391	0.251	0.205	0.332	0.520	0.402	0.388	0.014***
<i>PPE</i>	18,924	0.236	0.212	0.062	0.182	0.356	0.243	0.234	0.009**
<i>ROA</i>	18,924	0.052	0.049	0.017	0.038	0.069	0.050	0.052	-0.002***
<i>CASH</i>	18,924	0.184	0.170	0.069	0.136	0.244	0.182	0.184	-0.003
<i>DEP</i>	18,924	0.031	0.025	0.014	0.026	0.042	0.030	0.031	-0.001***
<i>ROASTD</i>	18,924	0.029	0.044	0.008	0.016	0.031	0.028	0.029	-0.002**
<i>BIG4</i>	18,924	0.065	0.246	0.000	0.000	0.000	0.049	0.069	-0.020***
<i>TENURE</i>	18,924	2.154	0.943	1.500	2.000	3.000	2.194	2.143	0.052***
<i>IND_EXP</i>	18,924	0.005	0.011	0.001	0.003	0.005	0.005	0.005	0.000
<i>SOE</i>	18,924	0.478	0.500	0.000	0.000	0.000	0.472	0.480	-0.008

Panel B Correlation table

<i>Vars</i>	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
(1) <i>BTD</i>	1.000	-0.756	-0.057	-0.009	0.070	0.325	0.017	0.047	0.097	0.108	0.279	0.094	0.130	0.164	0.029	0.002	-0.045	-0.046
(2) <i>ETR</i>	-0.521	1.000	0.063	0.007	-0.043	-0.286	-0.093	-0.104	-0.173	-0.180	-0.146	-0.104	-0.127	-0.156	0.012	-0.007	0.186	0.103
(3) <i>TAX_EXP</i>	-0.034	0.062	1.000	0.012	-0.003	-0.019	-0.013	0.019	0.030	0.016	0.024	0.010	-0.025	-0.010	-0.038	0.039	0.015	0.001
(4) <i>SIZE</i>	-0.006	0.007	0.002	1.000	0.018	0.191	0.037	0.436	0.305	-0.020	0.031	-0.064	0.075	-0.044	0.288	0.050	0.024	0.273
(5) <i>ABACC</i>	0.213	-0.034	-0.002	0.009	1.000	0.093	-0.035	-0.022	-0.136	-0.161	0.138	0.039	-0.036	0.162	-0.036	-0.010	0.041	-0.042
(6) <i>EQINC</i>	0.494	-0.224	-0.008	0.085	0.292	1.000	-0.018	-0.024	-0.088	-0.283	0.165	-0.070	0.007	0.120	0.060	0.044	-0.003	0.053
(7) <i>FI</i>	0.091	-0.035	-0.007	-0.007	0.091	0.074	1.000	-0.091	-0.037	0.025	0.007	0.040	0.131	-0.011	0.005	-0.006	-0.357	-0.122
(8) <i>LEV</i>	0.034	-0.052	0.014	0.410	0.009	-0.034	-0.046	1.000	0.263	0.230	-0.148	-0.156	0.069	-0.066	0.140	0.026	0.172	0.275
(9) <i>BTM</i>	0.103	-0.151	0.030	0.330	-0.138	-0.116	-0.044	0.224	1.000	0.209	-0.246	-0.059	0.022	-0.219	0.121	0.003	0.135	0.233
(10) <i>PPE</i>	0.082	-0.113	0.014	0.068	-0.148	-0.218	0.003	0.258	0.219	1.000	-0.005	-0.004	0.378	-0.080	0.042	-0.014	0.065	0.189
(11) <i>ROA</i>	0.412	-0.195	0.016	0.002	0.241	0.361	0.061	-0.143	-0.271	-0.012	1.000	0.221	0.036	0.209	0.068	-0.027	-0.010	-0.057
(12) <i>CASH</i>	0.017	-0.019	0.004	-0.044	0.126	0.014	0.060	-0.150	-0.101	-0.056	0.226	1.000	-0.176	-0.044	-0.037	-0.057	-0.035	-0.061
(13) <i>DEP</i>	0.139	-0.118	-0.025	0.124	0.028	0.095	0.135	0.077	0.019	0.327	0.063	-0.094	1.000	0.059	0.046	0.014	-0.094	0.079
(14) <i>ROASTD</i>	0.332	-0.105	-0.010	-0.161	0.290	0.248	0.072	-0.060	-0.212	-0.050	0.335	0.030	0.063	1.000	-0.007	-0.015	-0.023	-0.058
(15) <i>BIG4</i>	0.014	0.002	-0.038	0.361	-0.038	0.027	-0.007	0.128	0.130	0.063	0.057	-0.034	0.067	-0.035	1.000	-0.028	0.039	0.162
(16) <i>TENURE</i>	0.001	-0.004	0.035	0.045	-0.011	0.028	0.010	0.025	0.007	-0.017	-0.023	-0.063	0.008	-0.013	-0.028	1.000	-0.005	0.001
(17) <i>IND_EXP</i>	-0.011	0.085	-0.006	-0.082	-0.018	0.012	-0.035	0.011	0.004	0.029	-0.017	-0.008	-0.017	0.018	0.017	-0.020	1.000	0.232
(18) <i>SOE</i>	-0.050	0.095	0.001	0.286	-0.036	0.010	-0.018	0.231	0.229	0.221	-0.050	-0.071	0.098	-0.049	0.162	0.005	0.095	1.000

