Essays on International Auditing

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ABSTRACT

This research investigates the determinants of both audit fees and the purchase of non-audit services using multi-country data. In the current globalized economy and in an environment of increased labour mobility, auditors play a crucial role in assuring the quality of financial reporting. At the same time, auditors could provide certain professional non-audit services to their audit clients. Understanding the factors influencing the demand for, or the provision of, audit and non-audit services is of interest to standard setters, corporate governance participants, and both individual and institutional investors, among others. Furthermore, under the current globalized environment, the role played by country-level institutional factors is especially important. This thesis is organized into three essays: (i) workforce environment, labour market flexibility, and audit fees; (ii) a literature review of auditor-provided tax services (APTS, one type of non-audit services); and, finally, (iii) book-tax conformity and the demand for APTS.

In Essay One, using a dataset from 30 countries over the period from 2002 to 2017, I examine the effects of audit clients' workforce environment on audit fees as well as the role that national labour market flexibility plays in this relationship. I find evidence that audit fees are significantly lower for firms with a good workforce environment, suggesting that auditors perceive such clients as less risky; as a result, auditors expend less effort and/or charge a lower risk premium. Furthermore, I find this effect to be stronger for firms in countries with a more flexible labour market. My study contributes to the international audit fee literature by identifying employee welfare as a distinct audit pricing factor, above and beyond the effects of overall corporate social responsibility practices.

Essay Two reviews the empirical literature on the determinants and consequences of APTS and provide some directions for future research. I first summarize two theoretical but competing

perspectives on the provision of APTS, namely, the knowledge spillover effect and the impaired independence effect. I then review the evolution of APTS-related disclosures and regulations in selected jurisdictions. My review of the determinants of APTS suggests that such decisions are related to the cost-benefit trade-off. I then review the literature on the consequences of APTS. This strand of the literature in the U.S. supports the knowledge spillover effect, but the findings in non-U.S. settings are mixed. The market perceptions of APTS in both the U.S. and non-U.S. settings suggest that market participants react to APTS negatively during uncertain periods, whereas non-archival studies suggest that the perceptions of APTS vary between stakeholder groups and with the types of APTS provided.

Finally, Essay Three examines the impact of different levels of required book-tax conformity on audit clients' demand for APTS. Utilizing a sample from 11 European Union (EU) countries between 2013 to 2019, I find evidence that listed firms in EU countries with a high level of required book-tax conformity are less likely to purchase tax services from their incumbent auditors, and also tend to pay lower tax service fees. Furthermore, I find these effects to be weaker after the implementation of the APTS-related EU Regulation that became effective from 2016. My findings contribute to the APTS literature by identifying a country-level institutional characteristic, i.e., the required level of book-tax conformity, as a potential determinant of appointing incumbent auditors as tax service providers. I also provide preliminary evidence of the effect of relevant EU regulation on changes in the demand for APTS.
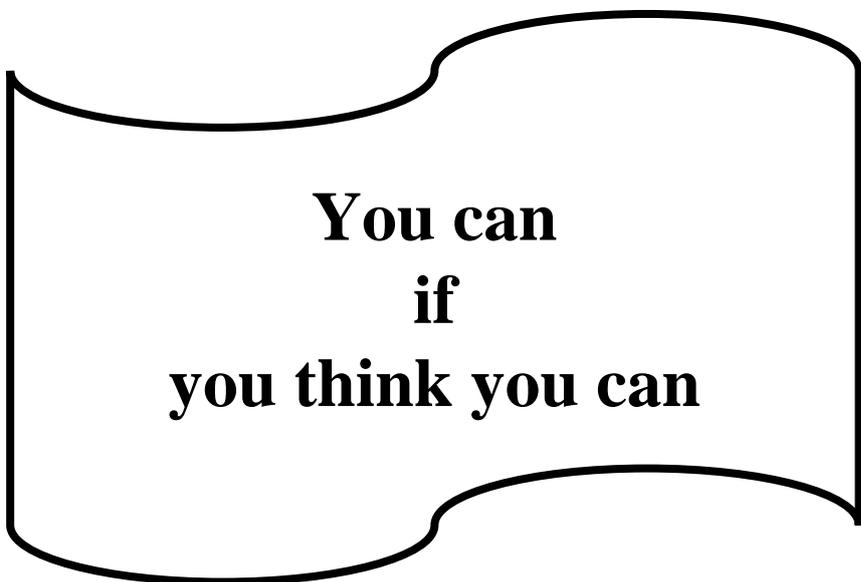
**You can
if
you think you can**

ACKNOWLEDGEMENT

Studying Ph.D. is something I would never have dreamed of a few years back. Even now, I cannot believe what I have been through in the past three years. Thus, I should express the heartiest congratulations to myself. Well done, Sean! However, Ph.D. is not an easy and one-day trip. During my Ph.D. candidature, I had highs and lows. I really appreciate those people who inspired me, accompanied me, helped me, and supported me in each step of this journey. They have given me physical and mental help as much as they could. Without any of them, I could not have made completed this journey successfully.

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CHAPTER ONE

INTRODUCTION

1.1 Motivations for the Research

The auditor is one of the important stakeholders in a modern corporation (Ormazábal, 2018), and understanding the relationship between audit clients' characteristics and auditors' behaviour is an important and popular area of research in the accounting and auditing literature. Most of the archival auditing research has been conducted using U.S. data (Simnett et al., 2016). In particular, about 85% of the archival auditing studies referenced in a comprehensive review by DeFond and Zhang (2014) used data for the U.S. companies (Simnett et al., 2016). However, the number of academic articles using international (i.e., non-U.S. or cross-country) accounting and auditing data has rapidly increased in recent years (Ball, 2016; Eierle et al., 2021; Simnett et al., 2016). Sharma (2017, p. 223) highlights the importance of conducting international research in auditing by stating that "…the imperative for international audit research is heightened in an era when international CPA firms are aggressively marketing themselves as global networks of professional services firms in assurance, advisory, and tax… Within this increasing internationalization of auditing and assurance practices, our role as researchers to provide rigorous evidence is invaluable to inform practice, policy formulation, and future research and education." Therefore, the main theme of this thesis is exploring various facets of 'International Auditing' in three essays.

In this thesis, an 'international' auditing study refers to a paper using ***multi-country*** data to investigate audit-related research questions. There are two reasons that motivate this thesis. First, studies using cross-country data are still limited in the accounting and auditing literature. Simnett et al. (2016) show that only 20% (26 out of 130) of non-U.S. archival auditing and assurance research that examined data from multiple countries were published in leading

accounting journals from 1995-2014. Additionally, Eierle et al. (2021) identify 50 high-quality published and working papers examining cross-country auditing research questions up to 2019. Of those papers, 34 were published after 2010, whereas only 16 papers were published before 2010, indicating increasing attention on cross-country auditing research in recent years. Furthermore, Gordon et al. (2019) show that 40% (26 out of 65) of articles published in top accounting journals from 2015-2018 used cross-country data. My thesis is expected to contribute to this growing, but still a scarce, research area.

Second, an 'international' study has a set of unique benefits that cannot be achieved by conducting research in a single country. For instance, multi-country research could address some limitations of within-jurisdiction research (Ball, 2016). Firms within a given country or jurisdiction are facing a relatively homogeneous accounting and auditing environment, which makes it difficult to investigate the effects of country-level institutional features (e.g. legal origin) on accounting and auditing practices. However, the multi-country study has the ability to explore and answer questions as to why certain regulations may work better in certain countries than in others, given the differences in certain contextual factors, such as culture (Simnett et al., 2016). Thus, this thesis is not only important to academic researchers but also useful to international regulators and standard setters in terms of understanding whether and how institutional differences affect the effectiveness of auditing regulations.

Generally, auditors could render audit services and non-audit services (hereafter NAS) to their audit clients in most countries/jurisdictions. Since the seminal audit pricing model developed by Simunic (1980), the determinants of audit fees have become one of the extensively investigated areas in auditing research. Therefore, in Essay One, I focus on examining the determinants of audit fees using a multi-country sample of firms. Specifically, I examine the relationship between audit clients' workforce environment and audit fees.

I incorporate workforce-related indicators as my main variable of interest in Essay One for the following reasons. First, in a financial statement audit, an auditor's main objective is to be reasonably assured that the financial statements are free of material misstatements owing to fraud or error. Employees have been found to be the most effective detectors of corporate fraud and misconduct (Dyck et al., 2010); therefore, workforce-related information is important to auditors. Second, workforce-related information is important not only to the firms themselves, but also to their business partners. For instance, importers (e.g., Next and H&M) expressed concerns about recent wage disputes in Bangladesh's garment industry, and requested their auditors to investigate the matter.[1] I posit that firms with a favourable workforce environment are relatively less risky, and auditors consequently charge lower fees, as such clients require both a reduced audit effort and lower audit risk premiums.

Additionally, the effects of workforce-related information may vary across jurisdictions with different labour market characteristics. Given that labour market flexibility is associated with firing and hiring costs, employee mobility, and worker behaviour (Addison & Teixeira, 2003; Gangl, 2003; Haltiwanger et al., 2014; Ichino & Riphahn, 2005), there is an unresolved question as to how *labour market flexibility* influences the relationship between the workforce environment and audit fees. Essay One also addresses this research question.

In Essay Two and Essay Three, I shift my research focus from audit services to auditor-provided tax services (hereafter APTS), a significant component of NAS. The well-known agency problem between shareholders and managers demands auditing services, to provide independent assurance to corporate stakeholders that financial statements prepared by managers comply with generally accepted accounting principles (Agrawal & Chadha, 2005; Watts & Zimmerman, 1986). Therefore, auditor independence is the cornerstone of both audit quality and the auditing profession, as acknowledged by international regulators and practitioners. For

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[1] See https://qz.com/1540275/5000-garment-workers-in-bangladesh-were-fired-after-protesting-low-wages/amp.

instance, the International Ethics Standards Board for Accountants (IESBA, 2018) requires "…professional accountants in public practice be independent when performing audit or review engagements" (Sec 400.1, p.118).[2]

In the past two decades, the increased proportion of revenues derived from providing NAS to audit clients has raised significant concerns, since high NAS might increase economic bonding with clients and, hence, compromise auditor independence (e.g., Agrawal & Chadha, 2005; DeAngelo, 1981; Hermanson, 2009). This is also echoed by the U.S. Securities and Exchange Commission (SEC, 2003), which points out that the joint provision of audit and NAS may reduce investors' confidence in auditor independence, and in the public capital markets. On the other hand, the joint provision of audits and NAS may increase audit efficiency, as the client-specific knowledge acquired from providing NAS can be transferred to statutory audits, thereby, enhancing their effectiveness and efficiency in performing audits (e.g., Joe & Vandervelde, 2007; Simunic, 1984).

In the meantime, the regulators noted that the beneficial versus the detrimental effects of NAS on audit quality depend on the types of NAS (SEC, 2003, 2014). In particular, the SEC (2002, 2003) describe APTS as services that "…traditionally have been viewed as closely related to audit services and as not being in conflict with an auditor's independence", thereby financial statements users would view APTS more favourably than other types of NAS. As a

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[2] IESBA (2018) explains two types of auditor independence: independence of mind and independence in appearance. Independence of mind is defined as "the state of mind that permits the expression of a conclusion without being affected by influences that compromise professional judgement, thereby allowing an individual to act with integrity, and exercise objectivity and professional skepticism." (Sec. 400.5a). Independence in appearance is defined as "the avoidance of facts and circumstances that are so significant that a reasonable and informed third party would be likely to conclude that a firm's or an audit or assurance team member's integrity, objectivity or professional skepticism has been compromised" (Sec. 400.5b). The former is also known as independent in fact, and the latter as the investors' perceptions of auditor independence. Unfortunately, academic research struggles to provide direct evidence on the former and instead uses various earnings quality proxies, e.g., discretionary accruals, accounting restatements, and earnings conservatism to assess the presence or absence of such independence (e.g., Chung & Kallapur, 2003; Frankel et al., 2002). With respect to independence in appearance, archival research investigates the association between NAS and market valuation of accounting earnings (Francis & Ke, 2006; Ghosh et al., 2009; Krishnan et al., 2005). Since being 'independent' is necessary to ensure high audit quality, I use "impaired independence" and "low audit quality" as interchangeable terms for the remainder of this thesis.

result, in the aftermath of some regulatory reforms, the regulators in several jurisdictions, e.g., the U.S. and the European Union (hereafter EU), decided to prohibit certain types of NAS, but continued to allow auditors to provide APTS to their audit clients (EU Directive, 2006; EU Regulation, 2014; SEC, 2003, 2006). Consequently, APTS became the largest source of non-audit revenues under the current environment in several jurisdictions (e.g., Alsadoun et al., 2018; Beasley et al., 2009; Chen et al., 2019b; DeFond & Francis, 2005; Dobler, 2014; Francis, 2006). APTS could be further categorized into tax compliance and tax planning services. The former generally refers to preparing, signing, and filing a tax return for the tax authorities, whereas the latter refers to a diverse range of services that could help clients to manage tax affairs efficiently and find legitimate tax-saving opportunities. Therefore, firms' investment in tax planning services could generate substantial benefits (Mills et al., 1998) that tax compliance services cannot provide (Chyz et al., 2021). In some extreme cases, firms adopt tax positions, courtesy of APTS-induced tax planning, that reduce their tax liabilities to zero. Naturally, tax planning services are more damaging than tax compliance services from the tax authority's point of view.

Compared with other types of NAS, APTS can affect the client's income and cash flows directly through tax rate reduction (e.g., Omer et al., 2006). The expertise possessed by auditors in both financial reporting and tax laws helps them to design corporate tax planning activities that reduce the actual taxes paid (the cash flow effect) and simultaneously reduce tax expense (the earnings effect) in the financial statements (Maydew & Shackelford, 2007). Also, APTS could be more closely related to audit work than other NAS (Francis, 2006; SEC, 2002, 2003), thereby, generating knowledge spillover benefits. For example, when auditors perform financial statement audits, they need to review the clients' tax returns and reserves, a process that requires substantial knowledge about the audit clients (Sage & Sage, 2005). Auditors' tax expertise can enable them to understand clients' tax positions easily, thereby, spilling the benefits over to financial statement audits.

However, ongoing debates on public firms' aggressive tax strategies and tax sheltering activities have attracted regulators' attention to the appropriateness of APTS (e.g., Harris, 2014). For instance, PwC was investigated by the U.S. audit regulator because of advising its audit client, Caterpillar Inc., to avoid U.S. $2.4 billion in taxes (Rapoport, 2014). Moreover, according to Klassen et al. (2016), more than 80% of audit clients purchased tax services unrelated to tax compliance from their incumbent auditors. In recent years, financial statement restatement issues related to "tax expense, benefit, deferral and other" have surged in the U.S. (Audit Analytics, 2016; Sheridan, 2017) and income tax related issues are one of the most cited deficiencies in the Public Company Accounting Oversight Board (hereafter PCAOB) inspection reports (Acito et al., 2018). Such findings raised significant concerns among regulators, practitioners, and researchers as to whether the incumbent auditors can maintain their independence in an environment where APTS constitutes a significant source of audit firm revenues.

Although there remain several literature reviews and meta-analyses on NAS in general (e.g., Habib, 2012; Schneider et al., 2006; Sharma, 2014), no detailed review of studies relating to APTS exists. Therefore, in Essay Two, I provide a systematic review on the determinants and consequences of APTS. Surprisingly, I find that only a small number of prior studies examined the determinants of APTS, and none of them used an international sample. The possible reason is that regulations related to the provision of NAS (including APTS) vary widely across countries or jurisdictions. In Essay Three, I address this concern by using APTS information in the EU where the auditing regulation in each member country is based on an EU-wide regulation, leading to smaller variations across the EU.

Audit Analytics (2020) analyses the audit markets in the EU and reports that the ratio of average NAS fees to total fees paid to statutory auditors varies significantly among the EU countries (from a low of about 0% in Latvia to a high of 34% in Denmark) during the period

2014 to 2019. My hand-collected data show that only 4% of Latvian firms purchase APTS from their incumbent auditors, whereas the corresponding figure is more than 88% for Danish firms. Thus, I conjecture that, apart from firm-level characteristics, country-level characteristics also affect the demand for APTS. In Essay Three, I examine whether the required level of book-tax conformity (hereafter BTC) is one such potential country-level determinant of APTS in the EU. BTC represents the degree of alignment between accounting (book) income and taxable income, which is expected to affect the demand for APTS from several perspectives (i.e., tax compliance, tax planning, and audit risk). In addition, during recent years, the EU audit and NAS markets have experienced significant reforms, owing to the enactment and implementation of EU Regulation (2014). I believe that this provides me an opportunity to compare the effects of the levels of BTC and the demand for APTS in both pre- and post-regulation periods, thereby, enabling me to better understand the consequences of the relevant regulation.

1.2 Findings of the Research

Using data from publicly listed companies in 30 countries during a sample period from 2002 to 2017 in Essay One, I find that firms with a favourable workforce environment pay significantly lower audit fees than their counterparts with a relatively poor workforce environment. The reported coefficient in the baseline model suggests that a one-standard-deviation increase in the workforce environment index is associated with a 2.57% decrease in audit fees. Furthermore, I find that the negative relationship between the workforce environment and audit fees is strongest in countries with a high level of labour market flexibility. Moreover, I find that media coverage of workforce controversies mediates this relationship. Employing a battery of sensitivity tests, my results remain robust when I use alternative measurements for the workforce environment, remove clients with multinational operations, control for NAS, and remove countries with an atypical sample composition. In addition, I use a two-stage-least-squares (2SLS) regression

model to alleviate endogeneity concerns stemming from, for example, omitted variables that could influence both the workforce environment and audit fees.

In Essay Two, I review the APTS studies published between 1983 and April 2021 following two widely used theoretical frameworks, namely, (1) the knowledge spillover and (2) the impaired independence theories. I also review the APTS regulations for the U.S. and EU in detail and summarize regulations in some other jurisdictions, regarding the provision of APTS by the incumbent auditors and related disclosure requirements. Four types of APTS-related decisions are reviewed, namely, decisions involving: (1) voluntary APTS information disclosure; (2) choice of incumbent auditors as tax service providers; (3) retention or dismissal of incumbent auditors as tax service providers; and (4) the magnitude of APTS fees. Firms trade-off the expected benefits against potential costs in assessing whether to disclose APTS information, purchase or retain APTS, and pay more fees for APTS. With respect to the implications of APTS, my review shows that studies have used both output-based and input-based measures of earnings quality in examining the consequences of APTS. I find that the bulk of such papers support 'knowledge spillover benefits' emanating from simultaneous provision of audit and tax services. Notwithstanding, some papers also provide mixed evidence for similar research questions.

Finally in Essay Three, using hand-collected data from listed firms in 11 EU countries spanning the period 2013 to 2019, I find that firms listed in countries with a higher level of BTC have a lower likelihood of purchasing APTS from the incumbent auditors, and also pay less APTS fees. The reported coefficient in my probit regression suggests that a one-unit change in the level of BTC (i.e., from no conformity to perfect conformity) decreases the likelihood of purchasing APTS by 8.79% to 22.10% depending on the BTC measures. Some plausible explanations for this finding might be related to a high level of BTC constraining audit clients' tax avoidance activities, thereby, reducing the demand for APTS. Also, audit clients in countries

with a high level of BTC are less likely to exhibit tax noncompliance behaviour because they have less discretion in tax reporting. Finally, a high level of BTC simplifies the auditing of complex tax accounts, thereby reducing the knowledge spillover benefits. All these plausible explanations suggest that the net benefits of purchasing APTS are relatively lower in countries with high levels of BTC compared with such benefits in countries with low levels of BTC. Regarding the moderating effect of the EU Regulation (2014), I find that the negative association between the purchase of APTS and the levels of BTC is mitigated in the post-regulation period.

1.3 Contributions and Implications of the Research

By using international data, this thesis contributes to both audit service and NAS research, especially APTS research. Essay One adds to the existing literature in several ways. For instance, although Huang et al. (2017) document a similar relationship in the U.S.[3], I extend this relationship between the client's workforce environment and audit behaviour (i.e., audit fees) to an international context, thereby responding to the call for additional, international-level research to exploit the moderating role of variations in institutional factors on existing findings (e.g., Ball, 2016).

In addition, Essay One explores issues affecting firms' operations and performance, rather than employee-related issues associated with earnings management (e.g., Chen et al., 2017). Chen et al. (2017) suggest that firms sponsoring defined benefit pension plans for their employees need more complex accounting estimates, thus providing unique opportunities for managers to manipulate earnings that, in turn, give rise to increased audit fees. Moreover, my

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[3] My study also differs from Huang et al. (2017) in two other important ways. First, I examine whether auditors price *employer efforts* to improve employees' working environment, while they rely on *employees' satisfaction* with the workforce environment. Second, Huang et al. (2017) do not explore the possible channel through which employee ratings of their workforce environment might affect audit risk. I address this void by showing that audit clients with a good workforce environment have fewer workforce-related controversies covered by the media (an outcome that decreases audit fees) relative to their counterparts with a poor workforce environment.

study focuses on the *supply side* rather than the *demand side* of audit services. For example, Duellman et al. (2015) find that firms with overconfident managers are less likely to demand a high-quality audit, leading to lower audit fees. I, on the other hand, explore the relationship between the workforce environment and audit fees from the supply-side perspective.

Essay Two contributes to an understanding of the research findings in APTS, and adds value to the series of PCAOB auditing synthesis papers (e.g., Carson et al., 2013; Knechel et al., 2013). In addition, Tepalagul and Lin (2015) suggest conducting more research related to NAS (including APTS) in non-U.S. settings, because of institutional differences that might lead to differences in incentives, perceptions, and behaviours of the multiple stakeholders regarding the demand for, and supply of, APTS. Thus, the research findings generated from the U.S. may not be generalized to non-U.S. settings. Although bulk of the reviewed papers used data from the U.S., there are some recent publications in other non-U.S. settings, including Germany, Malaysia, South Korea, and Spain, among others. Not surprisingly, I observe different findings across countries (or jurisdictions) for similar research questions. I hope that my systematic review will help stakeholders understand whether further regulations restricting APTS would be beneficial or not. I also hope that this review will be useful for researchers willing to conduct additional research on the determinants and consequences of APTS in the U.S. as well as in non-U.S. settings.

Essay Three contributes to the scarce literature examining the determinants of APTS. Only a few prior studies investigate the firm-level determinants of APTS and these find mixed results (Finley & Stekelberg, 2016; Halperin & Lai, 2015), probably because the cost-benefit trade-offs are based on the joint effects of several firm-specific characteristics. I, on the other hand, report that variation in a country-specific feature, i.e., BTC, affects firms' decision to purchase APTS. The reduced demand for APTS in high BTC countries might at least partially explain

the reasons why prior U.S. studies normally support the tax-saving benefits emanating from APTS, but other studies using data from the EU countries find inconclusive results.[4]

Also, Essay Three responds to the call for more research about the consequences of BTC (Hanlon & Heitzman, 2010). Hanlon and Heitzman (2010, p.136) document that "…The evidence suggests there will be a substantial cost in terms of the information loss in accounting earnings should book-tax conformity be adopted. We have little evidence about anything else… Further evidence on a broader set of costs and benefits would be valuable to inform this debate." I provide a possible consequence of adopting a high level of BTC, which is the reduced demand for APTS: a finding that should be of interest to multiple stakeholders including the regulators and equity market participants. The low demand for APTS in high BTC countries could partially alleviate concerns over auditor independence and, hence, assure stakeholders about audit integrity. On the flip side, lower demand for APTS in high BTC countries will lead to fewer consulting revenues for audit firms and may also affect audit clients adversely, since they will lose out on some knowledge spillover benefits, especially for non-tax accounts.

Finally, I provide some preliminary results of the effect of implementing the EU Regulation (2014) on the European APTS market in Essay Three. My results show that both the likelihood of purchasing APTS and the amount paid for APTS declined significantly in the post-regulation period. Importantly, I find that the negative association between the demand for APTS and the levels of BTC is mitigated in the post-regulation regime. This might be attributable to favourable market perceptions about the APTS-related regulatory changes (Horton et al., 2018) in countries with a high level of BTC.

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[4] For example, Cook et al. (2008, 2020), Hogan and Noga (2015), Maydew and Shackelford (2007), and Omer et al. (2006) suggest that the purchase of APTS, or the magnitude of APTS fees, are both positively associated with tax avoidance in the U.S., whereas Garcia-Blandon et al. (2021) fail to find an association in Spain, and Watrin et al. (2019) find a negative association in Germany.

1.4 Organization of the Research

The remainder of this thesis proceeds as follows. Chapter two (Essay One) is titled "Workforce environment and audit fees: International Evidence", Chapter three (Essay Two) is titled "Determinants and consequences of auditor-provided tax services: A systematic review of the international literature", Chapter four (Essay Three) is titled "Book-tax conformity and the demand for auditor-provided tax services: European evidence". Chapter five concludes this thesis.

CHAPTER TWO

WORKFORCE ENVIRONMENT AND AUDIT FEES:

INTERNATIONAL EVIDENCE (ESSAY ONE)[5]

2.1 Introduction

When making pricing decisions, auditors evaluate the costs of conducting an audit, the litigation risk inherent therein, and non-litigation risk brought about by a client's potential failure (Houston et al., 2005; Pratt & Stice, 1994; Simunic, 1980). Audit processes and audit efforts are adjusted to reduce any potential costs stemming from client-specific risks. For risks that are costly to reduce and that cannot be decreased by increasing audit efforts, auditors charge a compensatory premium. Therefore, any factors related to client-specific risks could influence auditors' pricing decisions. As employees could be a source of sustained competitive advantage inasmuch as they facilitate a firm's success in the market (e.g., Fulmer et al., 2003), employee- or workforce-related information could be of interest to auditors concerned about clients' performance and risk. Auditors have previously voiced their interest in workforce environment. For example, Rebecca Dabbs, a partner of Ernst & Young, claims that firms can improve workplace productivity by "…better managing environment, health and safety risks."[6] In this essay, I examine whether auditors price information related to a client's workforce environment.

Recent studies suggest that a family-friendly workforce environment could not only help firms attract and keep talented employees (Hom et al., 2017; Turban & Cable, 2003), but also

[6] See https://www.ey.com/en_gl/assurance/how-to-support-better-environment-health-and-safety-outcomes.

motivate employees to be more cooperative and productive (Bloom et al., 2011; Fehr & Gächter, 2000). In addition, empirical studies show that relative to peers with a less favourable environment, firms with a favourable workforce environment have high performance and valuation levels, high levels of innovation performance, few internal control inefficiencies, and a low cost of debt capital, among other advantages (e.g., Chen et al., 2016, 2019a; Edmans, 2011; Guo et al., 2016; Lee & Kim, 2016). For instance, Guo et al. (2016) find that the probability of experiencing an employee-related material internal control weakness is relatively low when employees work in a workforce-friendly environment. In addition, Ji et al. (2018) find that auditors charge higher fees for firms that disclose material internal control weaknesses that are non-financial in nature. Therefore, the favourable workforce environment, a key ingredient of non-financial information, could be interpreted as a signal of both a low level of client internal control risk and highly credible client financial statements. Such positive signals would decrease audit fees accordingly.

Moreover, a good workforce environment could decrease the incidence of workforce-related controversies. Employees are less prone to report managerial wrongdoing when they work in a satisfactory environment (e.g., Ben-Nasr & Ghouma, 2018; Rothschild & Miethe, 1999). From an audit risk perspective, less media coverage of workforce controversies is likely to decrease audit fees, because less public attention on clients will reduce auditors' litigation risk (e.g., Gong et al., 2018; Redmayne et al., 2010). Building on these studies, I posit that firms with a favourable workforce environment are relatively less risky, and auditors consequently charge lower fees, as such clients require both a reduced audit effort and lower audit risk premiums.

I also investigate whether country-level labour market flexibility moderates this relationship. In more flexible labour markets, firms with a better workforce environment can easily replace low-productive employees with more productive ones, as they will have fewer

adjustment costs than their peers in less flexible labour markets. At the same time, in more flexible labour markets, low-productive employees risk losing their job if they shirk their responsibilities, which will force them to improve their performance. As a result, firms that operate in a flexible labour market and that have a favourable workforce environment may have stable or even improved employee productivity and, consequently, firm performance, thereby reducing audit risk even further. The benefits of investing in the workforce environment are thus likely to be higher in countries with high labour market flexibility, where firms can easily and quickly adjust their workforce as needed. Thus, I posit that auditors will further decrease audit fees for firms that have a favourable workforce environment and that are domiciled in countries with a more flexible labour market.

This chapter proceeds as follows. In Section 2.2, I present the extant literature on the determinants of audit fees and employee-related studies, as well as develop my hypotheses. I then describe my research methodology and sample selection procedure in Section 2.3. In Section 2.4, I present descriptive statistics, my main test results, and my mediation test results. In Section 2.5, I provide my robustness and endogeneity test results, and I summarize this chapter in Section 2.6.

2.2 Literature Review and Hypotheses Development

Academic studies suggest that the costs of conducting an audit (i.e., audit fees) consist of a "resource cost factor" and an "expected loss factor" (e.g., Pratt & Stice, 1994; Simunic, 1980). The resource cost factor is a quantitative measurement of how many audit efforts the auditor performed, while the expected loss factor is the present value of future losses for which the auditor will be liable, which is related to client-specific risks. Furthermore, auditors will expend their audit efforts to reduce future expected losses to the point at which the overall cost of conducting an audit is expected to be the lowest. Auditors charge a litigation risk premium to

compensate for the remaining expected loss factors (Simunic & Stein, 1996). Moreover, Houston et al. (2005) introduce a non-litigation risk premium into the audit fee model. In sum, audit efforts, litigation risk, and non-litigation risk premiums collectively comprise the audit fees that auditors charge.

According to Hay et al. (2006), most of the determinants of audit fees can be categorized into client attributes, auditor attributes, and engagement attributes. I consider audit clients' workforce-related information as a client attribute that will affect an auditor's pricing behaviour. The role of employees in modern corporations has been debated for several years. Instead of considering employees as a common input factor in the production process, modern management theory suggests that employees are a resource crucial to a firm's success. According to the resource-based view, firms' resources are classified into three categories: physical capital resources, human capital resources, and organizational capital resources (Barney, 1991). Human capital resources consist of training, experience, judgment, intelligence, relationships, and the insights of *individual* managers and workers in a firm. Human capital resources meet the criteria for sustained competitive advantage because of their VRIN characteristics (i.e., valuable, rare, inimitable, and non-substitutable), which distinguish human capital resources from other types and help firms to pursue competitive success (Pfeffer & Villeneuve, 1994; Wright et al., 1994).

Therefore, corporations must necessarily improve and maintain their employees' effectiveness and efficiency to remain competitive. In addition to giving normal monetary incentives, employers can motivate employees by also providing non-monetary, welfare-related benefits. These non-monetary benefits include opportunities to be involved in the firm's decision-making process, a flexible working schedule, a safer workplace environment, and more training and career development opportunities, among others. Employees make more effort and perform better in their tasks when they work in a good workforce environment, which leads to

higher productivity and performance (Akerlof, 1982; Bloom et al., 2011; Dalal et al., 2012; Levine, 1992). Meanwhile, employees are also more cooperative and less likely to become involved in sabotaging activities when they are treated well (Fehr & Gächter, 2000). Many other studies, both in single country and international settings, present evidence that firms with satisfied employees are more likely to outperform counterparts with dissatisfied employees (e.g., Chen et al., 2016; Edmans, 2011, 2012; Faleye & Trahan, 2011; Fauver et al., 2018; Filbeck & Preece, 2003; Gupta & Krishnamurti, 2020; Huselid, 1995; Lee & Kim, 2016). Firms with a high employee-friendly rating tend to maintain low leverage ratios (Bae et al., 2011), and debtholders require lower returns (Chen et al., 2019a). Note that these benefits may be limited to treating employees well within an appropriate range, and that excess employee welfare treatment could have detrimental effects on shareholder value (Ben-Nasr & Ghouma, 2018).

On the other hand, Hom and Kinicki (2001) suggest that in response to an unsatisfactory workforce environment, employees may choose to either leave a firm or to perform in a detrimental way. Therefore, poor employee treatment policies significantly increase the likelihood of an employee-related material internal control weakness and the probability of a misstatement caused by an unintentional error (Guo et al., 2016). Firms with a poor workforce environment are more likely to have employee disputes (e.g., strikes and litigation) that lead to significant financial and reputational losses (e.g., Karpoff & Lott, 1999). Thus, auditors will increase their professional skepticism toward client-specific risks when a client has a poor workforce environment, a proposition that has been empirically confirmed in U.S. contexts by Huang et al. (2017).

Given these studies, the client's workforce environment may affect audit fees in multiple ways. First, a better workforce environment may lead to a lower likelihood of a financial statement misstatement, thereby reducing audit efforts and hence audit fees. Employees who work in a favourable environment are more likely to properly perform internal tasks and hence

significantly reduce the propensity for having material internal control weaknesses. Second, the litigation risk premiums that auditors charge may also be lower when clients have a favourable workforce environment, because auditors are less likely to be sued for material misstatements. Relatedly, such firms tend to have fewer workforce-related disputes and controversies reported in the media, leading to less public attention on both the firms and their auditors, as well as decreased litigation risks for the auditor. Overall, firms with a good workforce environment are highly likely to be seen to have relatively few audit risks; therefore, auditors will expend less effort on such clients and charge them lower risk premiums. I therefore state my first hypothesis as follows:

H_1: A good (poor) audit client's workforce environment decreases (increases) audit fees, ceteris paribus.

H_1 focuses on the firm-specific workforce environment determinants of audit fees. However, prior studies document that institutional factors (e.g., the broader legal environment) also play a vital role in determining audit fees (e.g., Choi et al., 2008; Kuo & Lee, 2016; Taylor & Simon, 1999). My second hypothesis considers country-level labour market flexibility, referring to the speed with which labour adapts to fluctuations and changes in market conditions, as a possible moderator between the client's workforce environment and audit fees. Labour market flexibility has been found to be negatively associated with the restrictiveness of employment protection regulations (e.g., Addison & Teixeira, 2003; Gangl, 2003; Haltiwanger et al., 2014). Employment protection regulations influence firms' employee-related costs including *per worker employment costs* and *employment adjustment costs* (Addison & Teixeira, 2003). The former reflects the costs of hiring and providing benefits to employees, and the latter reflects costs that accompany gross changes, especially those that occur when employers dismiss employees. Both costs will be higher in countries/markets with more protective

employment regulations and, consequently, lower labour market flexibility. In such countries, firms are less likely to hire and fire employees, which decreases both employees' labour mobility and their external opportunities (Gangl, 2003). In countries with a more flexible labour market, high external job availability allows employees to switch firms more easily.

Moreover, when more outside options are available, firms need to pay higher compensation to retain key skilled employees. According to the theoretical discussion from Shapiro and Stiglitz (1984), the total demand for labour declines when all firms raise their wages. Thus, employees who shirk their responsibilities are under the threat of job loss, which encourages them to make more firm-specific investments. Ichino and Riphahn (2005) use data from a large Italian bank and document that the number of days of absence per week, on average, increases significantly after employees are protected by the employment regulation. Bjuggren (2018) uses a natural experiment method in Sweden to explore the causal relationship between labour market flexibility and labour productivity. He finds that after a reform of Swedish last-in-first-out (LIFO) labour rules[7], labour productivity increased by 2% to 3% in small treated firms compared to large firms that were not affected by the reform. The author suggests that the increased threat of job loss may induce employees to exert greater effort in their jobs. Edmans et al. (2017) and Gupta and Krishnamurti (2020) provide further evidence on the benefits of undertaking employee-friendly practices in countries with high labour market flexibility.

Building on this discussion, I conjecture that in flexible labour markets, firms with a favourable workforce environment are more likely to retain productive employees and to lay off low-productivity employees, thus creating for incumbent employees a job termination threat that forces them to work diligently. Therefore, firms with a good workforce environment should maintain or increase their employees' performance easily, because of the low hiring and firing

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[7] Before 2001, regulations mandated that if the firm wished to lay off staff, the employee who last joined the firm should be the first fired. After the 2001 reform, firms with fewer than 11 employees were granted the option to choose which of the three shortest-tenure employees should be let go.

costs in flexible labour markets. Therefore, the benefits brought about by a good workforce environment will be enhanced in countries with a more flexible labour market. As a result, auditors' concerns about such firms' specific risk will further diminish with increased labour market flexibility. Accordingly, I state my second hypothesis as follows:

H_2: The impact of the workforce environment on audit fees will be reinforced in countries with high labour market flexibility.

2.3 Research Methodology

2.3.1 Model specification

To test H_1, I develop the following Ordinary Least Square (OLS) regression model:

$$
\begin{aligned}
LNAF_{i,t} = \ & \beta_0 + \boldsymbol{\beta_1 WEI_{i,t}} + \beta_2 SIZE_{i,t} + \beta_3 LEV_{i,t} + \beta_4 INVREC_{i,t} + \beta_5 ROA_{i,t} + \beta_6 LOSS_{i,t} \\
& + \beta_7 NBS_{i,t} + \beta_8 NGS_{i,t} + \beta_9 SPECIAL_{i,t} + \beta_{10} CROSS_{i,t} + \beta_{11} MTB_{i,t} \\
& + \beta_{12} CURRENT_{i,t} + \beta_{13} INTS_{i,t} + \beta_{14} TURN_{i,t} + \beta_{15} ISSUE_{i,t} + \beta_{16} CSR_{i,t} \\
& + \beta_{17} BIGN_{i,t} + \beta_{18} AO_{i,t} + \beta_{19} BUSY_{i,t} + \beta_{20} BSIZE_{i,t} + \beta_{21} BIND_{i,t} \\
& + \beta_{22} ACM_{i,t} + \beta_{23} ACMIND_{i,t} + \beta_{24} ACMEXP_{i,t} + \beta_{25} CEODUAL_{i,t} \\
& + \beta_{26} LAW_{j,t} + \beta_{27} LNGDP_{j,t} + \beta_{28} FDI_{j,t} + \beta_{29} DISCL_{j,t} + \beta_{30} CORRUP_{j,t} \\
& + Fixed\ Effects + \varepsilon_{i,t}, \quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad (2.1)
\end{aligned}
$$

where the dependent variable is the natural logarithm of audit and audit-related fees (*LNAF*) (see Section 2.3.2 for a detailed construction). My variable of primary interest is the *Workforce Environment Index* (hereafter *WEI*), which provides a comprehensive rating of a company's workforce environment (see Section 2.3.3 for a detailed discussion). In H_1, I argue that firms with a good workforce environment pay significantly lower audit fees. Therefore, I predict a negative β_1.

I include several control variables that are likely to determine audit fees. Firm size (*SIZE*), measured as the natural logarithm of total assets, is found to be an extremely critical explanatory variable for audit fees (Hay et al., 2006). In addition, I use five variables to control for firm complexity, including *INVREC* (the sum of inventories and receivables divided by total assets), *NBS* (the natural logarithm of the number of business segments), *NGS* (the natural logarithm of

the number of geographic segments), *TURN* (net sales divided by total assets), and *INTS* (coded as 1 for firms that have at least 10% international sales to total sales, and zero otherwise). Since operational or geographical diversification and internationalization often signal greater complexity in a firm's operations, such firms require more audit efforts and procedures, resulting in higher audit fees (e.g., Choi et al., 2008; Jaggi & Low, 2011; Kim et al., 2012). Thus, I expect positive associations between audit fees and firm size and the complexity measures.

I control for several client-specific risk factors because auditors will either make greater auditing efforts or charge fee premiums to high-risk clients, leading to increased audit fees (e.g., Pratt & Stice, 1994). Consistent with Choi et al. (2008), proxies for the client-specific risks are *LEV*, *ROA*, *LOSS*, *SPECIAL*, *MTB*, and *CURRENT*. I measure *LEV* as the sum of short- and long-term debt divided by total assets, *ROA* as net income divided by total assets, and *LOSS* as a dummy variable that is coded as 1 for firms reporting negative income before extraordinary items for the current year, and zero otherwise. Firms that report special items (*SPECIAL*) are coded as 1, and zero otherwise. The market to book ratio (*MTB*) is measured as the ratio of firm market capitalization to common shareholder equity, and the liquidity ratio (*CURRENT*) is measured as total current assets divided by total current liabilities. I predict positive coefficients on *LEV*, *LOSS*, and *SPECIAL*, and negative coefficients on *ROA, MTB*, and *CURRENT*. I use cross-listing on the U.S. markets (*CROSS*) as an additional variable for client-specific litigation risk, because auditors face increased legal liability when client firms are cross-listed in countries with stronger legal regimes than those in their home country (Choi et al., 2009a). Similar to Kuo and Lee (2016), I include firms' financing activities (*ISSUE*) as a control variable that is coded as 1 when a firm obtains either equity or debt capital in the current year, and zero otherwise; I include this particular control variable since both the demand for

audit quality and audit risk are higher when firms are involved in such activities. I also include CSR as an additional control variable.

