Volume 32 (1) April 2025 ISSN 0216-423X (Print)
ISSN 2622-2667 (Online)

JABM
JOURNAL *of*
ACCOUNTING, BUSINESS and MANAGEMENT

Journal of Accounting, Business and Management (JABM) vol. 32 no. 1 (2025) 1-26

The Relationship between Principles-Based Accounting Rules and Audit Fees

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Abstract

This paper examines the relationship between principles-based accounting standards and audit fees. The analysis of a sample of 8,046 US public firm year observations for the 2000 to 2006 period shows that auditors charge a lower fee when firms' standards are more principles based. Our result is consistent with the notion that principles-based accounting standards improve earnings quality and reduce auditor's risk-related premium. The results add to the growing body of literature examining the cost/benefit of principles-based accounting standards, as well as to the literature of the determinants of audit fees.

Keywords: principles-based accounting standards, auditing, audit fees.

I. INTRODUCTION

Stylized facts in accounting research and popular press generally suggest that principles-based accounting standards offer the desirability of more application of professional judgement and higher reporting quality, while rules-based accounting standards provide the benefits of clarity in application and increased comparability (Schipper 2003; Jamal et al., 2010; Byard et al., 2011; Brochet et al., 2013; Chan et al., 2013; and Sundvik 2019). Yet, despite the alleged benefits of different reporting standards, there is limited empirical evidence demonstrating how different financial reporting regimes will impact the decision making of stakeholders of the capital market. In this study, we investigate whether auditors' fee decisions are related to different types of accounting standards, i.e., rules-based vs. principles-based.

Our study is also motivated by recent studies that examine the impact of the adoption of international financial reporting standards (IFRS) on audit fees (Kim et al., 2012; De George et al., 2013; and Tawiah 2022). Although IFRS is generally considered to be more principles-based compared with U.S. GAAP, examining audit fee changes around IFRS adoption may not be the ideal setting to explore the impact of principles-based accounting standards on audit fees since this setting is confounded by transition cost, compliance cost, and IFRS complexity, as well as economy-wide switching

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cost.[1] In contrast, a firm-level empirical measure of firms' reliance on principles-based accounting standards in this study provides a clean measure and enables us to better tease out the effect of financial reporting regimes on audit fees.[2] One unique feature of our sample is that the firms are all US firms which are under the same legal system and face similar litigation environment. That reduces the external complication to investigate the research question. Furthermore, our measure is a firm-level instrument that measures the extent to which firms' financial reporting is affected by principles-based standards. It is a more precise measure than using IFRS adoption. Therefore, our research context provides a cleaner setting to examine the question and therefore complement prior studies.

Prior research of audit fee determinants does not afford a directional prediction of the relation between principles-based accounting standards and audit fees. On the one hand, empirical evidence suggests the discretion embedded in principles-based accounting standards enables managers to better capture and report real economic substance and produce more informative and reliable financial reports (Barth et al., 2008; Jamal & Tan 2010; Agoglia et al., 2011; and Folsom et al., 2017). To the extent that higher quality earnings can substantially lower auditors' audit-related litigation risk[3] and subsequently risk-based audit fees, we hypothesize a negative relation between principles-based accounting standards and audit fees.

Nonetheless, we do not rule out the possibility of a positive association between principles-based accounting standards and audit fees. Rules-based accounting standards provide "safe harbor" and reduce shareholder litigation risk as long as detailed guidance and bright-line rules are strictly followed. Principles-based accounting standards, on the other hand, lack precise language and bright-lines and thus do not offer such legal protection as the application of accounting principles can be very subjective.[4] In addition, principles-based accounting standards are significantly more complex. Thus, principles-based accounting standards may lead to higher auditor liability and higher audit-related litigation risk (Donelson et al., 2012; Gimbar et al., 2016).

Identifying a firm-level empirical measure of reliance on principles-based accounting standards is challenging. In this study, we follow prior research (Donelson et al., 2012; Donelson et al., 2016) and use the PSCORE (described in greater detail in the "research methodology" section), a well-validated empirical measure, as our proxy of

[1] In fact, those IFRS-adoption studies do not claim their purpose is to test the relationship between reporting regimes and audit fees per se. We will discuss these studies in detail in the literature review.