Panel A of this table presents the descriptive statistics of the variables used in the analysis. We use the *BTD* sample to report statistics for the control variables. All the continuous variables are winsorized at top and bottom 1% level. Variable definitions are reported in Appendix A. Panel B presents the correlation matrix of the variables used in the main analyses. Pearson's correlation coefficients are shown below the diagonal, while Spearman's rank correlations appear above the diagonal. Bolded correlation coefficients are significant at the 5% level or greater (two-sided).

Table 3: The effects of signatory auditors' tax expertise on tax aggressiveness

<i>Vars</i>	<i>BTD</i>			<i>ETR</i>		
	(1) Review or Engagement Auditor	(2) Review Auditor	(3) Engagement Auditor	(4) Review or Engagement Auditor	(5) Review Auditor	(6) Engagement Auditor
<i>TAX_EXP</i>	-0.006*** (-5.071)	-0.005*** (-3.423)	-0.006*** (-3.704)	0.021*** (5.165)	0.015*** (3.048)	0.018*** (3.446)
<i>SIZE</i>	-0.001 (-1.537)	-0.001 (-1.554)	-0.001 (-1.533)	0.002 (0.865)	0.002 (0.902)	0.002 (0.873)
<i>ABACC</i>	0.026*** (3.167)	0.026*** (3.169)	0.026*** (3.151)	-0.066*** (-3.663)	-0.066*** (-3.645)	-0.067*** (-3.665)
<i>EQINC</i>	0.563*** (21.453)	0.563*** (21.491)	0.563*** (21.450)	-0.587*** (-13.690)	-0.588*** (-13.758)	-0.589*** (-13.721)
<i>FI</i>	0.001 (0.926)	0.001 (0.923)	0.001 (0.923)	-0.000 (-0.124)	-0.000 (-0.127)	-0.000 (-0.136)
<i>LEV</i>	0.010** (2.072)	0.011** (2.115)	0.010** (2.047)	-0.050*** (-2.730)	-0.051*** (-2.776)	-0.050*** (-2.717)
<i>BTM</i>	0.019*** (8.492)	0.019*** (8.420)	0.019*** (8.410)	-0.029*** (-3.284)	-0.029*** (-3.332)	-0.029*** (-3.338)
<i>PPE</i>	0.000 (0.300)	0.000 (0.285)	0.000 (0.297)	-0.013 (-1.461)	-0.013 (-1.464)	-0.013 (-1.441)
<i>ROA</i>	0.297*** (15.863)	0.296*** (15.832)	0.296*** (15.839)	-0.470*** (-12.916)	-0.467*** (-12.847)	-0.467*** (-12.840)
<i>CASH</i>	0.019*** (4.144)	0.019*** (4.154)	0.019*** (4.153)	-0.037*** (-4.487)	-0.037*** (-4.497)	-0.037*** (-4.511)
<i>DEP</i>	0.072*** (2.720)	0.073*** (2.768)	0.072*** (2.738)	-0.218*** (-3.617)	-0.222*** (-3.673)	-0.220*** (-3.643)
<i>ROASTD</i>	0.187*** (9.608)	0.186*** (9.613)	0.187*** (9.634)	-0.116*** (-3.074)	-0.116*** (-3.082)	-0.119*** (-3.139)
<i>BIG4</i>	0.001 (0.282)	0.001 (0.357)	0.001 (0.394)	-0.001 (-0.135)	-0.001 (-0.237)	-0.001 (-0.242)
<i>TENURE</i>	0.000 (0.114)	0.000 (0.210)	0.000 (0.180)	0.000 (0.191)	0.000 (0.291)	0.000 (0.263)
<i>IND_EXP</i>	0.044	0.038	0.044	0.160	0.183	0.178