I also include a set of auditor and engagement attributes likely to affect audit fees, including *BIGN* auditor (a dummy variable coded as 1 for firms audited by a Big N audit firm, 0 otherwise), audit opinion (*AO*; a dummy variable coded as 1 for firms receiving qualified opinions, 0 otherwise), and busy season (*BUSY*; a dummy variable coded as 1 for firms for which the fiscal year-end comes during an auditor busy season, 0 otherwise).[8] All these audit-related variables are expected to have a positive relationship with audit fees. Carcello et al. (2002), Hay et al. (2008), and Zaman et al. (2011) find that firms with a good corporate governance structure are more likely to demand high-quality audits, whereas other studies suggest the opposite (e.g., Griffin et al., 2008). As proxies for a client's corporate governance structure, I include board size (*BSIZE*; the number of board members), board independence (*BIND*; the proportion of independent board members), CEO duality (*CEODUAL*; a dummy variable coded as 1 for firms in which the CEO and chair of the board are the same person, 0 otherwise), the presence of an audit committee (*ACM;* a dummy variable coded as 1 for firms with an audit committee, 0 otherwise), audit committee independence (*ACMIND*; the proportion of independent audit committee members), and audit committee expertise (*ACMEXP*; a dummy variable coded as 1 for firms that have an audit committee with at least three members and at least one financial expert, 0 otherwise).

Similar to Choi et al. (2009a) and Kuo and Lee (2016), I include five country-level control variables that may affect cross-country variations in audit fees. *LAW* is a dummy variable for legal origin that is coded as 1 for common law countries and 0 for code law countries, which represents a country's legal origin and the level of investor protection; *FDI* is the level of

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[8] Prior studies use a single month (e.g., December or January) to proxy the auditor busy season effect for all countries. In this essay, however, for each country in my initial sample, I designate the month when the largest number of firms have their fiscal year-end as the auditor busy month.

foreign direct investment as a proportion of gross domestic product (GDP); *LNGDP* is the natural logarithm of GDP per capita; *DISCL* measures a country's required disclosure level; and *CORRUP* is the perceived corruption index. I expect all the country-level variables to be positively related to audit fees. I further include year- and industry-fixed effects in my Equation (2.1).

In H_2, I hypothesize that the negative relationship between the workforce environment and audit fees is stronger in countries with high labour market flexibility. I develop the following Equation (2.2) to test H_2:

$$LNAF_{i,t} = \beta_0 + \beta_1 WEI_{i,t} + \beta_2 LMF_{j,t} + \boldsymbol{\beta_3 LMF_{j,t} * WEI_{i,t}} + Control\ variables$$
$$+ Fixed\ Effects + \varepsilon_{i,t}, \qquad\qquad (2.2)$$

where *LMF* refers to the country-level labour market flexibility (for a detailed construction of *LMF*, see Section 2.3.4). In Equation (2.2), my main variable of interest is the interaction term between *LMF* and *WEI* (i.e., **LMF*WEI**), and I expect a negative association between *LNAF* and this interaction term ($\beta_3 < 0$.) Such a negative association would indicate that auditors tend to further decrease fees for client firms with a favourable workforce environment, as the country-level labour market flexibility increases.

2.3.2 Measurement of audit fees

I use the natural logarithm of the sum of audit fees and audit-related fees (*LNAF*) as my proxy for audit pricing, as is consistent with U.S. audit fees research. The most common measure of audit fees in international audit fees research (e.g., Bronson et al., 2017; Choi et al., 2008) is "fees paid to auditor" and includes (1) audit and audit-related fees and (2) other NAS fees. I did not include the fees paid for other NAS because regulations permitting or prohibiting the

provision of such services vary widely across jurisdictions. Consequently, I use audit and audit-related fees, rather than the total fees paid to the auditor, as my proxy for audit pricing.[9]

2.3.3 Measure of workforce environment index

I retrieve firm-level workforce environment data from the Thomson Reuters ESG database, which covers information related to ESG (Environmental, Social, and Governance) and significant ESG controversies.[10] The Thomson Reuters ESG database provides over 400 ESG measures and both enhances and replaces the ASSET4 database used in prior studies (e.g., Gupta & Krishnamurti, 2020; Thomson Reuters, 2018). Following Gupta and Krishnamurti (2020), I identify a list of 20 indicators that are available consistently across the sample period to construct the Workforce Environment Index (*WEI*).[11] These indicators combine both qualitative (19) and quantitative (1) attributes. I provide the details of each measure and the scoring approach I use in Appendix A. I add all of a firm's scores to construct a *WEI* that ranges from 0 to 20. A high value for *WEI* indicates that a firm has a favourable workforce environment.

2.3.4 Measurement of labour market flexibility

I use two measures of labour market flexibility. The first is the Employment Protection Legislation (*EPL*) Index for OECD countries and some emerging countries. This index measures "the procedures and costs involved in dismissing individuals or groups of workers

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[9] Audit-related fees include fees paid for external services that are reasonably associated with performing the audit or reviewing financial statements. I find similar results when I use only audit fees as the dependent variable.

[10] The Thomson Reuters ESG database provides ESG data for 7,000+ companies globally, which gives me a platform for comparing ESG performance globally. The ESG database collects ESG information from multiple sources, including annual reports, NGO websites, CSR reports, company websites, stock exchange fillings, and news sources, among others.

[11] Gupta and Krishnamurti (2020) identify 35 workforce-related performance indicators to construct their own employee treatment index. Because the Thomson Reuters ESG database is an updated version of the ASSET4 database and it classifies some indicators that are better related to the workforce, I identify 20 measures among those indicators to capture the overall workforce environment. However, I acknowledge that my *WEI* based on the selected indicators may not capture the entire workforce environment. Therefore, in Section 2.5.1, I confirm the validity of *WEI* using alternative independent variables gathered from the ESG and the ASSET4 databases.

and the procedures involved in hiring workers on fixed-term or temporary work agency contracts."[12] It consists of three category scores: individual dismissals of regular workers (EPR), additional costs of collective dismissals (EPC), and the regulation of temporary contracts (EPT). Consistent with prior studies (Banker et al., 2013; Pagano & Volpin, 2005), I measure *EPL* as the equally weighted EPR, EPC, and EPT. Furthermore, I multiply *EPL* by -1 for ease of interpretation. Following Edmans et al. (2017), I use the labour market regulations index (*EFW*) from the Economic Freedom of the World database as my second measure of labour market flexibility to represent the "de facto strictness of labo[u]r regulation" (Feldmann, 2009, p. 77). There are six components of *EFW*: hiring regulations and minimum wage (5Bi), hiring and firing regulations (5Bii), centralized collective bargaining (5Biii), working-hours regulations (5Biv), mandated cost of worker dismissal (5Bv), and conscription (5Bvi). I use the average of these six components to construct the *EFW* index. High values for both *EPL* and *EFW* indicate greater labour market flexibility.[13]

2.3.5 Sample and industry distribution

I extract audit and audit-related fees data, all of which required firm-specific financial information from the Thomson Reuters Fundamentals (via Thomson Reuters Eikon) and WorldScope databases. I retrieve workforce-related information from the Thomson Reuters ESG database, as I discussed in Section 2.3.3. Auditor classification information is gathered from Thomson Reuters Eikon, which provides time-series auditor information. I source firm-level governance data from the Thomson Reuters ESG database, and country-level variables mainly from World Bank, the International Monetary Fund (IMF), and prior literature (e.g., La Porta et al., 2008). The country-level required disclosure index is developed by the Center for

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[12] This definition is retrieved from the OECD website: http://www.oecd.org/employment/emp/oecdindicatorsof employmentprotection.htm.

[13] The current form of the *EPL* data is available annually until 2013, and the *EFW* data is available annually until 2016. To maximize my sample size in Equation (2.2), I replace the missing *EPL* and *EFW* using their latest values.

International Financial Analysis and Research (CIFAR). The perceived corruption index, developed by Transparency International, ranges from 1-10. For ease of interpretation, I replace the original index with 10 minus the original value, which means that the higher the index, the higher the perceived corruption level. In Appendix B, I include detailed variable definitions and sources. The sample period is from 2002 to 2017. I choose 2002 as the beginning year, because workforce-related information became available beginning in that year.

I begin with a sample of 32,666 firm-year observations with non-missing audit fees and *WEI* data from 43 countries for the 2002-2017 sample period. Consistent with previous literature, I eliminate firm-years from the financial (4,787) and utility industries (1,323) based on the 2-digit Global Industry Classification Standards (GICS), as the audit fee determinants for such industries are distinct. After further applying the data requirements for computing firm-specific financial variables, I delete 3,876 observations. Similar to Jaggi and Low (2011), I drop some countries (Brazil, Chile, Greece, Hungary, Indonesia, Luxembourg, Mexico, Philippines, Portugal, and Thailand) with fewer than 30 firm-year observations. My baseline regression, therefore, includes 22,573 firm-year observations from 30 countries. I then delete 2,454 firm-year observations with missing corporate governance variables. Finally, I exclude 315 observations with missing country-level data, resulting in 19,804 firm-year observations that I use for the most comprehensive regression specification.[14] To mitigate the impact of outliers, I winsorize all the continuous variables at the 1st and 99th percentiles of their respective distributions. In Table 2.1, I present my industry-based sample distributions. My sample is well distributed, as no single industry covers more than 15% of the total sample. A total of 14.89% of the sample comes from Capital Goods (GICS 2010), followed by 13.34% from Materials (GICS 1510) and 7.93% from Energy (GICS 1010).

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[14] My sample is comparable to Fauver et al. (2018) who use 21,103 observations to investigate the impact of employee-friendly culture on firm value.

Table 2.1 Industry distribution

Industry group	Name	N	% of N
1010	Energy	1,791	7.93
1510	Materials	3,011	13.34
2010	Capital Goods	3,361	14.89
2020	Commercial & Professional Services	828	3.67
2030	Transportation	1,110	4.92
2510	Automobiles & Components	656	2.91
2520	Consumer Durables & Apparel	877	3.89
2530	Consumer Services	828	3.67
2540	Media	736	3.26
2550	Retailing	1,234	5.47
3010	Food & Staples Retailing	375	1.66
3020	Food, Beverage & Tobacco	982	4.35
3030	Household & Personal Products	277	1.23
3510	Health Care Equipment & Services	906	4.01
3520	Pharmaceuticals, Biotechnology & Life Sciences	1,001	4.43
4510	Software & Services	1,206	5.34
4520	Technology Hardware & Equipment	1,044	4.62
4530	Semiconductors & Semiconductor Equipment	548	2.43
5010	Telecommunication Services	568	2.52
6010	Real Estate	1,234	5.46
Total		22,573	100.00

2.4 Empirical Results

2.4.1 Descriptive statistics

In Table 2.2, I report the detailed descriptive statistics of the variables used in this essay. As shown in Panel A, the mean of *LNAF* is 7.44, corresponding to 3.91 million $US, which is similar to the result found by LópezPuertas-Lamy et al. (2017).[15] The average workforce environment index is 10.37, exhibiting a large standard deviation. The mean *SIZE* of the sample firms is 15.23 (i.e., 12,362 million $US), while about 14% of firms report negative incomes for the current year, and the majority of them (*INTS* statistic of 0.70) have substantial international operations. The ratio of receivables and inventory over total assets is 23%, while current assets are, on average, two times larger than current liabilities. The mean leverage ratio is 55%, while 8% of sample firms are cross-listed in the U.S. markets. With respect to the firm-level governance variables, I note that the mean size of the board of directors is 10. Most of the firms (93%) have an audit committee, which shows that most countries follow a best practice code that suggests

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[15] The average amount of audit fees is calculated using unlogged audit fees, which, for my comprehensive sample observations, is $US 3.98 million.

the formation of an audit committee. The percentages of independent directors on the board of directors and the audit committee are 57% and 80%, respectively. Moreover, about 75% of audit committees have at least three members and at least one financial expert. Big N audit firms audit most of the sample firms (94%), and only a few firms (0.2%) received qualified audit opinions. In addition, about 74% of firms have their fiscal year-end during the auditor's busy season.

Table 2.2 Descriptive statistics

Panel A: Firm-level variables

Variable	N	Mean	SD	P25	Median	P75
LNAF	22573	7.44	1.32	6.53	7.44	8.34
WEI	22573	10.37	4.00	7.00	11.00	14.00
SIZE	22573	15.23	1.52	14.30	15.22	16.18
LEV	22573	0.55	0.22	0.41	0.55	0.68
INVREC	22573	0.23	0.16	0.10	0.22	0.34
ROA	22573	0.05	0.10	0.02	0.05	0.09
LOSS	22573	0.14	0.35	0.00	0.00	0.00
NBS	22573	1.02	0.71	0.00	1.10	1.61
NGS	22573	1.19	0.70	0.69	1.39	1.79
SPECIAL	22573	0.88	0.32	1.00	1.00	1.00
CROSS	22573	0.08	0.28	0.00	0.00	0.00
MTB	22573	3.01	3.47	1.18	2.05	3.66
CURRENT	22573	1.92	1.47	1.09	1.52	2.24
INTS	22573	0.70	0.46	0.00	1.00	1.00
TURN	22573	0.86	0.59	0.45	0.76	1.13
ISSUE	22573	0.27	0.44	0.00	0.00	1.00
CSR	22573	51.62	17.40	38.17	51.59	65.05
BIGN	20119	0.94	0.23	1.00	1.00	1.00
AO	20119	0.00	0.05	0.00	0.00	0.00
BUSY	20119	0.74	0.44	0.00	1.00	1.00
BSIZE	20119	9.73	3.10	8.00	9.00	11.00
BIND	20119	0.57	0.28	0.38	0.62	0.80
ACM	20119	0.93	0.26	1.00	1.00	1.00
ACMIND	20119	0.80	0.34	0.67	1.00	1.00
ACMEXP	20119	0.75	0.43	0.00	1.00	1.00
CEODUAL	20119	0.40	0.49	0.00	0.00	1.00
LAW	19804	0.71	0.46	0.00	1.00	1.00
LNGDP	19804	10.64	0.55	10.61	10.76	10.89
FDI	19804	0.04	0.08	0.02	0.02	0.03
DISCL	19804	76.14	5.42	74.00	76.00	80.00
CORRUP	19804	2.49	1.03	2.40	1.90	2.70
EPL	18366	-1.60	0.52	-1.83	-1.50	-1.13
EFW	19804	8.06	1.19	7.70	8.33	9.10

Note: Variables are defined in Appendix B.

In Table 2.2, Panel B, I provide country distribution and descriptive statistics for my main variables (i.e., *LNAF* and *WEI*) and the country-level variables. About 31% of the sample comes

from the United States (6,960 observations), while around 24% is from Japan (2,932 observations) and the United Kingdom (2,495 observations). Russia (30 observations) has the lowest representation followed by Israel (39 observations) and Ireland (71 observations). The mean *LNAF* and *WEI* reveal significant variation across countries. For example, firms are more likely to have a better workforce environment when they are from certain European countries (e.g., France, Germany, Spain, Sweden). Regarding the country-level variables shown in Table 2.2, over 71% of firms come from common law countries; the average disclosure requirement is over 76, and the mean perceived corruption index is about 2.49, suggesting that the countries covered in my sample provide high levels of protection and financial information to investors in general. Also, labour markets are more flexible in Hong Kong (mean *EFW* is 9.33), the United States (mean *EFW* is 9.12), and New Zealand (mean *EFW* is 8.72), and they are less flexible in South Korea (mean *EFW* is 4.70) and Norway (mean *EFW* is 4.77).

Table 2.2 Descriptive statistics (continued)

Panel B: Country distribution (N=22,573)										
Country	N	% of N	LNAF	WEI	LAW	LNGDP	FDI%	DISCL	CORRUP	EPL	EFW
Australia	1,849	8.19	6.31	9.98	1	10.93	0.46	80	1.82	-1.79	7.64
Austria	100	0.44	6.87	12.06	0	10.78	1.88	62	2.48	-2.31	5.94
Belgium	116	0.51	7.14	12.01	0	10.70	6.31	68	2.53	-3.14	7.27
Canada	1,336	5.92	7.00	9.24	1	10.75	3.90	75	1.61	-1.38	8.31
China	353	1.56	6.84	9.18	0	8.88	1.01	-	6.11	-2.42	5.55
Denmark	198	0.88	7.40	11.80	0	10.97	2.64	75	0.85	-2.14	7.40
Finland	218	0.97	7.34	12.42	0	10.77	2.69	83	0.97	-1.79	5.33
France	642	2.84	8.70	13.88	0	10.62	2.63	78	3.01	-3.13	5.70
Germany	679	3.01	7.99	13.78	0	10.69	3.15	67	2.03	-2.46	6.18
Hong Kong	709	3.14	7.12	9.40	1	10.54	32.20	73	2.17	-	9.33
India	259	1.15	5.86	11.81	1	7.37	0.44	61	6.28	-1.85	6.83
Ireland	71	0.31	7.40	9.78	1	10.93	23.10	81	2.56	-1.81	7.79
Israel	39	0.17	7.76	8.64	1	10.44	2.30	74	3.92	-1.60	5.29
Italy	168	0.74	8.04	13.14	0	10.45	1.23	66	5.56	-2.88	6.68
Japan	2,932	12.99	7.57	10.64	0	10.61	2.57	71	2.49	-1.83	8.21
Malaysia	245	1.09	6.28	12.13	1	9.21	4.13	79	5.17	-	7.95
Netherlands	257	1.14	8.39	12.62	0	10.82	34.40	74	1.43	-2.29	7.01
New Zealand	135	0.60	5.77	8.95	1	10.57	0.03	80	0.91	-0.81	8.72
Norway	135	0.60	7.59	11.57	0	11.37	4.16	75	1.41	-2.61	4.77
Poland	99	0.44	5.90	9.36	0	9.49	1.02	-	4.14	-2.29	7.47
Russia	30	0.13	9.01	9.53	0	9.35	2.82	-	7.41	-1.90	5.84
Singapore	325	1.44	6.57	9.61	1	10.79	12.10	79	1.16	-	7.65
South Africa	503	2.23	7.01	13.07	1	8.77	1.42	79	5.65	-1.51	6.21
South Korea	454	2.01	6.15	10.80	0	10.15	2.10	68	4.58	-2.12	4.70
Spain	253	1.12	7.54	13.42	0	10.30	3.35	72	3.89	-2.83	5.54
Sweden	395	1.75	7.60	12.25	0	10.90	4.36	83	1.06	-1.99	6.39
Switzerland	303	1.34	7.84	11.93	0	11.29	7.62	80	1.32	-2.12	8.01
Taiwan	315	1.40	5.51	10.97	0	9.99	0.02	58	3.91	-	5.90
United Kingdom	2,495	11.05	7.04	11.53	1	10.65	2.80	85	2.04	-1.45	8.26
United States	6,960	30.83	8.13	8.78	1	10.86	2.09	76	2.61	-1.13	9.12

Note: Variables are defined in Appendix B.

2.4.2 Correlation analysis

Table 2.3 presents the Pearson correlations among the variables included in my baseline regression. The test variable *WEI* is significantly and negatively correlated with *LNAF* (correlation coefficient of -0.20, *p*<0.01), indicating that a good workforce environment decreases audit fees in the absence of relevant controls. This univariate result supports my prediction. Consistent with the existing auditing literature, I find that audit fees (*LNAF*) are positively and significantly correlated with *SIZE* (correlation coefficient of 0.73), *LEV* (coefficient of 0.32), complexity (e.g., coefficients of 0.41 and 0.35 for *NBS* and *INTS*, respectively), and *BIGN* (coefficient of 0.22, untabulated). The positive correlations between firm-level governance variables (i.e., *BSIZE*, *BIND*, *ACM*, *ACMIND*, and *ACMEXP*) and *LNAF* indicate that well-governed firms are likely to demand more audit services (untabulated). Regarding country-level variables, audit fees are higher in countries with good economic conditions (coefficient of 0.21 for *LNGDP*, untabulated).

Table 2.3 Correlations

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
LNAF	(1)	-															
WEI	(2)	**-0.20**	-														
SIZE	(3)	**0.73**	**0.40**	-													
LEV	(4)	**0.32**	**0.16**	**0.27**	-												
INVREC	(5)	**0.06**	**0.13**	**-0.05**	**0.14**	-											
ROA	(6)	**0.02**	**0.06**	**0.08**	**-0.10**	**0.13**	-										
LOSS	(7)	**-0.07**	**-0.08**	**-0.15**	**0.04**	**-0.13**	**-0.64**	-									
NBS	(8)	**0.41**	**0.20**	**0.39**	**0.12**	**0.12**	**0.07**	**-0.11**	-								
NGS	(9)	**0.25**	**0.14**	**0.16**	**0.03**	**0.12**	**0.02**	**-0.03**	**0.16**	-							
SPECIAL	(10)	**0.06**	**0.15**	**0.09**	**0.08**	-0.01	**-0.08**	**0.05**	**0.05**	**0.06**	-						
CROSS	(11)	**-0.05**	**0.05**	**-0.04**	**-0.09**	**-0.09**	**-0.12**	**0.10**	**-0.07**	0.02	**0.03**	-					
MTB	(12)	0.00	**-0.05**	**-0.13**	**0.09**	**0.03**	**0.23**	**-0.08**	**-0.06**	**-0.04**	**-0.11**	**-0.07**	-				
CURRENT	(13)	**-0.21**	**-0.20**	**-0.29**	**-0.52**	-0.00	**-0.06**	**0.10**	**-0.11**	-0.01	**-0.07**	**0.08**	-0.01	-			
INTS	(14)	**0.35**	**0.21**	**0.22**	**0.02**	**0.16**	**0.05**	**-0.04**	**0.20**	**0.41**	**0.09**	-0.00	-0.00	**0.02**	-		
TURN	(15)	**0.09**	**0.04**	**-0.09**	**0.19**	**0.57**	**0.21**	**-0.15**	**0.05**	**0.03**	**-0.07**	**-0.12**	**0.15**	**-0.16**	-0.00	-	
ISSUE	(16)	**-0.02**	**-0.05**	-0.01	**0.03**	**-0.05**	**-0.09**	**0.06**	**-0.05**	0.00	0.00	**0.05**	-0.00	-0.01	**-0.03**	**-0.09**	-

Note: Sample size: 22,573. Boldface indicates significance at the 1% level. Variables are defined in Appendix B. This table reports the correlations between the variables used in the baseline regression. Other untabulated correlations are generally as expected, except for the insignificant correlation between *AO* and *FDI*.

2.4.3 Workforce environment and audit fees: Baseline regression results for H$_1$

In Table 2.4, I report the OLS regression results for H$_1$. Throughout this essay, I compute all reported t-statistics in parentheses using heteroscedasticity-robust standard errors clustered by firm. In Column (1), I report the association between audit fees (*LNAF*) and the workforce environment index (*WEI*), controlling for financial statement-based control variables. In Column (2), I include firm-level corporate governance variables, and Column (3) introduces country-level control variables. In addition, I control for firms' CSR performance in Column (4) to test whether workforce-related performance impacts audit fees after controlling for overall CSR practice performance. The coefficients on *WEI* are consistently negative and statistically significant for all the specifications mentioned above. These results support H$_1$, suggesting that auditors may expend less effort, and charge lower risk premiums, in response to a better audit client's workforce environment. In terms of economic significance, the reported coefficient in Column (4) suggests a decrease of US$ 102,292 in audit fees for a one-standard-deviation increase in *WEI*.[16] Given that the unlogged mean value of audit fees is US$ 3.98 million, a one-standard-deviation increase in *WEI* would decrease the mean audit fees by 2.57%. Therefore, the effects of the workforce environment on audit fees are both statistically and economically significant.

With respect to the sign and significance of the control variables, I find that large and complex firms (e.g., *SIZE*, *NBS*, *NGS*, *TURN*, *INTS*) and high audit risk firms (e.g., high *LEV*) are more likely to pay relatively high audit fees. The coefficients on *BIGN* and *AO* are positive and significant, indicating that there is a Big N premium and a risk premium for high audit risk firms. Consistently, I find that *BSIZE*, *BIND*, *ACM*, and *ACMEXP* are positive and significant,

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[16] Following Kuo and Lee (2016), I first multiply the coefficients (excluding year and industry) from Table 2.4, Column (4) with the mean values of the corresponding variables as reported in Table 2.2. The sum of these numbers equals the logged audit fees (*LNAF*) of 6.98, which implies: $e^{6.98} * \$1000 = US\$ 1,074,918$. Then, I recalculate the sum by replacing the mean value of *WEI*, 10.37, with 14.37, where 14.37 equals a one-standard-deviation increase in the mean value of *WEI*, all else being the same. Thus, the revised *LNAF* is 6.88, while the unlogged audit fees are US$ 972,626. The differences are $972,626-$1,074,918=US$ -102,292.

suggesting that good corporate governance structures are more likely to demand a high-quality audit. Also, the coefficients for *LAW, LNGDP, DISCL*, and *CORRUP* are positive and significant at the 1% level, as expected. Taken together, my findings suggest that the client's workforce environment plays an important role in the audit pricing process.

I conduct a diagnostic test to mitigate possible concerns about multicollinearity. My untabulated result shows that all the variance inflation factors (VIFs) are well below 10 (Marquaridt, 1970) (the highest value is 4.14 for *ACMIND*). Therefore, multicollinearity should not be a concern in this essay.

Table 2.4 Baseline regression: Workforce environment and audit fees

	(1) LNAF	(2) LNAF	(3) LNAF	(4) LNAF
WEI	-0.009**	-0.010***	-0.012***	-0.023***
	(-2.38)	(-3.14)	(-3.66)	(-5.17)
SIZE	0.587***	0.548***	0.567***	0.558***
	(56.24)	(51.77)	(52.79)	(51.32)
LEV	0.813***	0.589***	0.495***	0.501***
	(11.06)	(9.97)	(8.68)	(8.73)
INVREC	-0.899***	-0.349***	-0.030	-0.015
	(-8.12)	(-3.08)	(-0.24)	(-0.12)
ROA	-0.807***	-0.925***	-0.795***	-0.787***
	(-7.88)	(-9.82)	(-8.75)	(-8.69)
LOSS	0.085***	0.029	0.025	0.021
	(3.25)	(1.19)	(1.05)	(0.91)
NBS	0.196***	0.183***	0.177***	0.173***
	(8.97)	(8.92)	(9.16)	(8.88)
NGS	0.148***	0.108***	0.095***	0.094***
	(8.54)	(6.77)	(6.03)	(5.98)
SPECIAL	-0.092***	0.004	0.041	0.044
	(-3.12)	(0.14)	(1.52)	(1.64)
CROSS	0.106**	0.126***	0.065	0.056
	(2.37)	(2.96)	(1.49)	(1.29)
MTB	0.016***	0.005*	0.007**	0.006**
	(5.04)	(1.94)	(2.46)	(2.24)
CURRENT	0.058***	0.034***	0.015*	0.014*
	(6.22)	(4.28)	(1.95)	(1.88)
INTS	0.391***	0.370***	0.386***	0.385***
	(13.89)	(13.83)	(14.11)	(14.05)
TURN	0.430***	0.312***	0.250***	0.247***
	(13.74)	(10.49)	(8.07)	(8.00)
ISSUE	0.010	0.012	0.009	0.010
	(0.73)	(0.91)	(0.71)	(0.77)
CSR	-	-	-	0.003***
				(3.50)
BIGN	-	0.411***	0.229***	0.228***
		(7.69)	(4.40)	(4.38)
AO	-	0.338***	0.261**	0.264**
		(2.59)	(2.18)	(2.18)

BUSY	-	0.033	0.078***	0.080***
		(1.27)	(2.98)	(3.08)
BSIZE	-	0.029***	0.034***	0.034***
		(6.72)	(7.91)	(7.92)
BIND	-	0.821***	0.638***	0.603***
		(13.67)	(10.32)	(9.73)
ACM	-	0.137**	0.223***	0.222***
		(2.29)	(4.01)	(4.02)
ACMIND	-	-0.078	-0.356***	-0.363***
		(-1.22)	(-5.75)	(-5.86)
ACMEXP	-	0.180***	0.104***	0.101***
		(6.39)	(3.96)	(3.88)
CEODUAL	-	0.165***	0.131***	0.136***
		(7.44)	(5.93)	(6.12)
LAW	-	-	0.171***	0.187***
			(3.82)	(4.18)
LNGDP	-	-	0.469***	0.470***
			(11.33)	(11.37)
FDI	-	-	-0.335*	-0.290
			(-1.87)	(-1.62)
DISCL	-	-	0.023***	0.023***
			(6.71)	(6.76)
CORRUP	-	-	0.138***	0.140***
			(6.18)	(6.29)
Industry	Yes	Yes	Yes	Yes
Year	Yes	Yes	Yes	Yes
_cons	-3.189***	-3.864***	-10.779***	-10.744***
	(-19.71)	(-22.86)	(-20.08)	(-20.01)
N	22573	20119	19804	19804
Adj.R-Square	0.64	0.71	0.74	0.74

Note: Robust t-statistics are in brackets. Variables are defined in Appendix B.
*** p< 0.01, ** p<0.05, * p<0.10.

2.4.4 Workforce environment and audit fees: Moderation results for H_2

In this section, I test whether audit fees are related to the interactive effects of a country's labour market flexibility and *WEI*. H_2 predicts that the effect of the workforce environment on audit fees will be stronger in countries with a more flexible labour market. I report my results in Table 2.5, Columns (1) (*EPL*WEI*) and (2) (*EFW∗WEI*). In both columns, my variable of interest (i.e., *WEI*) is still negatively and significantly associated with audit fees, supporting my main results (coefficients of -0.010 (p<0.05) and -0.011 (p<0.01) on *WEI*, respectively). Furthermore, the coefficients of *EPL∗WEI* and *EFW∗WEI* are negative and statistically significant at the 1% level in Columns (1) and (2), respectively.[17] Thus, my results suggest that

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[17] In my main test, I replace missing *EPL* and *EFW* with their latest values. If I use only the available *EPL* and *EFW* data, then my sample sizes decrease to 9,994 for *EPL* and 18,406 for *EFW*, respectively. My results remain the same if I use smaller samples. Moreover, to mitigate the multicollinearity problem resulting from the

the impact of *WEI* on audit fees is stronger in countries with a more flexible labour market, where employees have more outside opportunities and higher productivity. The findings of my empirical tests support H₂.

Table 2.5 Interactive effects of the workforce environment and labour market flexibility on audit fees (Moderation effects)

	(1) LNAF	(2) LNAF
WEI	-0.010**	-0.011***
	(-2.39)	(-2.70)
EPL	0.165***	-
	(3.71)	
EPL∗WEI	-0.041***	-
	(-7.29)	
EFW	-	0.208***
		(12.41)
EFW∗WEI	-	-0.016***
		(-6.91)
Other control variables	SIZE; LEV; INVREC; ROA; LOSS; NBS; NGS; SPECIAL, CROSS, MTB, CURRENT, INTS, TURN, ISSUE, CSR, BIGN, AO, BUSY, BSIZE, BIND, ACM, ACMIND, ACMEXP, CEODUAL, LAW, LNGDP, FDI, DISCL, CORRUP	
Industry	Yes	Yes
Year	Yes	Yes
_cons	-8.576***	-11.065***
	(-15.65)	(-21.10)
N	18366	19804
Adj.R-Square	0.77	0.75

Note: Robust t-statistics are in brackets. Variables are defined in Appendix B.
*** p< 0.01, ** p<0.05, * p<0.10.

2.4.5 Mediation test results

The mediation effect refers to "the presence of an intervening variable or mechanism that transmits the effect of an antecedent variable on an outcome" (Aguinis et al., 2017, p. 666). My results thus far do not identify the specific channel(s) through which the workforce environment reduces audit fees. I propose the *financial reporting quality* (*FRQ*) and *media coverage of workforce controversies* (*CONTRO*) as two such possible channels. I choose *FRQ* because Guo et al. (2016) provide evidence that firms with an employee-friendly environment are less likely

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introduction of interactive terms and to ease interpretation, I apply a mean-centering approach to both the *WEI* and *EPL* (*EFW*) variables before constructing the interaction terms.

to have employee-related material internal control weaknesses and financial restatements. Poor FRQ has been found to increase audit fees (e.g., Cho et al., 2017; Ji et al., 2018). I use a number of *FRQ* measures to conduct my mediation test.[18] I choose *CONTRO* as another mediating variable because employees are less prone to report managerial wrongdoing when they work in a satisfactory environment. Therefore, a negative association is expected between the client firm's workforce environment and the frequencies of *CONTRO*. *CONTRO* may increase audit fees because either the negative media coverage provides more information related to client firms' risks to auditors (i.e., the *information* role), or media coverage places more public attention on clients, which will increase an auditor's litigation risks (i.e., the *disciplining* role) (e.g., Gong et al., 2018; Redmayne et al., 2010).

Following Baron and Kenny (1986), I use the following four steps to establish these mediation channels (Equation 2.3A-2.3C). First, I show that variations in the independent variable (i.e., *WEI*, in this essay) are correlated with the dependent variable (i.e., audit fees, *LNAF*; Equation 2.3A; α_1), to confirm the possibility that a mediation effect is present. Second, I show how variations in the independent variable (i.e., *WEI*) account for variations in the mediator (i.e., *M*; Equation 2.3B; β_1). Third, I show that the mediator (i.e., *M*) has a significant effect on the dependent variable (i.e., *LNAF*; Equation 2.3C; γ_2). Finally, I show that the significant relationship between *WEI* and *LNAF* (Equation 2.3A) either becomes insignificant after controlling for *M* (full mediation) or that the significance level shrinks after doing so (partial mediation). To conduct my mediation test, I develop the following set of equations:

$$LNAF_{i,t} = \alpha_0 + \alpha_1 WEI_{i,t} + Control\ variables + Fixed\ Effects + \varepsilon_{i,t}, \quad (2.3A)$$

$$M_{i,t} = \beta_0 + \beta_1 WEI_{i,t} + Control\ variables + Fixed\ Effects + \varepsilon_{i,t}, \quad (2.3B)$$

---

[18] Owing to data unavailability at the international level for clients' material internal control weaknesses and financial restatements, I am unable to perform a mediation test using these two variables. Instead, in this section, I employ several FRQ measures suggested by the prior literature, such as discretionary accruals (Dechow et al. 1995; Kothari et al., 2005), real earnings management (Roychowdhury, 2006), and earnings smoothness (Dechow et al., 2010). I find consistent results for all these FRQ measures. For brevity's sake, I report only results for the discretionary accruals test.

$$LNAF_{i,t} = \gamma_0 + \gamma_1 WEI_{i,t} + \gamma_2 M_{i,t} + Control\ variables + Fixed\ Effects + \varepsilon_{i,t}\ (2.3C)$$

The mediators (i.e., *M*) are *|DAC|* and *CONTRO*. *|DAC|* is measured as the absolute value of discretionary accruals generated from the modified Jones model (Dechow et al., 1995), while *CONTRO* is measured as the natural logarithm of the total number of controversies published in the media related to workforce plus one.[19] The total effect of *WEI* on *LNAF* (i.e., α_1 from Equation 2.3A) can be decomposed into a direct effect and an indirect effect (i.e., through the mediator). The direct effect is γ_1 from Equation (2.3C), whereas the indirect effect is $\beta_1 * \gamma_2$ for the proposed mediator. The core of the mediation effect rests in testing the null hypothesis H_0: $\beta_1 * \gamma_2 = 0$. For the estimation I provide, I first use the OLS regressions to perform Baron and Kenny's (1986) causal step regression. However, I acknowledge that Baron and Kenny's (1986) causal step regression has come under criticism in recent years (Hayes, 2009; Zhao et al., 2010). Zhao et al. (2010) suggest a superior test approach (i.e., the "bootstrap" approach proposed by Preacher & Hayes, 2004) for the mediation test. Therefore, I report the results of both Baron and Kenny's (1986) causal step regression and the bootstrap approach.[20]

I report the direct and indirect effects of the workforce environment on audit fees for the pooled sample in Table 2.6, Panels A and B. In Columns (1) and (4) of Panel A, I document negative and significant coefficients on *WEI* when I run the regressions without mediators (i.e., *|DAC|* and *CONTRO*; Equation 2.3A), which is in line with my H_1 that a good audit client's

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[19] The Thomson Reuters ESG database provides the following controversy indicators for the workforce: (1) the number of controversies published in the media linked to workforce diversity and opportunity; (2) the number of controversies published in the media linked to workforce health and safety; (3) the number of controversies published in the media linked to the company's relations with employees or relating to wage or wage disputes; and (4) whether an important executive management team member announced a voluntary departure (other than retirement) or had been ousted. I add up the three quantitative indicators, (1) to (3), to derive the total number of controversies published in the media related to workforce. In addition, the original *WEI* includes an indicator, "Is the company under the spotlight of the media because of a controversy linked to the company's employees, contractors or suppliers due to wage, layoff disputes or working conditions?," which is related to my media coverage proxy. Thus, I exclude this indicator and re-construct my *WEI* for this analysis.

[20] The bootstrap approach is a non-parametric method based on resampling with replacement, which is done multiple times (e.g., 5,000 times in this essay). For a more detailed discussion of the use of the bootstrap approach in mediation tests, see Hayes (2018).

workforce environment decreases audit fees. I do not find a significant relationship between *WEI* and *|DAC|* in Column (2), indicating that a client's workforce environment has no direct impact on the overall FRQ for my chosen FRQ measures.[21] Therefore, I conclude that my chosen FRQ proxies do not mediate the relationship between the workforce environment and audit fees. My result in Column (3) suggests that my main result remains unchanged, even after controlling for the FRQ in the model. On the other hand, I find a significantly negative association between *WEI* and *CONTRO* in Column(5) (coefficient -0.003, $p<0.05$), suggesting that the frequency of media coverage of workforce controversies is lower for firms with a better workforce environment. As I show in Column (6), there is a partial mediation effect between *WEI* and *LNAF* through *CONTRO*. The results from the bootstrap approach support Baron and Kenny's (1986) causal step regression results by showing significant indirect effects for *CONTRO* but not for *|DAC|*. However, the direct effects account for the bulk of the total effects. In sum, my evidence suggests that media coverage of workforce controversies, a hitherto unexplored channel in the international audit fee literature, affects the relationship between the workforce environment and audit fees.

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[21] I also find insignificant relationships between *WEI* and other *FRQ* measures from Equation (2.3B): performance-matched discretionary accruals (coefficient -0.001, p=0.32), real earnings management (coefficient -0.014, p=0.551), and earnings smoothness (coefficient -0.007, p=0.377). I caution readers that my mediation results are based on the chosen FRQ measures and that I could not rule out the possibility that other, unselected FRQ measures might mediate the relationship between the workforce environment and audit fees.

Table 2.6 Regression results of mediation tests (Mediation effects)

Panel A: The Baron and Kenny's (1986) causal step regression results

Dependent Variable	(1) LNAF (2.3A)	(2) /DAC/ (2.3B)	(3) LNAF (2.3C)	(4) LNAF (2.3A)	(5) CONTRO (2.3B)	(6) LNAF (2.3C)
WEI	-0.023***	-0.001	-0.025***	-0.022***	-0.003**	-0.022***
	(-5.17)	(-0.85)	(-5.42)	(-5.08)	(-2.56)	(-5.04)
/DAC/	-	-	0.018*	-	-	-
			(1.76)			
CONTRO	-	-	-	-	-	0.068**
						(2.24)
Other controls	Yes	Yes	Yes	Yes	Yes	Yes
Industry and year	Yes	Yes	Yes	Yes	Yes	Yes
_cons	-10.744***	-1.252***	-10.989***	-10.778***	-0.962***	-10.712***
	(-20.01)	(-9.93)	(-18.66)	(-20.04)	(-8.52)	(-19.90)
N	19804	17574	17574	19804	19804	19804
Adj.R-Square	0.74	0.10	0.74	0.74	0.13	0.74

Panel B: Bootstrap approach results

Direct effect			-0.0247***			-0.0223***
Indirect effect			-0.0000			-0.0002***
Total effect			-0.0247***			-0.0225***
Indirect/Total			0.0009			0.0089
Indirect/Direct			0.0009			0.0090
Total/Direct			1.0009			1.0090

Note: My primary independent variable is *WEI*, and my dependent variable is *LNAF*. I use as mediators financial reporting quality proxied by discretionary accruals (i.e., */DAC/*) and media coverage of workforce controversies (*CONTRO*). Column (1) shows the effect of the independent variable (*WEI*) on the dependent variable (*LNAF*) without the mediator (*/DAC/*). Column (2) presents the effect of *WEI* on */DAC/*, while Column (3) shows the results with both the independent variable (*WEI*) and the mediator (*/DAC/*). Columns (4) to (6) report the results of the mediation test using *CONTRO* as the mediator. Robust t-statistics are in brackets. Variables are defined in Appendix B.
*** $p< 0.01$, ** $p<0.05$, * $p<0.10$.

2.5 Additional Robustness Tests

2.5.1 Alternative measure of workforce environment

So far in this essay, I use the workforce-related measures from the ESG database to construct my workforce environment index (*WEI*). Although this approach is prevalent in the prior literature (e.g., Fauver et al., 2018; Gupta & Krishnamurti, 2020), I now examine whether I obtain consistent results when I employ alternative workforce environment (*WEI_ALT*) proxies. The first alternative variable is the Workforce Score (*WS*) calculated and provided by the ESG database, which measures "…a company's effectiveness towards job satisfaction, a healthy and safe workplace, maintaining diversity and equal opportunities, and development opportunities for its workforce" (Thomson Reuters, 2018, p. 15). *WS* is benchmarked to the Thomson Reuters Business Classification (TRBC) industry groups. Thus, the higher the *WS*, the better a firm's

workforce environment is, when compared to its industry peers. Furthermore, as the *WS* is a substitute for four sub-scores that are not benchmarked to industry groups in the ASSET4 database,[22] I use the equal weighted workforce score (*WS_A4*) as my second alternative variable by taking the average of those sub-scores. I re-estimate Equations (2.1) and (2.2) using *WS* and *WS_A4* as the independent variables. My results, reported in Table 2.7, Panel A, show negative relationships between the workforce environment (both *WS* and *WS_A4*) and audit fees, and thus support H_1. Moreover, such relationships are stronger in countries with a more flexible labour market, which support H_2. Overall, as I show in Table 2.7, Panel A, my findings are robust to alternative proxies for the workforce environment. These consistent results also validate the construction of my *WEI*.