[2] Exploring the impact of principles-based accounting standards vs. rules-based accounting standards at the firm level is also consistent in spirit with the view of the regulator. For example, the SEC in its 2013 Final Staff Report claims that "although U.S. GAAP is perceived by many to be more rules-based, and IFRS to be more principles-based, the Staff finds both sets of standards to be a combination of both approaches. (SEC, 2013, p. 27)". Thus, "it is better to think about individual standards within US GAAP as being more or less rules-based.".

[3] Following Houston et al. (2005), we define audit-related litigation risk as litigation risk related to materially erroneous financial statements. See more details in Audit fee model framework in hypothesis development.

[4] One example is lease accounting. Unlike the old ASC 840 that states a lease term equal to 70 percent or more of its useful life enables a lessee to recognize an asset on a lessee's balance sheet, the new and more principles-based ASC 842 stipulates a lessee would record an asset and liability on its balance sheet unless "the lease term is for an insignificant part of the total economic life of the underlying asset". The transition from "70 percent or more" to "insignificant part" requires more judgment and leads to potentially higher litigation risk.

firms' reliance on principles-based accounting standards. Our sample consists of 8,046 firm-year observations from 2,101 unique firms, spanning from year 2000 to year 2006. After controlling for a standard set of determinants of audit fees identified in prior literature, we find in response to a higher degree of principles-based accounting standards, auditors favorably adjust audit fees. The result of our baseline regression supports the argument that principles-based accounting standards improve financial reporting quality and thus lower audit fees.

To better understand the channels through which principles-based accounting rules impact audit fees, we test whether the observed effect in our baseline regression varies symmetrically across different settings. In the first set of cross-sectional tests, we focus on situations where financial reporting quality is important or higher financial reporting quality is demanded. Prior studies suggest the post-SOX legal environment strongly favors higher financial reporting quality. We thus first test if the impact of principles-based accounting on audit fees is stronger in the post-SOX era. Next, we explore the situation of institutional ownership as prior research indicates institutional investors demand higher financial reporting quality. And finally, we test whether the negative relationship observed in the baseline regression varies with auditor expertise. Prior research suggests expert auditors demand and produce higher financial reporting quality. Our evidence suggests the negative relationship is more pronounced in the post-SOX era, in firms with higher institutional ownership, and clients with expert auditors. We also conduct additional cross-sectional tests to verify the other two channels through which principles-based accounting may positively impact audit fees: increased litigation risk and audit complexity. If principles-based accounting standards increase litigation risk and audit complexity, we expect the negative impact on audit fees observed in our baseline regression will be less salient in firms with higher litigation risk and firms in complicated operating environments where the complicated operating environment will exacerbate the impact of increased audit complexity. Our test results show when firms' bankruptcy risk (litigation risk) is higher, the effect of principles-based accounting standards is significantly positive while the effect of principles-based accounting standards on audit fees is insensitive to situations where clients' operating environment is more complex. Thus, while our cross-sectional tests suggest principles-based accounting standards simultaneously reduce audit fees because of improved financial reporting quality and increase audit fees through increased litigation risk, our baseline regression result indicates a dominance of the financial reporting quality channel.

We make two primary contributions. First, our study adds to the academic literature of the impact of financial reporting regimes on capital market participants. Prior studies primarily focus on the transition process of IFRS to understand how different reporting regimes are related to accounting quality, information environment, and other benefits to the capital market. Although those IFRS adoption studies generally find an increase in audit fees after IFRS adoption, attribution of the causality to principles-based accounting is challenging. Our evidence from the firm level measure of a firm's reliance on principles-based accounting standards helps alleviate the concern in IFRS adoption setting and suggests that principles-based accounting standards can reduce audit fees, which have a real economic impact on capital markets as audit fees are a significant cash outflow which imposes a deadweight cost to shareholders.[5] Our study also has important policy implications for the ongoing cost-benefit debate of the two different sets of accounting standards. Although the efforts to converge U.S. and international accounting

[5] For example, in our sample, the average (median) audit fees is $614,003 ($572,493).

standards has stalled, the SEC has not completely ruled out the possibility of future adoption of IFRS, which is widely perceived as more principles-based.[6] Our study provides empirical evidence of audit fee savings for shareholders from principles-based accounting.