	(0.374)	(0.324)	(0.374)	(0.318)	(0.367)	(0.352)
<i>SOE</i>	-0.001	-0.001	-0.001	0.006*	0.007*	0.007*
	(-1.025)	(-0.968)	(-0.977)	(1.824)	(1.882)	(1.862)
Industry/Year	YES	YES	YES	YES	YES	YES
Observations	18,924	18,924	18,924	17,076	17,076	17,076
Adj R ²	0.314	0.313	0.314	0.194	0.193	0.193
<i>Test the coefficient difference on TAX_EXP between review auditor and engagement auditor</i>						
	Chi(2)=0.27			Chi(2)=0.36		
	Prob>Chi2=0.606			Prob>Chi2=0.549		

This table reports the analysis of the effects of signatory auditors' tax expertise on clients' tax aggressiveness. *TAX_EXP* is an indicator variable that equals 1 if the signing auditor is designated as a Certified Tax Agent, zero otherwise. *BTD* is the book-tax difference, equal to pre-tax net income minus taxable income deflated by total assets at the beginning of the year. *ETR* is the effective tax rate, equal to total tax expense minus changes in deferred tax assets or liabilities deflated by pre-tax income. When *TAX_EXP* measures review (engagement) partner expertise, *TENURE* measures review (engagement) partner tenure. Both industry and year fixed-effects are included. Industries are classified based on CSRC 2012 industry classifications with a two-digit code for the manufacturing sector and a one-digit code for other sectors. Variable definitions are provided in Appendix A. Standard errors are clustered at the client company level. ***, **, and * indicate two-tailed statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 4: Shocks to the effects of auditors' tax expertise on tax aggressiveness
Panel A: The effects of mandatory auditor rotation on tax aggressiveness

<i>Vars</i>	(1) <i>BTD</i>	(2) <i>ETR</i>
<i>ROTIN</i>	-0.006** (-1.978)	0.024** (2.414)
<i>ROTOUT</i>	0.002 (1.246)	-0.011* (-1.949)
<i>SIZE</i>	-0.000 (-0.075)	0.009** (2.161)
<i>ABACC</i>	0.036 (1.448)	-0.193*** (-3.201)
<i>EQINC</i>	0.548*** (8.514)	-0.616*** (-5.157)
<i>FI</i>	0.002 (1.384)	-0.000 (-0.215)
<i>LEV</i>	0.012 (0.860)	-0.015 (-0.318)
<i>BTM</i>	0.019*** (3.734)	-0.030 (-1.511)
<i>PPE</i>	0.003 (0.411)	-0.009 (-0.416)
<i>ROA</i>	0.224*** (5.203)	-0.458*** (-5.089)
<i>CASH</i>	0.003 (0.211)	-0.047* (-1.886)
<i>DEP</i>	0.145** (2.051)	-0.313** (-2.119)
<i>ROASTD</i>	0.168*** (3.711)	-0.306*** (-3.118)
<i>BIG4</i>	0.002 (0.530)	0.017 (0.967)
<i>TENURE</i>	-0.001 (-0.902)	0.002 (0.440)
<i>IND_EXP</i>	-0.113 (-0.376)	0.306* (1.713)
<i>SOE</i>	-0.006** (-2.526)	0.013* (1.755)
Industry/Year FE	YES	YES
Observations	4,383	3,870
Adj R ²	0.347	0.213