Table 2.7 Robustness and the endogeneity test

Panel A: Alternative independent variables

	WS			WS_A4		
	(1) LNAF	(2) LNAF	(3) LNAF	(4) LNAF	(5) LNAF	(6) LNAF
WEI_ALT	-0.297***	-0.138***	-0.175***	-0.328***	-0.206**	-0.131*
	(-5.75)	(-2.79)	(-3.56)	(-4.68)	(-2.85)	(-1.98)
EPL	-	0.158***	-	-	0.202***	-
		(3.63)			(3.94)	
EPL∗WEI_ALT	-	-0.529***	-	-	-0.631***	-
		(-6.97)			(-6.63)	
EFW	-	-	0.201***	-	-	0.201***
			(12.23)			(10.61)
EFW∗WEI_ALT	-	-	-0.195***	-	-	-0.242***
			(-6.24)			(-6.31)
Control variables	Yes	Yes	Yes	Yes	Yes	Yes
Industry	Yes	Yes	Yes	Yes	Yes	Yes
Year	Yes	Yes	Yes	Yes	Yes	Yes
_cons	-11.122***	-8.589***	-10.874***	-9.661***	-7.967***	-10.100***
	(-20.56)	(-15.66)	(-20.60)	(-15.37)	(-11.94)	(-16.21)
N	19804	18368	19804	15839	14945	15839
Adj.R-Square	0.74	0.77	0.75	0.75	0.78	0.77

Note: Robust t-statistics are in brackets. Variables are defined in Appendix B.
*** p< 0.01, ** p<0.05, * p<0.10.

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[22] Those scores are employment quality (*SOEQ*), health and safety (*SOHS*), training and development (*SOTD*), and diversity and opportunities (*SODO*).

2.5.2 Exclusion of multinational firms

In my main analyses, I add *INTS* (coded as 1 for firms that have at least 10% international sales to total sales, and zero otherwise) to control for the impact of internationalization on audit pricing. However, the internationalization of audit clients may also influence their workforce environment. More concretely, multinational audit clients must adopt the best standards from all the countries in which they operate. As a result, their workforce environment affected by all of these countries' employment regulations, which may introduce noise in my main findings. To mitigate this issue, I partition my sample into multinational (*INTS*=1; 13,942 observations) and domestic clients (*INTS*=0; 5,864 observations). The results (untabulated) show that the mean value of *WEI* in my multinational clients subsample (i.e., 10.92) is significantly higher than that in my domestic clients subsample (i.e., 9.12), supporting the prediction that to comply with multiple countries' employment regulations, multinational clients offer a relatively better workforce environment. I re-run my Equations (2.1) and (2.2) using the domestic clients subsample only, and the results (untabulated) show significantly negative coefficients on *WEI* in Equation (2.1) and on *EPL∗WEI* (*EFW∗WEI*) in Equation (2.2), which is consistent with my main findings.

2.5.3 Control for NAS fees

I include an additional variable (*LN_NAS,* the natural log of the sum of tax and other services fees) in my equations to control for the possible association between audit fees and NAS fees, based on the notion that the simultaneous provision of audit and NAS may reduce audit costs owing to either economies of scope or knowledge spillover (e.g., Chung & Kallapur, 2003; O'Keefe et al., 1994). My untabulated results show that my main variable of interest (i.e., *WEI*) is still significantly and negatively associated with *LNAF* across all specifications, which supports my main findings. In contrast to my expectations, the coefficient on *LN_NAS* is

significantly positive. A possible explanation suggested by Simunic (1984) is that knowledge spillover helps auditors reduce the unit costs of audit services and, in turn, the reduced price encourages clients to buy additional audit services.

2.5.4 Additional analyses

I also perform two additional analyses. First, as I show in Table 2.2, Panel B, about 33% of the observations in my sample are from the U.S., leading to a concern that U.S. firms might be primarily driving my findings. To mitigate this concern, I re-run my models by excluding all U.S. observations. My results in Table 2.7, Panel B suggest that my results do not suffer from sample concentration. Second, there is a concern that auditors may decide how much they will charge at the beginning of the year, which may lead to incorrect inferences when I use the workforce environment from the current year to predict audit fees for those current years. I mitigate this concern by repeating Equations (2.1) and (2.2) using lagged *WEI* and lagged independent variables. The coefficients on lagged *WEI* and on *EPL∗WEI* (*EFW∗WEI*) are also significantly negative, as I report in Panel B of Table 2.7. These results further support my main findings.

Table 2.7 Robustness and the endogeneity test (continued)

Panel B: Non-US results and results with lagged independent variables

	Non-US observations			Lagged independent variables		
	(1)	(2)	(3)	(4)	(5)	(6)
	LNAF	LNAF	LNAF	LNAF	LNAF	LNAF
WEI	-0.010*	-0.012*	-0.011*	-0.023***	-0.013***	-0.012***
	(-1.75)	(-1.96)	(-1.90)	(-4.79)	(-2.78)	(-2.68)
EPL	-	-0.302***	-	-	0.137***	-
		(-5.65)			(2.95)	
EPL*WEI	-	-0.023***	-	-	-0.038***	-
		(-2.89)			(-6.68)	
EFW	-	-	0.128***	-	-	0.192***
			(6.85)			(11.18)
EFW*WEI	-	-	-0.012***	-	-	-0.015***
			(-4.03)			(-5.86)
Control variables	Yes	Yes	Yes	Yes	Yes	Yes
Industry	Yes	Yes	Yes	Yes	Yes	Yes
Year	Yes	Yes	Yes	Yes	Yes	Yes
_cons	-7.209***	-5.749***	-8.223***	-9.830***	-7.930***	-10.263***
	(-11.25)	(-8.83)	(-12.60)	(-17.24)	(-13.47)	(-18.26)
N	13292	11854	13292	16576	15347	16576
Adj.R-Square	0.72	0.76	0.73	0.73	0.76	0.74

Note: Robust t-statistics are in brackets. Variables are defined in Appendix B. All the independent variables used in Panel B, Columns (4) to (6) are lagged forms.
*** $p < 0.01$, ** $p<0.05$, * $p<0.10$.

2.5.5 Endogeneity test

I further address endogeneity concerns about omitted variables by implementing a two-stage-least-squares (2SLS) regression. I report my results in Table 2.7, Panel C. Similar to normal CSR practice (Ioannou & Serafeim, 2012), I argue that a firm's workforce environment is determined by both country and industry characteristics. Ioannou and Serafeim (2012, 2017) suggest that in a given country, a firm's CSR practice might vary over time systematically as a result of regulatory changes. In addition, a firm's incentives and abilities to engage in CSR are influenced by its competitors in the same industry (Hawn & Kang, 2018). If a firm operates in an industry in which its peers have a stronger commitment to employee well-being and that firm cannot provide a workforce environment comparable with those of its competitors, then it risks losing employees. Thus, firms are more likely to provide a favourable workforce environment if they are headquartered in countries, as well as operate in industries, that have a stronger commitment to employee well-being. Following prior studies (e.g., Cheng et al., 2014; Gupta & Krishnamurti, 2020), I select the country-year mean WEI (*COUN_WEI*) and the country-

industry mean *WEI* (*IND_WEI*) as my instruments. When calculating both *COUN_WEI* and *IND_WEI*, I exclude the focal firm's workforce environment performance to eliminate the firm's influence on both instrumental variables. As a result, my instruments represent the average workforce environment of the focal firm's competitors within the same industry and across years, in a given country.[23] I predict positive effects for *COUN_WEI* and *IND_WEI* on *WEI*. However, I have no a priori reason to believe that *COUN_WEI* and *IND_WEI* to have a direct impact on audit fees through channels other than the firm-level workforce environment.

In the first stage, I regress *WEI* on *COUN_WEI*, *IND_WEI* and other control variables that I used in Equation (2.1). My results in Column (1) of Table 2.7, Panel B show that both the coefficients on *COUN_WEI* and *IND_WEI* are positive and significant at the 1% level, supporting my argument that a firm's workforce environment is determined by both country and industry characteristics. In the second stage, I replace the original *WEI* with the predicted *WEI* generated from the first stage. My results in Column (2) of Table 2.7, Panel B show that the coefficients on *WEI* remain negative and significant at the 5% level, further supporting my main finding that a favourable workforce environment leads to lower audit fees. Similar to Cheng et al. (2014), I perform three tests to check the validity of my instruments in Table 2.7, Panel B. First, the result of the under-identification test, the Kleibergen-Paap rk LM statistic, illustrates that my model is identified (p=0.0000). Second, I report the Kleibergen- Paap rk Wald F statistic (Kleibergen & Paap, 2006) for my weak identification test. The *F*- statistic is very high in my sample, suggesting that my instruments are relevant and strong. Third, I report the Hansen's J statistic (Hansen, 1982) to test the over-identification concern. The *p*-value of the Hansen's J statistic is high for this test, suggesting that I cannot reject the null hypothesis that the instruments are exogenous. Following Larcker and Rusticus (2010), I also regress the

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[23] I acknowledge the limitation inherent in selecting industry-average as the instrument (Larcker & Rusticus, 2010). Larcker and Rusticus (2010) suggest that accounting researchers often use regulatory changes as a quasi-experiment to address endogeneity concerns. However, owing to the international nature of my study, I could not identify a universal regulatory shock.

residuals of the second stage on the exogenous variables (i.e., *COUN_WEI*, *IND_WEI*, and control variables) to test the over-identification concern. My untabulated results support the Hansen's J statistic. Overall, my post-estimation tests confirm both the relevance and the exclusion restrictions of my instruments.

Table 2.7 Robustness and the endogeneity test (continued)

Panel C: 2SLS results for the endogeneity test

	(1) WEI	(2) LNAF
WEI	-	-0.044**
		(-2.22)
COUN_WEI	0.272***	-
	(9.73)	
IND_WEI	0.374***	-
	(16.60)	
Control variables	Yes	Yes
Industry	Yes	Yes
Year	Yes	Yes
_cons	-9.310***	-10.840***
	(-7.18)	(-20.26)
N	19786	19786
(Centered) R-Square	0.726	0.739
Kleibergen-Paap rk LM statistics (under-identification test)		280.989 (p=0.0000)
Kleibergen-Paap rk Wald F statistic (weak identification test)		259.312
Hansen J statistic (over-identification test)		2.073 (p=0.1499)

Note: Robust t-statistics are in brackets. Variables are defined in Appendix B.
*** p< 0.01, ** p<0.05, * p<0.10.

2.5.6 Alternative argument on workforce environment

My results suggest that auditors charge lower audit fees for client firms that provide a favourable workforce environment. However, this negative relationship may hold up only to a certain point, as this relationship may reverse if a client firm improves its workforce environment beyond that point. From the agency perspective, opportunistic managers may provide generous welfare to employees to increase employee satisfaction, which will reduce the likelihood that employees report managers' wrongdoing. From a traditional cost efficiency perspective (e.g., Taylor, 1914), employers should keep the employees from being too satisfied by paying them no more than their reservation wages because over-satisfaction might lead to

complacency and shirking responsibilities. Based on both agency and efficiency perspectives, auditors may assess higher risks and, in turn, increase auditing efforts and audit fees, when client firms' employee welfare is too generous. Therefore, a U-shaped relationship may exist between the workforce environment and audit fees.

I introduce a quadratic term, WEI^2, into my Equation (2.1) and report my results in Table 2.8. The coefficient on WEI remains negative and significant. The positive and significant coefficient of WEI^2 confirms that the optimal level (i.e., WEI=18.98) for a workforce environment is very close to the maximum value of my workforce environment index (20).[24] My results suggest that auditors charge higher fees only to those clients with an extremely favourable workforce environment, to compensate for the extra risks related to agency or employee efficiency problems. However, the untabulated results find that this U-shaped relationship exists only in firms with poor corporate governance mechanisms, indicating that good corporate governance mechanisms can mitigate auditors' concerns about the extreme workforce environment.

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[24] I derive the optimum level of 18.98 using the formula: $\frac{-\text{coefficient on } WEI}{2 \times \text{coefficient on } WEI^2} = \frac{-(-0.0491243)}{2 \times 0.0012939} = 18.98$. Both coefficients on WEI and WEI^2 are from Table 2.8, Column (3).

Table 2.8 Additional test results: Non-linear relationship between the workforce environment and audit fees

	(1) LNAF	(2) LNAF	(3) LNAF
WEI	-0.034***	-0.037***	-0.049***
	(-2.60)	(-3.00)	(-3.82)
WEI²	0.001*	0.001**	0.001**
	(1.83)	(2.05)	(2.14)
Other control variables	*SIZE; LEV; INVREC; ROA; LOSS; NBS; NGS; SPECIAL, CROSS, MTB, CURRENT, INTS, TURN, ISSUE, BIGN, AO, BUSY, BSIZE, BIND, ACM, ACMIND, ACMEXP, CEODUAL*	*SIZE; LEV; INVREC; ROA; LOSS; NBS; NGS; SPECIAL, CROSS, MTB, CURRENT, INTS, TURN, ISSUE, BIGN, AO, BUSY, BSIZE, BIND, ACM, ACMIND, ACMEXP, CEODUAL, LAW, LNGDP, FDI, DISCL, CORRUP*	*SIZE; LEV; INVREC; ROA; LOSS; NBS; NGS; SPECIAL, CROSS, MTB, CURRENT, INTS, TURN, ISSUE, CSR, BIGN, AO, BUSY, BSIZE, BIND, ACM, ACMIND, ACMEXP, CEODUAL, LAW, LNGDP, FDI, DISCL, CORRUP*
Industry	Yes	Yes	Yes
Year	Yes	Yes	Yes
_cons	-3.754***	-10.654***	-10.613***
	(-21.14)	(-19.73)	(-19.65)
N	20119	19804	19804
Adj.R-Square	0.71	0.74	0.74

Note: Robust t-statistics are in brackets. Variables are defined in Appendix B.
*** p< 0.01, ** p<0.05, * p<0.10.

2.6 Chapter Summary

The objective of this essay is to investigate the relationship between an audit client's workforce environment and audit fees in an international setting. Specifically, I posit and find a better workforce environment may encourage employees to dedicate themselves to their work, resulting in higher productivity and firm performance; as a result, this dedication decreases client-specific risks and, thus, audit fees. In addition, my results also show that the negative association between audit fees and the workforce environment is stronger in countries with a more flexible labour market, presumably because the low hiring and firing costs in such markets encourage employees to be diligent and to cope with both external opportunities and internal job loss threats, which will further decrease client-specific risks. I also posit that both firms' financial reporting quality and media coverage of workforce controversies might mediate the effect of the workforce environment on audit fees; however, I find supportive evidence for the media coverage channel only.

My research is related to the literature studying the consequences of treating employees well from an external stakeholder's perspective (i.e., an auditor). My study, in particular, should be of interest to corporate insiders (i.e., managers and directors), as my results show that a firm's efforts to improve its workforce environment will be recognized by both internal (i.e., employees) and external stakeholders (e.g., auditors). In addition, my study responds to the call for additional international-level research, so researchers may better understand how the variations in institutional factors influence existing findings. In particular, I extend and complement Huang et al.'s (2017) results by showing that country-level labour market flexibility moderates the negative association between audit fees and the workforce environment. My findings also improve the understanding of the channels through which a favourable workforce environment contributes to reduced audit fee.

CHAPTER THREE

DETERMINANTS AND CONSEQUENCES OF AUDITOR-PROVIDED

TAX SERVICES: A SYSTEMATIC REVIEW OF THE

INTERNATIONAL LITERATURE (ESSAY TWO)[25]

3.1 Introduction

In this essay, I provide a systematic literature review on the determinants and consequences of auditor-provided tax services (hereafter APTS) in an international setting, critique the findings, and offer suggestions for future research in this area. The term 'international literature' in this essay includes both U.S. and non-U.S. studies. The extant literature generally suggests that the simultaneous provision of audit and APTS by the same audit firm can result in either a 'knowledge spillover benefit' or a potential 'impaired independence effect' (e.g., Alsadoun et al., 2018; De Simone et al., 2015; Gleason & Mills, 2011; Kinney et al., 2004; Lisic, 2014; McGuire et al., 2012). The proponents argue that APTS facilitate the verification of tax-related accounts in financial statements by statutory auditors (e.g., Francis, 2006; McGuire et al., 2012; Seetharaman et al., 2011). Auditors evaluate the validity of accrued taxes payable and tax contingent liabilities on the balance sheet, income tax expenses on the income statement, and the related note disclosures, in order to provide adequate assurance to the investing public about the appropriateness of these items and disclosures (Barrett, 2004). Managers can use valuation allowances (Frank & Rego, 2006), tax contingency reserves (Gupta et al., 2016), estimates of accrued taxes (Dhaliwal et al., 2004), and the designation of permanently reinvested earnings

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[25] The term APTS *does not capture* all services performed by the tax department of the incumbent auditors but *includes* only those tax services that are not necessary parts of the audit process. If a service is a necessary part of the audit process, it will be classified as "audit services." For instance, if tax partners review the provision of tax accrual in clients' financial statements, such services will be classified as "audit services" rather than "tax services". Furthermore, my review *excludes* research that examines the determinants and consequences of tax services provided by auditors to non-audit clients (e.g., Lisic et al., 2019).

(Krull, 2004) to manage earnings. Material information about risky tax transactions tends to be hidden in these accounts and disclosures, thereby, making proper auditing of tax accounts very difficult for external auditors.

Since client-specific knowledge is more likely to be shared within the same audit firm between the audit and the tax departments (Gleason & Mills, 2011), the provision of APTS helps statutory auditors to better understand clients' revenue-generating activities, revenue-recognition policies, accounting implications of (uncertain) tax positions, and other tax-related activities, which could assist the auditors' in planning strategies: especially the tax-related ones. Such knowledge sharing also benefits audit clients. For example, because of their better understanding of clients' operations and structures, and their knowledge about the cutting-edge tax technologies, incumbent auditors have competitive positions over other external tax consultants as well as over clients' internal tax personnel, in reducing both taxes paid and tax expenses for financial statements (e.g., Maydew & Shackelford, 2007).[26]

Despite the potential benefits from knowledge spillover, the opponents of providing APTS argue that auditors may acquiesce or be perceived as having acquiesced, to clients' aggressive accounting practices in order to retain lucrative tax services (e.g., Mishra et al., 2005). For instance, auditors might help clients to manage earnings aggressively to avoid taxes (Alsadoun et al., 2018; Armstrong et al., 2012; Klassen et al., 2016). The regulators, too, have expressed concerns about APTS threatening auditor independence, and have banned certain types of tax

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[26] Incumbent auditors have information advantages over the external tax services providers because they obtain client-specific tax-related information themselves, whereas external providers must rely on material prepared/provided by clients. Furthermore, incumbent auditors, especially those large audit firms with extensive global reach, are more professional than in-house tax personnel in terms of choosing up-to-date and well-supported tax strategies. For instance, PricewaterhouseCoopers (PwC) claims that "…In a world in constant flux, ruled by regulatory complexity and filled with economic risk, PwC's Tax and Legal Services cuts through the noise and helps you stay ahead of the changes that impact your business…We design best-in-class integrated tax and legal strategies that empower you to move from complexity to execution." (Source: https://www.pwc.com/gx/en/services/tax.html)

services that are more likely to impair auditor independence (SEC, 2006).[27] Nevertheless, some

audit firms continued to provide some APTS that have been banned by the SEC. For example,

KPMG was charged by the SEC (2014) for the practice of loaning tax professionals to audit

clients, which violated the rule prohibiting auditors from acting as an employee of clients. The

SEC (2014) affirmed that auditors must assess the independence threats of providing certain

types of NAS carefully, rather than just consider whether the proposed services fall within one

of the permissible categories. These mixed results make my synthesis important not only to

regulators but also to academic researchers.

I choose a systematic rather than a structured literature review. The advantage of systematic

reviews lies in a ''replicable, scientific, and transparent process that enables the researcher to

provide an audit trail, justifying his/her conclusions" (Tranfield et al., 2003, p. 218).[28] I adapt

the Haapamäki and Sihvonen (2019) and Gepp et al. (2020) approaches to collecting papers for

inclusion in this literature review, which combines both electronic and manual searches. First,

I performed an extensive search via the Scopus database to identify potential studies published

in accounting journals. Pany and Reckers (1983) report the first study that investigated the

stakeholder's perception of APTS. Therefore, I restrict the journal library search to papers

published between 1983 and April 2021, with a keywords search that includes "tax* service*",

"auditor provided tax service", "APTS", "tax NAS", "NAS", "nonaudit service", "non-audit

service", "nonaudit fee", "non-audit fee", "NAS fees", "tax fee*", "tax specialization", and "tax

expertise". I include APTS studies published in non-accounting journals as well (e.g., Journal

of Corporate Finance), to make the review comprehensive. To maintain the quality of this

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[27] That is, SEC (2006) banned (i) APTS with contingent fee arrangements; (ii) APTS for achieving tax positions
to avoid tax; and (iii) APTS to a person who has a financial reporting oversight role in the client firm. I discuss
this issue further in Section 3.3.1.

[28] According to Littell et al. (2008) systematic literature reviews aim "to comprehensively locate and synthesize
research that bears on a particular question, using organized, transparent, and replicable procedures at each step in
the process" (p. 1). Booth et al. (2012, p. 24), however, highlight that comprehensiveness in systematic literature
reviews does not mean to identify 'all studies' on a specific topic, since this goal is not realistic. Instead, researchers
should aim to find literature that fits most appropriately with the defined topic.

review, I include only those journals that are listed on the 2019 Australian Business Deans Council (ABDC) rankings.[29]

The search process generated 346 papers with proposed keywords from accounting journals. I then screened them manually to identify papers that examine either determinants or consequences of APTS by reviewing abstracts, hypotheses and empirical results sections, and by tracking down references in those papers. I performed the same methods to search for papers from non-accounting journals. This screening process resulted in 101 papers published in business journals. To include the most recent research related to APTS, I also included some high-quality working papers. Similar to Harvey et al. (2016), I selected working papers (1) that have been presented at top conferences; (2) that have been cited one or more times by other published papers; or (3) having at least one author in the author team who has published one or more papers on this topic; to maintain the quality of this review. This process yielded a total of 11 working papers.

My final sample consists of 112 papers with an overwhelming majority of the papers examining the consequences of APTS, and only 20 papers examining the determinants of APTS. Table 3.1 displays the journals' details and publication trends. As shown in Table 3.1, five journals, namely: *The Accounting Review*; *Contemporary Accounting Research*; *Journal of Accounting, Auditing, & Finance*; *Auditing: A Journal of Practice & Theory*; and *The Journal of the American Taxation Association*; published more than 40% of the APTS research. 41, 45, and 15 papers have been published in A*, A, and B-ranked journals, respectively. I also observe

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[29] ABDC ranks journals into four categories: A*, A, B, and C. I review papers published in journals ranked B and above to ensure a certain quality threshold. I found a high degree of overlap in the journal rankings in the accounting field in the ABDC and the Chartered Association of Business Schools (CABS) Journal rankings. ABDC tends to be a more inclusive list and I decided to follow the ABDC ranking. The full list of ABDC rankings can be retrieved from https://abdc.edu.au/research/abdc-journal-list/ (Accessed at the end of January 2020). CABS rankings can be retrieved from https://charteredabs.org/academic-journal-guide-2018/ (Accessed at the end of January 2020).

that there has been a significant increase in the number of publications since 2006. Such a rapid

increase in APTS research highlights the importance of my review.

Table 3.1. Trend of publication: APTS studies

Panel A: Details of journals that publish APTS studies	Rank	N	%
The Accounting Review	A*	11	9.82
Contemporary Accounting Research	A*	10	8.93
Journal of Accounting, Auditing & Finance	A	9	8.04
Auditing: A Journal of Practice & Theory	A*	8	7.14
The Journal of the American Taxation Association	A	8	7.14
International Journal of Auditing	A	6	5.36
Advances in Accounting	A	5	4.46
Managerial Auditing Journal	A	5	4.46
Journal of Accounting and Public Policy	A	3	2.68
Journal of Accounting Research	A*	3	2.68
Accounting and Business Research	A	2	1.79
European Accounting Review	A*	2	1.79
Journal of Accounting and Economics	A*	2	1.79
Journal of Contemporary Accounting & Economics	A	2	1.79
Journal of International Accounting, Auditing and Taxation	B	2	1.79
Journal of International Financial Management & Accounting	B	2	1.79
Review of Accounting and Finance	B	2	1.79
Review of Accounting Studies	A*	2	1.79
The International Journal of Accounting	A	2	1.79
Accounting Horizons	A	1	0.89
Accounting Perspectives	B	1	0.89
Advances in Taxation	B	1	0.89
Asia-Pacific Journal of Accounting & Economics	B	1	0.89
British Accounting Review	A*	1	0.89
International Journal of Accounting & Information Management	B	1	0.89
Journal of Applied Accounting Research	B	1	0.89
Journal of Business Finance & Accounting	A*	1	0.89
Journal of Business Research	A	1	0.89
Journal of Corporate Accounting & Finance	B	1	0.89
Journal of Corporate Finance	A*	1	0.89
Meditari Accountancy Research	A	1	0.89
Pacific Accounting Review	B	1	0.89
Research in Accounting Regulation	B	1	0.89
Spanish Journal of Finance and Accounting	B	1	0.89
Total number of published papers		**101**	**90.17**
Working papers		11	9.83
Total		**112**	**100%**

Panel B: Yearly distribution of APTS studies		
	N	**%**
1986-2005	10	8.93
2006-2010	14	12.5
2011-2015	37	33.04
2016-2020	37	33.04
To April 2021 and In press	14	12.49
Total	**112**	**100.0%**

The remainder of this chapter is organized as follows. Section 3.2 discusses the theoretical framework pertinent to the APTS literature. Section 3.3 provides a review of the APTS regulations from selected jurisdictions. I review the literature that examines the determinants of APTS in Section 3.4. The consequences of APTS are reviewed in Section 3.5. Section 3.6 concludes the paper and provides some useful directions for future research. I present a framework underpinning my review of APTS in Figure 3.1.

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┌─────────────────────────┐              ┌─────────────────────────┐
│  Knowledge spillover    │              │  Impaired independence  │
│     Section 3.2.1       │              │     Section 3.2.2       │
└─────────────────────────┘              └─────────────────────────┘
            ↖                                        ↗
                      ┌───────────────────────┐
                      │ Theoretical perspectives│
                      │     Section 3.2        │
                      └───────────────────────┘
      ┌──────────────┐   ┌──────────────────┐   ┌──────────────┐
      │ Determinants │ ← │ Auditor-provided │ → │ Consequences │
      │ Section 3.4  │   │ tax services     │   │ Section 3.5  │
      └──────────────┘   │ (APTS)           │   └──────────────┘
                         └──────────────────┘
                  ┌───────────────────────────┐
                  │ Regulatory environment    │
                  │      Section 3.3          │
                  └───────────────────────────┘
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- Material misstatements and auditor communication
- Earnings quality (tax and non-tax related)
- Tax avoidance and tax reserves
- Market perceptions (cost of debt, cost of equity, earnings response coefficients, value relevance of earnings, etc.)
- Audit fees

Figure 3.1 Framework for the auditor-provided tax services

3.2 Theoretical Perspectives on APTS

In this section, I introduce the main theoretical frameworks that are commonly used in APTS research. There are two competing views pertaining to the joint provision of audit services and APTS: the *knowledge spillover effect* and the *impaired independence effect*. The former argument contends that APTS can improve audit quality and reduce audit costs through sharing client-specific and industry-specific knowledge between tax and audit departments (De Simone et al., 2015; Gleason & Mills, 2011; Kinney et al., 2004; McGuire et al., 2012). The latter, on the other hand, suggests that auditors are more likely to, or be perceived to compromise audit quality when they provide APTS to their audit clients, owing to the increased economic bonding between them (e.g., Alsadoun et al., 2018; Choudhary et al., 2021; Mishra et al., 2005). Therefore, prior studies suggest that the net effect of APTS on audit quality depends on which effect dominates (e.g., Choi et al., 2009b; Fortin & Pittman, 2008; Krishnan et al., 2013; Lisic, 2014).

3.2.1 APTS and knowledge spillover arguments

The knowledge spillover effect assumes that the knowledge is transferable between different departments within an audit firm, and the audit and tax services require overlapping information pertinent to clients.[30] Such information sharing is beneficial for several reasons. First, since APTS normally are performed across the fiscal year, the communication between tax and audit partners allows the audit team to be aware of material risky transactions at an early stage,

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[30] Auditors, at least the Big 4 firms, are aware of the benefits of sharing clients' information across professionals and encourage their staff to do so. For instance, PwC states that "Leveraging all lines of service is an important component of providing a high-quality audit. Drawing on the knowledge of our non-audit professionals, we develop a deeper understanding of our audit clients' processes and financial reporting risks…that may affect our audit clients' financial statements – for example, *the potential impact of complex income tax matters…*" (PwC, 2019) (italics added). One Big 4 accounting practice partner interviewed by Law (2010) states that "Taxation services (I agree) is value-added service to clients, as that may clear up some complex accounting entries that the client may not know to do it" (p. 107). Moreover, by discussing with tax and audit partners across Big 4 firms, Gleason and Mills (2011) confirm that the tax partners will fully inform their audit partners of the unique knowledge related to audit clients' risk in tax accounts that is gathered through providing tax services.

thereby, enabling the audit team to detect and remedy clients' internal control weaknesses (both tax and non-tax related) before the release of the financial statements (De Simone et al., 2015). Second, prior studies find a strong and positive association between financial and tax reporting aggressiveness (Frank et al., 2009). When auditors provide tax services to their audit clients, auditors will gain good understandings of the client's tax strategies. Such understandings not only facilitate auditors attesting clients' tax-related assertions, but also help auditors assess clients' attitudes towards financial reporting aggressiveness. Therefore, compared with auditors who only provide audit services (i.e., less informed auditors), auditors will likely design significantly different and more effective audit procedures when they provide both audit services and APTS to their clients (Joe & Vandervelde, 2007).

More importantly, when the incumbent auditors also provide APTS, audit personnel can learn and evaluate clients' uncertain tax positions easily: knowledge that increases audit quality. On the contrary, if firms purchase tax services from parties other than the incumbent auditors, then the latter must first detect clients' uncertain tax positions and then obtain evidence of the outcomes of those positions. By using various measures of audit quality, the majority of empirical studies find a positive relationship between audit quality and APTS, indicating the existence of knowledge spillover effects (e.g., Kinney et al., 2004; Robinson, 2008). The extant literature also considers whether or not APTS are recurring in nature (e.g., Abdul Wahab et al., 2014; Paterson & Valencia, 2011). Recurring APTS are defined as tax services that are purchased from the same auditors for two or more consecutive years: otherwise, they are non-recurring APTS. Recurring NAS gives rise to economies of scope, which would contribute to auditors' cost savings (e.g., Beck et al., 1998; Chung & Kallapur, 2003), especially for some categories of NAS (e.g., APTS) (Arruñada, 1999, Francis, 2006; Gleason & Mills, 2011). If auditors pass on part of the cost savings to their audit clients, economic bonding between the two parties is declined, with a consequent positive effect on audit quality.

Moreover, the benefits of knowledge spillover effects are generated not only from client-specific knowledge but also from industry-specific knowledge obtained through providing tax services to firms in the same industry. McGuire et al. (2012) propose that auditors have superior knowledge of the industry-specific tax planning opportunities that are available to their clients, if auditors are *tax industry specialists*. Such specialization is also found to be helpful in establishing formal or informal benchmarks for reasonable accounting practices, and hence, auditors could detect and constrain industry-specific opportunistic earnings management behaviour (Christensen et al., 2015). Thus, tax industry specialization could enhance not only tax service effectiveness, but also audit quality. These benefits even exist when clients do not purchase APTS or purchase low levels of APTS from their incumbent auditors, since the knowledge could spill over to different engagements across the same audit firm/office. However, Goldman et al. (2021) argue that the improved audit quality pertinent to income tax accounts is due to auditors possessing more general tax task-specific knowledge, rather than to industry expertise, since tax issues are not necessarily industry-specific (Hux et al., 2018). Goldman et al. (2021) find that audit offices with more general tax task-specific knowledge (proxied by audit offices' exposure to complex tax issues) decrease the incidence of tax-related restatements, whereas those with industry tax expertise exacerbate such restatements. Nevertheless, both Christensen et al. (2015) and Goldman et al. (2021) show that the benefits of industry tax expertise or general tax task-specific knowledge are concentrated in firms that procure low levels of APTS from incumbent auditors, indicating a substitution effect.

3.2.2 APTS and the impairment of independence arguments

In contrast to the possible benefits generating from the knowledge spillover effects, auditor independence can be, or be perceived as, negatively influenced by the joint provision of audit services and NAS, including APTS. The provision of APTS could create several threats to

auditor independence, such as self-interest and self-review threats. Such independence threats will affect independence of mind, independence in appearance, or both. DeFond and Zhang (2014) suggest that the impairment of auditor independence could be triggered by both demand- and supply-side factors.

The first independence threat stemming from APTS is economic bonding (i.e., self-interest). Although the economic bonds between auditors and their clients are inherent even if auditors do not provide any NAS (DeAngelo, 1981), the provision of NAS increases the client-specific current and future quasi-rents, which increase the bond with and, in turn, the fee reliance on audit clients (Francis, 2006; Simunic, 1984). From the demand side, Srinidhi and Gul (2007) document that it is easier for audit clients to influence their auditors by including excessive rents in the NAS fees, which are less regulated than audit fees. Since APTS is still permitted under the current environment in many jurisdictions, the purchase of APTS could be a way, or maybe the most important way, that audit clients can influence auditor independence. Also, from the supply side, owing to the pressure on auditors' (e.g., audit offices or partners) to achieve performance targets, their incentives to acquiesce to, or even help clients with, the manipulation of earnings and/or the adoption of aggressive tax positions increases as the APTS fees increase (Alsadoun et al., 2018; Causholli et al., 2014; Doty, 2011; Favere-Marchsi, 2006). Therefore, audit clients that acquire both audit services and APTS gain more opportunities to conduct opportunistic behaviour than do those purchasing audit services only, or other types of NAS, from their auditors. Besides the self-interest threat generated from current quasi-rents, Causholli et al. (2014, p. 681) argue that "a client's promise of future NAS business has potential to impair an auditor's independence". Supporting this argument, Lynch et al. (2021) find that auditors will receive about 17% more (5% fewer) APTS fees in the following year from their audit clients if they stop (start or continue) issuing tax-related key audit matters (KAM) to the clients in the current year. In sum, both current and future quasi-rents related to

APTS fees can create enhanced economic bonding between auditors and audit clients, thereby, threatening auditor independence.

The second independence threats stemming from APTS are the self-review concerns. Francis (2006) documents that the provision of NAS may change the auditor's role from outside independent reviewer to inside adviser and decision-maker. Since the provision of APTS is more closely and directly related to clients' income and cash flow (e.g., Maydew & Shackelford, 2007; Omer et al., 2006), auditors may end up auditing their own work. In such cases, auditors are less (more) likely to challenge (rely on) the clients' treatment of complicated tax issues and tax strategies that are advised by "auditors themselves" (i.e., the tax services team in the same audit firm/office).

3.2.3 Section summary

In this section, I discussed two theoretical perspectives on APTS. The knowledge spillover effect suggests that the provision of APTS, especially the recurring ones, helps auditors to have a better understanding of clients' operations, internal control, tax strategies, and of managers' attitudes towards financial reporting. Such understanding facilitates high-quality audits. The impaired independence effect suggests that the provision of APTS increases economic bonds between auditors and clients, thus, decreasing their incentives to provide high-quality audits. The net effects of APTS, therefore, have been subject to a substantial amount of academic research over the years.

3.3 Overview of the APTS Regulations for Selected Jurisdictions

In this section, I provide an overview of the APTS regulations related to both the *disclosure* of APTS and the *provision* of APTS by incumbent auditors. Leuz (2010) shows that the regulatory environment and institutional factors are different across countries, and these differences are

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likely to persist in the foreseeable future. Therefore, it is important to understand differences in APTS regulations around the world, as they may affect both the determinants and consequences of APTS. The selection of jurisdictions is based on the importance of capital markets in the world economy.

3.3.1 United States (U.S.)

The SEC first issued Accounting Series Release (ASR) No. 250 in June 1978, which required firms to disclose the specific nature of NAS and total NAS as a percentage of total audit fees in their proxy statements (SEC, 1978). However, the SEC rescinded this requirement in August 1981. Parkash and Venable (1992) find that 90% of the Fortune 500 firm-year observations purchased APTS during the period 1978 to 1980. They also document that the demand for APTS varied with agency costs and auditor characteristics. Koh et al. (2013) use a similar dataset, but do not find any evidence that the APTS fees ratio is related to impaired auditor independence. Subsequently, the SEC mandated the detailed disclosure of fees paid to registrants' auditors since 2001, to facilitate investors in evaluating the impact of the joint provision of audit and NAS on auditor independence. In particular, the SEC registrants must disclose their fees paid to auditors in three categories: (1) audit services fees, (2) financial information systems design and implementation (FISDI) services fees, and (3) all other NAS fees (SEC, 2000). In addition, the SEC (2000) restricts certain types of NAS that would impair auditor independence when being provided by registrants' auditors, with some exceptions.

Following some accounting scandals, Section 201(a) of Sarbanes-Oxley Act of 2002 (SOX) imposed stricter rules banning audit firms from simultaneously providing audit and FISDI services or some certain services classified in "other NAS".[31] However, SOX did not prohibit

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[31] Those services include (1) bookkeeping or other services related to the accounting records or financial statements of the audit client; (2) appraisal or valuation services, fairness opinions, or contribution-in-kind reports; (3) actuarial services; (4) internal audit outsourcing services; (5) management functions or human resources; (6)

the provision of APTS, a category of NAS that auditors frequently provide to their clients (SEC, 2003). However, before acquiring APTS and other allowed NAS from their auditors, registrants must get pre-approval from their audit committees to assure stakeholders that providing such services will not impair the auditors' independence (Section 202 of SOX).

After SOX, the SEC (2003) amended the disclosure requirements for auditor fees. The new rules required registrants to disclose auditor fees in four separate categories: (1) audit fees; (2) audit-related fees; (3) tax fees (i.e., APTS fees); and (4) all other fees. In regard to the addition of a "tax fees" category, SEC states that the provision of tax services needs extensive knowledge about the client, and the APTS fees are considerable in relation to other NAS fees. Therefore, SEC believes that it is appropriate and beneficial to investors if firms distinguish APTS fees from all other fee categories. The SEC (2003) rules became mandatory for years ending after December 15, 2003 and required that registrants must provide such information for each of the two most recent fiscal years. As a result, registrants started to disclose the four-categories of auditor fees information from 2002. Moreover, the SEC reiterated that audit firms could provide APTS (i.e., tax compliance, tax planning, and tax advice) to their clients. However, some prior studies find that firms started to voluntarily dismiss, or substantially reduce, the purchase of APTS owing to concerns about the perception of impaired independence (e.g., Omer et al., 2006): a perception that imposed significant costs on firms such as reduced tax savings (Cook et al., 2020) and low value-relevance of earnings (Krishnan et al., 2013).

In 2005, the PCAOB further adopted three new rules prohibiting certain tax consulting services that are perceived to impede auditor independence. More precisely, Rule 3521 proscribed auditors from providing APTS with contingent fee arrangements, Rule 3522 prohibited auditors from promoting and providing clients with APTS for achieving aggressive tax positions to avoid tax, and Rule 3523 banned auditors from providing any APTS to a person

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broker or dealer, investment adviser, or investment banking services; (7) legal services and expert services unrelated to the audit; and (8) any other service that the PCAOB determines, by regulation, is impermissible.

who has a role in financial reporting oversight (e.g., executives) at the client's firm, or to immediate family members of such persons. On April 19, 2006, SEC (2006) approved these three PCAOB (2005) proposed rules, effective from October 31, 2006 and onward.

For new audit clients, PCAOB (2008) amended Rule 3523 to remove the restriction for tax services provided during the portion of the audit period that is completed before the beginning of the professional engagement period, since tax services provided in such a period are perceived not to impair auditor independence. The amendment of Rule 3523 would be effective immediately upon the SEC approval, which occurred on August 22, 2008 (SEC, 2008). Markelevich and Rosner (2013) find in their additional tests that APTS fees were positively associated with the likelihood of issuing fraudulent financial statements from 2000 to 2005. Also, Thornton and Shaub (2014) show that U.S. jurors perceive a significantly lower audit quality when auditors provide audit clients with aggressive tax-planning services, as compared with tax compliance services. These results support the new restrictions. Finley and Stekelberg (2016) illustrate that there is a significant decrease in tax avoidance for firms continuing to purchase APTS from Big 4 auditors from pre- to post-2005 periods. However, Lennox (2016) examines the effects of these three new restrictions on audit quality and fails to find an increased audit quality, as proposed by the U.S. regulators, after the implementation of new restrictions. Also, Nesbitt et al. (2020) show that despite complying with Rule 3522, audit firms have been advising larger clients on the use of more aggressive tax strategies increasingly over time. Moreover, some audit firms continued to provide some tax services that are not specifically mentioned in the regulation, but that do compromise auditor independence. For instance, KPMG was penalized 8.2 million U.S. dollars by SEC on January 24, 2014, for loaning tax professionals to audit clients from 2007 to 2011: a practice that violates the rule proscribing auditors from acting as an employee of clients. As a result, the SEC (2014) states that auditors must carefully assess the independence threats of providing certain types of NAS, rather than

just consider whether the proposed services fall within one of the permissible categories (e.g., tax services).