There are two important caveats to our study. First, our sample consists of 8,046 firm-year observations from 2,101 unique firms, but due to limited data availability of our empirical proxy, our sample period only covers the 2000-2006 period. Second, similar to all other audit fee research, it is empirically challenging to establish a causal relationship because of the potential endogeneity concerns. To mitigate the correlated omitted variable concern about our regression model, we add several alternative control variables, including the abnormal audit fees, natural log of non-audit fees, performance matched discretionary accrual, accrual quality, restatements, and earnings auto correlations to our regression model, and we find qualitatively the same results. We also perform change regression analysis and propensity matched sample analysis to mitigate the endogeneity concern about our model, and again we continue to find similar results. Such robustness tests provide some relief to the endogeneity concerns of our regression model.

The remainder of this paper is organized as follows. The next section reviews prior research concerning principles-based accounting standards and audit fees, and develops the hypothesis. The sample and research design are described next, followed by a discussion of the empirical results. The last section discusses the implications and directions for future research.

II. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

2.1. Principles-based Standards or Rules-based Standards

Currently there are two sets of well-recognized, high quality accounting standards, U.S. GAAP and IFRS. It is generally acknowledged that U.S. GAAP is more rules-based while IFRS is more principles-based. Both rules-based and principles-based standards have their own advantages. Principles-based standards do not provide detailed guidelines, and thus may better capture the underlying economics of transactions through the exercise of professional judgement. For example, rules-based standards usually are more precise and provide detailed guidance through bright-line thresholds, scope restrictions, and implementation guidance which reduce the incidence of litigation (Donelson et al., 2012). Dalatu et al. (2022) analyze the international accounting standards on consolidation and conclude that consolidation criteria are more complex, and thus difficult to understand even among experts. They are even more challenging to apply in practice.

On the other hand, there is a concern that company management may interpret rules-based standards (the U.S. GAAP) opportunistically (Agoglia et al., 2011). The accounting scandals in early 2000s demonstrated that the detailed implementation guidelines encouraged accountants to exploit loopholes in the rules and to engage in transaction structuring to evade treatments such as capitalization and conceal unfavorable information. For instance, lease accounting to avoid capitalization is a common example subject to abuse. The FASB's SFAS No. 13, Accounting for Leases, states four criteria

[6] Indeed, although not its top priority, the SEC is still evaluating the potential convergence of the two accounting standards. For example, Mary Jo White, the chair of SEC, recently emphasized the importance of developing uniform, high-quality, globally accepted accounting standards for U.S investors and suggested that the SEC "must continue to pursue such standards as one of its highest priorities (https://www.sec.gov/news/statement/white-2016-01-05.html)".

to classify a lease as a capital lease which contain bright-line thresholds. As a contrast, the IAS 17 – leases does not have that kind of bright-line threshold.[7] Consequently the application of IAS 17 requires more professional judgement and it is not as easily manipulated.

As a result, the heated debate on whether the accounting standards should be more principles-based or rules-based is still ongoing. Even though there are several studies on this issue, it remains unsolved because it involves a delicate balance of cost and benefit analysis, and all involved stakeholders should be considered. Among the stakeholders, auditors are an important constituent, as the audit methodology will change significantly if a more principles-based standard is adopted. Therefore, the research on how auditors react to the two kinds of accounting standards can shed light on this principles-versus-rules debate.

2.2. Related Auditing Research

In the audit fees research, a number of studies have examined determinants that affect audit fees. Simunic (1980) develops an audit fee model to explain the determinants of audit fees. Simunic (1980) suggests the audit fees contain both the cost of the audit and the expected costs of business risk. Houston et al. (1999) extend Simunic (1980) by decomposing the expected costs of business risk into two components: audit risk (primarily litigation risk related with undetected material misstatements) and non-audit risk (risk unrelated with undetected material misstatements).[8] Houston et al. (2005) further separate the non-audit risk into two components: residual litigation risk and nonlitigation risk. The audit fee model is:

$$E(tac) = [pq+(E(a)\times E(b))]+[E(c)\times E(d)]+[E(e)\times E(f)] \quad \text{.....} \quad 1$$

Where:

E(tac): total expected audit cost;

p : the per unit cost of auditor resources;

q : the quantity of resources used by the auditor in performing the audit examination;

E(a) : expected present value of possible losses incurred by client stakeholders associated with undetected material misstatements in this period's financial statements;

E(b) : expected likelihood that the auditor will be held responsible for stakeholder losses associated with undetected material misstatements in this period's financial statements;

E(c) : expected present value of possible losses from future litigation by being associated with this period's financial statements due to factors other than undetected materials misstatement;