Panel B: The effects of a sudden decline in tax rates

Vars	Tax Expertise		Industry Expertise		Tax Expertise	
	BTD (1)	ETR (2)	BTD (3)	ETR (4)	BTD (5)	ETR (6)
<i>TAX_EXP</i>	-0.010*** (-4.408)	0.025*** (4.253)	-0.007*** (-3.505)	0.022*** (4.025)	-0.011*** (-4.269)	0.042*** (3.681)
<i>POST2008</i>	-0.007*** (-3.071)	0.044*** (6.182)	-0.007*** (-2.944)	0.049*** (5.166)	-0.005** (-2.517)	0.068*** (4.808)
<i>TAX_EXP</i> × <i>POST2008</i>	0.006** (2.254)	-0.013** (-2.315)			0.007* (1.944)	-0.030** (-2.060)
<i>IND_EXP</i>	0.020 (0.167)	0.185 (0.349)	0.088 (0.749)	0.076 (0.151)	-0.121 (-0.356)	0.627 (0.532)
<i>IND_EXP</i> × <i>POST2008</i>			0.056 (0.697)	0.280 (0.486)		
<i>SIZE</i>	-0.000 (-0.679)	0.000 (0.164)	-0.000 (-0.814)	0.000 (0.105)	-0.000 (-0.063)	0.001 (0.191)
<i>ABACC</i>	0.022*** (2.669)	-0.071*** (-3.872)	0.021** (2.445)	-0.074*** (-3.797)	0.005 (0.343)	-0.088*** (-2.719)
<i>EQINC</i>	0.591*** (22.662)	-0.625*** (-14.874)	0.604*** (22.720)	-0.674*** (-15.289)	0.613*** (13.244)	-0.637*** (-8.130)
<i>FI</i>	0.001 (0.943)	-0.000 (-0.113)	0.002** (2.341)	-0.000 (-0.169)	0.002 (1.470)	0.000 (0.174)
<i>LEV</i>	0.005 (0.929)	-0.043** (-2.316)	0.004 (0.664)	-0.044** (-2.244)	0.005 (0.592)	-0.061** (-2.139)
<i>BTM</i>	0.019*** (7.865)	-0.029*** (-3.243)	0.018*** (7.376)	-0.030*** (-3.206)	0.014*** (4.409)	-0.034** (-2.350)
<i>PPE</i>	0.002 (0.566)	-0.016* (-1.847)	0.002 (0.321)	-0.013 (-1.356)	0.015*** (2.890)	-0.017 (-1.137)
<i>ROA</i>	0.282*** (14.822)	-0.436*** (-12.072)	0.281*** (14.145)	-0.424*** (-11.215)	0.289*** (8.767)	-0.512*** (-7.493)
<i>CASH</i>	0.019*** (4.167)	-0.038*** (-4.655)	0.017*** (3.786)	-0.040*** (-4.691)	0.018** (1.976)	-0.054*** (-3.209)
<i>DEP</i>	0.071*** (2.636)	-0.233*** (-3.881)	0.063** (2.264)	-0.221*** (-3.515)	0.088** (2.281)	-0.127 (-1.247)
<i>ROASTD</i>	0.179*** (8.783)	-0.123*** (-3.180)	0.172*** (7.957)	-0.126*** (-3.051)	0.145*** (4.779)	-0.135** (-1.967)
<i>BIG4</i>	0.001 (0.400)	-0.002 (-0.403)	0.002 (0.802)	-0.004 (-0.646)	0.005 (1.577)	0.005 (0.524)
<i>TENURE</i>	0.000 (0.278)	-0.000 (-0.021)	0.000 (0.419)	-0.001 (-0.362)	-0.000 (-0.574)	-0.001 (-0.268)
<i>SOE</i>	-0.001 (-1.411)	0.005 (1.547)	-0.002* (-1.655)	0.003 (0.700)	-0.003** (-2.185)	0.002 (0.323)
Industry/Year FE	YES	YES	YES	YES	YES	YES
Observations	17,879	16,120	17,879	16,120	6,683	5,932
Adj R ²	0.326	0.197	0.330	0.198	0.303	0.222

This table reports two identification tests on the effect of signatory auditors' tax expertise on clients' tax aggressiveness. Panel A examines the effect of mandatory audit partner rotation. *TAX_EXP* is an indicator variable that equals 1 if the signing auditor is designated as a Certified Tax Agent, and zero otherwise. *BTD* is the book-tax difference, equal to pre-tax net income minus taxable income deflated by total assets at the beginning of the year. *ETR* is the effective tax rate, equal to total tax expense minus changes in deferred tax assets or liabilities deflated by pre-tax income. *ROTIN* equals one when the successor signing auditor is a tax-expert, and zero otherwise. *ROTOU* equals one when the predecessor signing auditor is a tax-expert, and zero otherwise. The mandatory rotation window is $[-1, 0, 1]$, where year 0 is the rotation year. Panel B examines the effects of an exogenous decline in tax rates in 2008. *POST2008* is an indicator variable equal to 1 if the year is 2009 and after, and zero if the year is 2007 and before. Panel B also reports a placebo test that replaces tax expertise with industry expertise. ***, **, * denotes statistical significance at 1%, 5%, 10% level (two-tailed), respectively. T-statistics (in parentheses) are calculated based on robust standard errors clustered at client company level. Variable definitions are provided in the Appendix.