Overall, the regulatory environment of APTS in the U.S. consists of the following: (1) all APTS should be pre-approved by the clients' audit committee; (2) clients need to disclose APTS fees in their proxy statements separately; (3) auditors can provide only those APTS that would not jeopardize their independence; and (4) SOX violations are subject to expanded criminal and civil liabilities and penalties.

3.3.2 European Union (EU)

To make the relationships between auditors and audit clients more transparent, the EU Directive (2006) suggested and required disclosure of audit fees and the fees paid for NAS including other assurance services, tax advisory services, and other NAS in the notes of financial statements in all EU member states: requirements that are comparable with those of the U.S. SEC (2003). In regard to auditor independence, the Directive also mentioned that auditors should not undertake any additional NAS that compromises their independence.

After the financial crisis around the world, regulators in the EU started to consider amending the audit regulations, including the prohibition of NAS, based on the presumption that NAS may compromise auditor independence as mentioned in the EU Directive (2006). According to the European Commission (EC) (2010) "Green Paper", although there was no mandatory ban of NAS provision along with statutory audits in EU-wide regulations, some member states already implemented the EU Directive (2006), albeit in a very divergent manner. For instance, auditors are proscribed from providing any NAS to their audit clients in France, whereas the restrictions on NAS provision are relatively loose in other member states.

In the following year, EC (2011), Article 10, proposed a specific requirement prohibiting auditor-provided NAS in the public interest entities (PIEs). Specifically, the EC (2011)

suggested to ban or restrict auditors from providing services other than statutory audit services and related financial audit services to PIE audit clients. The scope of "related financial audit services" includes (a) the audit or review of interim financial statements, (b) providing assurance on other statements (e.g., corporate governance, corporate social responsibility matters, and regulatory reporting), (c) providing certification on compliance with tax requirements, where such attestation is required by national law, and (d) other duty related to audit work imposed by the EU legislation on the statutory auditor. To enhance auditor independence, the EC (2010, 2011) even proposed banning auditors from providing any NAS to PIE clients, and suggested that such prohibition might contribute to the establishment of "pure audit firms", in which auditors could provide independent opinions without any business interest in their audit clients.

In 2014, the Regulation (EU) No. 537/2014 amended and approved the EC (2011) proposal described above. The EU Regulation (2014) introduced a "blacklist" of prohibited NAS across all EU member states. The first banned NAS in EU Regulation (2014), Article 5, is the APTS related to (i) preparation of tax forms; (ii) payroll tax; (iii) customs duties; (iv) identification of public subsidies and tax incentives; (v) support regarding tax inspections by tax authorities; (vi) calculation of direct and indirect tax and deferred tax; and (vii) provision of tax advice. Other NAS included in the "blacklist" are similar to those services that are banned in the U.S. (see Section 3.3.1 above). In addition, member states may further prohibit any NAS that they consider as representing a threat to auditor independence. The EU Regulation (2014) also required a pre-approval from clients' audit committees if incumbent auditors want to provide some permissible NAS that is not part of the "blacklist".

In addition, a fee cap is introduced on the total amount of fees to be charged for allowable NAS, assuming that the provision of NAS negatively affects auditor independence only when a certain threshold is exceeded. In particular, the total fees for those allowable NAS shall not

exceed 70% of the average of the statutory audit fees in the last three consecutive fiscal years. Also, member states' regulators could opt to set stricter rules on the NAS fee cap. These new regulations were effective from 17 June 2016 onwards, and regulators expected to observe increased auditor independence after implementing those restrictions. Ratzinger-Sakel and Schönberger (2015) demonstrate that, although the EU Regulation has different impacts on the provision of NAS in different member states, the EU-wide regulation is an extension of existing restrictions in each member state. However, the new regulation seems unnecessary, considering the empirical findings in the EU, which show little impairment of independence due to APTS, using data from the pre-2016 regime (Castillo-Merino et al., 2020; Eilifsen et al., 2018; Garcia-Blandon et al., 2017, 2021; Watrin et al., 2019).

Notably, the EU Regulation (2014) gives a derogation option to member states when implementing these NAS regulations in their local legislations. That is, member states could opt to allow auditors to provide some valuation and certain tax services (i, iv, v, vi, and vii contained in Article 5) that are included in the "blacklist" if certain criteria are met.[32] Therefore, EU regulators view some categories of APTS as less harmful to auditor independence compared with other categories of NAS. According to the Audit Analytics (2020, December), most member states opt to allow the aforementioned tax services, and only eight member states decide not to use this option. In other words, the APTS are totally banned in these eight member states (i.e., Croatia, Greece, France, Italy, Netherlands, Poland, Portugal, and Slovenia). Regarding the fee cap on NAS, all member states have opted for the 70% except for Portugal where a 30% cap has opted. It is worth noting that there is no specific fee cap for APTS. Moreover, recent studies show that the mean or median APTS fees ratios are well below 20%

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[32] Three such criteria are, (a) they have no direct or have immaterial effect, separately or in the aggregate on the audited financial statements; (b) the estimation of the effect on the audited financial statements is comprehensively documented and explained in the additional report to the audit committee referred to in Article 11; and (c) the principles of independence laid down in Directive 2006/43/EC are complied with by the statutory auditor or the audit firm.

or 30% in some EU countries, such as Spain (Castillo-Merino et al., 2020) and Germany (Eilifsen et al., 2018; Watrin et al., 2019). Although there are some firms with very high APTS fees, this fee cap regulation may have less or no influence on the purchase or provision of APTS for most of the listed firms in the EU.

The EU Regulation (2014) specifies some tax services that should be banned without exemption, namely (ii) and (iii) contained in Article 5, which seems to be different from the U.S. regulation. However, although these services fall within the tax services category, provision of these services would make auditors play either an accounting role or a management function role for the audit clients, posing serious threats to auditor independence. Therefore, this rule is, in general, consistent with the U.S. SEC (2014) argument that auditors should assess both the nature and the manner of delivering some types of services to make sure auditor independence is not compromised, although EU Regulation (2014) is less ambiguous than the U.S. regulation.

3.3.3 Other jurisdictions

Besides the regulatory environments in the U.S. and EU, which have received much attention in the previous literature, I also provide a brief review of regulations related to APTS in some other jurisdictions, based on the importance of their capital markets in the world economy. As the second-largest capital market, China mandated the disclosure of NAS fees in 2001, but there is no specific regulation related to APTS thus far. This seems reasonable, because the Chinese NAS market is small and most firms do not purchase NAS from their incumbent auditors (Chen et al., 2010; Fang et al., 2014). Thus, the provision of NAS, including APTS, is not considered to threaten auditor independence. Hong Kong has not mandated the disclosure of NAS fees yet and, therefore, it is difficult to determine whether the provision of such services is valued favourably by the stakeholders or not. However, Law (2010), using a survey among some Hong

Kong auditors and financial analysts, finds that APTS are perceived as a value-added service by their clients by comparison with other types of NAS such as, corporate finance services and internal audit services. Japanese auditors are banned from providing certain types of NAS, including any type of APTS. The Companies Act of 2013 in India prohibits certain types of NAS, but does not prohibit APTS. If Indian listed firms purchase APTS from their incumbent auditors, they need to disclose the fees paid under "Payments to the auditors for taxation matters" in their financial statements.

Although Canadian prohibitions of NAS are very similar to the U.S. ones, there are some differences. The CPA Canada Independence Working Group (IWG) initiated a discussion in 2012 about whether to further prohibit certain types of APTS as the U.S. SEC did in 2006 (IWG, 2012). In the following year, IWG (2013) concluded that it would support additional prohibitions of APTS with respect to personal tax services for individuals who hold financial reporting oversight roles (similar to U.S. Rule 3523), and aggressive and confidential tax transactions (similar to U.S. Rule 3522). IWG (2013) called for more studies on the impacts of the provision of APTS on a contingent basis (similar to U.S. Rule 3521). So far, these suggestions have not been enforced in Canada. Moreover, CPA Canada (2016) clearly states that if auditors are already providing services related to "Tax calculations for the purpose of preparing accounting entries, except under certain circumstances in emergency situations [Rule 204.4 (34) (b)]" for a listed firm, then they shall not perform audit services for that same firm. Makni et al. (2020) published the only study using Canadian data to explore the impacts of APTS, and find weak evidence that the ratio of APTS fees to total auditor fees is positively associated with the firms' use of tax havens.

The Certified Public Accountant Act in South Korea mandated the disclosure of NAS fees and their components in 2001, and prohibited certain types of NAS in 2002, although such prohibitions were less restrictive compared with the U.S. and EU (Kang et al., 2019). The

Korean National Assembly amended the Korean CPA Act on February 18, 2016, and banned

additional NAS, making Korean law similar to the U.S. SOX (2002). However, like India, South

Korea has not banned any APTS because the Korean Institute of Certified Public Accountants

(KICPA, 2006) suggests that the provision of APTS is unlikely to impair auditor independence.

Empirical research supports this view (Choi et al., 2009). Taken together, my review of the

APTS regulations reveals significant variations across jurisdictions. Table 3.2 provides an

overview of APTS-related regulations in different jurisdictions.

Table 3.2 Overview of APTS regulations as at the end of 2020

Jurisdictions	APTS (1)	APTS Restriction (2)	APTS disclosure (3)
Canada	Yes	Yes	Yes
China	Yes	No	No
European Union	Yes	Yes	Yes
Hong Kong	Yes	No	No
India	Yes	No	Yes
Japan	No	N/A	N/A
South Korea	Yes	No	Yes
United States	Yes	Yes	Yes

Note: In this table, I provide an overview of APTS-related regulations in different selected jurisdictions. For the purpose of this paper, I focus on the APTS provided to audit clients only. Column (1) shows whether auditors in a certain jurisdiction are allowed to provide tax services, and Column (2) indicates whether certain types of APTS are clearly banned in the same jurisdiction. In Column (1), "*Yes*" means auditors are permitted to provide tax services to audit clients, and "*No*" means auditors are prohibited to provide any types of tax services to audit clients. In Column (2), "*Yes*" means there are additional restrictions on certain types of APTS, otherwise, it will show "*No*". Conditional on the provision of APTS is permitted either fully or partially, Column (3) shows whether the audit clients need to disclose APTS fees in the financial statements.

3.4 Determinant of APTS

I review the literature investigating the determinants of purchasing tax services from incumbent

auditors this section. Four types of APTS-related decisions are reviewed, namely, decisions

involving: (1) voluntary APTS information disclosure; (2) choice of incumbent auditors as tax

service providers; (3) retention or dismissal of incumbent auditors as tax service providers; and

(4) the magnitude of APTS fees.

3.4.1 Voluntary disclosure of APTS information

As discussed in Section 3.3, publicly listed firms were required to disclose APTS fees from 2003 in the U.S. (from 2006 in the EU countries), although some firms voluntarily disclosed the APTS information prior to the passage of these regulations. Omer et al. (2006) examine the factors associated with firms' decision to purchase APTS from 2000 to 2002. To control for potential selection bias resulting from purchase and disclosure decisions, they model the factors influencing such decisions in the first stage of the Heckman two-step estimation process. There are two findings from Omer et al.'s (2006) selection bias regressions. First, the decision to disclose APTS fees is positively associated with tax complexity, auditor tenure, and auditor change, and negatively associated with the proportion of NAS fees to total fees supporting the notion that firms are less likely to disclose APTS fees information to reduce political costs associated with heightened regulatory scrutiny. Second, their results imply that firm size and auditor size jointly affect a client's decision to purchase APTS, but not the decision to disclose APTS fees. Bedard et al. (2010) extend Omer et al. (2006) by including two important players in the corporate governance structure of a firm (i.e., the audit committee and the auditor) in explaining firm's voluntary APTS fees disclosure decisions. They confirm the negative association between APTS fees disclosure and the proportion of NAS fees to total fees. Importantly, the negative association is found to be more pronounced when firms have a strong audit committee: a finding that is inconsistent with the audit committee oversight theory. A stronger audit committee may perceive costs resulting from regulatory scrutiny as outweighing the additional benefits of disclosures to investors. Also, this negative association is stronger for firms audited by non-Big 4 auditors, which is consistent with the findings that clients of non-Big 4 auditors tend to disclose less information (e.g., Clarkson et al., 2003).

3.4.2 Selecting incumbent auditors as tax service providers

It is worthy of note that publicly listed firms are required to disclose only the tax services fees paid to their incumbent auditors, but not if they purchase tax services from other providers, or if their internal tax departments perform those services. Therefore, I could not find any empirical paper using publicly available data to examine the entire spectrum of tax services provider choices in publicly listed firms. However, using proprietary data from the U.S. Internal Revenue Service (IRS), and focusing on tax compliance services only, Klassen et al. (2016) find that firms are more likely to hire incumbent auditors to prepare tax returns when they have been less tax aggressive in the past, higher-growing, and smaller. Furthermore, firms having less foreign activities, incurring losses, engaging in R&D activities, and exhibiting high other-NAS fees ratios, also tend to select incumbent auditors to prepare tax returns. Neuman et al. (2015) provide additional evidence using data from the U.S. not-for-profit sector (NFPs), where the decision to choose a tax service provider is observable for all entities. They find that the NFPs are less likely to purchase tax services from the incumbent auditor, as the distance between the firm and the auditor increases, indicating that tax services, similar to financial statement audit services, also require a high degree of client contact. Moreover, Neuman et al. (2015) posit and find that clients are more likely to hire other audit firms or law firms when the set of substitute service providers is greater and, thus, the purchase of tailored services is facilitated.

3.4.3 Retaining or dismissing incumbent auditors as tax service providers

Instead of examining the determinants of purchasing APTS directly, another stream of studies provides some evidence about the reasons audit clients decide to dismiss or retain their incumbent auditors as their tax services providers (Ahn et al., 2021; Albring et al., 2014; Finley & Stekelberg, 2016; Lassila et al. 2010). Because SOX (2002) and SEC (2000, 2003, 2006)

prohibited certain types of NAS and required more granular classifications of fees disclosure, public firms substantially reduced or terminated the purchase of some NAS, including tax services, from their auditors, to reduce negative reactions from investors and regulators (Abbott et al., 2011; Finley & Stekelberg, 2016; Lennox, 2016; Maydew & Shackelford, 2007), even when the regulations clearly suggest that investors would view APTS more favourably than other types of NAS (SEC, 2003). Omer et al. (2006) show that the sample median APTS fees declined from US$256,880 in 2000 to US$145,150 in 2002, and Cook et al. (2020) further find that approximately 21% of the firms in their sample period (i.e., 2002 to 2005) eliminated or significantly reduced the use of APTS. Among these firms, the median APTS fees dropped from US$326,446 to $53,000. Therefore, firms' decisions to retain or dismiss incumbent auditors as tax services providers became an important research question.

Lassila et al. (2010) mention that 'retaining or dismissing' decisions appear to be a trade-off between the benefits generated from knowledge spillover and the costs related to impaired auditor independence of mind, or in appearance. If benefits exceed costs, firms will retain or hire their auditors as tax services providers and, otherwise, dismiss them. Therefore, those factors that can either increase the benefits of knowledge spillover or decrease the costs of impaired auditor independence will contribute to the hiring and retaining decisions. Lassila et al. (2010) find a positive association between clients' corporate governance and the likelihood of retaining auditors as tax services providers in the period surrounding the SOX (i.e., 2001 to 2003). The association is consistent with the argument that strong corporate governance increases auditor oversight and decreases the likelihood of impaired auditor independence (e.g., Carcello & Neal, 2003). However, using a sample of the matched switch and non-switch firms in the post-SOX period (i.e., 2003 to 2006), Albring et al. (2014) find a negative association between corporate governance attributes and the decision to retain auditors as tax services providers. Likewise, both Almaqoushi and Powell (2021) and Bédard and Paquette (2021) show

that audit committee quality indices are negatively associated with the purchase and magnitude of APTS fees. These studies support the conservative behaviour of directors or audit committee members in response to the increased litigation and potential reputation risks after the passage of SOX. Furthermore, the *ex-ante* independence risk will increase the costs of retaining decisions. Both Ahn et al. (2021) and Lassila et al. (2010) posit and find evidence that auditors will be perceived as lacking independence if they provide high non-tax NAS relative to audit fees to their audit clients, and have a long relationship with them; consequently, the clients are less likely to retain incumbent auditors as tax services providers.

On the other hand, if some firm-specific characteristics increase the potential benefits through knowledge spillover effects, firms are more prone to retain the incumbent auditors as their tax service provider. Both Albring et al. (2014) and Lassila et al. (2010) find that firms are more likely to retain their auditors as tax services providers when they have high tax and operational complexity, supporting the notion that the complexity (e.g., the existence of foreign operations and the M&A activities) will generate more knowledge spillover benefits. Complexity also encourages firms to purchase more tax advice from incumbent auditors (Omer et al., 2006). Similarly, Bédard and Paquette (2021) find the high ex-ante litigation risk of firms encourages audit committee members with accounting financial expertise to purchase more APTS. However, the moderating effects of firm litigation risk exist only in the period of 2007 to 2011 when the public scrutiny had faded away.

Finley and Stekelberg (2016) use a "natural experiment" method to examine the impact on retaining decisions of external oversight imposed on tax service providers. Specifically, KPMG, one of the Big 4 firms, entered into a deferred prosecution agreement (DPA) with the U.S. Justice Department in 2005 to resolve charges stemming from the sale of tax shelter services to its individual clients. KPMG agreed to comply permanently with several tax services rules that are stricter than those required of other tax services providers, which limited KMPG's ability

to facilitate some tax avoidance strategies for clients.[33] The authors investigate the reactions of firms that are currently purchasing APTS from KPMG, in response to the potential damage to KPMG's reputation and/or the decreased expected tax benefits owing to the DPA. The results show that whilst all other Big 4 firms' provision of APTS declined in the post-DPA period, KPMG suffered more from to the DPA, compared with other firms, in terms of both the likelihood of purchasing APTS and the amount of purchased APTS. The authors also examine whether tax avoidance decreased significantly for the KPMG clients that decided to continue purchasing tax services from KPMG after the DPA, compared with clients of other Big 4 auditors. Surprisingly, KPMG's clients did not exhibit any difference in tax avoidance behaviour relative to clients of other Big 4 auditors. In addition, Baugh et al. (2019) find that the audit quality of KPMG did not change significantly relative to other Big 4 auditors after the DPA, even for KPMG clients that dropped KPMG as the tax service provider. Combining these two studies, I may conclude that the DPA had no or little effects on KPMG's audit and tax services quality.

Similarly, Ahn et al. (2021) examine the changes in APTS after the public disclosure of the 2007 PCAOB Part II inspection report, which identified Deloitte's deficiencies related to audits of income tax accounts. They find that, compared with other large audit firms inspected by the PCAOB, both the increased costs stemming from perceived impaired independence and the decreased benefits due to Deloitte's inability to use knowledge transferred from the tax team, prompted Deloitte's audit clients to dismiss or reduce the purchase of APTS from Deloitte. Overall, these results related to KPMG and Deloitte are supportive of Omer et al.'s (2006) finding that clients terminated or significantly reduced APTS investment around the uncertain external oversight environment.

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[33] For detailed information about the DPA, see http://www.iaipsig.org/kpmg1005-remark.pdf

3.4.4 The magnitude of APTS fees

Halperin and Lai (2015) develop a tax fee model from the clients' demand side to examine the determinants of APTS fees. In addition to unexpected audit fees (Omer et al., 2006), they find that expected audit fees are also positively associated with APTS fees, indicating a cross-selling behaviour of auditors.[34] While Chan et al. (2012) find results similar to those of Halperin and Lai (2015), they do not develop a specific model for APTS fees. Other factors found to be associated with APTS fees are firm characteristics, executive and board characteristics (e.g., tenure, compensation, publicity, interlocks, and alumni), auditor characteristics (e.g., size, tenure, and switch), among others (e.g., Alexander & Hay, 2013; Duan et al., 2018; Naiker et al., 2013; Omer et al., 2012; Parkash & Venable, 1993; Shi et al., in press). Parkash and Venable (1993) find that firms with fewer agency costs (i.e., firms having high managerial ownership, high outside ownership concentration, and low leverage), and firms having industry specialist auditors, tend to pay more APTS fees. Duan et al. (2018) utilize Google search volume to measure CEOs' publicity and find that firms whose CEOs have high publicity tend to avoid tax to meet investors' performance expectations. Importantly, such firms pay more fees for tax planning services to their incumbent auditors. Naiker et al. (2013) show that audit committees with former audit firm partners are less likely to purchase more tax services from firms' incumbent auditors, probably because of concerns over auditor independence. Regarding audit committee networks, Shi et al. (in press) find that, purchases of APTS increased with the prior year's average of APTS purchased by board-interlocked firms via an audit committee board member. Omer et al. (2012, p. 33) develop a composite measure to differentiate a group of firms

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[34] The cross-selling behaviour is called "mixed-leader bundling" by the marketing literature (Guiltinan, 1987). Guiltinan (1987) suggests that clients are potential buyers of a range of complementary services since those services are interdependent in their demand. The success of bundling of services could be increased owing to at least two reasons (Halperin & Lai, 2015). First, when a client has already purchased one type of service from an audit firm, it will save time and effort in acquiring information about another type of service from the same audit firm, rather than from other service providers (i.e., search economies). Second, if either type of service increases audit firms' reputation or credibility of their provided services, clients are more likely to purchase another type of service from the same auditor when they need it. For a detailed discussion about the cross-selling of audit services and APTS, see Halperin and Lai (2015).

having a new economy business model that "allows firms to exploit their operational flexibility to align with tax incentives" and consequently reduce their tax burdens. Therefore, if they are following the new economy business model, firms have less demand for investment in tax planning services compared with their counterparts following the traditional business model.

Two more recent studies use a change specification to examine the determinants of APTS fees (Kim et al., in press; Lynch et al., 2021). Using the changes in APTS fees as the dependent variable, Lynch et al. (2021) find that auditors receive more APTS fees in the next year when they stop issuing tax-related KAM in clients' audit reports in the current year. Kim et al. (in press) explore the macroeconomic determinants of APTS fees. They argue that the benefits from investment in tax planning activities increase with an increase in the optimism about future economic growth, because firms expect to generate more pre-tax income and cash flows as well as more tax planning opportunities. Consequently, firms are likely to invest more in purchasing tax planning services. The authors find supportive results using U.S. macroeconomic forecasts of real gross domestic growth (GDP) as a proxy for expected macroeconomic conditions. Moreover, this positive association is found to be more pronounced for firms with financial constraints and high tax rate volatility.

3.4.5 Section summary

In this sub-section, I summarize prior studies examining four types of APTS-related firm decisions. Table 3.3 summarizes the research questions, samples used, and key findings of these papers. Although the papers examined different research questions, I can conclude that all of these decisions are related to a cost-benefit trade-off. If the expected benefits exceed the expected costs, firms are more likely to disclose APTS information, purchase or retain APTS, and pay more fees for APTS. I will discuss the costs and benefits (i.e., the consequences) of APTS in the next subsection. However, the extant literature does find significant variations in

the purchase of APTS based on firm-level and auditor-level characteristics, so it is important to control and correct selection bias induced by such factors, before investigating the consequences of APTS.

Table 3.3 Determinants of APTS
All papers in this table and following tables are published papers with at least one hypothesis that is directly related to APTS.

Authors (Year)	Research questions	Sample	Results
Omer et al. (2006)	This paper examines the impact of uncertainty of external oversight on APTS.	US: 5,727 firm-years from 2000 to 2002, which consists of 2,405 tax fees disclosers and 3,322 non-disclosers.	Tax complexity, auditor tenure, and auditor change are positively associated with *voluntary* disclosure of APTS fees, whereas the proportion of NAS fees to total fees is negatively related. Firm size and auditor size are positively associated with the likelihood of purchasing tax service from the incumbent auditors.
			Unexpected audit fees are positively associated with APTS fees in 2000 and 2001, whereas this association is significantly weakened in 2002. During 2000 to 2001, new clients paid significantly greater APTS fees than continuing clients, whereas, in 2002, shorter-tenure client paid lower APTS fees. APTS fees are positively associated with reductions in future tax rate (i.e., more tax avoidance) during 2000 and 2001. However, such benefits reduced or eliminated in 2002.
Bedard et al. (2010)	This paper examines the decision of firms to voluntarily disclose tax service fees paid to their incumbent auditors before the SEC (2003) regulation.	US: 807 disclosing APTS firms and 225 non-disclosing firms in 2002.	Firms with higher proportion of NAS fees to total fees are less likely to voluntarily disclose APTS fees information. This effect is exacerbated by strong audit committee governance and the use of a non-Big 5/4 auditor.
Lassila et al. (2010)	This paper examines factors that influenced listed firms to retain or dismiss their incumbent auditors as tax services providers during the years surrounding the passage of SOX (2002).	US: 1,006 firm-years from 2001 to 2003.	Companies that experience relatively high tax or operating complexity, that have relatively strong corporate governance, and whose auditors are relatively more independent are more likely to retain their auditors for tax services than companies that do not exhibit these characteristics.
Albring et al. (2014)	This paper examines the relations between audit committee quality, corporate governance, and audit committees' decision to switch permissible tax services providers from incumbent auditors to others.	US: 203 switch firms and 203 matched non-switch firm from 2003 to 2006.	The switch decision is increasing with audit committee accounting financial expertise, board independence, institutional stockholdings, directors' stock ownership, and CEO duality. Firms with a history of restatement/accounting irregularity, with higher tax to audit fees ratios, and with unqualified audit opinions are more likely to switch. Larger, less leveraged firms, with higher stock returns, lower pre-tax accruals, and firms accessing equity markets are also more likely to switch. The likelihood of switching is negatively associated with proxies for tax complexity, such as foreign operations, and merger/acquisition activities.
Neuman et al. (2015)	This paper examines the determinants of tax services provider choice in the non-for-profit sector (NFPs).	US: 4,700 firm-years from 2004 to 2008.	Greater distance (i.e., spherical distance in miles) between the client and the auditor increases the likelihood that NFPs hire non-auditor professional services firms or self-prepare the tax return.

			NFPs are more likely to hire non-auditor professional services firms as knowledge availability (i.e., the number of professionals employed in the local metropolitan statistical area) increases. Both external auditors and non-auditor tax service providers improved NFPs' disclosure quality pertaining to executive compensation and helped NFPs to attract more donations in the following year.
Halperin and Lai (2015)	This paper examines the relation between APTS fees and audit fees after SOX from the perspective of cross-selling of services.	US: 3,545 firm-years from 2004 to 2008.	Audit fees are positively associated with APTS fees because of the cross-selling behaviour of auditors. Firm size, complexity, executive compensation, foreign operation, loss carry-forward, auditor size, the proportion of tangible assets, and opportunity of tax avoidance are associated with APTS fees.
Finley and Stekelberg (2016)	This paper examines the effect of KPMG's Deferred Prosecution Agreement (DPA) on the accounting firm' ability to sell APTS and its clients' tax avoidance.	US: 9,787 firm-years with Big 4 auditors from 2002 to 2008 (excluding 2005).	Firms are more (less) likely to terminate (engage) purchasing APTS from KPMG following the DPA. Among firms continued engaging KPMG as their tax service providers, the amount of purchased APTS declines following the DPA, relative to the amounts for other Big 4 clients. While there is a significant decrease in tax avoidance for firms continuing to purchase APTS from Big 4 auditors from pre- to post-2005 periods, KPMG's clients do not exhibit any difference in such behaviour relative to clients of other Big 4 auditors.
Klassen et al. (2016)	The paper examines the large publicly traded firms' selection of tax preparers for tax compliance work.	US: 1,533 firm-years from 2008 and 2009 (804 firms in 2008 and 729 firms in 2009).	Firms are more likely to prepare tax returns by internal tax staff when firms are more tax aggressive in the past, slower-growing, larger, and have more foreign activities. Also, firms incurring losses, engaging in R&D, and paying high other NAS fees are more likely to outsource tax compliance work to their auditors. Firms are more likely to hire incumbent auditors as tax return preparers rather than other external non-auditors when firms are less tax aggressive in the past, higher-growing, smaller, and have high other NAS fees ratios.
Ahn et al. (2021)	This paper examines whether and how the public disclosure of the Deloitte 2007 PCAOB Part II inspection report related to income tax-specific quality control deficiencies, affects its audit clients' retention of APTS.	US: 9,292 matched firm-years from 2009 to 2012 (4,646 firm-years before and after October 17, 2011, respectively).	After publicly releasing the PCAOB Part II report, the likelihood of using APTS among Deloitte's audit clients is 17% lower relative to audit clients of other annually inspected firms. Such effects are more evident among audit clients paying higher NAS fees and those with greater tax complexity, but are mitigated among audit clients whose auditor possesses tax expertise. Among audit clients that retained Deloitte as the tax service provider, reliance on APTS decreased (i.e., they had lower APTS fees).
Almaqoushi and Powell (2021)	This paper examines the relationships between the quality of audit committee, financial reporting, internal control quality, and firm value.	US: 7,054 firm-years from 2002 to 2012.	Firms with a low-quality audit committee tend to spend more expenditures on APTS.

Bédard and Paquette (2021)	This paper examines the effect of the presence of financial expertise on the audit committee on the purchase of APTS.	US: 19,806 firm-years from 2003 to 2011.	Firms are less likely to purchase APTS and tend to pay less APTS fees when their audit committees have at least one accounting financial expert. Furthermore, this relationship is mitigated by the firms' ex-ante litigation risk, especially in the period of 2007 to 2011.
Kim et al. (in press)	This paper examines the effect of expected economic growth on the firms' investment in tax planning.	US: 13,553 firm-years from 2003 to 2014.	Firms tend to invest more in tax planning activities (i.e., APTS fees) in periods when forecasted economic growth is more optimistic. Such association is stronger when firms are financially constrained and when firms are more likely to experience changes in tax status.

3.5 Consequence of APTS

In this section, I synthesize the empirical research examining the consequences of purchasing tax services from the incumbent auditors. I structure my review based on the different types of audit quality measures. Following DeFond and Zhang (2014) and Francis (2011), I classify my audit quality proxies into *output-* and *input-based* measures.

3.5.1 Output-based measures

3.5.1.1 Binary audit quality: Material misstatements and auditor communication

The first binary audit quality factor is the financial statement misstatement, the extent of which is measured by the restatements in subsequent periods. Christensen et al. (2016) reveal that both audit professionals and experienced investors view financial statement restatements as the most significant publicly available signal of low audit quality.

Kinney et al. (2004) is one of the first papers linking the types of NAS with financial statement restatements before the SEC (2000, 2003) disclosure rules, and the passage of the SOX (2002) restrictions on NAS. By using proprietary data from years 1995 to 2000, the authors classify NAS into following five categories: (i) FISDI services; (ii) audit-related services; (iii) internal audit services; (iv) *APTS*; and (v) other unspecified services. They find insignificant associations between FISDI, audit-related, or internal audit services and the likelihood of restatement, but find a significant *negative* association between APTS fees and restatement, especially for large firms (i.e., total assets over US$200 million). The results of Kinney et al. (2004) support the 'knowledge spillover benefits' of providing APTS, while supporting the impaired independence notion for the unspecified NAS. The insights gained from Kinney et al. (2004) also partially support the SOX ban on certain types of NAS, whilst allowing APTS. Supporting this argument, Schmidt (2012) documents no relation between the levels of APTS fees and auditors' litigation risks following financial statement restatements.

However, if auditors provide aggressive tax planning services to audit clients, U.S. jurors tend to charge auditors high punitive damages when audit failure occurs (Thornton & Shaub, 2014). Beardsley et al. (2021) find that audit quality is lower (i.e., there are more restatements) among those audit offices that are more focused on providing NAS, suggesting a distraction effect of NAS on audit quality. However, this effect is driven by non-tax NAS, rather than APTS.

Following Kinney et al. (2004), the literature explored the possible moderators for the negative association between APTS and financial statement restatements, including the recurrence of APTS (Paterson & Valencia, 2011), types of restatements (Seetharaman et al., 2011), auditor size (Notbohm et al., 2015), institutional settings (Abdul Wahab et al., 2014; Castillo-Merino et al., 2020), and SEC (2006) restrictions on certain types of APTS (Lennox, 2016). Notbohm et al. (2015) report an auditor size effect incremental to the audit client size effect documented by Kinney et al. (2004). That is, if a client is audited by a small audit firm, the provision of tax services leads to fewer restatements regardless of client size, compared with clients audited by big audit firms. The authors give two possible reasons. First, large audit firms have ex-ante high audit quality regardless of APTS, because they have more experienced employees and specialists (O'Keefe & Westort, 1992). Thus, small audit firms have more to gain from knowledge spillovers derived from providing APTS. Second, as small audit firms normally have fewer professionals to perform the audit and other NAS, knowledge spillovers may transfer easily between audit and tax professionals (e.g., Joe & Vandervelde, 2007).

Considering the types of APTS, Paterson and Valencia (2011) find that the negative association between APTS and future restatements holds only when the APTS are recurring in nature. On the contrary, firms purchasing non-recurring APTS from their auditors incur more high-concern restatements: evidence supportive of impaired independence. Based on 953 firm-years from 2007 to 2009, Abdul Wahab et al. (2014) also document a negative relationship between recurring APTS and restatements in Malaysia, a market that has not experienced audit

regulatory reforms like the SOX in the U.S. However, the negative association holds only for a subgroup of firms with political connections. The authors, however, did not offer any explanation for this potentially interesting finding. Castillo-Merino et al. (2020) examine the association between future APTS fees and several audit quality measures including restatements in Spain. The authors find that neither current nor future APTS fees have any relationships with restatements. However, a positive (negative) relationship between current (future) APTS fees and the probability of issuing qualified opinions is documented by the authors.[35]

Although auditors are still permitted to provide tax services to their audit clients post-reforms, such services require pre-approval by the audit committee. As a result, both clients and auditors evaluate the costs and benefits of purchasing and providing APTS carefully. Seetharaman et al. (2011) posit and find a significantly negative association between APTS and tax-related restatements using proprietary data from a Big 4 audit firm from 2003 to 2005. However, inconsistent with prior studies, they fail to find any association between APTS and general financial statement restatements using the Audit Analytics database. The possible explanation is that providing APTS facilitates auditors' familiarity with audit clients' tax strategies, contributing to more certain assessments of tax-related components than other components of financial statements. A recent study focuses on whether the PCAOB restrictions on the provision of certain types of APTS improves audit quality (Lennox, 2016). Using a difference-in-difference (DiD) design for the 2002 to 2009 period, Lennox (2016) finds that firms that reduced APTS purchases significantly owing to the restrictions are more likely to

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[35] Castillo-Merino et al. (2020) argue that banning APTS will not likely to improve audit quality since they fail to find any relationship between APTS fees and audit quality measures. However, as mentioned in their study, the enforcement environment in Spain is weak relative to that in the U.S., and the EU regulations on the prohibition of NAS have not been enforced very diligently in the Spanish market. Therefore, such a weak enforcement environment introduces noise in their research design. For instance, the APTS fees include fees paid to both banned and permitted tax services, and this may offset the beneficial or detrimental effects of such services on audit quality. Garcia-Blandon et al. (2017), too, fail to find any relationship between the provision of APTS and discretionary accruals in Spain. Future research could investigate the similar research questions in other European countries with stronger enforcement environments, to provide more robust evidence on the effect of EU regulations.

have experienced accounting or tax-related restatements for the period prior to the restrictions, and this did not change in the post-restriction era. These results contradict the PCAOB's (2005) argument that those banned APTS impair auditors' independence. In a similar vein, Notbohm et al. (2015) find no significant difference for the detrimental effect of APTS on restatements between the pre- and post-2006 subsamples.

The second binary audit quality factor is auditor communication through audit reports. Like restatements, the issuance of going concern opinions (GCOs) is a clear and direct indicator of audit quality (DeFond & Zhang, 2014; Francis, 2011). Robinson (2008) operationalizes the accurate issuance of GCOs prior to bankruptcy filings as a measure of high audit quality in the U.S., to investigate the consequences of purchasing APTS. She finds a positive relationship between this measure of audit quality and the level of APTS fees (i.e., knowledge spillover effects).[36] Another audit quality indicator in terms of auditor communication is the audit report lag (ARL), but it is a continuous measure. Knechel and Payne (2001) document that the presence of APTS potentially reflects more complexity related to tax positions, which is associated with more audit work and a longer ARL. This result is echoed by Knechel et al. (2009) in a new audit production model. On the contrary, Lee et al. (2009) and Knechel and Sharma (2012) find significant and negative relationships between the levels of APTS fees and ARL in their additional tests, supporting the knowledge spillover effects. Walker and Hay (2013) find no association between the provision of APTS and ARL in New Zealand. Table 3.4 provides a summary of the papers discussed in this sub-section.

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[36] The dependent variable used in Robinson (2008) is different from that used in Castillo-Merino et al. (2020). As reviewed by Carson et al. (2013), a type II misclassification arises when the auditors did not issue GCOs to audit clients that filed for bankruptcy later: clear evidence of audit failure (Francis, 2011). However, the likelihood of issuing GCOs is a proxy for continuous audit quality (i.e., non-audit failure), given the premise that a less independent auditor is less likely to issue a negative report, to avoid losing clients (Krishnan, 1994). GCOs here refer to going concern opinions, qualified opinions, and modified opinions.

Table 3.4 Consequences of APTS: Binary audit quality

Authors (Year)	Research questions	Sample	Results
Kinney et al. (2004)	This paper examines the effects of different types of NAS (including APTS) on financial statements restatements in the pre-SEC (2000) period.	US: 432 restating firm-years and 512 non-restating firm-years from 1995 to 2000, or small sample size for matched sample or different specifications.	Firms are less likely to restate financial statements when they purchase more tax services from incumbent auditors. The significant associations are driven primarily by larger registrants (i.e., over $200 million total asset).
Robinson (2008)	This paper examines the effect of APTS on the likelihood of correctly issuing a going concern opinion prior to the bankruptcy filing.	US: 209 bankrupt firms from 2001 to 2004 including 153 firms that correctly received a GCO. prior to filing, and 56 firms that did not.	Auditors are more likely to correctly issue going-concern opinions prior to bankruptcy filings if they also provide tax services to their clients.
Seetharaman et al. (2011)	This paper examines the association between APTS and financial statements restatements in a post-SOX environment.	US: 3,888 matched pairs with/without general restatements from 2003 to 2005. 259 match pairs with/without tax-related restatements from 2003 to 2005 using proprietary data.	No significant association is found between APTS and general financial statement restatements. However, a significant negative association between APTS and tax-related financial statement restatements is documented.
Paterson and Valencia (2011)	This paper examines the association between the recurrence of APTS and financial statement restatements.	US: 3,232 restatement observations, and 15,087 non-restatement observations from 2003 to 2006.	Recurring APTS are negatively associated with restatements. Non-recurring APTS are not associated with restatements in the whole sample but are positively associated with high-concern restatements.
Abdul Wahab et al. (2014)	This paper examines the effects of types of NAS and their recurring nature on financial statements restatement in Malaysia.	Malaysia: 953 firm-years from 2007 to 2009.	The purchase of APTS decreases the likelihood of restatements. Recurring APTS are negatively and significantly related to the likelihood of restatements. These findings hold for politically connected firms only.
Notbohm et al. (2015)	This paper examines the relations between APTS, auditor size, SEC (2006) regulations, and financial statements restatements.	US: 33,514 firm-years including 6,795 restating and 26,719 non-restating observations from 2003 to 2008.	The authors find a negative relation between APTS and restatements. This relation is significantly more negative when the auditor is a small accounting firm. The SEC (2006) restriction on certain types of APTS does not influence such relations.
Lennox (2016)	This paper examines whether SEC's (2006) ban on certain types of APTS affect audit quality.	US: 41,535 firm-years from 2002 to 2009.	Firms that substantially reduced their APTS purchases in the period around restrictions had exhibited significantly more accounting and tax-related restatements during the period both prior to and post the restrictions, suggesting no changes in audit quality for those firms after restrictions.
Castillo-Merino et al. (2020)	This paper examines the association between current and future NAS fees (including APTS fees) and audit quality.	Spain: 973 firm-years from 2005 to 2016.	Both current and future APTS fees are not associated with a set of financial reporting quality measures, including restatements, earnings surprises, loss avoidance, and meeting or just beating earnings benchmarks. Current APTS fees are positively associated with the issuance of qualified audit opinions, whereas future APTS fees show a negative association.

3.5.1.2 Continuous audit quality

3.5.1.2.1 Earnings quality

Non-tax related earnings quality

The quality of clients' earnings is another indicator of audit quality that is widely used in the accounting literature, based on the assumption that high-quality auditors constrain earnings management (DeFond & Zhang, 2014; Francis, 2011). Auditors are more likely to curtail clients' opportunistic accounting practices based on the information gained from providing tax services (i.e., knowledge spillover effect), leading to a positive association between APTS and earnings quality. On the other hand, auditors tend to acquiesce in clients' earnings management activities when the auditors develop strong economic bonds with their clients (i.e., impaired independence effects), suggesting a detrimental effect of APTS on earnings quality. Results from the extant literature are inconclusive, both in the U.S. and in other countries.