E(d) : expected likelihood that auditor will be held responsible for losses associated with this period's financial statements due to factors other than undetected materials misstatement;

E(e) : expected present value of possible profits or losses associated with business opportunities caused by factors other than litigation as a result of being identified with this period's financial statements; and

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[7] Under U.S. GAAP, the four criteria are: 1) the lease transfers ownership of the property to the lessee by the end of the lease term; 2) the lease contains a bargain purchase option; 3) the lease term [is at least] 75 percent. of the estimated economic life of the leased property; and 4) the present value of the minimum lease payments [at lease inception] excluding executory costs [is at least] 90 percent of the excess of the fair value of the leased property. Under IFRS, the first two criteria are the same as US GAAP while the third and the fourth are different. IFRS states the third and fourth criteria as: 1) the lease term is for the major part of the economic life of the asset even if title is not transferred; and 2) the present value of the minimum lease payments at lease inception is for substantially all of the fair value of the leased asset.

[8] Examples of non-audit risk are litigation losses due to a client's poor financial condition and /or high stock price variability.

E(f) : expected likelihood of a business opportunity caused by factors other than litigation as a result of being identified with this period's financial statements.

Utilizing this framework, many studies have identified the factors affecting audit fees: auditor type, firm size, firm operation complexity, firm risk, firm performance, financial reporting quality, and potential legal liability or litigation risk (for example, Simunic, 1980; Palmrose, 1986; Craswell et al., 1995; Ashbaugh et al., 2003; Whisenant et al., 2003; Hogan & Wilkins, 2008; and Kim et al., 2012). Hay et al. (2006) use meta-analysis to test the consistency of the drivers identified in the prior studies. They categorize these different drivers into three groups: client attributes, auditor attributes, and engagement attributes. In this study, we focus on three factors relevant to our hypothesis: financial reporting quality, litigation risk, and audit complexity.

Financial reporting quality. Firms with higher financial reporting quality are more likely to decrease information asymmetry and agency costs. Firms with high accounting quality are less likely to incur financial misstatements. If the client's financial statements are misstated, then auditors face drastic reputation loss and litigation cost. Therefore, when auditors perceive the client's financial reporting quality is low, they will increase audit hours and risk premium, which leads to higher audit fees. So the direct effect of financial reporting quality on audit fees is that higher accounting information quality can lower auditors' inherent risk assessment and thus lower the audit effort and audit fees (Kim et al., 2012; Lobo & Zhao 2013; and Hribar et al., 2014). Furthermore, since higher financial reporting quality can substantially lower auditors' litigation exposure, it can lower the risk-based audit fees as well (Skinner & Srinivasan, 2012; Chung et al., 2013).[9]

Litigation risk. In the auditing process, audit firms face tremendous litigation risk. For example, the six largest audit firms were mentioned in more than 90 lawsuits, with the alleged damages more than $100 million (Advisory Committee on the Auditing Profession, 2008). The audit fee model has litigation risk as a major component. Archival studies also provide supporting evidence that the higher the litigation risk, the higher the audit fees. (Seetharaman et al., 2002; Venkataraman et al., 2008; Badertscher et al., 2014; and Zhang et al., 2023. Simunic and Stein (1996) try to answer the question whether audit fees are adequate to compensate auditors for litigation risk. They document supporting evidence indicating that CPA firms make adjustments to audit fees in situations involving higher litigation exposure. Using an IPO setting, Venkataraman et al. (2008) examine the relation between auditor exposure to legal liability, audit quality, and the pricing of litigation risk. They find that audit fees are higher for IPO audits and they attribute a substantial portion of fee increases to the litigation exposure. Badertscher et al. (2014) investigate the effect of auditor litigation risk on audit fees by examining the audit fees across different ownership structures. More specifically they compare the audit fees of firms with public debt and public equity to audit fees of firms with public debt and private equity. They find that firms with public debt and public equity pay 20-22% higher audit fees than firms with public debt and private equity do. The finding is consistent with the existence of litigation risk premium paid by firms with public equity. In summary, prior studies find consistent evidence that when auditors perceive higher litigation risk they charge higher audit fees.

[9] We caution readers that although empirical evidence from archival studies suggests a positive impact of principles-based accounting on financial reporting quality with the exception of Ahmed et al. (2013), evidence from experimental studies is mixed (Jamal & Tan, 2010; Gimbar et al., 2016; Kadous & Mercer, 2016; and Cornell et al., 2017). We thank one anonymous reviewer for pointing this out.