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Table 5: The effects of signatory auditor tax expertise on tax-related misstatements

	<i>Dep. Variable = TAX_MISSTATE</i>		<i>Dep. Variable = NonTAX_MISSTATE (Placebo Test)</i>	
	(1)	(2)	(3)	(4)
<i>TAX_EXP</i>	-0.305** (-2.484)	-0.312** (-2.270)	-0.115 (-0.655)	-0.120 (-0.772)
<i>BTD</i>	1.182** (1.979)		0.387 (0.303)	
<i>ETR</i>		-0.171** (-2.259)		-0.035 (-0.246)
<i>TAX_EXP</i> × <i>BTD</i>	-0.725* (-1.819)		-0.255 (-0.769)	
<i>TAX_EXP</i> × <i>ETR</i>		0.087** (2.034)		0.127 (0.417)
<i>SIZE</i>	-0.022 (-0.388)	-0.017 (-0.293)	-0.044 (-0.700)	-0.047 (-0.754)
<i>LEV</i>	0.952* (1.669)	0.888 (1.560)	0.777 (1.386)	0.693 (1.266)
<i>ROA</i>	0.506 (0.485)	0.016 (0.016)	-1.129 (-1.444)	-1.097 (-1.393)
<i>GROWTH</i>	0.003 (0.247)	0.003 (0.242)	0.036 (1.222)	0.039 (1.176)
<i>TOPI</i>	-0.210 (-0.561)	-0.195 (-0.520)	-0.383 (-1.389)	-0.391 (-1.403)
<i>INDEP</i>	-1.550* (-1.699)	-1.537* (-1.681)	-0.021 (-0.285)	-0.022 (-0.303)
<i>BIG4</i>	-0.913** (-2.442)	-0.900** (-2.388)	-0.335 (-1.005)	-0.377 (-1.099)
<i>TENURE</i>	-0.093** (-2.210)	-0.097** (-2.303)	-0.233*** (-2.772)	-0.230*** (-2.821)
<i>IND_EXP</i>	-7.101 (-0.891)	-7.094 (-0.823)	-20.066** (-2.137)	-20.070** (-2.362)
<i>SOE</i>	0.135 (1.121)	0.142 (1.176)	-0.158 (-1.154)	-0.160 (-1.166)
Industry/Year FE	YES	YES	YES	YES
Observations	902	902	1,582	1,582
Pseudo R ²	0.050	0.048	0.079	0.080
Cluster	Client	Client	Client	Client

This table uses matched samples to test whether tax aggressiveness is positively related to tax-related misstatements; and whether signatory auditors' tax expertise weakens the positive relation between tax aggressiveness and tax-related misstatements. ***, **, * denotes statistical significance at 1%, 5%, 10% level (two-tailed), respectively. Clustered t/Z statistics at the client level are in the parentheses. t-statistics (in parentheses) are calculated based on robust standard errors clustered at client company level. Variable definitions are provided in the Appendix.

Table 6: The Effect of Tax-expert Signatory auditors on the Components of *BTD*, Tax-related Audit Adjustments, and the Cash Effective Tax Rate