Huang et al. (2007) investigate whether the lack of association between composite NAS fees ratio and earnings quality measures found in Ashbaugh et al. (2003) are sensitive to the types of NAS in the period immediately after SOX (i.e., 2003 and 2004). With respect to APTS, Huang et al. (2007) find weak evidence on the negative association between discretionary accruals and the ratio of APTS fee to total fees. They suggest that auditors may become more conservative when levels of APTS are high to avoid financial statement users' perceptions of compromised auditor independence. Using loss avoidance as a measure of earnings quality, Krishnan and Visvanathan (2011) report that APTS fees constrain clients' propensity for engaging in loss-avoidance behaviour in the post-SOX era. They point out that there will be better communication between the audit and tax sides of audit firms during the joint provision of audit and APTS throughout the fiscal year (De Simone et al., 2015; Gleason & Mills, 2011), thereby, reducing information asymmetry and helping auditors to detect contentious issues on a timely basis. Therefore, it will reduce clients' future earnings management opportunities. The

negative association is found to be more pronounced for large firms and firms with high tax and operational complexity: firm characteristics that should generate high knowledge spillover benefits. Dechow et al. (2010, p. 365) suggest that the use of loss avoidance as a proxy for earnings management is "unsubstantiated", but the use of meeting or beating analyst forecasts to represent earnings management is somewhat more persuasive. Both Huang et al. (2007) and Krishnan and Visvanathan (2011) fail to find any association between the absolute or relative magnitude of APTS fees and meeting or beating analyst forecasts. A possible explanation is that the provision of APTS reduces the analysts' forecast accuracy (Francis et al., 2019) and, in turn, decreases the statistical power of using the meet or beat analyst forecast as a proxy for earnings management. Moreover, Carcello et al. (2020) do not (do) find a detrimental effect of APTS (audit-related services) on the likelihood of goodwill impairment.

The findings of APTS and earnings quality research in other countries are mixed as well. Abdul Wahab et al. (2020) document a positive association between discretionary accruals and APTS in Malaysia. On the other hand, Choi et al. (2009b) find a negative relationship between the levels of APTS fees and earnings management in South Korea. Considering the institutional settings in South Korea where the book-tax conformity is high, Choi et al. (2009b) argue that the negative relationship between APTS fees and earnings management may not only results from high-quality audits, but also possibly is caused by tax avoidance purposes. However, the authors find either no or negative associations between APTS fees and tax avoidance measures, indicating that the negative association between APTS fees and earnings management is not driven by tax avoidance argument. Similarly, Watrin et al. (2019) find a negative association between the ratio of APTS fees and the volatility of abnormal accruals in Germany. However, Garcia-Blandon et al. (2017) fail to find any association between the provision of APTS and earnings quality in Spain, where the potential impaired independence effects should be clearly observed, owing to the lower litigation risk for Spanish auditors compared with that for U.S.

auditors. Also, Svanström (2013) finds no evidence of reduced discretionary accruals in Swedish small and medium-sized firms.

The nontax-related earnings quality measures used in the above studies may fail to capture the more relevant outcome variables, i.e., tax-related consequences (reviewed in the following subsection). However, there is still a possibility that the two-way knowledge spillover effects from the audit and tax teams could increase the quality of audit clients' overall pre-audit accounting information. Such *ex ante* high-quality accounting information could also positively affect most of the outcomes discussed above, which somehow rationalizes the links between APTS and non-tax consequences. For example, De Simone et al. (2015) argue that the extensive knowledge of clients' operations gathered through providing APTS in conjunction with auditors' expertise related to financial statement auditing and internal controls, enables the auditors to identify and remedy material internal control weaknesses (ICWs) in a timelier manner and, hence, improve financial reporting quality. Supporting this argument, the authors find that firms purchasing more APTS are less likely to disclose both tax and non-tax related ICWs, confirming the existence of the knowledge spillover benefits. Alternatively, Harris and Zhou (2013) interpret such results as suggesting that auditors are less likely to disclose discovered ICWs. Li et al. (2017) continue to find similar results for APTS fees after considering the ambiguity in auditing standards for internal control audits. Moreover, firms with high levels of APTS fees exhibit high future operating performances (i.e., after-tax profit margins) and reduced future operating risk (i.e., cash flow volatility and stock return volatility) (Ciconte et al., 2014). Axelton et al. (2019) also find that a high APTS fees to total assets ratio increases the power of discretionary changes in the deferred tax assets valuation allowance as predictors of firms' future performance. Thus, such firms are more likely to issue their preliminary earnings announcements, voluntarily and in a timely fashion, before the audit completion date, owing to their increased confidence in financial statements that stems from a combination of enhanced

pre-audit financial reporting quality and audit efficiency (Hogan et al., 2019). However, this positive relationship does not hold in cases when APTS constitute a small proportion of total fees (Hogan et al., 2019; Legoria et al., 2017).

Tax related earnings quality

Another strand of research focuses on clients' earnings management behaviour through tax-related accounts: a more relevant outcome proxy than general earnings quality measures (Choudhary et al., 2021; Christensen et al., 2015; Cook et al., 2008; Lisic, 2014; Luo, 2019). Owing to the complexity of estimating tax expenses and tax reserves, managers' discretionary reporting of tax accounts is difficult to evaluate and challenge by financial statement users. Using the difference between the actual annual effective tax rate (ETR) at year-end and the estimated annual ETR at the third quarter as the measure of earnings management in tax expense, Dhaliwal et al. (2004) find that firms are more likely to be involved in tax expense earnings management if their earnings without managing tax expense would miss the analysts' consensus forecasts. However, auditors are in better positions to evaluate the reasonableness of the tax accrual than other financial statement users and, hence, are likely to constrain such opportunistic tax expense management techniques.

Using post-SOX samples spanning from 2004 to 2011, Christensen et al. (2015) find that auditors' audit or tax expertise constrains tax expense earnings management. Moreover, the results show that firms purchasing significant amounts of tax services from their incumbent auditors can use fewer 'last-chance earnings management' techniques, irrespective of whether incumbent auditors have tax expertise or not. This suggests that APTS is a substitute, at least in part, for industry expertise in constraining earnings management through the tax accounts. Cook et al. (2008), on the other hand, consider the purchase of APTS as an investment in legitimate tax planning activities, and posit that it will be positively associated with greater

reductions in the third-to-fourth quarter ETR changes.[37] However, they find such association only for firms that would miss earnings forecasts without tax expense management. Their findings cannot rule out the possibility that audit clients failing to meet earnings benchmarks without managing tax expense, can buy more APTS: a possibility that supports impaired independence effects. Lisic (2014) incorporates 'audit committee effectiveness' as a contextual setting to corroborate the findings of Cook et al. (2008). Lisic (2014) suggests that more effective audit committees are expected to have better skills in identifying cost-beneficial tax planning activities and, thus, the reductions in ETRs are more likely to occur if the provision of APTS is related to additional tax planning opportunities when audit committee effectiveness is high. However, Lisic (2014) fails to find support for this hypothesis. Instead, she finds that APTS become negatively related to the reduction in ETR, once audit committee effectiveness exceeds a certain threshold, highlighting the audit committee's effective role in screening and monitoring APTS after the passage of the SOX.

Another measure of pre-tax earnings management is the temporary book-tax difference (BTD), which is driven by the accruals process (Badertscher et al., 2009; Hanlon & Heitzman, 2010). Using a propensity-score matched sample spanning the period 2000 to 2013, Luo (2019) evidences that U.S. firms have relatively lower temporary BTD when they purchase APTS from incumbent auditors than firms that do not purchase. This is supportive of the argument that auditors constrain clients' earnings management behaviour. However, Choudhary et al. (2021) find opposite results when utilizing tax accruals quality, a modification of working capital accruals quality (Choudhary et al., 2016), to measure tax-specific earnings quality. The authors find that a significant level of APTS fees decreases audit clients' tax accruals quality. This is

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[37] However, there is a stronger argument for considering the reduction in ETR as a proxy for earnings management rather than a legitimate tax planning investment. The construction of this measure has considered the effect of tax planning in the fourth quarter. Specifically, the U.S. Accounting Principles Board (APB) Opinion No. 28 requires firms, in quarterly reports, to use their best estimate of the annual ETRs that reflects anticipated tax planning effects in future quarters. Thus, the reduction in the third-to-fourth quarter ETRs is used to measure unanticipated changes in ETRs (i.e., earnings management) as suggested by Dhaliwal et al. (2004).

owing to the audit team's inappropriate evaluation of judgments made by the tax team from the same audit office (i.e., the self-review threat of auditor independence). However, such an adverse effect is fully (partially) mitigated by audit industry expertise (audit office size) and is concentrated in clients of greater economic importance (i.e., the self-interest threat of auditor independence). Carr et al. (2021) complement Choudhary et al. (2021) by finding that tax accrual quality increased significantly after firms reduced APTS purchases substantially following the SEC's (2006) restrictions on certain types of APTS.

3.5.1.2.2 Other tax-related consequences

Tax avoidance

Tax avoidance is used to describe activities or strategies that would reduce firms' explicit tax liability (Brühne & Jacob, 2020; De Simone et al., 2020; Dyreng et al., 2008; Hanlon & Heitzman, 2010). Auditors are proscribed from providing tax services for achieving aggressive tax positions to avoid taxes (e.g., PCAOB Rule 3522 in the U.S.). However, auditors could provide useful advice on tax strategies that would reduce tax liability based on their client-specific or industry-specific expertise (Christensen et al., 2015; Lassila et al., 2010; Maydew & Shackelford, 2007; McGuire et al., 2012; Simunic, 1984). Such advice would not be questioned by the audit team and tax authorities (i.e., knowledge spillover perspective). This could be the reason, at least in part, why APTS could reduce tax-related restatements (Seetharaman et al., 2011). On the other hand, however, from the impaired independence perspective, auditors are more (less) likely to approve (resist) clients aggressive tax strategies, because of the economic bonding between the two parties. Both perspectives suggest a positive relationship between the provision of APTS and tax avoidance. Therefore, it is difficult to disentangle the 'knowledge spillover' versus 'impairment of independence' effects for this strand of the research.

Omer et al. (2006) provide some preliminary results on the relationships between the provision of APTS and tax avoidance. Using data from the pre-SOX periods (i.e., 2000 to 2002), the authors document a positive relationship between APTS fees with tax avoidance (proxied by reductions in current year cash ETR and one-year-ahead marginal tax rate). However, such tax benefits are reduced or eliminated during 2002 owing to the heightened external oversight pressures. Halioui et al. (2016) support Omer et al. (2006) by finding a negative association between the ratio of APTS fees to audit fees and annual book ETR in the post-SOX periods (i.e., 2008 to 2012). Correspondingly, firms tend to purchase more APTS to reduce tax expense when they face higher costs of using accruals to meet earnings expectations (e.g., Kubick et al., 2020). Liu et al. (2021) show that both book and cash ETRs are less likely to increase after mandatory rotation of audit partners when firms have been less tax aggressive in the past, and are purchasing APTS from their incumbent auditors. Chyz et al. (2021) find that the reduced ETRs (both book and cash) are concentrated in firms purchasing more tax planning services, rather than more tax compliance services. The positive association between APTS and tax avoidance, however, may have an upper boundary beyond which the next additional tax planning might be too aggressive and more likely to violate PCAOB Rule 3522. This suggests the possibility of a nonlinear relation (Nesbitt et al., 2020). Using quantile regressions, Nesbitt et al. (2020) find that the statistical significance stops at the 23rd (55th) percentile of the book (cash) ETR, which translates into a book (cash) ETR of 16.23% (23.77%). These results are also corroborated by Neuman (2019) who finds that firms purchasing APTS are less likely to be in the lowest quintile of the distribution of cash ETR. Xu and Zheng (2020, p. 739) find that "…firms receiving greater net benefits from tax avoidance as they spend more on tax-related expenditures [APTS in this case]…However…for firms in the highest TaxFee group, the net benefits from tax services diminish due to significant costs incurred on tax-related services…". With respect to BTD, especially the tax avoidance component, both Huang and Chang (2016)

and Krishnan and Visvanathan (2011) find no association with the provision of APTS in the U.S. However, Huang and Chang (2016) show that the provision of APTS can indirectly affect tax avoidance by mitigating the positive association between tax related ICWs and permanent BTD.

Lassila et al. (2010) suggest that firms' decision to dismiss their incumbent auditors as tax services providers is influenced by a trade-off between the benefits and costs of such decisions. Cook et al. (2020) extend this line of research by investigating whether the audit clients' tax avoidance (or tax savings) behaviour is affected by their decisions to dismiss or substantially reduce the purchase of APTS during the period 2002 to 2005. They find that such decisions are related positively to the current-year book and cash ETR and related negatively to discretionary permanent BTD, implying a tax cost (i.e., declined tax avoidance benefits) of avoiding the perception of impaired independence.[38] Furthermore, they find that these tax costs are larger when the outgoing tax service providers are tax-specific industry experts, and such costs are short-lived as the decline in tax avoidance lasted for only one year. McGuire et al. (2012) propose and find significant associations between auditors' tax expertise and clients' short-term tax avoidance measures (both less and more aggressive avoidance measures). However, for clients appointing auditors with both audit and tax expertise, the association becomes confined to less aggressive measures only.

Prior studies examining the impacts of APTS on short-term tax avoidance in countries outside the U.S. are relatively scarce. Choi et al. (2009b) fail to find a relation between APTS fees and abnormal total BTD in South Korea, which is consistent with Krishnan and Visvanathan's (2011) finding in the U.S. Similarly, Garcia-Blandon et al. (2021) find neither

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[38] There are two possible reasons for Cook et al.'s (2020) findings. When a firm switches to a new tax service provider other than its incumbent auditor, the succeeding tax service provider may lack familiarity with the client's existing tax planning or the expertise to generate new tax-avoidance opportunities. When a firm reduces its purchase of APTS substantially, on the other hand, the remaining tax services may be for tax-compliance purposes only, rather than for tax-planning purposes that would increase tax avoidance.

the provision nor the levels of APTS fees are associated significantly with tax avoidance in Spain. Specific to the Germany setting, Watrin et al. (2019) state that German auditors may be more conservative when providing tax services to their audit clients, in response to the higher litigation, reputation, or restatement risks in Germany compared with those faced by the U.S. auditors.[39] Consistent with this argument, the authors document a negative association between APTS fees ratio, and both short and long-term tax avoidance. Makni et al. (2020) find a weak positive relation between the magnitude of APTS fees relative to total auditor fees and listed firms' use of tax havens to avoid tax in Canada.

Because of the large year-to-year variations in annual ETR, prior studies also suggest using the long-term version of ETR to measure tax avoidance behaviour (Dyreng et al., 2008; Omer et al., 2006). Existing U.S. studies generally support the negative relationships between the provision of APTS (or levels of APTS fees) and long-term ETRs (Hogan & Noga, 2015; Huseynov & Klamm, 2012), except for one early study that did not find any significant relation (Krishnan & Visvanathan, 2011). Also, such relations are moderated by corporate social responsibility performance (Huseynov & Klamm, 2012) and the decision to reduce or terminate purchasing APTS for a short period (Hogan & Noga, 2015). Although Hogan and Noga (2015) support Cook et al.'s (2020) finding that the termination or substantial reduction in APTS purchasing imposes a significant cost on audit clients immediately (i.e., more cash tax paid), the effects persist for the long run, rather than just for one year as found in Cook et al. (2020).

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[39] Unlike in the U.S. setting, where, since 2006, firms are required to recognize and disclose a reserve named "unrecognized tax benefit" (UTB) for potentially additional tax payment after a tax audit, the IFRS Interpretations Committee published IFRIC 23 in 2017 requiring public firms to recognize and report tax reserves. The first draft of IFRIC 23 was published in October 2015, passed and issued in Jun 2017, and would be effective for annual periods beginning on or after 1 January 2019. Therefore, the EU member states (including Germany) just started to work on similar tasks in 2015 following the guidelines and requirements of the IFRIC 23. Thus, auditors in the EU may face higher risks of financial statements restatements and auditor liabilities brought by the tax uncertainties, in comparison to U.S. auditors. Because of the recent emergence of IFRIC 23, future studies could explore the effects of this regulation on the provision of APTS in countries adopting IFRS, when sufficient observations become available to researchers.

Instead of focusing on tax minimization captured by low ETRs, researchers also use ETR volatility (a measure that captures tax sustainability or tax risk) to explore the effect of APTS (e.g., Abernathy et al., 2019; Chyz et al., 2021; Neuman, 2019; Watrin et al., 2019). Watrin et al. (2019) find that APTS fees are positively related to the sustainability of reported tax expense (book ETR) in the financial statements, but not to the sustainability of cash taxes paid (cash ETR) in Germany. However, Francis et al. (2019) find opposite results that the levels of APTS fees increase the book ETR volatility; and Neuman (2019) and Chen et al. (2021) find that firms obtaining APTS tend to have more sustainable cash ETR in the U.S. Chyz et al. (2021) document that tax planning services are related to both sustainable book and cash ETR, whilst tax compliance services do not have any impact. These conflicting findings may result from different research design and sample selection approaches used in specific papers. For example, the measurement of ETR volatility varies across different papers. Neuman (2019) and Watrin et al. (2019) utilize past and future ETRs, respectively, whereas Francis et al. (2019) use ETR that span across past and future periods.

Tax reserves (UTBs)

As noted in footnote 39, there has not been any specific guidelines and disclosure requirements about the recognition of UTB before 2006, which has led to diverse accounting practices for recording UTB. From a knowledge spillover perspective, auditors providing tax services to their clients would have done better reporting of UTB in the pre-2006 period. Consistent with this argument, Gleason and Mills (2011) find that firms that purchased APTS between 2000 and 2002 recorded UTB for the IRS assessments adequately and accurately, whilst firms not purchasing APTS did not.

To reduce the inconsistency of recording UTBs, the U.S. regulators provided clearer guidance and requirements to publicly listed firms through FASB Interpretation No. 48 (FIN

48, now ASC 740-10-25), which was effective for fiscal years beginning after December 15, 2006 (FASB, 2006). FIN 48 standardizes the recognition, measurement, and disclosure of UTB. Accordingly, whether the information advantages enjoyed by auditors providing both audit and tax services, increased or decreased after the enactment of FIN 48, required empirical investigation. Gleason et al. (2018) extend Gleason and Mills (2011) by using a relatively long sample period, including both the pre-FIN (2003 to 2007) and the post-FIN 48 (2008 to 2014) periods, to compare the adequacy and accuracy of UTBs in those two sample groups. In line with Gleason and Mills (2011), Gleason et al. (2018) find that firms procuring substantial tax services from the incumbent auditors provided more adequate UTBs than firms that used little tax services in the pre-FIN 48 periods. However, such knowledge spillover benefit is no longer existent in the post-FIN 48 period, indicating an overall improvement in cumulative auditor knowledge about clients' UTB after FIN 48, irrespective of the level of APTS. However, Ciconte et al. (2016) complement Gleason et al. (2018) by finding that, in the post-FIN 48 period, firms accurately recorded UTBs when they purchased APTS from their auditors with both tax and audit expertise. Klassen et al. (2016) examine how the identity of the firm's tax compliance services providers affects firms' tax aggressiveness, as proxied by the current-year increase in the UTBs, in the post FIN 48 sample periods. Klassen et al. (2016) find that, although the overall APTS fees are associated with tax aggressiveness, firms claim less aggressive tax positions when hiring incumbent auditors as tax returns preparer than do those using others. This is consistent with auditors being more sensitive to having tax positions overturned by tax authorities when providing both audit and tax services than when they provide tax services only.

3.5.1.3 Continuous audit quality: Perception studies

In the previous sections, I reviewed empirical studies on the consequences of APTS on earnings quality in general, and on tax-related earnings quality measures, with mixed findings. Studies summarized in the preceding sections also reveal that firms voluntarily dismiss or significantly reduce the purchase of APTS to avoid potentially negative reactions from market participants. Research on APTS, therefore, also examines the market perception of auditor provision of both audit and tax services. In this sub-section, I review this strand of the literature, and split it into archival and non-archival studies. Overall, both categories of study show mixed perceptions regarding the provision and magnitude of APTS.

Archival studies

Opposing the SEC's (2002, 2003) argument that investors would view APTS more positively than the other types of NAS, Mishra et al. (2005) find that shareholders view audit related NAS but not APTS and other NAS, as beneficial. They used auditor ratification voting as a proxy for perception of audit quality. Similarly, Hermanson et al. (2019) find that firms with relatively high APTS fees ratios are more likely to receive shareholder proposals seeking to restrict NAS purchases from 2001 to 2004. However, the uncertainty associated with the regulatory environment around the passage of the SOX in conjunction with the subsequent ban on certain types of APTS may have driven these findings. Thus, whether such relations exist in the current environment is worthy of investigation. Gal-Or et al. (2016) expand Mishra et al. (2005) by showing that an audit committee is more likely to reduce the purchase of APTS in the year following their election to alleviate the concerns over their effectiveness when shareholders are dissatisfied with the audit committee and the auditors as expressed through low votes. Such reductions in APTS fee ratios are significant only among firms having non-staggered boards, where all board members, including audit committee members, need to be re-elected annually.

Alsadoun et al. (2018) find that clients providing high APTS revenues to auditors at the office level, also incur high costs of equity capital in the post-SOX era. This finding supports investors' perceptions of high APTS as compromising auditor independence. Moreover, such negative perceptions are exacerbated by the presence of large UTB, especially when those uncertain tax positions are promoted by auditors with tax or overall industry expertise. This is because such large UTB are more likely to attract regulatory scrutiny, and are more likely to be challenged by the tax authorities: actions that will reduce future cash flows and have an adverse effect on the cost of capital.

However, studies also find support for positive market perceptions of firms procuring high APTS. In contrast to Alsadoun et al. (2018), Nam and Ronen (2012) find that investors require lower returns using pre-SOX data (i.e., 2001 to 2003), suggesting that investors perceive the provision of APTS favourably. Also, the provision of APTS results in high value relevance of earnings (Krishnan et al., 2013), low cost of debt capital (Fortin & Pittman, 2008), and high earnings response coefficients (ERCs) (Chen et al., 2019; Eilifsen et al., 2018).

Using matched observations on the ETR in the supplemental analysis, Krishnan et al. (2013) also show that the positive effects of the APTS fees ratio on the value-relevance of earnings are not attributable mainly to the tax savings associated with more APTS, but instead, to the enhanced financial reporting quality resulting from knowledge spillover effects. Chen et al. (2019b) utilize quarterly ERCs as the proxy for investors' perception, and find results supporting Krishnan et al. (2013). In addition, the results are driven by firms with high levels of accruals and by smaller firms, which have greater earnings uncertainty, higher information asymmetry and, hence, greater expectation of the benefits of knowledge spillover. Chen et al. (2019b) also show that the firms' tax strategies play a role in investors' perceptions, as investors place higher confidence in the UTBs supported by incumbent auditors, compared with UTBs prepared by internal staff or external non-auditors (e.g., other audit firms or law firms). The

contrasting finding vis-a-vis Alsadoun et al. (2018), might relate to high measurement consensus and low measurement error associated with ERCs (DeFond & Zhang, 2014) rather than to the cost of capital proxies.

Eilifsen et al. (2018) document similar results for Germany using annual ERCs, but such results are found only for certain sub-periods in their sample. Specifically, the market perception was found to be negative/insignificant in the pre and during the global financial crisis (GFC) regime, but became positive in the post GFC period (2010 to 2015). They show that the proportion of NAS fees to total fees paid to auditors dropped from 31.5% before the GFC to 26.1% after the GFC, with all three component fees' percentages (i.e. audit-related, APTS, and other NAS) having dropped as well. They suggest that both the criticism of the auditing profession during the GFC and the EU-wide proposed restrictions on NAS encourage firms' managers to reduce the purchase of NAS with higher risks to auditor independence, in order to avoid future losses. Such reductions in NAS purchase may have been favourably perceived by investors, thereby, enhancing investors perception of auditor independence. Their findings are generally consistent with prior U.S. studies (Chen et al., 2019b; Krishnan et al., 2013), but the latter two studies did not differentiate the results using different sample periods. The lower level of temporary BTD resulting from the provision of APTS might lead to more persistent future earnings: a catalyst for positive market perception (Luo, 2019).

Finally, Habib and Hasan (2016) document a negative relation between APTS fees and stock price crash risk and, further, provide two possible channels through which APTS could affect crash risk. They argue that the provision of APTS reduces earnings management through tax expense and clients' tax avoidance behaviour and, thus, discourages managers from hoarding bad news via such accounts. This, in turn, reduces crash risk. However, the authors do not test their arguments directly, but just show that the negative associations between APTS fees and stock price crash risk are stronger when firms exhibit higher third-to-fourth quarters

ETR changes and more tax avoidance. However, prior literature also finds that APTS promote client tax avoidance and earnings management through tax expenses (e.g., Cook et al., 2008; Klassen et al., 2016; Lisic, 2014; McGuire et al., 2012). It may be that the provision of APTS increases the credibility of those tax accounts and then hinders managers' ability to conceal bad news in such accounts. Nevertheless, both explanations support the knowledge spillover effect.

The studies reviewed above focus on the effects of APTS on shareholders' perceptions. However, such a narrow focus on shareholders alone may provide a biased picture of the perceptions regarding APTS. To alleviate such concern, Fortin and Pittman (2008) investigate the perceptions of bondholders by testing the link between the APTS fees ratio and the cost of newly issued debts. Using 694 public debts newly issued from January 1, 2001 to December 31, 2005, they find that firms procuring proportionately more APTS enjoy lower yield spreads when issuing new debts, thereby, supporting the knowledge spillover argument. Francis et al. (2019) use the levels of APTS fees as proxies for firms' tax planning activities and examine whether such activities affect analysts' forecast accuracy. They argue and find that tax planning negatively affects analysts' forecast accuracy because such tax planning strategies complicate the accurate processing of earnings and tax expenses. However, the authors also suggest that their findings for APTS fees may be generalized to other tax planning services providers (e.g., external non-auditors and internal tax professional staff). Therefore, the reduced accuracy of analysts' forecasts is specific to overall tax planning activities, rather than subject to auditor-provided tax planning activities. It is worth noting that the differences between firms' actual earnings and analysts' inaccurate forecasts (i.e., earnings surprise) may be viewed differently by investors based on the tax planning services providers' identity. For instance, as I discussed above, investors perceive the earnings surprises positively when firms hire their incumbent auditors for tax services (Chen et al., 2019b). In other words, although the APTS could

influence analysts' forecast accuracy negatively, such inaccuracy has less influence on investors' decisions compared with tax services provided by other providers.

Non-Archival studies

In addition to the archival studies reviewed above, I also review prior studies using non-archival approaches (either surveys or experiments) to examine participants' perceptions of APTS provision. I find that there are differences in perceived auditor quality across participant groups, which is not surprising, given that their interests, their expertise in accounting and auditing, and their levels of knowledge differ widely (e.g., Dart, 2011; van Liempd et al., 2019; Wines, 2012). For instance, Wines (2012) requests each of his participants to use 22 semantic scales for assessing auditor independence under certain scenarios and finds that the perceptions of auditor independence in relation to APTS vary with subject groups. Specifically, by comparison with the auditors, Australian financial report preparers and users have more negative perceptions of APTS.

Using a survey approach, Pany and Reckers (1983) find that corporate directors are more likely to approve the purchase of tax preparation and acquisition review services, than the purchase of system design services. In addition, if auditors do engage in these services, auditor independence is perceived as being lowest when system design services are being provided, compared with the other two service types. Similarly, Meuwissen and Quick (2019) investigate the perceptions of German supervisory board members regarding auditor independence when three types of NAS are provided: tax compliance services (i.e., APTS); accounting information system consulting; and human resource consulting. Although all three types of NAS are perceived as impairing auditor independence, the provision of APTS is found to be relatively less harmful than the others. In a similar vein, using a survey approach among UK institutional investors, Dart (2011) provides descriptive evidence that provision of APTS is considered less likely to impair auditor independence compared with provision of other types of NAS. In sum,

these studies suggest that APTS are perceived to be less harmful than other types of NAS by corporate insiders and outsiders.

Focusing on APTS, non-archival evidence is rather mixed. Solomon et al. (2005) use third-year law students as participants, and find they exhibit greater confidence in earnings quality when the auditor provides audit services only: evidence consistent with Mishra et al. (2005) and Hermanson et al. (2019). Accordingly, they are more willing to invest in firms that do not purchase substantial amounts of APTS. In Austria, Aschauer and Quick (2018) find that both auditor independence in appearance, and audit quality, are perceived to be low by Austrian investment consultants when auditor provision of tax services is substantial (i.e., 60% of total audit fees). Although the provision of APTS is not associated with auditor objectivity/independence in general (Iyer & Reckers, 2007), both Iyer and Reckers (2007) and Favere-Marchesi (2006) find that auditors' objectivity (proxied by the initial assessment of fraud risk or material misstatement) is significantly and negatively influenced by the provision of APTS, where there are certain "red flags" (e.g., weak management integrity) in audit clients' information. That is, auditors report a lower risk assessment when they provide APTS to their audit clients, compared with their counterparts who do not provide APTS.\

On the other hand, some prior studies find positive effects (or no effect) of the provision of APTS on perceived auditor independence. For instance, Law (2010) finds that both Big 4 auditors and financial analysts perceive the provision of APTS as a value-added service to audit clients in Hong Kong. Furthermore, although APTS are the most commonly purchased NAS in Swedish small and medium-sized firms (Svanström & Sundgren, 2012), Svanström (2013) finds no evidence of impaired auditor independence in such firms, in terms of both perceived and actual audit quality. Furthermore, CEOs and CFOs think the provision of APTS could improve the accounting and audit quality of their firms. Quick and Warming-Rasmussen (2009) provide survey evidence that German private investors perceive the provision APTS unfavourably. However, a later experimental study conducted by the same authors (i.e., Quick & Warming-Rasmussen, 2015) finds no significant negative perception of APTS, after controlling for auditor and investor characteristics.

Thornton and Shaub (2013) conduct experiments among 168 U.S. jurors and find that perceived audit quality is low when auditors provide aggressive tax planning services to audit

clients. However, perceived audit quality is not affected by providing tax compliance services to audit clients. Moreover, van Liempd et al. (2019) is the only study investigating the external stakeholders' perceptions of APTS in an EU country (i.e., Denmark) after the implementation of EU Regulation (2014). The authors surveyed five types of Danish external stakeholders (i.e., lawyers, bank loan officers, financial analysts, private shareholders, and journalists) in 2016, and asked for their opinions on the provision of 38 different types of NAS. Among those NAS, eight types are related to tax services. In general, all eight types of APTS are perceived as problematic. However, 'preparing tax forms' and 'support regarding tax inspections' (i.e., two types of tax compliance services) do not impact nearly as much on perceived auditor independence as the provision of other types of APTS. Furthermore, these negative perceptions of APTS are driven mostly by lawyers and financial analysts.

3.5.2 Input-based factors

In Section 3.5.1, I have discussed the effects of APTS on output-based measures, which could be used to infer audit quality. DeFond and Zhang (2014) also find that audit clients could choose audit quality based on some observable inputs, such as auditor-specific characteristics (e.g., auditor size and industry specialization) and audit-client contracting features (e.g., audit fees).

Extant APTS literature has examined the association between APTS and audit fees, but the results are inconclusive as well. Audit fees could measure the audit effort levels, given the intuition that more audit efforts increase audit quality. However, over and above the audit effort exerted by auditors, audit fees are also influenced by the unit cost of audit effort and the risk premium charged to cover future losses (Houston et al., 2005; Pratt & Stice, 1994; Simunic, 1980). Thus, audit fees could be a noisy measure of auditor quality in the context of APTS for at least two reasons. First, the knowledge spillover effects of providing APTS facilitate auditors' assessments of clients' internal control, and tax-related, or non-tax related accounts (e.g., De Simone et al., 2015), reducing the required audit effort, and the high-quality pre-audit financial information decreases the auditors' concerns about future losses. Also, the economies of scope

achieved by the simultaneous provision of NAS and audit services may reduce the unit cost of audit effort (Arruñada, 1999). These factors suggest that the provision of APTS would reduce audit fees without impairing audit quality. Second, audit fees could be increased either because the reduced unit cost of both audit and NAS encourages clients to buy more services from incumbent auditors (Simunic, 1984), or because of the cross-selling behaviour of auditors (Halperin & Lai, 2015). In these cases, the provision of APTS would increase audit fees without improving audit quality. As a result, researchers should interpret previous papers examining the relations between APTS and audit fees with caution.

Early studies using proprietary data, or data collected through surveys, generally find a positive association between audit fees and APTS fees in both the U.S. (e.g., Palmrose, 1986) and the UK (Ezzamel et al., 2002). Palmrose (1986) is the first study to investigate the effects of different types of NAS on audit fees. She decomposes total NAS into three categories: tax, accounting-related, and nonaccounting services. Her results show a significantly positive relationship between audit fees and APTS fees, especially for small clients. Later, Davis et al. (1993) test and attribute this audit fee premium resulting from tax services to increased audit effort, proxied by audit hours. However, O'Keefe et al. (1994) fail to find any evidence that the APTS fees ratio is related to either audit hours or audit fees. From a cross-selling perspective, Halperin and Lai (2015) use simultaneous equations to test whether APTS fees and audit fees are jointly determined. Their results suggest that the demand for tax services gives rise to a higher demand for audit services and vice versa (cross-selling behaviour). Alexander and Hay (2013) and Klumpes et al. (2016) test the associations between APTS fees and audit fees in New Zealand and the UK, respectively. While Alexander and Hay (2013) find that APTS fees are positively associated with audit fees, Klumpes et al. (2016) find negative associations between these two types of fees in the UK life insurance industry. The former suggests that

there is no issue of impaired independence, whereas the latter suggests the opposite. Fleischer and Goettsche (2012) also find a positive relation between these fees in the German context.

Instead of testing the associations between the provision of APTS and audit fees directly, the research could examine the moderating effects of APTS on the relationships between some variables and audit fees. Prior auditing and taxation studies show that auditors charge higher audit fees for clients with high levels of tax aggressiveness (Donohoe & Knechel, 2014) and with high tax risk (Abernathy et al., 2019). However, both studies document that such risk premiums charged by auditors are significantly lower when audit clients also purchase a material level of APTS. Consistent with my arguments suggesting that the provision of APTS may reduce audit fees without impairing audit quality, both studies attribute the reduced audit fees to synergies between the tax and audit teams. Donohoe and Knechel (2014) also find that auditors' tax or overall industry expertise could provide high-quality audits to clients regardless of whether clients hire their incumbent auditors for tax services, which increase the audit fees, especially for tax-aggressive clients. Surprisingly, Abernathy et al. (2019) show that the provision of APTS reduces approximately 48% to 68% of the audit fee premiums associated with different tax risk measures, which could be a huge benefit of hiring incumbent auditors as tax service providers.

3.5.3 Section summary

In this sub-section, I reviewed studies related to the consequences of APTS. I categorized these studies into five themes: (1) misstatement and auditor communication; (2) earnings quality (both tax and non-tax related); (3) tax avoidance and tax reserves; (4) market perceptions of APTS; and (5) APTS and input-based audit quality proxy. In general, the APTS literature in the U.S. supports the knowledge spillover effect with some exceptions. However, the findings in the non-U.S. settings are mixed, a finding that may be attributed to diverse institutional factors

in different countries. The market perceptions of APTS in both the U.S. and non-U.S. settings seem to suggest that market participants value APTS in uncertain periods negatively and value APTS in more stable periods positively. Non-archival studies suggest that the perceptions of APTS vary with stakeholder groups and with the type of APTS provided. Table 3.5 provides a summary of the papers discussed in this sub-section.

Table 3.5 Consequence of APTS: Continuous audit quality

Panel A: Earnings quality			
Authors (Year)	**Research questions**	**Sample**	**Results**
Huang et al. (2007)	This paper examines the associations between the types of NAS (including APTS) and earnings quality measures.	US: 6,891 firm-years from 2003 to 2004.	Weak evidence between lower discretionary accruals and higher APTS ratio. No evidence is found between APTS and meeting or beating earnings benchmark.
Cook et al. (2008)	This paper examines the effects of APTS fees on earnings management using changes in ETRs between the third and fourth quarters.	US: 1,802 firm-years from 2000 to 2004.	For firms that would miss their earnings forecasts without tax expense management, the levels of APTS fees are positively associated with the reductions in third-to-fourth quarters ETRs changes. The findings hold for both the pre- and post-SOX periods.
Choi et al. (2009b)	This paper examines the associations between APTS, earning quality, and tax avoidance.	South Korea: 8,794 firm-years or less from 2000 to 2006.	APTS fees are negatively associated with discretionary accruals and with tax avoidance measures. Tax avoidance result reveals that APTS fees are negatively associated with the total book-tax difference (BTD) but not associated with abnormal total BTD.
Krishnan and Visvanathan (2011)	This paper examines whether APTS fees mitigate earnings management and tax avoidance.	US: 2,935 firm-years for earnings management model and 6,299 firm-years for tax avoidance model from 2000 to 2007.	APTS fees mitigate clients' loss avoidance behaviour, particularly in the post-SOX era, for larger firms, and for firms with high tax and operational complexity. APTS fees are not associated with tax avoidance.
Svanström (2013)	This paper examines the relationship between audit quality and the provision of NAS (and its types).	Sweden: 420 private firms in 2005.	The provision of APTS has no association with discretionary accruals.
Lisic (2014)	This paper examines whether the association between APTS and earnings management in tax expense varies with audit committee effectiveness.	US: 799 observations from S&P 1500 companies with non-zero $APTS in 2003.	APTS fees increase (decrease) earnings management in tax expense for firms with less (more) effective audit committees. Overall, APTS fees reduce earnings management in tax expense as audit committee effectiveness increases.
Christensen et al. (2015)	This paper examines the associations between audit firm expertise, APTS, and earnings management through the tax accounts.	US: 2,905 firm-years from 2004 to 2011.	Firms audited by an audit firm with either national audit or tax expertise do not appear to manage tax expense. When firms audited by neither an audit nor a tax expert, firms purchasing significant amount of APTS also do not appear to manage tax expense.
Garcia-Blandon et al. (2017)	This paper examines whether the provision of NAS (including APTS) is related to earnings quality.	Spain: 813 firm-years from 2005 to 2013.	The provision of APTS is not associated with discretionary accruals.
Luo (2019)	This paper examines the effects of APTS on temporary BTD and on investors' mispricing of temporary BTD.	US: 8,702 or less matched firm-years from 2000 to 2013.	Firms that have purchased APTS have significantly lower levels of temporary BTD than firms that have not. Investors' mispricing of temporary BTD is reduced in the presence of APTS.

Abdul Wahab et al. (2020)	This paper examines the relationship between the recurrence and types of NAS and accruals quality.	Malaysia: 1,117 firm-years from 2009 to 2011.	Both APTS fees ratio and recurring APTS fess ratio decrease accruals quality.
Carr et al. (2021)	This paper examines whether SEC's (2006) ban on certain types of APTS affects tax accrual quality.	US: 4,696 or fewer matched firm-years from 2003 to 2009.	Firms that substantially reduced their APTS purchases owing to the new restrictions had exhibited significantly lower tax accrual quality during the pre-regulation period, but such firms experienced a greater improvement in tax accrual quality after the regulation. However, these effects are concentrated in firms with high tax-aggressiveness in the pre-regulation period. In addition, such firms recorded more adequate tax reserves after the regulation.

Panel B: Pure tax-related consequences

Authors (Year)	Research questions	Sample	Results
Gleason and Mills (2011)	This paper examines whether APTS improve the estimate of tax reserves.	US: 497 firm-years from 2000 to 2002.	Firms that purchase APTS make adequate and accurate reserves to defend IRS disputes, supporting the knowledge spillover effects. However, firms that do not purchase APTS require additional tax reserves for IRS disputes.
McGuire et al. (2012)	This paper examines the association between auditors' tax-specific industry expertise and tax avoidance.	US: 8,025 firm-years with non-zero APTS fees from 2002 to 2009.	Firms purchasing APTS engage in greater tax avoidance (both more and less aggressive avoidance measures) when their auditors are tax experts. Auditors' overall expertise (both audit and tax) is associated with greater tax avoidance, but such associations exist only when using book and cash ETRs as tax avoidance measures.
Huseynov and Klamm (2012)	This paper examines the role of CSR in the relationship between APTS and tax avoidance.	US: 2,237 S&P500 firm-years with non-zero APTS fees from 2000 to 2008.	In general, the use of APTS reduces both long-term book ETR and cash ETR. The negative association is stronger for cash ETR for firms with strong governance. The negative associations between APTS and ETRs are stronger for firms that have diversity concerns. The associations between APTS and ETRs turn to become positive for firms that have community concerns.
Hogan and Noga (2015)	This paper examines the association between APTS and long-term tax avoidance.	US: 4,173 firm-years from 2003 to 2009.	APTS fees are negatively and significantly related to cash taxes paid (i.e., cash ETR) over the long run. A part of these tax savings is lost for firms that repurchase APTS after a one-year break.
Klassen et al. (2016)	This paper examines the link between the tax preparer type and the aggressiveness of the corporation's tax positions.	US: 1,533 firm-years from 2008 and 2009. (804 firms in 2008 and 729 firms in 2009).	Tax returns prepared by internal tax departments and external non-auditors report more aggressive tax positions than auditor-prepared returns. Big 4 tax preparers are linked to less tax aggressiveness when they are the auditors than when they are not the auditors. APTS are positively related to tax aggressiveness even after considering tax preparer identity.