Audit Complexity. Audit complexity is another contributing factor to audit fees. Complex issues demand significant professional judgement to determine the proper accounting treatment. Audit firms have to spend more time and resources to perform the audit service. This, in turn, increases audit fees. Simunic (1980) tests the determinants of audit fees and finds size and complexity are important determinants. Vermeer et al. (2009) find, for nonprofit organizations, size and complexity explain the majority of fees variance. Kanakriyah (2020) finds that corporate complexity is one of most important factors having a significant effect on audit fees. The most common indicators of complexity include the number of subsidiaries, the existence of foreign operation, and the number of standard industrial classification (SIC) codes that make up the client, etc.

2.3. IFRS Adoption Studies

A stream of recent studies examines the impact of IFRS adoption on audit fees and the empirical results of those studies generally suggest an increase of audit fees around IFRS adoption.[10] For example, De George et al. (2013) find that at the year of IFRS adoption, Australian public firms incurred an economy-wide increase in the mean level of audit fees of 23 percent and an 8 percent IFRS-related audit fee increase. Kim et al. (2012) also document a similar increase in audit fees for European countries that adopted IFRS in 2005. Tawiah (2022) documents that IFRS is positively and significantly associated an increase in audit fees for early adopters, but the impact is weak for late adopters.

Although IFRS is generally considered more principles-based than U.S. GAAP, it is difficult to directly attribute the audit fee increase documented in those aforementioned studies to the impact of financial reporting regimes, i.e., principles-based vs. rules-based for the following reasons. First, in addition to the difference in principles- versus. rules-based features, other fundamental differences between IFRS and U.S. GAAP, such as reporting complexity and extent of disclosure requirements, may also lead to the observed audit fee increase (Barth et al., 2008; Chan et al., 2013). For example, IFRS places more emphasis on the use of fair value, and the increased reliance on fair value measurement may result in a higher chance of reporting errors and audit failure. IFRS also requires more detailed disclosure than U.S. GAAP, such as using hedge accounting, and the nature and method of executive compensation plans. Higher reporting complexity and more extensive disclosure will necessarily increase audit efforts and also risk-related fee premiums (KPMG, 2007; Deloitte, 2008). Second, IFRS adoption introduces other significant costs unrelated to the difference in principles-based and rules-based accounting standard attributes. The change in reporting regime to IFRS requires significant preparation, certification, and disclosure costs. The IFRS adoption will also force auditors to exert efforts to be knowledgeable with the new reporting regime and revise their information system to be compatible with the new reporting regime (Kim et al., 2012). These firm-specific adoption-related costs, along with a fixed economy-wide switching cost and general uncertainty surrounding IFRS adoption, will also make it difficult to disentangle and capture the effect of individual factors in audit fee decisions.

Longer-horizon studies of IFRS adoption may alleviate some of the concerns raised above, such as adoption-related concerns. However, a long horizon in research design does not relieve the concern of increased audit complexity and may also bring in other non-IFRS factors which contaminate the empirical results and inferences. For

[10] We thank two anonymous reviewers for bringing these articles to our attention, as they substantially improve the motivation and the contribution of the study.

example, the longer the horizon, the more confounding changes there may be in regulation and/or the general economy. Prior research also finds that audit fee increases, particularly those related to regulation changes, are sticky and have a long-term effect (Raghunandan & Rama, 2006; Salman & Carson, 2009). Thus, tweaking the research design in an IFRS adoption setting cannot completely parse out the effect of those noises and identify the impact of principles-based accounting on audit fees.

In summary, the audit fee model presents a framework that audit fees contain the audit cost, the expected cost of audit risk (primarily litigation risk) and non-audit risk. Many studies have identified factors affecting audit fees. However, the evidence on how accounting standards affect audit fees is rare. Several studies examine the impact of IFRS adoption on audit fees. However, it is not the ideal setting to answer the question, due to many confounding factors. Therefore, this study attempts to shed light on this research question – how accounting standards affect audit fees.

2.4. Hypothesis Development

We examine how principles-based and rules-based accounting standards affect audit fees because audit fees proxy for the level of effort and service provided by auditors. Even though prior research on audit fee determinants is extensive, how principles- versus rules-based standards affect audit fees is unclear. To help our hypothesis development, we focus on financial reporting quality, litigation risk, and audit complexity.