<i>Vars</i>	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	<i>PBI</i>	<i>TI</i>	<i>Cash ETR</i>	<i>TAXADJ</i>	<i>INCADJ</i>	<i>DECADJ</i>	<i>NONTAXADJ</i>
<i>TAX_EXP</i>	-0.001 (-1.564)	0.007*** (5.220)	0.006 (1.368)	0.062* (1.940)	0.067** (2.246)	-0.012 (-0.268)	0.033 (0.479)
<i>SIZE</i>	0.003*** (10.083)	0.004*** (6.571)	0.003 (1.570)	-0.047** (-1.976)	-0.046** (-2.247)	-0.007 (-0.340)	-0.108*** (-3.843)
<i>ABACC</i>	0.064*** (13.047)	0.029*** (3.401)	-0.071*** (-3.153)	-0.426** (-1.974)	0.112 (0.545)	-0.727*** (-3.235)	-0.026 (-0.086)
<i>EQINC</i>	-0.017 (-1.065)	-0.561*** (-19.201)	-0.364*** (-6.844)	0.280 (0.517)	0.283 (0.586)	0.052 (0.099)	1.992*** (3.038)
<i>FI</i>	0.002*** (5.699)	0.004*** (7.789)	-0.004 (-1.191)	0.091* (1.684)	0.069** (2.114)	-0.007 (-0.248)	-0.074 (-1.342)
<i>LEV</i>	0.002 (0.679)	-0.014** (-2.353)	-0.026 (-1.223)	-0.542** (-2.354)	0.339 (1.625)	-0.277 (-1.343)	0.469* (1.675)
<i>BTM</i>	-0.005*** (-3.905)	-0.023*** (-9.552)	-0.031*** (-3.251)	-0.019 (-0.195)	0.038 (0.437)	-0.094 (-1.063)	-0.172 (-1.373)
<i>PPE</i>	0.022*** (11.957)	0.020*** (5.552)	-0.042*** (-3.960)	0.023 (0.215)	0.092 (0.933)	0.096 (0.987)	0.103 (0.754)
<i>ROA</i>	1.269*** (119.352)	0.933*** (44.610)	-0.837*** (-19.694)	0.924** (2.311)	-0.176 (-0.480)	1.446*** (3.777)	1.222** (2.361)
<i>CASH</i>	0.057*** (17.542)	0.068*** (13.978)	-0.013 (-1.553)	0.024 (0.238)	0.090 (0.978)	-0.089 (-0.954)	-0.100 (-0.744)
<i>DEP</i>	0.170*** (8.999)	0.064** (2.342)	-0.224*** (-2.795)	0.517 (0.639)	0.220 (0.296)	-0.290 (-0.367)	0.549 (0.548)
<i>ROASTD</i>	0.076*** (6.679)	-0.147*** (-6.946)	-0.068 (-1.424)	-2.244*** (-5.974)	-1.126*** (-3.246)	-1.688*** (-4.273)	1.468*** (3.194)
<i>BIG4</i>	-0.007*** (-6.164)	-0.005** (-2.556)	0.001 (0.176)	-1.070*** (-9.795)	-0.803*** (-7.435)	-0.646*** (-6.271)	-0.211* (-1.752)
<i>TENURE</i>	-0.001*** (-3.896)	-0.001 (-1.251)	0.002 (1.295)	0.063*** (3.870)	0.042*** (2.761)	0.026 (1.590)	0.023 (1.047)
<i>IND_EXP</i>	-0.091 (-1.593)	-0.098 (-0.678)	0.011 (0.022)	5.732 (1.036)	2.597 (0.547)	3.978 (0.734)	7.675 (1.156)
<i>SOE</i>	-0.003*** (-5.267)	-0.002 (-0.773)	0.002 (0.556)	-0.229*** (-4.918)	-0.120*** (-3.163)	-0.140*** (-3.782)	0.040 (0.774)
<i>Constant</i>	-0.090*** (-13.285)	-0.105*** (-7.813)	0.068 (1.435)	1.681*** (3.124)	1.109** (2.488)	-0.731* (-1.684)	1.170* (1.931)
Industry	YES	YES	YES	YES	YES	YES	YES
Observatio	18,924	18,924	13,922	9,846	9,846	9,846	9,846
Adj/Pseudo	0.892	0.489	0.143	0.068	0.033	0.031	0.045
<i>PBI&TI</i>	Chi2(1) = 26.64, Prob>Chi2 = 0 .000						
Marginal				0.022*	0.025**	-0.003	0.011

This table Column (1) and (2) investigate whether the effects of tax expertise on tax aggressiveness are attributable to a reduction in tax aggressiveness (i.e., an increase in taxable income), or a reduction in upward earnings management (i.e., a decrease in pre-tax book income). Following Armstrong et al. (2012), we partition *BTD* into *PBI* (pre-tax book income, column (1)) and *TI* (taxable income, column (2)) and use seemingly unrelated regression to estimate the

difference of coefficients. Column (3) examines the effect of tax-expert signatory auditors on *Cash ETR*, which is cash income taxes paid divided by pretax income. Cash income taxes paid equal current tax expense plus beginning-of-year income taxes payable minus end-of-year income taxes payable. Due to missing data for taxes payable, the number of observations for this analysis decreases to 13,922. Columns (4)-(7) examine the effect of tax-expert auditors on tax-related audit adjustments (*TAXADJ*), income-increasing tax-related audit adjustments (*INCADJ*), income-decreasing tax-related audit adjustments (*DECADJ*), and non-tax-related audit adjustments (*NOTAXADJ*). ***, **, * denotes statistical significance at 1%, 5%, 10% level (two-tailed), respectively. Clustered t/Z statistics at the client level are in the parentheses. t-statistics (in parentheses) are calculated based on robust standard errors clustered at client company level. Variable definitions are reported in the Appendix.