Halioui et al. (2016)	This paper examines the impact of APTS on the level of tax aggressiveness.	US: 471 firm-years listed on the NASDAQ 100 from 2008 to 2012.	APTS has a positive relationship with tax aggressiveness (lower book ETR).
Huang and Chang (2016)	This paper examines the moderation effect of APTS on the relation between tax-related internal control weakness (ICW) and BTD.	US: 197 firm-years with tax-related ICW and matched firms without tax-related ICW from 2005 to 2011.	The purchase of APTS mitigates the positive relation between tax ICW and permanent BTD, where has no effect on the relation between tax ICW and temporary BTD.
Gleason et al. (2018)	This paper examines the effects of FIN 48 and APTS on the adequacy and accuracy of tax reserves (UTBs).	US: 2,798 firm-years, from 2003 to 2014.	Prior to FIN 48, firms that purchase a significant amount of APTS are adequately reserved, whereas firms that do not purchase a significant amount of APTS are under-reserved for IRS assessments. Post FIN 48, there is no significant difference between the adequacy of reserves for high and low APTS purchase firms. APTS do not improve the accuracy of UTBs in both pre- and post-FIN 48 periods.
Watrin et al. (2019)	This paper examines the effects of APTS on tax avoidance and tax uncertainty.	Germany: 829 firm-years from 2009 to 2014.	APTS are negatively and significantly associated with tax avoidance. Specifically, firms purchasing more APTS have higher both annual and long-run book ETR and cash ETR and have lower permanent BTD. The volatility of the book ETRs decreases with more APTS, i.e., the tax strategies are more sustainable (i.e., less uncertain). APTS are positively related to audit quality (as measured by the lower volatility of discretionary accruals).
Cook et al. (2020)	This paper examines the effects of firms' decision to dismiss or significantly reduce the using of APTS on tax avoidance.	US: 7,976 firm-years from 2002 to 2005.	Book and cash ETR significantly increase after terminating or substantially reducing APTS, whereas discretionary permanent BTD declines significantly. Such effects persist for only one year, suggesting that these effects are short-lived. Such effects are stronger when outgoing APTS providers are tax experts.
Chyz et al. (2021)	This paper examines the different effects of tax compliance and tax planning services on tax avoidance and tax risk.	U.S.: 8,122 or fewer firm-years for tax avoidance tests, and 6,509 or fewer firm-years for tax risk tests over fiscal years 2007 to 2012.	Tax planning services are positively associated with tax avoidance and negatively associated with tax risk, whereas tax compliance services are associated with neither tax avoidance nor tax risk. Tax avoidance results are more pronounced for firms having auditors with more tax expertise and long tenure, as well as for firms with higher tax and operational complexity. Tax avoidance results hold only when firms also purchase tax compliance services from their auditors.
Garcia-Blandon et al. (2021)	The paper examines the relationship between APTS and tax avoidance strategies.	Spain: 495 firm-years from 2008 to 2016.	None of APTS measures is significantly associated with both book ETR and cash ETR.

Liu et al. (2021)	This paper examines the impact of mandatory audit partner rotation on tax avoidance and the moderating role of APTS.	U.S.: 5,137 firm-years from 2016 to July 2019.	Firms exhibit less increase in both book and cash ETRs after an audit partner rotation if they are less tax aggressive in the past and purchasing APTS from their incumbent auditors.

Panel C: Perceived audit quality (capital market consequences)

Authors (Year)	Research questions	Sample	Results
Mishra et al. (2005)	This paper examines the investors' perceptions of the types of NAS in terms of auditor ratification voting.	US: 248 of the S&P1500 firms in 2003.	The likelihood of investors voting against ratification of the auditor is positively associated with APTS fees ratio.
Fortin and Pittman (2008)	This paper examines the association between APTS and corporate debt pricing (i.e., cost of debt).	US: 694 public debt issues from 2001 to 2005.	Firms that pay proportionately more APTS fees enjoy lower cost of debt (i.e., lower yield spreads). This effect is stronger for newly debts issued by firms with high information asymmetry risk (i.e., shorter maturity and financial firms).
Krishnan et al. (2013)	This paper examines investors' perception of APTS, as reflected in the value relevance of earnings.	US: 27,919 firm-years from 2000 to 2008.	The value-relevance of earnings is increasing in the ratio of APTS fees over total fees. For firms that dismiss APTS, the value-relevance of earnings is lower in the year of dismissal/switch.
Habib and Hasan (2016)	This paper examines (1) whether APTS affect stock price crash risk and (2) the factors mediating and moderating such effects.	US: 21,950 firm-years or less from 2002 to 2012.	APTS attenuate crash risk by constraining both earnings management in tax expenses and tax avoidance. APTS constrain tax avoidance and, hence, reduce crash risk for firms following innovator business strategies.
Alsadoun et al. (2018)	This paper examines the investors' perception of APTS, as reflected in the cost of equity capital.	US: 11,329 firm-years with Big 4 auditors and non-zero APTS fees from 2003 to 2012.	Investors demand higher returns from firms that are responsible for more APTS revenue for their auditors' offices in the post-SOX era. Investors' concerns about APTS are exacerbated by the presence of large UTB (high tax risk), especially when such uncertain tax positions are promoted by auditors with tax or overall expertise.
Eilifsen et al. (2018)	This paper examines the investors' perception of NAS and its types, as reflected in the long-term earnings response coefficients (ERCs).	Germany: 2,723 firm-years, from 2005 to 2015. 769 are pre-crisis, 504 are during crisis, 1,450 are post-crisis.	Ratio of APTS to total fees is not significantly associated with ERCs for the entire sample period and for the financial crisis period (2008 and 2009). In the pre-financial crisis period (2005 to 2007), investors negatively perceive high APTS fees ratio. In the post-financial crisis period (2010 to 2015), investors positively perceive high APTS fees ratio.
Chen et al. (2019b)	This paper examines the investors' perception of NAS and its types, as reflected in the short-term ERCs.	US: 127,690 firm-quarters from 2004 to 2015.	Investors have positive perceptions of APTS, manifested in higher ERCs. This result is driven by firms with high levels of accruals and smaller firms. The positive association between APTS fees ratio and ERCs is stronger when firms exhibit higher level of UTBs. ERCs decrease with the level of UTBs when firms do not purchase APTS.

| Francis et al. (2019) | This paper examines whether and how APTS affects the accuracy of analysts' forecasts. | US: 212,372 firm-year-analyst observations from 16,954 firm-years with non-zero APTS fees from 2003 to 2016. | Analysts' forecast errors at both individual analyst level and the consensus forecast level increase with the ratio of APTS fees over audit fees. Analysts underestimate after-tax EPS for firms engaged in more APTS. Firms that pay higher APTS fees are more likely to meet analysts' earnings target. APTS fees are negatively associated with the accuracy of analysts' pre-tax EPS and book ETR forecasts. Firms with higher levels of APTS fees ratio have more volatile book ETRs (i.e., higher uncertainty) and less persistent after-tax earnings. APTS increase disagreement among individual analysts, because it is positively associated with the dispersion of EPS forecasts. |

Panel D: Perceived audit quality – non-archival studies

Authors (Year)	Method	Sample	Internal or external	Results
Pany and Reckers (1983)	Survey	U.S.: 92 directors.	Internal	In comparison to the purchase of system design services, corporate directors are more likely to approve the purchase of APTS and acquisition review services. Also, they perceive high auditor independence in the provision of the latter two types of services.
Solomon et al. (2005)	Experiments	U.S.: 95 third-year law students in the post-SOX period.	External	Earnings quality is perceived to be higher when auditors only provide audit services to audit clients compared with when auditors also provide substantial APTS. Accordingly, investors have more willingness to invest in firms with high perceived earnings quality.
Favere-Marchesi (2006)	Experiments	U.S.: 90 audit partners and senior managers of small- and medium sized firms.	External	Auditors whose firms also provide APTS to audit clients assess a lower risk of fraud than auditors whose firms do not provide any APTS to audit clients.
Iyer and Reckers (2007)	Experiments	U.S.: 47 audit seniors from a Big 4 firm.	External	The provision of APTS does not affect the initial assessment of the risk of material misstatement in general. However, auditors significantly discount the incremental risks arising out of weak management integrity if they provide APTS in addition to audit services, compared with auditors who provide audit services only.
Quick and Warming-Rasmussen (2009)	Survey	Germany: 98 private investors in the spring of 2006.	External	Respondents tend to perceive a negative effect on auditor's independence for the provision of APTS.
Law (2010)	Survey	Hong Kong: 203 Big 4 auditors and 210 financial analysts in 2008.	External	The provisions of APTS are perceived as value-added services to the audit clients.

Dart (2011)	Survey	UK: 113 institutional investors in the summer of 2005.	External	The provision of APTS causes the least concerns about auditor independence impairment compared with other types of NAS.
Wines (2012)	Experiments	Australia: 658 responses from auditors, financial report preparers, and users in March 2004 to May 2005.	Internal and External	Compared with auditors, financial report preparers and users are more worried about the provision of APTS.
Svanström (2013)	Survey	Sweden: 420 small and medium-sized firms in 2006.	Internal	Managers' (i.e., CEOs and CFOs) perception of audit quality is positively associated with the provision of APTS.
Thornton and Shaub (2014)	Experiments	U.S.: 168 jurors in the late June 2005.	External	Jurors perceive that the audit quality is low when auditors provide aggressive tax planning services, but not tax compliance services. Jurors' assessment of auditor responsibility for plaintiff losses is not associated with the provision of APTS. Jurors propose to charge auditors higher punitive damage awards when they provide aggressive tax planning services than the amount proposed for no APTS provision or for providing tax compliance services.
Quick and Warming-Rasmussen (2015)	Experiments	Germany: 212 private investors in 2010.	External	Investors do not have significant concerns about the provision of APTS (i.e., representation of the client in the resolution of a tax dispute before a tax court).
Aschauer and Quick (2018)	Experiments	Austria: 140 professional investment consultants from credit institutions in 2013.	External	Investment consultants perceive lower auditor independence in appearance and audit quality when the audit clients purchase a considerable amount of APTS (in this case, 60% of total audit fees) compared with the auditors of audit clients with no APTS purchase.
van Liempd et al. (2019)	Survey	Denmark: 205 lawyers, private shareholders, bankers, financial analysts, and financial journalists in 2016.	External	All eight types of APTS are perceived as problematic. However, tax compliance services are less harmful compared with other types of APTS. These results are driven by lawyers and by financial analysts, whereas private shareholders and bank loan officers perceive the provision of APTS favourably.
Meuwissen and Quick (2019)	Experiments	Germany: 110 responses from supervisory board members in the fall of 2006.	Internal	The provisions of tax compliance services (APTS), accounting information system consulting (AIS consulting), and human resource consulting (HR consulting) are perceived as impairing auditor independence. Compared with AIS consulting and HR consulting, APTS is perceived as relatively less harmful to auditor independence.

Panel E: Input-based and other measures

Authors (Year)	Research questions	Sample	Results
Palmrose (1986)	This paper examines the effects of different types of NAS on audit pricing.	US: 298 firms with Big 8 auditors from 1980 to 1981.	APTS fees are positively associated with audit fees, especially for small clients.

Davis et al. (1993)	This paper examines the relationship between NAS and audit effort.	US: 95 engagements from a large public accounting firm.	APTS fees are positively associated with audit effort (i.e., more audit hours).
O'Keefe et al. (1994)	This paper examines the determinants of audit hours and audit fees.	U.S.: 249 engagements from a Big 6 firm in 1989.	The percentage of APTS fees to audit fees is associated with neither audit hours nor audit fees.
Ezzamel et al. (2002)	This paper examines the relationship between audit fees and different types of NAS.	UK: 193 firms in 1995.	APTS fees are positively associated with audit fees, especially for clients with overseas subsidiaries. The fees paid for tax services provided by other providers are not associated with audit fees.
Alexander and Hay (2013)	This paper examines the associations between different types of NAS and audit fees.	New Zealand: 643 firm-years from 1995 to 2001.	Firms that purchase NAS are significantly larger and more complex than those that do not purchase any NAS. APTS fees are positively associated with higher audit fees.
Donohoe and Knechel (2014)	This paper examines (1) whether corporate tax aggressiveness influences audit pricing; (2) the moderation effect of APTS and tax expertise.	US: 32,315 firm-years from 2002 to 2010.	A substantial amount of APTS fees may alleviate the audit fee premium associated with tax aggressiveness unless clients' tax uncertainty is high. Tax-related industry expertise is not associated with a fee premium unless the client is tax aggressive.
De Simone et al. (2015)	This paper examines the association between purchasing APTS and internal control (IC) quality.	US: 32,048 firm-years with auditor internal control opinions from 2004 to 2012.	Firms purchasing more APTS are significantly less likely to disclose a tax or non-tax material IC weakness. APTS fees have more positive effects on IC quality when companies experience a significant shock to their IC environment. The effect of APTS is greatest earlier in the audit firm tenure.
Halperin and Lai (2015)	This paper examines the relation between APTS fees and audit fees after SOX from the perspective of cross-selling of services.	US: 3,545 firm-years from 2004 to 2008.	Firms that purchase APTS from incumbent auditors are likely to pay higher audit fees than in the case when they hire only incumbent auditors for audit services.
Klumpes et al. (2016)	This paper examines the effect of actuarial services and APTS on audit pricing in UK life insurance firms.	UK: 198 firm-years from 1999 to 2009.	APTS fees are weakly and negatively associated with audit fees.
Abernathy et al. (2019)	This paper examines the auditors' responses to tax risk and how the provision of APTS moderate such responses.	US: 18,955 firm-years from 2002 to 2015.	The provision of APTS mitigates the positive associations between clients' tax risk and audit fees.

3.6 Chapter Summary and Some Future Research Agendas

In this essay, I first summarize two widely used theoretical frameworks pertaining to the simultaneous provision of audit and APTS in the literature. They are (1) the knowledge spillover and (2) the impaired independence theories. Then I provide a review of APTS regulations for the U.S., EU, and some other jurisdictions. Finally, I offer a detailed review of the literature, published between 1983 to April 2021, on both the determinants and consequences of APTS. In terms of determinants, my review focused on firms' decisions to (1) voluntarily disclose APTS information; (2) choose incumbent auditors as tax service providers; (3) retain or dismiss incumbent auditors as tax service providers; and (4) the magnitude of APTS fees. Firms trade-off the expected benefits against potential costs in assessing whether to disclose APTS information, purchase or retain APTS, and pay more fees for APTS. In terms of the consequences, prior studies have used both output-based and input-based measures of audit quality in examining APTS-related research questions. Although most papers support the knowledge spillover theory, there are some papers that provide mixed evidence for similar research questions. Below I provide some suggestions to standard setters, and useful directions for future research to academic researchers.

3.6.1 Measurement of APTS

There remain wide variations in the measurement of APTS in the existing literature. Table 3.6 provides an overview of APTS measures used in the surveyed archival papers. It is evident that APTS measures vary significantly across studies, which is not surprising given that different measures capture different aspects of APTS pertinent to different research questions. For instance, the APTS ratios either consider the importance of APTS fees to each audit client (e.g., APTS fees/total fees) or control for client size (e.g., APTS fees/total assets). The absolute value

of APTS fees, on the other hand, captures the magnitude of fees auditors received from their audit clients. Conceptually, both the high levels of *relative* and *absolute* APTS fees indicate a high degree of involvement in the client's tax-related work and an increased economic bond between the incumbent auditors and their clients. It remains unclear which measure has the largest explanatory power in a specific research setting. Future studies could examine several proxies for APTS to assess the incremental explanatory power of using one measure over the other.

Table 3.6 Measurement of APTS (archival studies)

Measures of APTS	Definition	Reference
$APTS	Raw value of APTS fees	Habib and Hasan (2016)
$APTS/SqrtTA	APTS fees divided by the square root of total assets	Kinney et al. (2004); Krishnan and Visvanathan (2011)
$APTS/TA	APTS fees divided by total assets	Klumpes et al. (2016)
$APTS/SG&A	APTS fees divided by selling, general, and administrative expense.	Cook et al. (2008); Hogan and Noga (2015)
$APTS/PretaxIncome	APTS fees divided by total pretax income	Huseynov and Klamm (2012)
$APTS/Total fees	APTS fees divided by total fees paid to the auditor	Abdul Wahab et al. (2014, 2020); Chen et al. (2019b); Huang et al. (2007); Klassen et al. (2016); Krishnan et al. (2013); Robinson (2008); Seetharaman et al. (2011)
$APTS/Audit fees	APTS fees divided by audit fees paid to the auditor	Francis et al., (2019); Garcia-Blandon et al. (2021); Mishra et al. (2005); Parkash and Venable (1993); Watrin et al. (2019)
$APTS/(Audit + Audit-related fees)	APTS fees divided by the sum of audit fees and audit-related fees	Fortin and Pittman (2008)
$APTS/Total office revenue	APTS fees divided by total auditor office revenue	Alsadoun et al. (2018)
$Tax compliance (planning) services/Total fees	Auditor-provided tax compliance (planning) services fees divided by total fees paid to the auditor	Chyz et al. (2021)
Changes in $APTS	$APTS/TA in the current year minus $APTS/TA in the previous year	Kim et al. (in press)
Ln (APTS)	Natural log of APTS fees	Castillo-Merino et al. (2020); Choi et al. (2009b); De Simone et al. (2015); Halperin and Lai (2015); Lisic (2014); Notbohm et al. (2015); Omer et al. (2006); Robinson (2008)
Ln (Future APTS fees)	Natural log of APTS fees in the subsequent two years	Castillo-Merino et al. (2020)
Recurring APTS	Recurring APTS fees divided by total fees Natural log of recurring APTS fees	Abdul Wahab et al. (2014, 2020) Paterson and Valencia (2011)
APTS dummy	An indicator coded one if clients purchased tax services from incumbent auditors, and zero otherwise.	Ahn et al. (2021); Finley and Stekelberg (2016); Garcia-Blandon et al. (2017, 2021); Gleason and Mills (2011); Huang and Chang (2016); Liu et al. (2021); Luo (2019); Seetharaman et al. (2011); Svanström (2013)
	An indicator coded one if tax services fees exceed a certain amount or ratio, and zero otherwise.	Abernathy et al. (2019); Christensen et al. (2015); Donohoe and Knechel (2014); Gleason et al. (2018)
APTS purchase, retention, and switch decisions	Firms' decision to hire, retain, or dismiss auditors as tax service providers.	Albring et al. (2014); Cook et al. (2020); Klassen et al. (2016); Lassila et al. (2010); Neuman et al. (2015)
Tax expertise (specialization)	An indicator coded one if the audit firm receives 30% or more of all APTS fees paid in the industry-year, and zero otherwise.	Christensen et al. (2015); Donohoe and Knechel (2014); McGuire et al. (2012)

3.6.2 Replication of previous studies

Over the years, the regulators from different jurisdictions implemented a multitude of regulations and restrictions on the provision of NAS and APTS, to regain investor confidence: confidence that rock bottomed because of large-scale corporate frauds. Prior studies have shown that behaviours of key stakeholders substantially changed during those uncertain times (Cook et al., 2020; Eilifsen et al., 2018; Maydew & Shackelford, 2007; Omer et al., 2006). Several prior studies reviewed in this paper explored the effects of SOX (2002) on certain research questions in the U.S. (e.g., Cook et al., 2008; Krishnan & Visvanathan, 2011). However, there is a lack of research investigating the impacts of other worldwide events on APTS-related questions. First, the GFC has had extensive and major consequences for worldwide economics. Both archival and non-archival findings related to stakeholders' perceptions of APTS may have changed after the GFC period. Therefore, some earlier findings might no longer be relevant to standard setters or academic researchers. Indeed, Eilifsen et al. (2018) show that the German investors' perceptions of APTS changed significantly during the GFC period. Thus, a revisit to some prior research questions using updated data is warranted.

Second, the EU audit and non-audit markets have experienced significant reforms, owing to the enactment and implementation of EU Regulation (2014), which became effective on 17 June 2016. I believe that this provides a rich research setting to compare the effects of APTS on certain research questions, such as tax avoidance, in both the pre- and post-regulation periods, thereby, informing regulators about the effectiveness of the new regulations. My review of non-archival literature also reveals that there is only one study that examined the stakeholders' perceptions of APTS in the post-regulation period (van Liempd et al., 2019). It is reasonable to expect that stakeholder perceptions might have changed because of recent reform in the EU. Both archival and non-archival evidence is needed in this area.

Third, similar to the GFC, the outbreak of COVID-19 has affected global economies significantly. Since 2020, academic researchers started to explore the consequences of COVID-19 extensively. I have not been aware of any COVID-related papers related to APTS. As discussed in Section 3.5, one benefit of purchasing APTS is to avoid tax. While the pandemic lasts, firms that suffer from financial constraints may choose to use APTS to avoid more tax, as a survival mechanism. However, curtailed demand in many of the sectors also means that firms may have to scale back their investments, leading to a decreased demand for APTS. Furthermore, the effects of COVID-19 vary with industries (Qin et al., 2020). Firms from certain industries (e.g., tourism, restaurant, and accommodation) are facing more serious challenges than those from others. The relations between the demand for APTS, COVID-19, and industry groups are unclear, and worthy of investigation. Another interesting topic is the relation between the provision of APTS and the cost of debt capital during the COVID-19 period. Audit Analytics (2021) illustrates that the total debt offerings in the U.S. surged in 2020. Given the negative association between the cost of debt and the levels of APTS fees found by Fortin and Pittman (2008), it would be meaningful to examine whether such an association still exists in the U.S. or in other non-U.S. settings.

3.6.3 APTS research in other jurisdictions

In my review of the APTS literature, I find that more than half of the surveyed papers are from the U.S., followed by some studies from the EU. However, the APTS-related research in other jurisdictions is relatively scarce, which makes my review more U.S. and EU-centric. As reviewed in Section 3.3, the regulations pertaining to APTS vary across jurisdictions. Although prior research has examined the effects of APTS in certain non-U.S. jurisdictions, it is surprising to find little research on APTS in Canada and India, for example, where APTS-related data is readily available. After summarizing research findings related to APTS in this

paper, I call for more research employing both archival and non-archival designs from other jurisdictions to enrich our understanding about various facets of APTS. Empirical research suggests that investors and other stakeholders do incorporate APTS-related information into their decision-making processes. I also hope that my review will provide useful information to jurisdictions that have not mandated the disclosure of APTS information (e.g., China and Hong Kong). Mandatory disclosure of APTS-related information could help various stakeholders to understand and assess auditor independence more precisely.

I also encourage more research in an international (i.e. cross-country) setting to better understand the role of institutional settings across different jurisdictions in influencing firms' decision to purchase APTS from the incumbent auditors and its associated consequences. Habib et al. (2019) document that some institutional factors such as political connections, investor protection, and national culture determine auditor choice decisions. It is plausible to contend that such factors might also affect both the demand for and supply of APTS. Regarding the consequences of APTS, some prior studies have shown conflicting findings for the same research question in different countries. For example, APTS fees are found to be positively associated with tax avoidance in the U.S. (e.g., Hogan & Noga, 2015; Omer et al., 2006), whereas they are associated negatively or insignificantly in other countries (Garcia-Blandon et al., 2021; Watrin et al., 2019). Some prior studies attribute the different findings found in their papers to the different institutional environments across jurisdictions, such as book-tax conformity (Aschauer & Quick, 2018), auditor liability (Watrin et al., 2019), enforcement level (Castillo-Merino et al., 2020), and investor protection (van Liempd et al., 2019). To the best of my knowledge, there is no research using an international dataset to examine the determinants and consequences of APTS.

Given that APTS-related regulations vary across countries, it may not be productive to explore the effects of APTS regulation using a global dataset. However, the EU is a good setting

for this line of research, because all EU member states follow similar audit regulation with little variation (e.g., EU Regulation, 2014). Although European firms have similar financial reporting standards (i.e., IFRS), some variations in the regulatory environment do exist within Europe. For example, EU member states have different legal origins (i.e., code or common law), financial secrecy (i.e., high or low transparency), and tax filing rules (i.e., independent or IFRS-based rules). These differences could affect both the determinants and consequences of APTS: a fruitful avenue for future research in the EU setting.

3.6.4 Tax services fees and its components

Finally, I discuss research opportunities related to the disclosure requirements of tax services fees, rather than APTS fees discussed in Section 3.6.2. A firm could choose to purchase tax services from several tax service providers (e.g., in-house, third-party, or incumbent auditor). Under the current regulatory environment, firms need to disclose only the tax services fees paid to their incumbent auditors, but not those paid to other providers. Therefore, extant studies could investigate only the APTS supplied by incumbent auditors, without simultaneously considering the role played by other tax service providers. One exception is Chen et al. (2021) who hand-collected data on firms' in-house tax departments, and find that firms' in-house tax investments and APTS work as substitutes. Such evidence suggests that ignoring the effects of other types of tax service provider, may bias research findings significantly, especially when APTS fees decline but the total tax service revenue for audit firms increases, or remains steady (Maydew & Shackelford, 2007). For example, McGuire et al. (2012) measure auditors' tax expertise using data on the market share of tax services fees charged by the incumbent auditor, rather than total fees charged by both the incumbent auditor and other tax service providers. This problem can be mitigated if regulation requires firms to disclose tax service fees paid to all providers. Such a mandatory disclosure requirement can also help future studies to enrich

the literature on the consequences of dismissing or switching tax services providers. For instance, how did the tax service fees change after firms' decisions to switch from incumbent auditors to others as tax service providers?

Regulators could also consider mandating the disclosure of APTS fees components, i.e., tax compliance and tax planning fees. As discussed in Section 3.1, tax planning services are more damaging than tax compliance services. Also, prior studies show, both theoretically and empirically, that tax planning and tax compliance components of total APTS fees have differential effects on tax outcomes (e.g., Chyz et al., 2021; Klassen et al., 2016). Some prior studies use total APTS fees as the measure of tax planning (e.g., Cook et al., 2008; Francis et al., 2019; Kim et al., in press; Kubick et al., 2020). However, using hand-collected data, Chyz et al. (2021) show that total APTS fees normally represent significant fees paid to both tax compliance and tax planning services. Although Kim et al. (in press) use a change specification to mitigate this concern, since tax compliance fees are likely to be relatively constant across years, mandatory disclosure of APTS fee components would enrich APTS research. It would be helpful in tax planning and tax avoidance research as well. A finer disclosure of APTS fees would help academic researchers use archival data to confirm some non-archival evidence suggesting that perceptions of APTS are dependent on the type of tax service provided (e.g., Thornton & Shaub, 2014; van Liempd et al., 2019).

CHAPTER FOUR

BOOK-TAX CONFORMITY AND THE DEMAND FOR AUDITOR-PROVIDED TAX SERVICES: EUROPEAN EVIDENCE (ESSAY THREE)[40]

4.1 Introduction

In this essay, I examine whether the demand for auditor-provided tax services (hereafter APTS) varies with the required level of book-tax conformity (hereafter BTC) in the EU countries.[41] Potential benefits and costs of non-audit services (hereafter NAS), including APTS, have been debated internationally for many decades, especially after the occurrence of major accounting scandals (e.g., Enron and WorldCom) at the beginning of this century. The proponents for the joint provision of audit and APTS by the incumbent auditor suggest that such activities lead to significant knowledge spillover benefits to both auditors and audit clients. For auditors, this can facilitate audits of both tax-related and non-tax related accounts, and reduce audit costs related to information gathering (e.g., Gleason & Mills, 2011). Such joint provision of services can help clients too, because the expertise in audits of financial statements together with the extensive knowledge of clients' operations, help auditors identify and remedy clients' material internal control weaknesses, thereby, improving pre-audited financial reporting quality (De Simone et al., 2015). Also, clients could achieve substantial tax savings through purchasing tax services from their auditors possessing tax specialization (McGuire et al., 2012).

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[40] I am grateful to Linda Myers for her constructive comments and suggestions on an earlier version. I also thank Alistair Hodson, Markus Milne, Adrian Sawyer, and seminar participants at University of Canterbury for their useful comments.

[41] Similar to the auditor choice decision for financial statements auditing, the APTS decision is also a two-party contractual arrangement (audit clients and their auditors). In this essay, I develop theoretical predictions and provide empirical tests from the demand side perspective (i.e., the client's APTS purchase decision). I use the demand for APTS and the purchase of APTS interchangeably for the remainder of this essay.

The opponents, on the other hand, argue that the increased economic bonding resulting from more profitable tax services could lead auditors to, or be perceived to, acquiesce in clients' aggressive accounting and tax practices (Alsadoun et al., 2018; Mishra et al., 2005). In some cases, auditors even help clients by developing client-suited tax avoidance strategies. For example, PwC, one of the largest auditors worldwide, was investigated by the PCAOB for helping Caterpillar Inc., one of PwC's clients, avoid taxes to the tune of US$2.4 billion since 2000 (Rapoport, 2014; U.S. Senate, 2014). Although regulators acknowledge the potential benefits of APTS, certain types of APTS that are more likely to compromise auditor independence are prohibited in both the U.S. and Europe (SEC, 2006; the EU, 2014). Given the increased dependence on APTS in recent years by the audit firms, the regulators expressed their concerns over APTS and considered further prohibiting certain types of APTS. For instance, Steven B. Harris, a former board member of PCAOB, in 2015, states that "[PCAOB] should examine whether certain kinds of tax consulting services create conflicts of interests that may impair auditor independence."[42]

Despite the extensive discussion of the costs and benefits associated with purchasing APTS from the incumbent auditors, only a few academic studies investigate the factors influencing clients' decisions to purchase APTS. Intuitively, such decisions are likely based on cost-benefit trade-offs, which vary with firm characteristics (Lassila et al., 2010). For example, Klassen et al. (2016) show that firms tend to *appoint* their incumbent auditors to prepare tax returns, a type of APTS, when they are smaller, exhibit lower tax reporting aggressiveness in the past, fast-growing but incurring losses, engaging research and development (R&D) activities, and exhibiting higher other NAS fees ratios and lower foreign operation activities. Lassila et al. (2010) find that firms are more likely to *retain* their incumbent auditors as tax service providers

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[42]   https://pcaobus.org/news-events/speeches/speech-detail/statement-on-proposed-2016-budget-and-2015-2019-strategic-plan_587.   https://pcaobus.org/news-events/speeches/speech-detail/the-rise-of-advisory-services-in-audit-firms_544.

when they have high tax and operational complexity, generating more knowledge spillover benefits. I extend the determinants of APTS literature by exploring the EU market: a market that is characterized by sizable variation in NAS services including APTS, and also in the required degree of BTC.

BTC represents the degree of alignment between accounting (book) income and taxable income. Since accounting standards and tax rules serve distinct purposes, accounting income often differs from taxable income (Hanlon et al., 2005). The considerable discretion to report accounting and taxable income could lead to low-quality financial and tax reporting (e.g., Desai, 2005). For example, when accounting income differs significantly from taxable income (i.e., a low level of BTC), firms are able to simultaneously overstate accounting income to shareholders and understate taxable income to tax authorities. This has raised significant concerns, and discussion has been ongoing as to whether to increase the conformity between book and taxable income. The former U.S. President Barack Obama, for example, has proposed tax reforms to "reduce the gap between book income, reported to shareholders, and taxable income, reported to the IRS" (i.e., U.S. Internal Revenue Service) (The U.S. Department of the Treasury, 2012, p. 10). The benefits of a high level of BTC include less earnings management and tax avoidance behaviour (Atwood et al., 2012; Tang, 2015), reduced tax compliance costs (Chan et al., 2010), and easier auditing (Kuo & Lee, 2016), among others. On the other hand, a high level of BTC could result in the loss of earnings informativeness (e.g., Atwood et al., 2010; Hanlon & Shevlin, 2005; Hanlon et al., 2005, 2008), lower international capital mobility (Young & Guenther, 2003), and accounting and tax misreporting (Niggemann, 2020).

I study firms listed in the EU markets for two reasons. First, owing to the mandatory adoption of the International Financial Reporting Standards (IFRS), the consolidated financial statements of EU firms are prepared under the same accounting standard. However, there is still not a common consolidated corporate tax base in the EU (Procházka & Molín, 2016; Watrin et

al., 2014) and, consequently, different levels of BTC are found in EU countries. Thus, I am able to explore the impact of differences in BTC on the demand for APTS. Second, during recent years, the EU audit and NAS markets have experienced significant reforms, owing to the enactment and implementation of EU Regulation (see Section 3.3.2 for details). I believe that this provides me an opportunity to compare the effects of the levels of BTC and the demand for APTS in both pre- and post-regulation periods, thereby, enabling me to better understand the consequences of the relevant regulation.

The rest of this chapter is organized as follows. Section 4.2 reviews the APTS and BTC literature and develops my hypotheses. In Section 4.3, I describe my research design. Descriptive statistics, main results, and robustness test results are presented in Section 4.4. Section 4.5 concludes this chapter.

4.2 Literature Review and Hypotheses Development

4.2.1 Auditor-provided tax services

Firms can fulfil their demand for tax-related services through in-house tax departments, external tax services providers, or both. For instance, Klassen et al. (2016) show that 45% of tax returns are prepared by external service providers, whereas the remaining are prepared by in-house tax departments in 2008 and 2009. In addition, Chen et al. (2021) show that, although 85% of the S&P 1500 firms had in-house tax departments during their sample period of 2009 to 2014, 81% of those firms also purchased tax services from their incumbent auditors. Therefore, like the selection of external auditors for financial statement audits, the selection of tax services providers is not a random decision. Ideally, firms will weigh the relative costs and benefits of hiring a pool of tax service providers and then choose the one provider, or the combination of providers, that provides the highest net benefit to the clients. Since procuring APTS is based on a cost-benefit trade-off, I first discuss such trade-offs and the related literature below.

4.2.1.1 Costs and benefits related to APTS

The primary benefit of the joint purchase of audit services and APTS is the *knowledge spillover effect*: the sharing of client-specific knowledge between auditors' tax and audit teams that might help auditors to increase audit quality and/or help clients to achieve certain tax and non-tax related benefits. First, the purchase of APTS could generate direct benefits to audit clients' tax accounts. Tax services could be split into two categories: tax compliance services and tax planning services. Tax compliance services include preparing, signing, and filing tax returns to tax authorities, whereas tax planning services include efficient management of tax affairs and legitimate tax-saving opportunities. [43] Auditors could use their client-specific or industry-specific expertise to help clients to reduce tax liability (both taxes paid and tax expenses), which will not be questioned by both the audit team and tax authorities (e.g., Maydew & Shackelford, 2007; McGuire et al., 2012). Prior studies have found that the purchase of APTS is associated with tax avoidance activities (e.g., Cook et al., 2008, 2020; Hogan & Noga, 2015; Omer et al., 2006), less tax-related restatements (Seetharaman et al., 2011), more sustainable effective tax rates (Watrin et al., 2019), and adequate tax reserves (Gleason & Mills, 2011; Gleason et al., 2018).

Second, the purchase of APTS could also generate some non-tax related benefits. Through providing tax services to audit clients across the fiscal year, auditors could obtain extensive knowledge of clients' operations, which would enable auditors to detect and remedy clients' internal control weakness, to be aware of material risky transactions, and to understand clients' attitudes towards financial reporting and tax reporting aggressiveness (e.g., De Simone et al., 2015; Frank et al., 2009). Thus, the simultaneous purchase of audit and tax services by audit clients might allow auditors to design significantly different and more effective audit

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[43] The aforementioned (in Section 3.2.2) "(i) preparation of tax forms" and "(v) support regarding tax inspections by tax authorities" generally belong to tax compliance services, while "(iv) identification of public subsidies and tax incentives", "(vi) calculation of direct and indirect tax and deferred tax", and "(vii) provision of tax advice" could be classified as tax planning services.

procedures (e.g., Joe & Vandervelde, 2007), thereby increasing audit quality. Existing evidence suggests that the purchase of APTS reduces financial restatements (Kinney et al., 2004; Paterson & Valencia, 2011), increases the possibility of issuing appropriate audit opinions (Robinson, 2008), increases earnings quality (Chen et al., 2019b; Choi et al., 2009b; Huang et al., 2007; Krishnan & Visvanathan, 2011; Krishnan et al., 2013; Watrin et al., 2019), reduces stock price crash risk by constraining both earnings management in tax expenses and tax avoidance (Habib & Hasan, 2016), lowers cost of debt (Fortin & Pittman, 2008), and strengthens clients' internal control (De Simone et al., 2015).

The costs related to APTS stem mainly from potential negative market reactions and regulatory scrutiny apart from the APTS fees (e.g., Alsadoun et al., 2018; Tepalagul & Lin, 2015). High APTS fees may increase the economic bonding between auditors and their clients, thereby compromising, or being perceived to compromise, auditor independence (Agrawal & Chadha, 2005; Hermanson, 2009). The SEC (2006) prohibited auditors from providing certain types of APTS that are more likely to impair auditor independence. The European Commission (2010, 2011) proposed to establish "pure audit firms", where auditors could provide only audit services to their audit clients. The U.S. evidence shows that firms paying more APTS fees were more likely to receive investors voting against auditor ratification (Mishra et al., 2005) and proposals seeking to restrict NAS purchases (Hermanson et al., 2019) during the period surrounding the passage of the Sarbanes-Oxley Act (SOX) of 2002. Alsadoun et al. (2018) show that cost of equity capital increases for firms with a high ratio of APTS fees to total audit office revenues. Francis et al. (2019) document a negative relationship between APTS fees as a proportion of audit fees and analysts' forecast accuracy. Therefore, evidence remains inconclusive regarding the cost-benefit trade-offs associated with the purchase of APTS.

4.2.1.2 Determinants of APTS purchase decisions

As discussed above, managers face cost-benefit trade-offs when making APTS-related decisions and will purchase tax services from the incumbent auditors when expected benefits of doing so exceed expected costs. Two studies examine firms' selection of tax service providers by using either proprietary data (Klassen et al., 2016) or hand-collected data for a specific sector (Neuman et al., 2015). Using proprietary data obtained from the U.S. IRS, Klassen et al. (2016) find that firms are *more likely* to select their incumbent auditors as tax compliance service provider when firms are smaller, less tax aggressive in the past, fast-growing but incurring losses, engaging in R&D activities, having less foreign activities, and exhibiting higher other NAS fees ratios. Focusing on the U.S. not-for-profit sector, Neuman et al. (2015) document that firms are *less likely* to appoint their incumbent auditors as tax service providers when the firm's headquarter is far from the audit firm and when there is a greater set of substitute tax service providers in the market.

Other studies focus on firms' decisions to dismiss or retain their incumbent auditors as tax service providers. Lassila et al. (2010) find a positive association between firms' corporate governance structure and retaining the incumbent auditor as the tax service provider in the period surrounding the SOX, whereas Albring et al. (2014) find a negative association in the post-SOX period (i.e., 2003 to 2006), indicating that directors and/or audit committee members behaved in more conservative ways in response to the increased litigation and potential reputation risks after the passage of the SOX. Finley and Stekelberg (2016) and Ahn et al. (2021) examine the impact of reputation concerns related to two Big 4 auditors (e.g., KPMG and Deloitte) on firms' decision to retain them as tax service providers.[44] Their results show that, compared with other Big 4 auditors, both KPMG's and Deloitte's audit clients, especially high tax avoidance clients, are more likely to dismiss them as tax service providers, because of the

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[44] See Section 3.4 for details.

increased costs resulting from regulatory scrutiny and damaged auditors' reputations and/or the decreased tax benefits (e.g., tax avoidance).[45]

Another strand of this APTS literature examines firms' decision to voluntarily disclose APTS information before the mandatory disclosure regulations became effective. Omer et al. (2006) find that audit clients' tax complexity, auditor tenure, and auditor change are associated positively with the decision to voluntarily disclose APTS fees, whereas the proportion of NAS fees to total fees is associated negatively with such a decision. Bedard et al. (2010) further find that the negative association between the voluntary disclosure of APTS fees and the proportion of NAS fees to total fees is stronger when firms have an effective audit committee, suggesting that an effective audit committee would better assess the cost-benefit trade-offs stemming from such voluntary disclosures.

Some research has also been conducted on how much firms need to pay for APTS. Halperin and Lai (2015) develop an APTS fee model to test the relationship between expected audit fees and APTS fees. They find that *expected* audit fees are associated positively with APTS fees, which complements Omer et al.'s (2006) finding that *unexpected* audit fees increase APTS fees. Some governance factors are also found to be associated with APTS fees. For instance, Duan et al. (2018) show that CEOs with high publicity tend to pay more APTS fees as a tax avoidance strategy in order to meet investors' performance expectations. Furthermore, most of the factors discussed in the decision to purchase APTS also affect APTS fees to some extent.

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[45] Finley and Stekelberg (2016) find that their results are significantly more negative among retail firms than nonretail firms, consistent with the argument that retail firms may be more sensitive to reputational concerns (Hanlon & Slemrod, 2009). The DPA also exposed KPMG's tax practice, and by extension its tax clients, to potential scrutiny from regulatory authorities following the settlement. The DPA put a stricter rule on tax strategies that KPMG could promote to its clients and appointed a monitor from the Justice Department that could review any of KPMG's files.

4.2.2 Book-tax conformity

BTC represents the degree of alignment between accounting income and taxable income. Under the current dual reporting system in most jurisdictions, accounting income and taxable income are characterized by different revenue and expense recognition criteria to achieve different financial reporting and tax reporting purposes (Hanlon et al., 2005). Such reporting flexibilities provide managers with considerable discretion to report both types of income (Frank et al., 2009). Managers have incentives to report higher book income and lower taxable income simultaneously to maximize shareholders' wealth or to maximize mangers' personal gain. As a result, the quality of the reported book and taxable incomes would be compromised by managers' opportunistic reporting behaviour (Desai, 2005). The extent of reporting discretion, however, is determined by the levels of BTC.

When a country has a low (or zero) level of BTC, managers' ability to report high book income to shareholders and low taxable income to tax authorities simultaneously is less constrained (or unconstrained). In other words, a low level of BTC could lead to more aggressive financial and/or tax reporting. This argument has been supported in prior studies by using data from Brazil (Nakao & Gray, 2018), China (Chan et al., 2010, 2013, 2016), Greece (Karampinis & Hevas, 2013), Israel (Chen & Gavious, 2017), among others. Chan et al. (2010), for example, show that book-tax differences (BTD) became a less useful indicator of tax noncompliance for tax authorities in China owing to the "noise" brought by a low level of conformity.[46]

An increased BTC makes book income more aligned with taxable income, thereby increasing the costs of overstating book income and understating taxable income (Chan et al.,

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[46] Total BTD can result from (1) legitimate differences in accounting standards and tax rules, (2) overstating book income (i.e., earnings management), and (3) understating taxable income (i.e., tax avoidance/aggressiveness) (Chan et al., 2010; Hanlon, 2005). When the book and taxable incomes are required to exhibit high conformity, any significant differences between them would be indicative of tax noncompliance. However, all these three types of BTD increase in a low conformity environment, which reduces the informativeness of BTD.

2010; Desai, 2005; Yin, 2001). Therefore, managers face a trade-off between financial reporting and tax planning objectives that reduces misreporting activities and, hence, results in improved financial reporting and less tax avoidance activities. Both Atwood et al. (2012) and Tang (2015) support this argument using international data. However, prior studies also present some contradictory results. Blaylock et al. (2015) find a positive, rather than a negative, association between the levels of BTC and earnings management. Watrin et al. (2014) find that the firms in European countries with a one-book system (i.e., a high level of BTC) engage in more downward and less upward earnings management, compared with firms from European countries with a two-book system.[47] Other benefits of increasing the level of BTC include reduced compliance costs (Chan et al., 2010) and easier auditing (Kuo & Lee, 2016).

It is worth noting that increasing the level of BTC, however, can result in unintended consequences. For example, increased BTC results in the loss of earnings informativeness (e.g., Atwood et al., 2010; Hanlon & Shevlin, 2005; Hanlon et al., 2005, 2008). Generally, managers could use some of their discretion over accounting earnings to signal value-relevant private information to the equity market (Bushman, 1991; Dechow, 1994). However, the additional taxes to be paid on overstated earnings (i.e., tax costs) resulting from the increased level of BTC restricts their willingness and ability to do so. Using the U.S. Tax Reform Act of 1986 (TRA86 hereafter) as a natural experiment, Guenther et al. (1997) find that firms that experienced an increased level of BTC ("converting firms") deferred more income.[48] Also, Hanlon et al. (2008) find a significant decrease in the informativeness of "converting firms" earnings, as proxied by

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[47] EU firms need to prepare three types of financial statements: (1) consolidated statements, (2) single statements, and (3) tax statements. The consolidated statements are prepared on a group-level basis, and the remains are prepared on a single-entity basis. Watrin et al. (2014) find similar results by using either consolidated- or single-level BTC measures. Therefore, they conclude that the book-tax trade-off between consolidated statements and tax statements result from the book-tax trade-off between single financial statements and tax statements.

[48] The TRA 86 requires firms with more than five million U.S. dollars in revenues to use the accrual method for tax purposes. Prior to the TRA 86, firms could use either the cash method or the accrual method for tax purposes. Therefore, the TRA 86 would not affect firms that already used the accrual method for tax accounting and firms that use the cash method but do not meet the revenue threshold in the pre-TRA period. Rather, the TRA 86 only affected a unique sample of firms, i.e., firms using the cash method and meeting the revenue threshold, by forcing them to change from the cash method to the accrual method for tax purposes, thereby increasing their BTC level.

earnings response coefficients, leading to an increased cost of equity capital and, hence, such firms increase their leverage (Blaylock et al., 2017).

As accounting standards and tax rules serve their distinct purposes, a perfect conformity level is neither possible, nor desirable. Niggemann (2020) argues that mandating a perfect or very high level of BTC may foster overall misreporting activities. Similarly, Eichfelder et al. (2020) argue that a high level of BTC promotes *conforming* tax avoidance (a reduction in both book income and taxable income) activities, and will not be captured by common *nonconforming* tax avoidance (a reduction in tax liabilities but not book income) measures used in prior studies (e.g., Atwood et al., 2012; Tang, 2015). They find supportive results that firms are more willing to report lower pre-tax book income in countries with a high statutory tax rate and a high level of BTC, where firms need to pay relatively higher marginal taxes (i.e., they have more tax pressure). Moreover, Chan et al. (2013) find that firms with more book income pressure are more likely to pay more taxes to keep a high book income when the level of BTC is high. Therefore, Niggemann (2020) suggests that allowing a moderate level of BTC minimizes overall misreporting and maximizes reporting compliance.

4.2.3 Hypotheses development

I develop my first hypothesis using both the "tax planning" and "tax compliance" perspectives. From the tax planning perspective, a high level of BTC introduces a trade-off between financial accounting and tax reporting, leading to less non-conforming tax avoidance (Atwood et al., 2012; Tang, 2015). Given additional scrutiny on financial statements by tax authorities in high BTC countries (van Tendeloo & Vanstraelen, 2008), the costs associated with tax planning increase. Therefore, firms' abilities and incentives to engage in tax planning activities might be decreased and, hence, the demand for APTS will be reduced accordingly. From the tax compliance perspective, a higher level of BTC provides managers less reporting discretion,

leading to less tax noncompliance caused by errors or irregularities (e.g., Chan et al., 2010, 2016). In other words, firms are more likely to be tax compliant when the level of BTC is high. Therefore, the demand for tax compliance service will be decreased. Both arguments suggest that the demand for APTS is low (high) when the level of BTC is high (low).

Furthermore, from the audit risk perspective, a low level of BTC gives managers considerable discretion to report different book and taxable income (Hanlon et al., 2005), which complicates financial statement audits (Kuo & Lee, 2016). Tax-related issues are often associated with financial statement restatements and are one of the most cited deficiencies in the PCAOB inspection reports (Acito et al., 2018; Audit Analytics, 2016; Badertscher et al., 2009). The joint purchase of audit and tax services by audit clients enables auditors to be familiar with both the accounting and tax treatments of clients, thereby, facilitating more accurate auditing of tax accruals. Likewise, low BTC increases the "noise" in reported book-tax differences (Chan et al., 2010; Hanlon, 2005), which requires auditors to exert additional audit effort (Hanlon et al., 2012). Thus, the knowledge spillover benefits are expected to be higher in countries with lower levels of BTC. In contrast, a high level of BTC simplifies tax accruals and narrows book-tax differences, thereby, reducing the complexity of auditing financial statements. The expected benefits associated with the joint provision of audit and APTS, as a result, are lower in countries with high levels of BTC. Since audit clients are expected to be aware of such reduced benefits of purchasing APTS in high BTC countries, I should expect a negative relationship between the levels of BTC and the purchase of APTS.

Alternatively, I might find a positive association (or no association) between the demand for APTS and the levels of BTC. Even if the level of BTC is high, there might still be possibilities for tax planning activities desired by clients (e.g., conforming tax avoidance activities). Auditors have competitive advantages over other tax service providers as well as over clients' in-house tax staff, because they have a good understanding of clients' operations

and structures, superior knowledge of tax planning, including industry-specific tax planning opportunities, and excellent expertise related to financial statement auditing (Maydew & Shackelford, 2007; McGuire et al., 2012). As a result, the demand for auditor-provided tax planning services may be increased even when the BTC is high. Also, the book-tax differences resulting from non-conforming tax avoidance activities are more likely to be challenged by the tax authorities when the level of BTC is high (Chan et al., 2010; Mills, 1998), leading to an increased demand for tax compliance services. Such increased demand could offset or outweigh the declined demand for the purchase of APTS, as discussed above. Based on these competing arguments, I develop the following non-directional hypothesis:

H_1: There is an association between the demand for APTS and the levels of BTC.

As discussed in Section 3.3.2, the EU Regulation (2014), which became effective from 17 June 2016, restricted certain types of APTS that auditors could provide to their audit clients. Thus, I expect the demand for APTS in the EU countries to decline in the post-regulation period compared with the pre-regulation period. However, an unanswered question is whether the implementation of new regulations has had a moderating effect on the association between the demand for APTS and the levels of BTC. On the one hand, in the post-regulation period, certain types of APTS that generate material effects on audit clients' financial statements (e.g., aggressive tax planning) are prohibited, thereby, reducing the benefits of purchasing APTS. Furthermore, the implementation of the EU Regulation increased the regulatory scrutiny on the performance of audit committee members, as they are required to assess and pre-approve APTS purchase decisions. The strengthened regulatory scrutiny further increases the costs of purchasing APTS in high BTC countries, thereby, lessening the demand for APTS in the post-regulation period.

On the other hand, I might observe an increase in the demand for APTS in countries with high BTC in the post-regulation period. Horton et al. (2018) examine the investors' reactions to nine events between 2010 and 2013 when the European Commission was working on the proposals of the EU Regulation (2014). They find that investors reacted positively to the events that had increased the probability of adopting the reforms. In other words, investors were expecting that auditor independence would be increased after adopting the EU Regulation (2014). This is also consistent with the U.S. evidence that investors' concerns over auditor independence were mitigated in the post-SOX period (Hollingsworth & Li, 2012). Therefore, the costs of purchasing NAS, including APTS, would be lower in the post-regulation period in comparison to the costs in the pre-regulation period. In addition, given that the majority of prior APTS studies suggest market participants perceive APTS positively compared with other types of NAS (e.g., Chen et al., 2019b; Fortin & Pittman, 2008), the purchase of APTS may bring more benefits to the audit clients in the post-regulation period. For example, when firms need to comply with high BTC, the cost of equity increases as a result of decreased financial reporting quality, thereby, forcing firms to rely more on debt capital (Blaylock et al., 2017). Prior evidence shows that firms can reduce their cost of debt capital by purchasing more APTS (e.g., Fortin & Pittman, 2008). As a result, firms listed in countries with a high level of BTC may purchase more APTS from their incumbent auditors after implementing the EU Regulation (2014). I, therefore, state my second non-directional hypothesis as follows:

H$_2$: The implementation of the EU Regulation (2014) moderates the association between the demand for APTS and the levels of BTC.

4.3 Research Methodology

4.3.1 Measurement of BTC

Atwood et al. (2010, p. 115) define book-tax conformity as "the flexibility that a firm has to report taxable income (*TI*) that is different from pre-tax book income (*PTBI*)", which is based on the conditional variance of current tax expense for a given level of *PTBI*. This measure is also used by prior studies to examine the impact of book-tax conformity on earnings management, tax avoidance and audit fees, among others (e.g., Atwood et al., 2012; Blaylock et al., 2015; Kuo & Lee, 2016; Tang, 2015). Following prior studies, I compute the conditional variance of current tax expense from the following equation, estimated by country-year:[49]

$$CTE = \theta_0 + \theta_1 PTBI + \theta_2 ForPTBI + \theta_3 DIV + e, \qquad (4.1)$$

where *CTE* is the current tax expense; *PTBI* is the pre-tax book income; *ForPTBI* is the estimated foreign pre-tax book income [(foreign tax expense / total tax expense) * *PTBI*]; *DIV* is the total dividends; and *e* is an error item.[50] *CTE*, *PTBI*, *ForPTBI*, and *DIV* are scaled by average total assets to control for cross-sectional differences in firm size.

The book-tax conformity measure, denoted as *BTC1*, is calculated as the scaled ranking of the root mean squared errors (RMSEs) obtained from country-year estimates of Equation (4.1), which provides an unbiased estimate of the conditional variance of current tax expense. I use descending RMSEs to rank countries each year. In particular, a country with the highest RMSE in a given year is ranked 0, and a country with the lowest RMSE in a given year is ranked *n-1*,

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[49] In this essay, I design my BTC measures based on consolidated financial statements. I acknowledge that my measures have limitations, since the tax burden is levied on a single-entity level rather than a consolidated group in Europe (Procházka & Molín, 2016; Watrin et al., 2014). Owing to data unavailability, I am unable to calculate my BTC measures using separate financial statements. However, I conduct robustness tests using BTC measures provided by these two studies in Section 4.4.5. I find qualitatively similar results, suggesting that my results are not sensitive to BTC measurement.

[50] When the current tax expense is missing, I calculate it using total tax expense minus deferred tax expense (if available). Like Atwood et al. (2010), I include *ForPTBI*, since foreign earnings may be charged at different tax rates than firms' domestic statutory tax rates, and include *DIV* to control for those countries with tax rates that depend on whether the earnings are distributed. In addition, I replace missing dividend values with zero.

where *n* is the number of countries ranked in that year. I then scale these rankings by *n-1* to calculate *BTC1*.[51] Thus, *BTC1* ranges from 0 to 1, and a higher value indicates a higher required book-tax conformity level in a firm's home country.

However, Tang (2015) argues that managers' opportunistic behaviours (e.g., earnings management and tax avoidance) could also affect reported *CTE* for a given level of *PTBI*, and this contaminates required BTC calculated by Atwood et al. (2010). Therefore, she develops a new measure of BTC using regulatory sources of book-tax differences from the following equation, estimated by country-year:

$$BTD = \theta_0 + \theta_1 DACC + \theta_2 TP + \theta_3 DACC * TP + \varepsilon, \qquad (4.2)$$

where *BTD* is book-tax differences, calculated as *PTBI* times firm's statutory tax rate (*STR*) minus *CTE*; *DACC* is discretionary accruals, calculated from the modified Jones model with lagged return-on-asset (Kothari et al., 2005); *TP* is the tax avoidance measure, calculated as the firm's *STR* minus the current effective tax rate (*CETR*). *CETR* is measured as *CTE* divided by operating cash flow, and it is truncated to lie between 0 and 1. *BTD* is scaled by average total assets to control for cross-sectional differences in firm size. *DACC* and *TP* are included to control for managers' earnings management and tax avoidance behaviours, respectively. Since the total BTD arises from (1) regulatory differences in accounting and tax rules, (2) earnings management, and (3) tax avoidance behaviour (Hanlon, 2005), the RMSEs obtained from country-year estimates in Equation (4.2) capture book-tax differences that are regulation-driven. I calculated my alternative BTC measure, denoted as *BTC2*, using the scaled ranking of these

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[51] A high RMSE (i.e., higher conditional variance) represents greater flexibility in the reporting of *TI* for a given level of *PTBI*, indicating a low level of BTC. For example, in 2014, the UK exhibited the highest RMSE and Latvia the lowest. Since my data comes from 11 EU countries, I rank the UK zero and Latvia ten (n-1). Then I scale these two rankings by n-1. The *BTC1* is 0 (0/10) for the UK and 1 (10/10) for Latvia, suggesting that Latvia (UK) has a relatively higher (lower) required BTC level, respectively. Another example is Germany, which is ranked fifth in 2014 based on RMSE. So, the *BTC1* for Germany is 0.4 [(5-1)/10] in 2014. Figure 4.1 illustrates the levels of BTC in each EU member country ranked in this essay over the sample period.

RMSEs obtained from Equation (4.2). Like *BTC1*, *BTC2* ranges from 0 to 1, and a higher value

indicates a higher required BTC level in a firm's home country.

4.3.2 Model specification

I estimate the following Probit and Ordinary Least Square regressions to test H1:

$$
\begin{aligned}
APTS_{i,t} = \ & \beta_0 + \boldsymbol{\beta_1 BTC_{j,t}} + \beta_2 AFEE_{i,t} + \beta_3 NAS\_AF_{i,t} + \beta_4 SIZE_{i,t} + \beta_5 MERGER_{i,t} + \\
& \beta_6 LOSS_{i,t} + \beta_7 ROA_{i,t} + \beta_8 FI_{i,t} + \beta_9 R\&D_{i,t} + \beta_{10} LEV_{i,t} + \beta_{11} NPPE_{i,t} + \\
& \beta_{12} INTANG_{i,t} + \beta_{13} CASH_{i,t} + \beta_{14} ACC_{i,t} + \beta_{15} NBS_{i,t} + \beta_{16} BTM_{i,t} + \beta_{17} SALES\_G_{i,t} + \\
& \beta_{18} ASSET\_G_{i,t} + \beta_{19} BIG4_{i,t} + \beta_{20} STR_{j,t} + \beta_{21} PROTECT_{j,t} + Fixed\ Effects + \\
& \varepsilon_{i,t}, \hspace{6cm} (4.3)
\end{aligned}
$$

where the dependent variable is the demand for APTS (i.e., *APTS_D* and *APTS_FEE*). *APTS_D*

is a dummy variable coded one if clients purchase tax services from their incumbent auditors

and zero otherwise, while *APTS_FEE* is measured as APTS fees scaled by the square root of

total assets at the beginning of the year (Kinney et al., 2004).[52] My variable of interest is *BTC*

as discussed in Section 4.3.1. Given the non-directional nature of H1, I expect the coefficient

on β_1 to be either positive or negative.

I include several control variables that are likely to affect the demand for APTS as shown

in the literature (e.g., De Simone et al., 2015; Halperin & Lai, 2015; Lassila et al., 2010;

McGuire et al., 2012). *AFEE* is total audit fees scaled by the square root of total assets at the

beginning of the year; *NAS_AF* is the ratio of non-tax NAS fees to audit fees received from the

client, a proxy for auditor independence; *SIZE* is measured as the natural logarithm of total

assets at the beginning of the year; *MERGER* is coded one for firms participated in M&A

activities, and zero otherwise; *LOSS* is coded one for firms reporting negative pre-tax income,

and zero otherwise; *ROA* is measured as pre-tax income divided by total assets at the beginning

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[52] I do not use the logarithm of APTS fees, as other APTS studies did (e.g., De Simone et al., 2015; Halperin & Lai, 2015), because of the different currencies used in preparing the financial statements in some of the EU countries. My results remain unchanged when I use the ratio of APTS fees to audit fees as an alternative proxy for *APTS_FEE*.

of the year; *FI* is coded 1 for firms reporting foreign income taxes, and zero otherwise; *R&D* is total research and development expenses divided by total assets at the beginning of the year; *LEV* is the ratio of long-term debt to total assets at the beginning of the year; *NPPE* is net property, plant, and equipment divided by total assets at the beginning of the year; *INTANG* is the net intangible assets divided by total assets at the beginning of the year; *CASH* is the ratio of cash and cash equivalent to total assets at the beginning of the year; *ACC* is the total accruals calculated as net income before extraordinary items minus operating cash flow, divided by pre-tax income; *NBS* is measured as the natural logarithm of the number of business segments; *BTM* is defined as the book value of common shareholder equity divided by the firm market value of equity; *SALES_G* is sales growth defined as $[(SALES_t - SALES_{t-1})/SALES_{t-1}]$; *ASSET_G* is asset growth and defined analogously; and *BIG4* is coded 1 for firms audited by one of the Big 4 auditors, and zero otherwise. I predict positive coefficients on *AFEE*, *SIZE*, *MERGER*, *FI*, and *CASH*. In addition, I predict significant coefficients on *NAS_AF* and *BIG4*, but given the mixed evidence reported in earlier studies, I do not make predictions regarding the sign of these two variables.

I also include two institutional factors that are likely to affect firms' tax planning or tax avoidance activities and, hence, might possibly affect the demand for APTS. *PROTECT* is the mean of four World Bank Indices (i.e., the Extent of Director Liability Index, the Ease of Shareholder Suits Index, the Rule of Law Index, and the Control of Corruption Index), which measure the strength of county-level investor protections (Atwood & Lewellen, 2019).[53] Chun et al. (2020) find that investors value tax avoidance activities positively in countries with strong investor protection. Thus, I predict a positive association between *PROTECT* and *APTS*. *STR* is the country-level statutory tax rate in each year, and it is expected to be associated with tax

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[53] The Extent of Director Liability Index (*EDL*) and the Ease of Shareholder Suits Index (*ESS*) range from 0-10, whereas the Rule of Law Index (*RL*) and the Control of Corruption Index (*CC*) range from 0 to 100. Similar to Atwood and Lewellen (2019), I divide the latter two by ten to make scales consistent across four indexes.

avoidance incentives and decisions positively (Atwood et al., 2012; Tang, 2015). I also include year, industry, and country-fixed effects in my Equation (4.3) to control for unobserved (time-invariant) characteristics at year, industry, and country-level that might affect the demand for APTS. Detailed variable definitions and data sources are provided in Appendix C.

I develop the following equation to test H_2:

$$APTS_{i,t} = \beta_0 + \beta_1 BTC_{j,t} + \beta_2 POST + \beta_3 \boldsymbol{BTC_{j,t} * POST} + Control\ variables \\ + Fixed\ Effects + \varepsilon_{i,t}, \hspace{2cm} (4.4)$$

where *POST* is a dummy variable coded one (zero) if clients have a fiscal year-end in the post (pre)-regulation period. I define the pre-regulation period as the time period before 17 June 2016, whereas the post-regulation period is the time period after 17 June 2017. To avoid the potentially confounding effect of the transition period, I exclude firm-year observations from the transition period (i.e., firms with a fiscal year-end between 17 June 2016 and 17 June 2017): an exclusion commonly made in regulation-related studies, for example, the adoption of the IFRS (DeFond et al., 2011).[54] Because the APTS was partially banned in the post-regulation period, I predict a negative coefficient on *POST*. My variable of interest in the Equation (4.4) is the interaction variable, *BTC*POST*. Similar to H_1, I have a non-directional prediction on *BTC*POST* (i.e., β_3 could be either positive or negative). Other control variables are the same as those in Equation (4.3).

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[54] European Commission Group FAQs document that the restrictions on NAS including APTS would apply to the first fiscal year beginning on or after 16 June 2016 (KPMG, 2020). Thus, for a firm with a 31 December 2016 fiscal year-end, the new regulations would mandatorily apply from 1 January 2017. However, during the transition period, the APTS purchase decisions may have been influenced by the new regulations. If firms have a fiscal year-end during the transition period, they may voluntarily adopt the new regulations from the beginning of that year. I mitigate concerns related to the voluntary adoption of the new regulations by excluding such firms. After excluding these firms from my sample, I could identify a set of firms that were not influenced by the regulation (i.e. *POST*=0), and a set of firms that were affected by the regulation (i.e. *POST*=1). For example, for a firm with a 30 June 2017 fiscal year-end (i.e., starting the fiscal year on 1 July 2016), the APTS purchase decision was mandatorily regulated by the new regulations. However, the EU Regulation (2014) was announced in 2014 and became effective from 17 June 2016, so there might have been some voluntary adopters since 2014. I could not identify those voluntary adopters based on financial statement disclosures and, hence, I cannot rule out the influence of voluntary adoption. I, therefore, acknowledge this as a potential limitation of my research design.

4.3.3 Sample and industry distribution

I use IFRS-based consolidated financial statements from eleven (11) EU countries for the period of 2013 to 2019 to investigate my research questions. I choose 2019 as the ending year to avoid the effect of COVID-19 on financial reporting, and also to retain the United Kingdom in the sample. Since the EU Regulation (2014) became effective on 17 June 2016, I choose three years before 2016 (i.e., 2013-2015) and three years after 2016 (i.e., 2017-2019) to investigate the impact of EU Regulation (2014) on the demand for APTS. My initial sample included 20 EU countries where the purchase of APTS was allowed throughout the sample period. Audit fees, other assurance related fees, APTS fees, and other services fees are first retrieved from the Thomson Reuter Eikon. I then check, correct, and complement these data by hand-collecting missing data from firms' annual reports. Owing to the data coverage issues in the Thomson Reuter Eikon, and difficulties in translating some of the annual reports published in non-English languages, I were able to collect data from 13 EU countries (i.e., Austria, Belgium, Czech Republic, Denmark, Finland, Germany, Ireland, Latvia, Luxembourg, Malta, Spain, Sweden, and the United Kingdom).[55] This generated an initial sample of 19,739 firm-year observations.

Similar to Kuo and Lee (2016), when calculating country-year BTC measures (i.e., *BTC1* and *BTC2*), I start with all firm-year observations in the Thomson Reuters WorldScope database from 2013 to 2019 with available data to estimate Equations (4.1) and (4.2). Following the selection criteria of prior studies (e.g., Atwood et al., 2010; Blaylock et al., 2015; Tang, 2015), I eliminate observations with negative pre-tax book income (i.e., *PTBI* < 0) or negative current tax expense (i.e., *CTE* < 0), since such observations add noise to the estimation procedure. To

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[55] For firms using non-English language as their reporting languages, I first retrieved auditor fees information by searching numbers reported by the Thomson Reuter Eikon database. Once I found the section related to auditor fees information, I used the Google translation function to translate the whole section to English and then collected data for audit and non-audit fees. However, I was unable to apply this approach to seven EU countries (i.e., Bulgaria, Cyprus, Estonia, Hungary, Lithuania, Romania, and Slovakia), because there are few data points for these countries in the Thomson Reuter Eikon database and I was unable to retrieve auditor fees information by manual checking.

mitigate the influence of outliers, I drop observations in the top and bottom 0.5% of the distributions of variables included in Equations (4.1) and (4.2) in each year. I further require each EU member country to have at least 40 useable observations: a requirement that led me to remove the Czech Republic and Malta from my sample. This results in 13,384 (10,225) firm-year observations from 11 EU countries, for calculating *BTC1* (*BTC2*).

I then merge this BTC data with firm-level control data retrieved from the Thomson Reuters Fundamentals. I exclude observations from financial and utilities industries (1,133), because of their unique regulatory environments. My final sample for estimating Equation (4.3) (test of H_1) consists of 11,371 firm-year observations from 2,012 unique firms. This is further reduced to 9,721 firm-year observations from 2,008 unique firms for estimating Equation (4.4) (test of H_2) because of the exclusion of firms with a fiscal year-end during the transition period. Country-level statutory tax rates are collected from the KPMG Corporate Tax Rates Table, and the investor protections data are collected from the World Bank website. All continuous variables are winsorized at the top and bottom 1% of their respective distributions to mitigate the impact of outliers. In Table 4.1, I present the industry-based sample distributions. The Capital Goods industry (GICS 2010) accounts for 17.93% of the firm-year observations, followed by 9.31% from Software & Services (GICS 4510), 8.57% from Materials (GICS 1510), and 6.30% from Commercial & Professional Services (GICS 2020).

Table 4.1 Industry distribution.

Industry Group	Name	N	% of N
1010	Energy	417	3.67
1510	Materials	974	8.57
2010	Capital Goods	2,039	17.93
2020	Commercial & Professional Services	716	6.30
2030	Transportation	347	3.05
2510	Automobiles & Components	186	1.64
2520	Consumer Durables & Apparel	503	4.42
2530	Consumer Services	412	3.62
2550	Retailing	534	4.70
3010	Food & Staples Retailing	90	0.79
3020	Food, Beverage & Tobacco	508	4.47
3030	Household & Personal Products	110	0.97
3510	Health Care Equipment & Services	594	5.22
3520	Pharmaceuticals, Biotechnology & Life Sciences	641	5.64
4510	Software & Services	1,059	9.31
4520	Technology Hardware & Equipment	601	5.29
4530	Semiconductors & Semiconductor Equipment	131	1.15
5010	Telecommunication Services	191	1.68
5020	Media & Entertainment	663	5.83
6010	Real Estate	655	5.75
Total		11,371	100.00

4.4 Empirical Results

4.4.1 Descriptive statistics

In Table 4.2, I present descriptive statistics for my main variables of interest (i.e., *BTC1*, *BTC2*, and *APTS*). Using the mean values of *BTC1* across seven sample years, I can classify Austria, Finland, Ireland, and Latvia as high BTC countries; Belgium, Denmark, and Spain as moderate-BTC countries; and Germany, Luxembourg, Sweden, and the United Kingdom as low BTC countries. This measure is comparable to the BTC measures shown by Kuo and Lee (2016), who use the same data sources and method as mine and cover a somewhat similar sample period as mine. The alternative BTC measure (i.e., *BTC2*) also provides a similar classification, except that the United Kingdom could be classified as a moderate-BTC country. Figure 4.1 illustrates the distribution of both BTC measures over time for each EU member country. It shows that, in general, my two BTC measures have comparable values and trends across years. However, I find that *BTC1* and *BTC2* in Belgium are inconsistent, even opposite in some years. Thomsen and Watrin (2018) show that Belgium has a relatively high STR and its average effective tax rates (ETR) were much lower than the STR (i.e., ETR<STR) every year, indicating high tax

avoidance behaviour. Since *BTC2* excludes earnings management and tax avoidance activities

from the calculation, these exclusions may explain why it differs from *BTC1* in Belgium.

Table 4.2 Country distribution

Country	N	*BTC1*	*BTC2*	*APTS_D*	*APTS_FEE*	*STR (%)*	*PROTECT*
Austria	236	0.800	0.757	0.199	0.701	25.000	7.692
Belgium	524	0.443	0.357	0.441	2.261	32.564	7.753
Denmark	473	0.471	0.571	0.884	8.846	22.786	8.175
Finland	680	0.743	0.786	0.519	2.317	20.643	7.971
Germany	2,360	0.229	0.229	0.452	2.009	29.766	7.166
Ireland	87	0.743	0.757	0.851	7.579	12.500	8.699
Latvia	51	0.957	0.986	0.039	0.023	16.429	6.894
Luxembourg	18	0.243	0.157	0.056	0.064	27.844	6.716
Spain	637	0.571	0.386	0.359	1.795	26.857	6.809
Sweden	1,884	0.143	0.143	0.562	6.140	21.914	7.678
United Kingdom	4,421	0.157	0.371	0.543	3.023	20.143	8.419
Total	11,371	0.500	0.500	0.517	3.394	23.313	7.634

Note: Variables are defined in Appendix C.
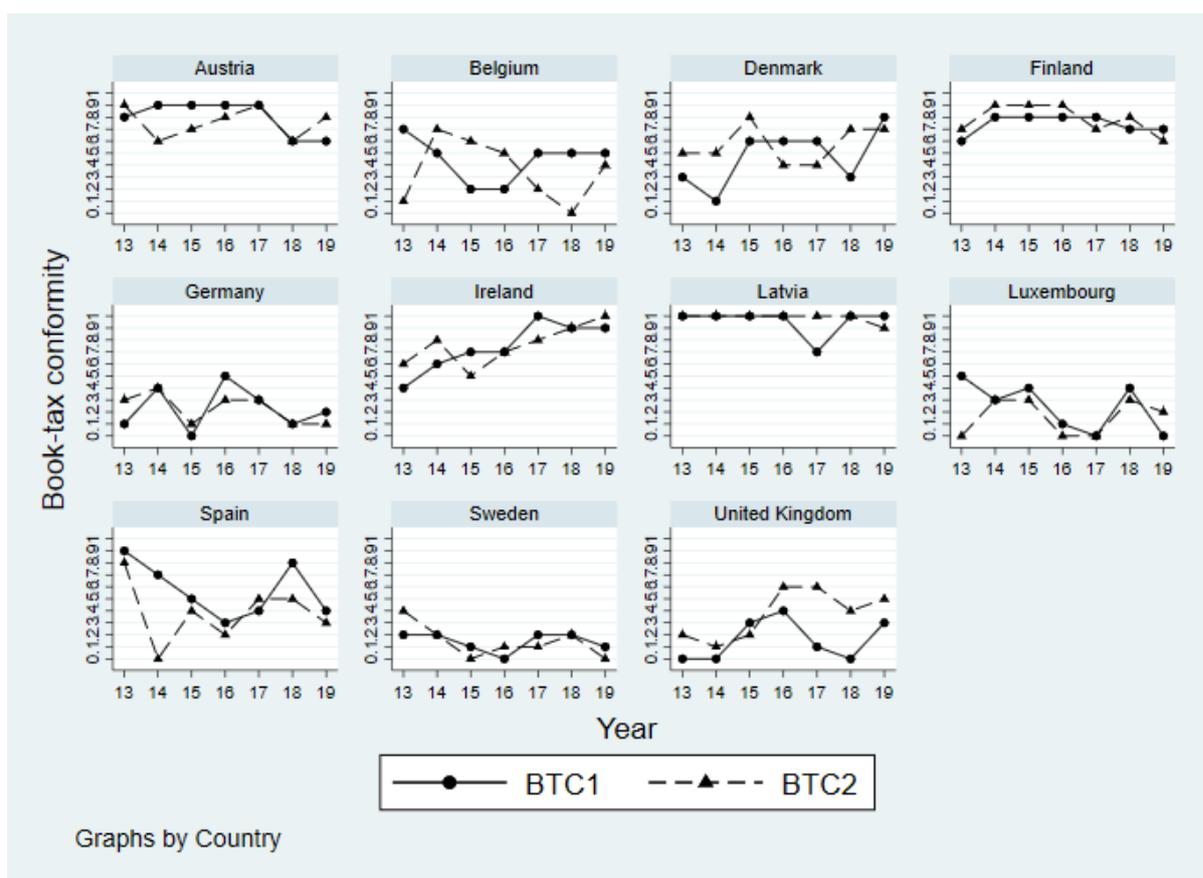
Figure 4.1. The distribution and comparison of two BTC measures across years in each EU member country. *BTC1* is estimated from Equation (4.1), and *BTC2* is estimated from Equation (4.2). The calculations are based on 13,384 and 10,225 firm-year observations respectively, for fiscal years 2013 to 2019 across 11 EU member countries.

I also observe significant variations in the demand for APTS (i.e., *APTS_D* and *APTS_FEE*) across EU countries in Table 4.2. For example, the percentage of firms that purchase APTS ranges from about 4% in Latvia to 88.4% in Denmark. Figure 4.2 illustrates the changes in the demand for *APTS_D*. On average, I can see a descending trend in the percentage of firms purchasing APTS over the entire sample period. Especially after 2016, there is a sharp decline in the demand for APTS in most of the sample countries. This is consistent with EU Regulation (2014) achieving its objectives of prohibiting the purchase of certain types of APTS: categories of APTS that were considered to be compromising auditor independence. Regarding other country-level control variables, I find a significant difference between *STR*s in EU countries. The highest average *STR* is 32.56% in Belgium, whereas the lowest average *STR* is 12.5% in Ireland. In addition, investors are better protected in Ireland (mean *PROTECT* is 8.699), the United Kingdom (mean *PROTECT* is 8.419), and Denmark (mean *PROTECT* is 8.175), compared with the other sample countries.
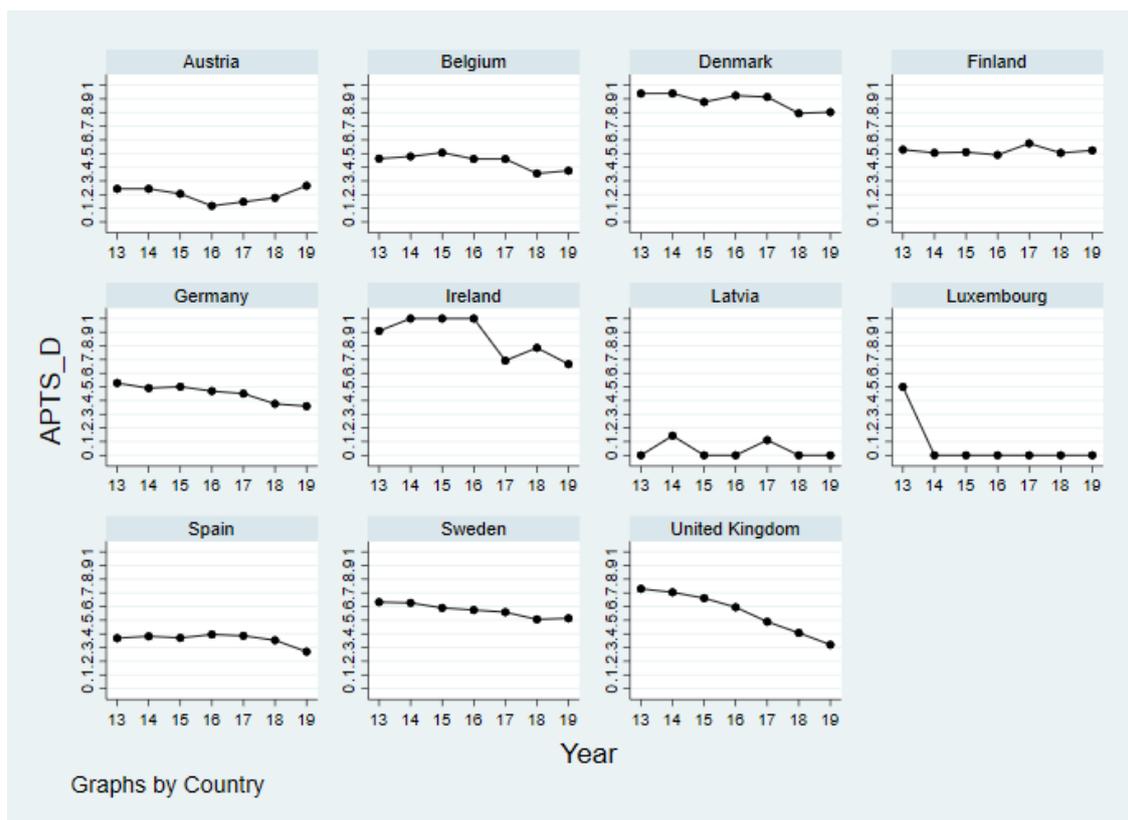
Figure 4.2. The change in demand for APTS across years in each EU member country. This graphical presentation is based on my final sample of 11,371 firm-year observations. As shown in Table 4.2, Luxembourg has only 18 firm-year observations across the sample period and only one firm appointed its incumbent auditor as the tax service provider in 2013. That is the reason for the flat line at 0 for Luxembourg, from 2014 to 2019.

I present the descriptive statistics for variables used to calculate my BTC measures in Table 4.3, Panel A. The pre-tax book income (*PTBI*) is 8.8% of average total assets and current tax expense (*CTE*) is 1.7% of average total assets. The average signed discretionary accruals (*DACC*) is 0.4% of lagged total assets, and the average tax avoidance measure (*TP*) is 0.037. Table 4.3, Panel B, shows the descriptive statistics for all firm-level variables included in my Equations (4.3) and (4.4). The mean of *APTS_D* is 0.517, indicating that more than 50% of sample firms purchased tax services from their incumbent auditors. The mean *SIZE* of sample firms is 12.39 at the beginning of the fiscal year, corresponding to 2,572 million Euros. About 39.1% of firms engage in M&A, and over 26% of firms report negative pre-tax income for the current year. The average firm is fast-growing (*SALES_G* and *ASSET_G* of 10.7% and 12.1%, respectively) and low levered (*LEV* statistic of 16.7%). Net PPE (20.7%), net intangible assets (13.1%), and cash (15.2%) account for about 49% of the average firm's total assets at the

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beginning of the fiscal year. Moreover, nearly 75% of sample firms are audited by one of the Big 4 auditors and the average firm pays non-tax NAS fees (*NAS_AF*) equivalent to 38% of audit fees to its auditor.

Table 4.3 Descriptive statistics

Panel A: Variables to calculate *BTC*						
Variables	N	Mean	SD	P25	Median	P75
CTE	13384	0.017	0.018	0.003	0.012	0.024
PTBI	13384	0.088	0.078	0.035	0.069	0.117
ForPTBI	13384	0.011	0.036	0.000	0.000	0.000
DIV	13384	0.024	0.036	0.000	0.012	0.032
BTD	10225	0.002	0.012	-0.004	0.001	0.007
DACC	10225	0.004	0.106	-0.033	0.004	0.042
TP	10225	0.037	0.200	-0.033	0.069	0.172
CETR	10225	0.198	0.199	0.064	0.160	0.260
Panel B: Variable included in regressions						
Variables	N	Mean	SD	P25	Median	P75
APTS_D	11,371	0.517	0.500	0.000	1.000	1.000
APTS_FEE	11,371	3.394	6.227	0.000	0.209	3.970
BTC1	11,371	0.277	0.248	0.100	0.200	0.400
BTC2	11,371	0.354	0.242	0.100	0.300	0.500
POST	9,721	0.529	0.499	0.000	1.000	1.000
AFEE	11,371	28.163	27.444	11.343	18.740	34.496
NAS_AF	11,371	0.380	0.655	0.034	0.158	0.405
SIZE	11,371	12.388	2.285	10.703	12.262	14.033
MERGER	11,371	0.391	0.488	0.000	0.000	1.000
LOSS	11,371	0.262	0.440	0.000	0.000	1.000
ROA	11,371	-0.023	1.461	-0.007	0.052	0.104
FI	11,371	0.170	0.376	0.000	0.000	0.000
R&D	11,371	0.025	0.064	0.000	0.000	0.015
LEV	11,371	0.167	0.189	0.007	0.117	0.256
NPPE	11,371	0.207	0.218	0.036	0.132	0.309
INTANG	11,371	0.131	0.182	0.016	0.060	0.167
CASH	11,371	0.152	0.177	0.041	0.090	0.187
ACC	11,371	-0.370	2.242	-0.839	-0.204	0.365
NBS	11,371	0.534	0.727	0.000	0.000	1.099
BTM	11,371	0.600	0.556	0.251	0.463	0.806
SALES_G	11,371	0.107	0.342	-0.031	0.051	0.163
ASSET_G	11,371	0.121	0.324	-0.032	0.048	0.163
BIG4	11,371	0.746	0.435	0.000	1.000	1.000

Note: Variables are defined in Appendix C.