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Table 7: Cross-sectional variation in client characteristics and auditor industry expertise

<i>Vars</i>	<i>BTD</i> (1)	<i>ETR</i> (2)	<i>BTD</i> (3)	<i>ETR</i> (4)
<i>TAX_EXP</i>	-0.004** (-2.197)	0.013** (2.198)	-0.006*** (-4.214)	0.017*** (3.693)
<i>PRIVATE</i>	0.003* (1.917)	-0.006* (-1.756)		
<i>TAX_EXP</i> × <i>PRIVATE</i>	-0.007*** (-2.705)	0.008** (2.122)		
<i>IND_EXP</i>			0.067 (0.909)	-0.047 (-1.082)
<i>TAX_EXP</i> × <i>IND_EXP</i>			-0.087** (-2.371)	0.372* (1.885)
<i>SIZE</i>	-0.001* (-1.650)	0.002 (0.822)	-0.001 (-1.555)	0.002 (0.907)
<i>ABACC</i>	0.025*** (2.968)	-0.071*** (-3.683)	0.026*** (3.163)	-0.067*** (-3.670)
<i>EQINC</i>	0.573*** (21.270)	-0.633*** (-13.966)	0.563*** (21.446)	-0.587*** (-13.685)
<i>FI</i>	0.002** (2.250)	-0.001 (-0.206)	0.001 (0.925)	-0.000 (-0.118)
<i>LEV</i>	0.008 (1.533)	-0.047** (-2.427)	0.010** (2.087)	-0.050*** (-2.760)
<i>BTM</i>	0.019*** (8.033)	-0.030*** (-3.293)	0.019*** (8.503)	-0.029*** (-3.266)
<i>PPE</i>	0.002 (0.565)	-0.010 (-1.099)	0.000 (0.104)	-0.013 (-1.448)
<i>ROA</i>	0.296*** (15.096)	-0.459*** (-11.998)	0.297*** (15.863)	-0.471*** (-12.930)
<i>CASH</i>	0.018*** (3.793)	-0.039*** (-4.574)	0.019*** (4.152)	-0.037*** (-4.528)
<i>DEP</i>	0.063** (2.329)	-0.212*** (-3.352)	0.072*** (2.720)	-0.219*** (-3.623)
<i>ROASTD</i>	0.179*** (8.651)	-0.116*** (-2.898)	0.187*** (9.606)	-0.116*** (-3.082)
<i>BIG4</i>	0.001 (0.739)	-0.004 (-0.564)	0.001 (0.284)	-0.001 (-0.131)
<i>TENURE</i>	0.000 (0.129)	-0.000 (-0.212)	-0.000 (-0.115)	0.000 (0.194)
<i>IND_EXP</i>	0.117 (1.027)	0.052 (0.102)		
<i>SOE</i>			-0.001 (-1.020)	0.007* (1.840)
<i>Constant</i>	0.016 (1.276)	0.087** (2.025)	0.018 (1.500)	0.100** (2.481)
Industry/Year FE	YES	YES	YES	YES
Observations	16,675	15,076	18,924	17,076
Adj R ²	0.317	0.196	0.314	0.194

This table examines the cross-sectional variation of the effect of tax-expert signatory auditors on clients' tax aggressiveness. *PRIVATE* is an indicator variable if the company is privately owned, and zero otherwise. *TAX_EXP* is an indicator variable that equals one if the total assets audited by the signing auditor fall in the top two deciles in a particular industry, and zero otherwise. Industries are classified based on CSRC 2012 industry classifications with a two-digit code for the manufacturing sector and a one-digit code for other sectors. ***, **, * denotes statistical significance at 1%, 5%, 10% level (two-tailed), respectively. T-statistics (in parentheses) are calculated based on robust standard errors clustered at client company level. Variable definitions are provided in the Appendix.