4.4.2 Correlation analysis

Table 4.4 presents the Pearson correlations among the variables included in my baseline regression. Both BTC measures are significantly ($p<0.01$) and negatively correlated with *APTS_D* (correlation coefficient of -0.06 and -0.04, respectively) and with *APTS_FEE* (correlation coefficient of -0.06 and -0.07, respectively), implying that higher book-tax

conformity decreases the demand for APTS. I also find that firms are more likely to appoint their incumbent auditors as tax service providers when firms pay higher audit fees (*AFEE*; coefficient of 0.15), engage in M&A activity and international operation (coefficients of 0.08 and 0.05 for *MERGER* and *FI*, respectively), and when firms are larger and audited by large audit firms (coefficients of 0.06 and 0.04 for *SIZE* and *BIG4*, respectively). These firms tend to pay more APTS fees as well. Regarding the country-level variables, the demand for APTS is higher when investors are better protected. The magnitudes of Pearson's correlations among independent variables are seldom greater than 0.70, with an exception between *STR* and *PROTECT* (coefficient of -0.76). I then estimate the variance inflation factors (VIFs) for my independent variables included in Equation (4.3). The untabulated results show that the highest VIF value is 2.69 for *STR* and, thus, multicollinearity concerns are alleviated.

Table 4.4 Correlation

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
APTS_D	(1)	-											
APTS_FEE	(2)	0.53	-										
BTC1	(3)	-0.06	-0.06	-									
BTC2	(4)	-0.04	-0.07	0.61	-								
AFEE	(5)	0.15	0.41	-0.16	-0.21	-							
NAS_AF	(6)	0.06	0.11	0.07	0.05	-0.04	-						
SIZE	(7)	0.06	0.09	0.13	0.05	0.17	0.01	-					
MERGER	(8)	0.08	0.10	-0.01	0.01	0.20	0.04	0.32	-				
LOSS	(9)	-0.03	-0.03	-0.06	-0.02	-0.02	0.03	-0.38	-0.21	-			
ROA	(10)	0.01	-0.02	0.03	0.00	-0.07	-0.00	0.11	0.03	-0.15	-		
FI	(11)	0.05	0.01	-0.15	-0.02	-0.01	-0.03	0.17	0.10	-0.09	0.03	-	
R&D	(12)	0.02	0.06	-0.04	-0.04	0.02	0.06	-0.18	-0.09	0.18	-0.04	-0.01	-
LEV	(13)	-0.03	0.01	0.08	0.01	0.08	0.08	0.28	0.13	-0.10	-0.01	-0.03	-0.11
NPPE	(14)	-0.02	-0.05	0.08	0.08	-0.06	-0.00	0.20	-0.03	-0.10	-0.04	0.02	-0.13
INTANG	(15)	0.03	0.04	-0.14	-0.06	0.06	0.09	-0.26	0.07	0.22	-0.06	-0.02	0.07
CASH	(16)	-0.00	0.01	-0.11	-0.08	-0.02	0.13	-0.39	-0.14	0.20	-0.12	-0.04	0.30
ACC	(17)	0.00	-0.01	-0.01	-0.01	-0.00	-0.01	-0.08	-0.05	0.38	-0.03	-0.01	0.02
NBS	(18)	0.03	0.05	0.07	0.04	0.08	-0.02	0.33	0.16	-0.17	0.04	0.09	-0.10
BTM	(19)	-0.03	-0.10	0.06	0.06	-0.13	-0.06	0.03	-0.09	0.10	0.03	-0.05	-0.17
SALES_G	(20)	-0.00	0.01	-0.07	-0.06	0.03	0.08	-0.14	0.04	0.01	-0.04	-0.04	0.06
ASSET_G	(21)	0.01	0.05	-0.08	-0.09	0.09	0.22	-0.19	0.11	-0.03	-0.10	-0.03	0.11
BIG4	(22)	0.04	0.10	0.13	0.02	0.21	0.07	0.46	0.15	-0.19	0.06	0.06	-0.05
STR	(23)	-0.07	-0.09	0.07	-0.30	-0.14	-0.01	0.18	-0.03	-0.11	0.03	-0.08	0.05
PROTECT	(24)	0.13	0.08	-0.19	0.26	-0.00	0.02	-0.15	0.05	0.10	-0.04	0.16	-0.01

Table 4.4 Correlation (continued)

		(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)
LEV	(13)	-											
NPPE	(14)	**0.25**	-										
INTANG	(15)	0.02	**-0.21**	-									
CASH	(16)	**-0.19**	**-0.17**	**0.19**	-								
ACC	(17)	**-0.05**	**-0.10**	0.02	0.02	-							
NBS	(18)	**0.10**	**0.12**	**-0.15**	**-0.20**	**-0.05**	-						
BTM	(19)	**-0.06**	**0.10**	**-0.08**	**-0.20**	-0.01	**0.04**	-					
SALES_G	(20)	**0.09**	-0.02	**0.20**	**0.20**	0.02	**-0.08**	**-0.08**	-				
ASSET_G	(21)	**0.23**	**0.09**	**0.38**	**0.47**	-0.00	**-0.08**	**-0.13**	**0.39**	-			
BIG4	(22)	**0.11**	**0.09**	**-0.15**	**-0.19**	**-0.06**	**0.14**	**-0.08**	**-0.08**	**-0.08**	-		
STR	(23)	**0.09**	0.02	**-0.17**	**-0.05**	-0.03	**0.08**	0.03	**-0.05**	**-0.05**	0.01	-	
PROTECT	(24)	**-0.10**	0.01	**0.14**	**0.06**	0.02	**-0.07**	-0.03	0.04	0.04	**-0.09**	**-0.76**	-

Note: Sample size: 11,371. Boldface indicates significance at the 1% level. Variables are defined in Appendix C.

4.4.3 Regression results for the demand for APTS and the levels of BTC (H$_1$)

Table 4.5 shows the baseline regression results for H$_1$. Throughout this essay, all reported t-statistics are estimated using heteroscedasticity-robust standard errors clustered by firm, to account for any serial correlation. Columns (1) and (3) report regression results using *BTC1* as the BTC measure, whereas the association between *BTC2* and *APTS* is presented in Columns (2) and (4). The demand for APTS is proxied by *APTS_D* in Columns (1) and (2), and by *APTS_FEE* in Columns (3) and (4). I find negative and significant coefficients for both BTC measures (coefficients on *BTC1* and *BTC2* are -0.246 and -0.621, respectively) in Columns (1) and (2) (for *APTS_D*). Both coefficients are statistically significant at the 1% level. I calculate the marginal effects of my BTC measures, and the results show that a one-unit change (i.e., from no conformity to perfect conformity) in *BTC1* (*BTC2*) decreases the probability of APTS purchase by 8.79% (22.10%). The coefficients, too, are negative and significant for both the BTC measures (coefficients on *BTC1* and *BTC2* are -0.708 and -1.294, respectively) in Columns (3) and (4) (for *APTS_FEE*). Both coefficients are statistically significant at the 1% level. In terms of economic significance, the reported coefficient in Column (3) suggests that a one-standard-deviation increase in *BTC1* (0.248) is associated with a 5.17% [(-0.708*0.248)/3.39] decrease in APTS fees paid to incumbent auditors, relative to the square root of total assets at the beginning of the year. These results suggest that the country-level required BTC affects the firms' demand for APTS negatively.

With respect to the sign and significance of the control variables, I find that large firms (*SIZE*; coefficient of 0.084, p<0.01) and firms paying high audit fees (*AFEE*; coefficient of 0.005, p<0.01) are more likely to purchase APTS from their incumbent auditors. However, firms audited by Big 4 auditors (*BIG4*; coefficient of -0.149, p<0.05) and more independent auditors (*NAS_AF*; coefficient of 0.103, p<0.01) are less likely to appoint their incumbent auditors as tax service providers. Consistent with my expectation, I find positive and significant

coefficients on *STR* and *PROTECT* (coefficients of 0.033 and 1.205, respectively), indicating that the demand for APTS is higher in countries with higher statutory tax rates and stronger investor protection. I find similar results using *BTC2* as the independent variable in Column (2) and using *APTS_FEE* as the dependent variable in Columns (3) and (4) of Table 4.5.

The pseudo R-square and the area under the ROC curve shown in Table 4.5, Columns (1) and (2), and adjusted R-square shown in Columns (3) and (4), are comparable to prior studies (e.g., Finley & Stekelberg, 2016; Halperin & Lai, 2015). The area under the ROC curve is about 0.7 in both Columns (1) and (2) of Table 4.5, which indicates that my model has acceptable discrimination power or moderate accuracy level (e.g., Hosmer et al., 2013). The inclusion of the country-fixed effect increases the explanatory powers of Equation (4.3) by about 0.025, indicating the importance of controlling for time-invariant country characteristics in my regressions.

Table 4.5 Baseline regression results (N=11,371)

	(1) APTS_D	(2) APTS_D	(3) APTS_FEE	(4) APTS_FEE
BTC1	-0.246***		-0.708***	
	(-4.32)		(-2.71)	
BTC2		-0.621***		-1.294***
		(-8.46)		(-4.15)
AFEE	0.005***	0.005***	0.085***	0.085***
	(4.31)	(4.37)	(12.18)	(12.20)
NAS_AF	0.103***	0.106***	1.082***	1.086***
	(3.91)	(4.00)	(7.67)	(7.69)
SIZE	0.084***	0.084***	0.224***	0.223***
	(5.34)	(5.33)	(3.43)	(3.42)
MERGER	0.024	0.025	-0.089	-0.086
	(0.56)	(0.59)	(-0.51)	(-0.50)
LOSS	-0.042	-0.044	-0.167	-0.171
	(-0.78)	(-0.80)	(-0.81)	(-0.83)
ROA	0.006	0.006	-0.011	-0.012
	(0.67)	(0.63)	(-0.14)	(-0.15)
FI	0.038	0.038	0.161	0.160
	(0.59)	(0.58)	(0.57)	(0.56)
R&D	-0.165	-0.159	2.990*	3.008*
	(-0.40)	(-0.39)	(1.82)	(1.83)
LEV	-0.041	-0.032	-0.419	-0.397
	(-0.32)	(-0.24)	(-0.77)	(-0.73)
NPPE	-0.054	-0.055	-0.355	-0.358
	(-0.38)	(-0.38)	(-0.72)	(-0.73)
INTANG	0.082	0.088	0.170	0.184
	(0.57)	(0.61)	(0.29)	(0.32)
CASH	0.117	0.123	0.640	0.657
	(0.76)	(0.79)	(1.03)	(1.06)
ACC	0.011	0.011	0.005	0.004
	(1.63)	(1.58)	(0.17)	(0.14)
NBS	0.005	0.005	0.141	0.141
	(0.15)	(0.13)	(0.94)	(0.94)
BTM	0.049	0.051	-0.243*	-0.240
	(1.17)	(1.20)	(-1.65)	(-1.64)
SALES_G	0.028	0.026	0.044	0.039
	(0.69)	(0.64)	(0.26)	(0.23)
ASSET_G	0.015	-0.003	-0.142	-0.178
	(0.20)	(-0.04)	(-0.45)	(-0.57)
BIG4	-0.149**	-0.153**	-0.449**	-0.458**
	(-2.26)	(-2.32)	(-2.00)	(-2.04)
STR	0.033**	0.002	0.051	-0.005
	(2.53)	(0.18)	(1.03)	(-0.11)
PROTECT	1.205***	1.407***	0.819	1.112
	(4.02)	(4.60)	(0.68)	(0.91)
Year effect	Yes	Yes	Yes	Yes
Industry effect	Yes	Yes	Yes	Yes
Country effect	Yes	Yes	Yes	Yes
_cons	-13.552***	-11.009***	-9.859	-10.168
	(-5.25)	(-4.50)	(-1.02)	(-1.04)
Area under ROC	0.6974	0.7005	-	-
R-square	0.0979	0.1006	0.2463	0.2470

Note: Robust t-statistics in brackets. Variables are defined in Appendix C.
*** p< 0.01, ** p<0.05, * p<0.10.

4.4.4 The effect of EU Regulation (H_2)

Table 4.6 presents the regression results for the potential moderating effect of EU Regulation (2014) on the association between the demand for APTS and the levels of BTC. Similar to Table 4.5, I use both *APTS_D* (Columns 1 and 2) and *APTS_FEE* (Columns 3 and 4) as my dependent variables. I continue to find negative and significant coefficients on my BTC measures in all four columns of Table 4.6, supporting my main results. Moreover, the coefficients on *POST* are negative and significant at the 1% level in all columns, suggesting that firms substantially reduced the purchase of tax services from their incumbent auditors after the enforcement of the EU Regulation. Importantly, I find that the coefficients on *BTC*POST* are positive and significant, which suggests that the negative impact of the levels of BTC on the demand for APTS is attenuated in the *post-regulation period*.[56]

Table 4.6 The effect of EU Regulation (2014) (N=9,721)

	(1) APTS_D	(2) APTS_D	(3) APTS_FEE	(4) APTS_FEE
BTC1	-0.595***		-1.329***	
	(-6.92)		(-3.97)	
BTC2		-0.660***		-1.127***
		(-8.36)		(-3.25)
POST	-0.469***	-0.611***	-1.795***	-1.954***
	(-8.75)	(-11.33)	(-7.58)	(-8.06)
BTC*POST	0.703***	0.381***	1.499***	0.869*
	(5.85)	(3.69)	(3.09)	(1.81)
Control variables	Yes	Yes	Yes	Yes
Year effect	Yes	Yes	Yes	Yes
Industry effect	Yes	Yes	Yes	Yes
Country effect	Yes	Yes	Yes	Yes
_cons	-12.500***	-9.959***	-10.012	-6.062
	(-4.81)	(-4.04)	(-0.96)	(-0.59)
Area under ROC	0.7042	0.7054	-	-
R-square	0.1024	0.1038	0.2437	0.2437

Note: Robust t-statistics in brackets. Variables are defined in Appendix C.
*** p< 0.01, ** p<0.05, * p<0.10.

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[56] I apply a mean-centering approach to *BTC1* and *BTC2* variables before constructing the interaction terms, to mitigate the multicollinearity problem stemming from the introduction of interactive terms and to ease interpretation. Moreover, I find similar results when I include firm-years from the transition period in the post-regulation period and when I use a balanced sample (i.e., all firms have seven consecutive years of data).

4.4.5 Robustness tests

In this section, I conduct two robustness tests to support my main results. First, Kuo and Lee (2016) find that the level of BTC, to some extent, is affected by other country-level institutional variables. Following their method, I perform a two-stage regression to mitigate this concern. In the first stage, I regress *BTC1* or *BTC2* on *EDL*, *ESS*, *RL*, *CC*, and *STR*. In the second stage, I replace original BTC measures with the residual values generated from the first stage (i.e., *BTC_R*) and rerun Equations (4.3) and (4.4). For brevity, I report only the results of two-stage regressions using *BTC1* to proxy the level of BTC in Table 4.7. Column (1) shows that all the institutional variables are associated with my BTC measures significantly. The second stage regressions show that *BTC_R* remains negatively and significantly associated with the demand for APTS, while the coefficients on *BTC*POST* are significantly positive. These results are supportive of those reported in Tables 4.5 and 4.6.

Table 4.7 Robustness tests – Excluding the effects of country-level institutional variables from BTC measures

		APTS_D		APTS_FEE	
	(1)	(2)	(3)	(5)	(6)
	BTC1	APTS	APTS	APTS	APTS
EDL	-0.144***				
	(-48.59)				
ESS	0.151***				
	(44.09)				
RL	-0.271***				
	(-18.84)				
CC	-0.033***				
	(-3.90)				
STR	0.015***				
	(18.03)				
BTC_R		-0.199***	-0.464***	-0.637**	-1.192***
		(-3.43)	(-4.93)	(-2.37)	(-3.30)
POST			-0.494***		-1.833***
			(-9.22)		(-7.61)
*BTC*POST*			0.413***		1.232*
			(2.79)		(1.76)
Control variables	No	Yes	Yes	Yes	Yes
Year effect	No	Yes	Yes	Yes	Yes
Industry effect	No	Yes	Yes	Yes	Yes
Country effect	No	Yes	Yes	Yes	Yes
_cons	2.515***	-12.320***	-13.993***	-11.745	-14.307
	(27.52)	(-5.14)	(-5.09)	(-1.20)	(-1.33)
N	11,371	11,371	9,721	11,371	9,721
Area under ROC	-	0.6972	0.7011	-	-
R-square	0.2805	0.0978	0.0999	0.2463	0.2431

Note: Robust t-statistics in brackets. Variables are defined in Appendix C.
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$.

Second, I rerun Equation (4.3) using two alternative measures of BTC. The first alternative measure is *BTC_WET* provided by Watrin et al. (2014) who construct their measure using single-entity level financial statements and tax statements. Since tax burden is levied on a single entity rather than a consolidated group in the EU, Watrin et al. (2014) argue that the BTC measure developed by Atwood et al. (2010) may be affected by the consolidation process. I still find a significant and negative coefficient on *BTC_WET* (coefficient -3.652, p<0.01) (untabulated). These results mitigate concerns regarding the construction of my BTC measures.

The second alternative measure I use is provided by Procházka and Molín (2016) who also developed their BTC measure (*BTC_PM*) based on the single entity level. Each EU member country is classified into low BTC, middle BTC, or high BTC groups depending on the number of adjustments required by tax authorities when firms prepare tax statements. Procházka and

Molín (2016) argue that ex-post BTC measures (i.e., *BTC1* and *BTC2* in this essay) capture the real differences between the book and taxable incomes that vary with changes in firms' business operations, even if both accounting standards and tax rules remain unchanged. However, *BTC_PM* is proposed to measure policy-based BTC (ex-ante), and is invariant unless an amendment in accounting standards or tax rules occurs. Indeed, as shown in Figure 4.1, both my BTC measures are subject to substantial annual changes. Therefore, I test whether my results are sensitive to the ex-ante or ex-post feature of BTC measures. Untabulated results find significantly negative coefficients on *BTC_PM* in the pooled sample and the high-conformity subsample, but significantly positive coefficients in the low- and middle-conformity subsamples. This supports my main findings that the demand for APTS decreases as the level of BTC increases. Overall, my results are robust using alternative measurements of BTC.

4.5 Chapter Summary

In this chapter, I examine the association between the country-level BTC index and the audit clients' demand for APTS. Using a hand-collected sample from 11 EU member countries for the period 2013 to 2019, I find that the levels of BTC are significantly and negatively associated with both the likelihood of purchasing APTS and the amount paid for APTS. When testing the moderating role of recent APTS reforms in the EU (i.e., the EU Regulation (2014)), I find that the negative association between the demand for APTS and the levels of BTC is weaker in the post-regulation regime. Findings from this study contribute to both the scarce literature on the determinants of APTS and the consequences of BTC.

My study provides some directions for future research. First, I find that the country-level required BTC is a significant determinant of APTS purchase decisions. Thus, I suggest that future studies consider the effects of BTC on APTS purchase decisions when exploring possible consequences of APTS using multi-country data. Second, this study is unable to suggest

whether the declining demand for APTS reflects the cost or benefit of a high level of BTC. Future research could fulfil this void by analysing the cost-benefit effects for different stakeholders (e.g., audit clients, audit firms, and capital providers). Finally, although this study provides some preliminary results that the implementation of the EU Regulation (2014) moderates the association between the demand for APTS and the levels of BTC, the possible reasons for this finding have not been explored adequately. Future research could compare market reactions to APTS purchase decisions in the pre- and post-regulation period, to extend the findings of this study.

CHAPTER FIVE

CONCLUSION

5.1 Conclusion

Auditing has become a globalized profession in the past decades (Carson, 2014). Thus, this thesis aims to offer insights into the extant literature on audit services, especially on how country-level institutional factors influence audit outcomes. Other than their audit services, non-audit revenues also account for a substantial portion of auditors' incomes. This thesis also provides novel evidence as to how country-level tax system characteristics affect the demand for auditor-provided tax services from their audit clients.

This thesis consists of three essays. Essay One investigates the relationship between audit clients' workforce environment and audit service fees, using a sample of firms from 30 countries spanning the period 2002 to 2017. I posit that auditors perceive audit clients with a good (favourable) workforce environment as being less risky and, hence, exert less audit effort and charge lower audit risk premiums, leading to lower audit fees. I find supportive evidence for this argument. Moreover, I examine the channels through which the workforce environment reduces audit fees and find that a fewer media coverage of workforce controversies is one such channel. In terms of the role played by country-level labour market flexibility, I find that the negative relationship between workforce environment and audit fees is stronger in countries with a more flexible labour market.

Essays Two and Three explore the research questions related to APTS. Essay Two provides a systematic review on the determinants and consequences of APTS in both the U.S and non-U.S. settings. An overview of regulations pertaining to the approval as well as the prohibition of APTS in the U.S., EU, and some selected countries or jurisdictions, is first discussed in Essay Two. Furthermore, Essay Two reviews and summarizes two widely used theoretical

frameworks in APTS literature, namely, the knowledge spillover and the impaired independence theories. Finally, 112 papers are reviewed in the literature review section of Essay Two, with an overwhelming majority of the studies examining the consequences of APTS. I conclude that firms trade-off the expected benefits against potential costs when making APTS-related decisions. Regarding the consequences of APTS, I find that a large number of studies, especially those in the U.S. setting, support the knowledge spillover effects of APTS.

Motivated by Essay Two's finding that only a small number of prior studies examined the determinants of APTS and none of them used multi-country data, Essay Three investigates how country-level tax system characteristics (i.e., the required levels of book-tax conformity) affect the demand for APTS in EU countries. Although firms listed in the EU markets prepare the consolidated financial statements using the same accounting standards (i.e., IFRS), the lack of a common consolidated corporate tax base leads to differences in the levels of BTC across the EU. I posit that such differences affect the audit clients' decision to purchase APTS from their incumbent auditors. I, indeed, find that the audit clients' demand for APTS decreases as the levels of BTC increase. However, this negative association is mitigated by the recent audit reforms in the EU.

5.2 Research Contribution and Implications

This thesis contributes to the fast-growing literature on cross-country auditing research in several ways. First, in this thesis, I find that the country-level institutional factors play a vital role in moderating the relationships between audit fees and their determinants. Although certain country-level factors could affect auditors' behaviour directly, they might have indirect effects as well. Therefore, I suggest future researchers to consider both direct and indirect effects of institutional factors when conducting cross-country auditing research.

Second, this thesis sheds new light on debates over the provision of APTS. The majority of surveyed papers in this thesis support the knowledge spillover effects of APTS in the U.S., whereas there are still some prior studies that find that the provision of APTS impairs auditor independence in other countries. The question as to what country-level factors drive such findings requires further empirical investigation. For example, are the findings affected by the different enforcement environments for regulating APTS in different countries? Moreover, the extant literature suggests that the disclosure of detailed NAS, including APTS information, does affect capital market participants' evaluations of auditor independence. A mandatory and/or a finer disclosure of APTS information worldwide could help to improve the effectiveness of capital markets.

Finally, to the best of my knowledge, this thesis is the first to investigate how country-level factors affect the audit clients' demand for APTS beyond the effects of firm-level determinants. The variations in country-level factors are found to influence audit clients' incentive to purchase APTS, and may lead to distinct consequences for APTS. My study calls for more research on this topic to enrich our understandings of APTS. Notably, the European markets are good settings for this line of research for reasons explained in Chapter 4. Overall, this thesis suggests that international regulators and standard setters should consider the differences in contextual factors when making regulations for both audit and non-audit services. Such a focus on context may help to build an effective auditing profession and capital markets.

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APPENDIX A
Components of Workforce Environment Index – ESSAY ONE

No.	Description	Positive or Negative	Compliance (%)
1	Does the company have a policy to drive diversity and equal opportunity?	P: 1 for Yes, 0 for No	71.71%
2	Has the company set targets or objectives to be achieved on diversity and equal opportunity?	P: 1 for Yes, 0 for No	12.90%
3	Does the company claim to provide flexible working hours or working hours that promote a work-life balance?	P: 1 for Yes, 0 for No	27.65%
4	Does the company have a policy to improve employee health & safety within the company and its supply chain?	P: 1 for Yes, 0 for No	75.71%
5	Does the company have an employee health & safety team?	P: 1 for Yes, 0 for No	47.78%
6	Does the company have health and safety management systems in place like the OHSAS 18001 (Occupational Health & Safety Management System)?	P: 1 for Yes, 0 for No	38.26%
7	Does the company claim to provide day care services for its employees?	P: 1 for Yes, 0 for No	13.24%
8	Does the company report on policies or programs on HIV/AIDS for the workplace or beyond?	P: 1 for Yes, 0 for No	13.18%
9	Does the company have a policy to improve the skills training of its employees?	P: 1 for Yes, 0 for No	62.86%
10	Does the company train its executives or key employees on health & safety?	P: 1 for Yes, 0 for No	62.89%
11	Does the company train its executives or key employees on employee health & safety in the supply chain?	P: 1 for Yes, 0 for No	9.22%
12	Does the company have a policy to improve the career development paths of its employees?	P: 1 for Yes, 0 for No	60.05%
13	Does the company claim to favor promotion from within?	P: 1 for Yes, 0 for No	32.32%
14	Does the company claim to provide regular staff and business management training for its managers?	P: 1 for Yes, 0 for No	49.01%
15	Does the company provide training in environmental, social or governance factors for its suppliers?	P: 1 for Yes, 0 for No	15.13%
16	Does the company have a policy to support the skills training or career development of its employees?	P: 1 for Yes, 0 for No	68.76%
17	Is the company under the spotlight of the media because of a controversy linked to the company's employees, contractors or suppliers due to wage, layoff disputes or working conditions?	N: 1 for No, 0 for Yes	96.69%
18	Has there have been a strike or an industrial dispute that led to lost working days?	N: 1 for No, 0 for Yes	97.49%
19	Has an important executive management team member or a key team member announced a voluntary departure (other than for retirement) or has been ousted?	N: 1 for No, 0 for Yes	94.20%
20	Total number of announced lay-offs by the company divided by the total number of employees.	N: 1 for no layoffs, 0 for having lay-offs	89.84%

Note: The qualitative measures provide binary information on whether a firm has a particular attribute, while the quantitative measure gives information about actual lay-off activities. For qualitative measures with positive attributes, I assign a score of 1 to a firm that has the attribute, and zero otherwise. For example, a firm will receive a score of 1 if it has an employee health and safety team, and zero otherwise. For qualitative measures with negative attributes, I apply a score of 1 to a firm that lacks the attribute, and zero otherwise. For instance, I give a score of 1 to a firm that has no strikes or industrial disputes during the current year, and zero otherwise. For the quantitative measure, a firm receives a score of 1 if it does not lay off its employees, and zero otherwise.

APPENDIX B
Variable Definitions – ESSAY ONE

Variable	Definition	Sources
Dependent variable		
LNAF	Natural logarithm of audit and audit-related fees.	Thomson Reuters (TR) Fundamentals
Independent variable		
WEI	Workforce environment index, measured by 20 firm-level qualitative and quantitative workforce-related indicators, which measures the overall workforce environment for employees.	Authors' calculation; TR ESG database
WS	Thomson Reuters ESG workforce score, which measures "a company's effectiveness towards job satisfaction, a healthy and safe workplace, maintaining diversity and equal opportunities, and development opportunities for its workforce."	TR ESG database
WS_A4	The equal weighted workforce score (*WS_A4*) as the average of employment quality (*SOEQ*), health and safety (*SOHS*), training and development (*SOTD*), and diversity and opportunities scores (*SODO*).	ASSET4; Authors' calculation
Firm-level control variable		
SIZE	Natural logarithm of total assets.	TR Fundamentals
LEV	The leverage ratio, defined as the sum of short- and long-term debt divided by total assets.	TR Fundamentals
INVREC	The sum of inventories and receivables divided by total assets.	TR Fundamentals
ROA	Net income divided by total assets.	TR Fundamentals
NBS	Natural logarithm of the number of business segments.	WorldScope
NGS	Natural logarithm of the number of geographic segments.	WorldScope
LOSS	Dummy variable coded as 1 for firms reporting negative income before extraordinary items, 0 otherwise.	TR Fundamentals
SPECIAL	Dummy variable, coded as 1 for firms reporting special items, 0 otherwise.	TR Fundamentals
CROSS	Dummy variable, coded as 1 for firms cross-listing in the US, 0 otherwise.	WorldScope
MTB	Market to book ratio, defined as the firm market value divided by common shareholder equity.	TR Fundamentals
CURRENT	Current ratio, defined as current assets divided by current liabilities.	TR Fundamentals
TURN	Turnover ratio, defined as net sales divided by total assets.	TR Fundamentals
INTS	International operation, coded as 1 for firms that have at least 10% international sales to total sales, 0 otherwise.	WorldScope
ISSUE	Dummy variable, coded as 1 when the following conditions apply: long-term debt increased by at least 20%, or the number of common shares increased by at least 10% after controlling for stock splits; 0 otherwise.	WorldScope
CSR	Corporate social responsibility score, which ranges from 0 to 100.	TR ESG database
BIGN	Dummy variable, coded as 1 for firms audited by one of the Big 4 firms (i.e., PricewaterhouseCoopers, Deloitte Touche Tohmatsu, KPMG, and Ernst & Young), 0 otherwise.	TR Eikon
AO	Audit opinion, coded as 1 for firms receiving qualified opinions for the current year, 0 otherwise.	WorldScope
BUSY	Dummy variable, coded as 1 for firms for which the fiscal year-end comes during an auditor busy season, 0 otherwise.	WorldScope
Firm-level governance control variable		
BSIZE	The total number of board members at the end of the fiscal year.	TR ESG database
BIND	The percentage of independent members on the board of directors.	TR ESG database
ACM	Dummy variable, coded as 1 for firms with an audit committee, 0 otherwise.	TR ESG database
ACMIND	The percentage of independent members on the audit committee.	TR ESG database
ACMEXP	Dummy variable, coded as 1 for firms that have an audit committee with at least three members and at least one financial expert, 0 otherwise.	TR ESG database
CEODUAL	Dummy variable, coded as 1 for firms where the CEO and chair of the board are the same person, 0 otherwise.	TR ESG database
Country-level control variable		
LAW	Legal origin. Dummy variable, coded as 1 for common law countries, 0 for code law countries.	La Porta et al. (2008)

LNGDP	Natural logarithm of gross domestic product (GDP) per capita in U.S. dollars.	International Monetary Fund
FDI	Foreign direct investment divided by GDP.	World Bank
DISCL	CIFAR disclosure developed by Center for International Financial Analysis and Research. CIFAR (1995) creates a country-specific index by rating the annual reports of at least three firms in every country for the inclusion or omission of 85 specific items. These 85 items include specific disclosures in the following seven categories: general information (8 items), income statement (11 items), balance sheet (14 items), funds flow statement (5 items), accounting policy disclosure (20 items), shareholder information (17 items) and other supplementary information (10 items). Each country is given a score that ranges from 0 to 85, with higher scores indicating greater disclosure.	CIFAR
CORRUP	Perceived corruption index, ranging from 0 to 10. For convenient interpretation, I use 10 minus the actual values. Thus, the higher the index, the higher the perceived corruption level.	Transparency International
EPL	Employment protection legislation index. It consists of three category scores: individual dismissal of regular workers (EPR), additional costs of collective dismissals (EPC), and regulation of temporary contracts (EPT). *EPL* is measured as the equally weighted score of EPR, EPC, and EPT. I multiply *EPL* by -1 for ease of interpretation.	OECD website
EFW	Labor market regulations including hiring regulations and minimum wage (5Bi), hiring and firing regulations (5Bii), centralized collective bargaining (5Biii), hours regulations (5Biv), mandated cost of worker dismissal (5Bv), and conscription (5Bvi). I use the average of these six components to construct the *EFW* index.	The Fraser Institute's Economic Freedom of the World

Mediation variable		
|DAC|	The absolute value of discretionary accruals (*DAC*), generated from the modified Jones model (Dechow et al., 1995). I estimate the model for all firms in the same country and industry (using the GICS industry group code) with at least eight observations in an industry-year-country pair using the following equation: $$\frac{ACC_{i,t}}{TA_{i,t-1}} = \gamma_0 \left(\frac{1}{TA_{i,t-1}}\right) + \gamma_1 \left[\frac{\Delta SALES_{i,t} - \Delta RECEIVABLE_{i,t}}{TA_{i,t-1}}\right] + \gamma_2 \left(\frac{PPE_{i,t}}{TA_{i,t-1}}\right) + \varepsilon_{i,t}, \quad (A1)$$ where *ACC* is the total accruals calculated as earnings before extraordinary items and discontinued operations, minus operating cash flows. $\Delta SALES$ is the change in sales revenue in year t; $\Delta RECEIVABLE$ is the change in accounts receivable in year t; and *PPE* is the gross value of property, plant, and equipment at the end of year t. All variables, including the intercept, are deflated by lagged total assets. Non-discretionary accruals (*NDAC*) is the predicted value from the above equation, with *DAC* representing the residuals.	TR Fundamentals; Authors' calculation
CONTRO	Media coverage of workforce controversies, measured as the natural logarithm of the total number of controversies published in the media related to workforce plus one. The total number of controversies published in the media related to workforce includes "Number of controversies published in the media linked to workforce diversity and opportunity (e.g., wages, promotion, discrimination and harassment)," "Number of controversies published in the media linked to the workforce health and safety," and "Number of controversies published in the media linked to the company's relations with employees or relating to wage or wage disputes."	TR ESG database

APPENDIX C
Variable Definitions -ESSAY THREE

Variable	Definition	Sources
Dependent variable		
APTS_D	An indicator coded one if clients purchased tax services from incumbent auditors, and zero otherwise	Hand collection
APTS_FEE	APTS fees scaled by the square root of total assets at the beginning of the year, following Kinney et al. (2004)	Hand collection, WorldScope
Independent variable		
BTC1	Book-tax conformity index, which measures the level of *required* book-tax conformity in each country and in each year as developed by Atwood et al. (2010). I calculate *BTC1* as the scaled ranking of the root mean squared errors obtained from country-year estimates of Equation (4.1).	WorldScope
BTC2	Alternative book-tax conformity index, which is developed by Tang (2015). I calculate *BTC2* as the scaled ranking of the root mean squared errors obtained from country-year estimates of Equation (4.2).	WorldScope
Variables to calculate BTC		
BTD	Book-tax differences (*PTBI* times *STR* minus *CTE*) scaled by average total assets.	WorldScope
CTE	Current tax expense scaled by average total assets. When the current tax expense is missing, I calculate it using total tax expense minus deferred tax expense, if available.	WorldScope
CETR	Current effective tax rate, defined as *CTE* divided by operating cash flow.	WorldScope
DACC	Signed discretionary accruals, generated from the modified Jones model with lagged return-on-assets (Kothari et al., 2005). I estimate the model for all firms in the same country and industry (using the SIC two-digit industry code) with at least twelve observations in an industry-country pair using the following equation: $\frac{ACC_{i,t}}{TA_{i,t-1}} = \gamma_0 + \gamma_1\left(\frac{1}{TA_{i,t-1}}\right) + \gamma_2\left[\frac{\Delta SALES_{i,t} - \Delta RECEIVABLE_{i,t}}{TA_{i,t-1}}\right] + \gamma_3\left(\frac{GPPE_{i,t}}{TA_{i,t-1}}\right) + \gamma_4(ROA_{i,t-1}) + \varepsilon_{i,t}$ (A2) where *ACC* is the total accruals calculated as net income before extraordinary items, minus operating cash flows. $\Delta SALES$ is the change in net sales or revenues in year t; $\Delta RECEIVABLE$ is the change in accounts receivable in year t; *GPPE* is the gross value of property, plant, and equipment at the end of year t; and *ROA* is return on assets, measured as net income before extraordinary items for the preceding year divided by total assets for the same year. *DACC* is the residual from above model.	WorldScope
DIV	Total dividends scaled by average total assets.	WorldScope
ForPTBI	The estimated foreign pre-tax book income [(foreign tax expense / total tax expense) * *PTBI*] scaled by average total assets.	WorldScope
PTBI	Pre-tax book income scaled by average total assets.	WorldScope
STR	Statutory tax rate for each country	KPMG Corporate Tax Rates Table
TP	Tax avoidance measure, defined as *STR* minus *CETR*	WorldScope
Firm-level control variable		
AFEE	Total audit fees scaled by the square root of total assets at the beginning of the year, following Kinney et al. (2004)	Hand collection, WorldScope
NAS_AF	Auditor independence, defined as other non-tax NAS fees divided by total audit fees received from the client.	Hand collection
SIZE	Natural logarithm of total assets at the beginning of the year.	TR Fundamentals
MERGER	Dummy variable coded as 1 for firms participating in M&A activities during the year, 0 otherwise.	TR Fundamentals
LOSS	Dummy variable coded as 1 for firms reporting negative pre-tax income, 0 otherwise.	TR Fundamentals
ROA	Pre-tax income divided by total assets at the beginning of the year.	TR Fundamentals
FI	Dummy variable coded as 1 for firms reporting foreign income taxes, 0 otherwise.	TR Fundamentals

R&D	Research and development expenses divided by total assets at the beginning of the year.	TR Fundamentals
LEV	The leverage ratio, defined as the long-term debt divided by total assets at the beginning of the year.	TR Fundamentals
NPPE	Net PPE divided by total assets at the beginning of the year.	TR Fundamentals
INTANG	Net intangible assets divided by total assets at the beginning of the year.	TR Fundamentals
CASH	The sum of cash and cash equivalent divided by total asset at the beginning of the year.	TR Fundamentals
ACC	Total accruals divided by pre-tax income. Total accruals are calculated as net income before extraordinary items, minus operating cash flows.	TR Fundamentals
NBS	Natural logarithm of the number of business segments.	WorldScope
BTM	Book to market ratio, defined as the book value of common shareholder equity divided by the firm market value.	WorldScope
SALES_G	The current year changes in sales.	TR Fundamentals
ASSET_G	The current year changes in total assets.	TR Fundamentals
BIG4	Dummy variable, coded as 1 for firms audited by one of the Big 4 firms (i.e., PricewaterhouseCoopers, Deloitte Touche Tohmatsu, KPMG, and Ernst & Young), 0 otherwise.	TR Eikon
PROTECT	Investor protection index, defined as the mean of four World Bank Indices. They are the Extent of Director Liability Index (*EDL*), the Ease of Shareholder Suits Index (*ESS*), the Rule of Law Index (*RL*), and the Control of Corruption Index (*CC*). Since *EDL* and *ESS* range from 0-10 while *RL* and *CC* range from 0 to 100, I divide the latter two by ten to make scales consistent across four indices.	World Bank

STATEMENT OF CONTRIBUTION
DOCTORATE WITH PUBLICATIONS/MANUSCRIPTS

We, the candidate and the candidate's Primary Supervisor, certify that all co-authors have consented to their work being included in the thesis and they have accepted the candidate's contribution as indicated below in the *Statement of Originality*.

Name of candidate:	Xuan Sun
Name/title of Primary Supervisor:	Ahsan Habib

In which chapter is the manuscript /published work:	Chapter Two

Please select one of the following three options:

⦿ The manuscript/published work is published or in press

- Please provide the full reference of the Research Output:

Sun, X. S., Habib, A., & Bhuiyan, M. B. U. (2020). Workforce environment and audit fees: International evidence. Journal of Contemporary Accounting & Economics, 16(1), 100182.

◯ The manuscript is currently under review for publication – please indicate:

- The name of the journal:

- The percentage of the manuscript/published work that was contributed by the candidate:

- Describe the contribution that the candidate has made to the manuscript/published work:

◯ It is intended that the manuscript will be published, but it has not yet been submitted to a journal

Candidate's Signature:	Sun, Xuan Digitally signed by Sun, Xuan Date: 2021.02.25 14:05:45 +13'00'
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- The name of the journal:

International Journal of Auditing

- The percentage of the manuscript/published work that   70.00
  was contributed by the candidate:

- Describe the contribution that the candidate has made to the manuscript/published work:

The candidate initiated the research idea, collected the reviewed papers, and wrote the literature review. The supervisor was responsible for guiding the candidate through various stages including refining the structure of the paper and helping the candidate for polishing the draft for publication.

○ It is intended that the manuscript will be published, but it has not yet been submitted to a journal

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Name/title of Primary Supervisor:	Ahsan Habib

In which chapter is the manuscript /published work:	Chapter Four

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◉ The manuscript is currently under review for publication – please indicate:

- The name of the journal:

European Accounting Review

- The percentage of the manuscript/published work that was contributed by the candidate: 70.00

- Describe the contribution that the candidate has made to the manuscript/published work:

The candidate initiated the research idea, developed preliminary hypotheses, hand-collected the data and conducted the empirical analyses. The supervisor was responsible for guiding the candidate through various stages including refining the hypotheses, developing additional tests and helping the candidate for polishing the draft for publication.

○ It is intended that the manuscript will be published, but it has not yet been submitted to a journal

Candidate's Signature:	Sun, Xuan Digitally signed by Sun, Xuan Date: 2021.02.25 14:15:13 +13'00'
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