Table 8 Client company fixed effects

<i>VARIABLES</i>	(1) <i>BTD</i>	(2) <i>ETR</i>
<i>TAX_EXP</i>	-0.009*** (-4.750)	0.029*** (5.399)
<i>SIZE</i>	0.000 (0.186)	0.013*** (3.241)
<i>ABACC</i>	0.019** (2.081)	-0.048*** (-2.601)
<i>EQINC</i>	0.497*** (15.440)	-0.457*** (-9.172)
<i>FI</i>	0.001 (0.921)	0.000 (0.071)
<i>LEV</i>	0.009 (1.296)	-0.011 (-0.548)
<i>BTM</i>	0.019*** (6.021)	-0.037*** (-3.692)
<i>PPE</i>	0.005 (0.980)	-0.036*** (-3.213)
<i>ROA</i>	0.407*** (16.857)	-0.623*** (-13.762)
<i>CASH</i>	0.019*** (3.237)	-0.028*** (-2.959)
<i>DEP</i>	0.035 (0.894)	-0.031 (-0.378)
<i>ROASTD</i>	0.119*** (6.214)	0.005 (0.121)
<i>BIG4</i>	-0.000 (-0.093)	-0.010 (-0.945)
<i>TENURE</i>	-0.000 (-0.387)	-0.001 (-0.694)
<i>IND_EXP</i>	-0.001 (-0.004)	-0.177 (-0.246)
Year FE	YES	YES
Client company FE	YES	YES
Observations	18,924	17,076
Adj R ²	0.419	0.409

This table replicates Table 3 Columns (1) and (4) after including client company fixed effects. Variable definitions are provided in Appendix A. Standard errors are clustered at the client company level. ***, **, and * indicate two-tailed statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 9 Further Analyses on CTA's incentives
Panel A The effects of tax expertise on auditors' job prospects

<i>VARIABLES</i>	(1) <i>PROMOTE</i>	(2) <i>JOBHOP</i>
<i>TAX_EXP</i>	0.404*** (6.915)	1.603** (2.469)
<i>Log (number of clients)</i>	0.174*** (4.783)	0.291 (0.364)
<i>Female</i>	-0.137*** (-4.402)	-0.105 (-0.166)
<i>Log (auditor age)</i>	4.009*** (34.242)	2.258*** (5.691)
<i>Academic Degree</i>	0.244*** (10.544)	0.942*** (3.992)
<i>Major in Accounting in University</i>	0.285*** (8.821)	-0.412 (-0.703)
<i>University Level</i>	0.163*** (5.148)	0.074 (0.121)
<i>Education Cohort</i>	1.243*** (29.555)	2.114** (2.245)
<i>Constant</i>	-17.114*** (-37.521)	-18.723*** (-7.267)
Observations	24,178	24,178
Pseudo R ²	0.060	0.081

Panel B The effects of clients' tax aggressiveness on tax-related sanctions

<i>VARIABLES</i>	(1) <i>SANCTION</i>	(2) <i>SANCTION</i>
<i>BTD</i>	0.425** (2.370)	
<i>ETR</i>		-0.265* (-1.774)
<i>SIZE</i>	-0.123** (-2.199)	-0.075 (-1.277)
<i>LEV</i>	0.768 (1.142)	0.565 (0.787)
<i>ROA</i>	-3.456** (-2.424)	-3.838*** (-2.735)
<i>Modified Audit Opinion</i>	0.357 (1.254)	0.444 (1.494)
<i>Academic Degree</i>	-0.276*** (-3.103)	-0.302*** (-3.209)
<i>Major in Accounting</i>	-0.157 (-1.436)	-0.126 (-1.095)
<i>Prestigious University</i>	-0.174 (-1.464)	-0.219* (-1.730)
<i>EDUCOHORT</i>	-0.225** (-1.993)	-0.229* (-1.928)
<i>FEMALE</i>	-0.328*** (-2.884)	-0.334*** (-2.796)
Industry and Year Fixed Effects	YES	YES
Observations	18,924	17,076
Pseudo R2	0.078	0.078

Panel A reports the results of logistic regressions of individual auditors' job prospects on their tax-expertise. The analysis is based on a sample of individual auditors' job migrations from 2003 to 2016. The unit of analysis is individual auditor-fiscal year. *PROMOTION* is an indicator variable that equals one if the individual auditor receives a promotion, and zero otherwise. *JOBHOP* is an indicator variable that equals one if the individual auditor switches job to a bigger audit firm, and zero otherwise. Panel B reports the results of a logistic regression of tax-related sanctions on clients' tax aggressiveness. The analysis is based on our full sample used in Table 3. *SANCTION* is an indicator variable that equals one if the individual auditor receives a sanction related to their audit of the tax accounts, and zero otherwise. Robust z-statistics are reported in the parentheses. ***, **, and * indicate two-tailed statistical significance at the 1%, 5%, and 10% levels, respectively.