Principles-based accounting standards provide management with more discretion to capture the underlying economic reality of the transactions. As a result, the financial statements become more informative. Barth et al. (2008) examine whether application of International Accounting Standards (IAS) is associated with higher accounting quality. They document that firms adopting IAS have higher accounting quality (less earnings management, more timely loss recognition, more value relevance of accounting amounts). With an experiment, Jamal and Tan (2010) specifically investigate lease accounting – how a lease is reported when the lease accounting standard is principles-based or rules-based. They find that for a rules-based standard, firms tend to report the lease off balance sheet (aggressive reporting). With principles-based accounting, firm's tendency to classify the lease off balance sheet is reduced (especially when the auditor is principles-oriented). That is, with a principles-based accounting standard, management tend to report less aggressively. Folsom et al. (2017) find supporting empirical evidence that when firms' standards are more principles-based, their earnings are more informative, more persistent, more highly correlated with future cash flows, and have a stronger contemporaneous relation with unexpected returns. Agoglia et al. (2011) find that CFOs report less aggressively under less precise (more principles-based) standards. They also find significantly less variability among preparers' reporting decisions, suggesting that the application of more principles-based standards results in more comparability, which is an important accounting information characteristic. Taken together, the more principles-based accounting standards result in higher accounting information quality. Furthermore, prior studies find that the higher the financial reporting quality, the lower the audit fees. Thus, the financial reporting quality hypothesis predicts:
H_1: principles-based accounting standards are negatively related to audit fees.

On the other hand, we do not completely rule out the possibility there is a positive relationship between principles-based accounting and audit fees. One obvious benefit of rules-based standards is that they can reduce managers' and auditors' litigation risk. Generally speaking, the rules-based standards can provide clear guidance and a "safe harbor" from litigation (Schipper, 2003). Donelson et al. (2012) find that rules-based

standards are associated with a lower incidence of litigation. Donelson et al. (2016) further find that litigation risk and complexity are most consistently related to rules-based characteristics. They state that "the United States is a litigious society and will likely remain so into the future, so there will likely always be a demand for specific guidance to offer protection from litigation risk." (Donelson et al., 2016, p. 831). On the contrary, principles-based standards cannot provide this kind of protection. Although managers report conservatively under imprecise standards (Jamal & Tan, 2010; Agoglia et al., 2011); and Kadous and Mercer (2016) find that there is more second-guessing of auditor judgments under the principles-based (imprecise) standard than the rules-based (precise) standard when the clients' reporting is conservative. Therefore, a move to more principles-based standards results in elevated audit firm litigation exposure. As a result, the auditors will increase the audit fees accordingly. Even though Grenier et al. (2015) find that audit firms can mitigate the increased litigation risk associated with imprecise accounting standards by using recognized technical experts, this imposes extra costs to the audit firms which lead to an increase in audit fees.

There is another concern for principles-based standards that the discretion provided by the standards can be misused by management (Herz, 2003). Folsom et al. (2017) find evidence that managers use the discretion to manage earnings when firms are nearing bankruptcy, issuing equity, or experiencing high growth, and if earnings are near prominent earnings benchmarks. When the discretion provided by the imprecise standards is manipulated by management, that will increase the managers' and auditors' litigation exposure. As a result, an audit firm will increase audit fees to compensate for the elevated litigation exposure.

Donelson et al. (2012) investigate the relationship between complexity and rules-based standards. They predict that measurement complexity and transaction complexity lead to more guidance. Consistent with their prediction, they find strong supporting evidence that there is a positive relation between complexity and rules-based characteristics. In another words, rules-based standards provide detailed guidance which reduces the preparation cost, audit cost, and enforcement cost of companies, audit firms, and standards setters (Schipper, 2003; Donelson et al., 2012). On the other hand, principles-based standards do not provide detailed guidance and therefore cannot offer this kind of benefit. That is, audit firms would have to spend more time and resources and incur more effort to perform the audit when facing the complex transactions with principles-based standards lacking the detailed implementation guidance. As a result, the audit firms would increase the audit fees.

III. RESEARCH METHODOLOGY

3.1. The PSCORE

We depart from prior studies of IFRS adoption and utilize PSCORE in this study, a well-validated firm-level empirical proxy that measures the extent of a firm's reliance on principles-based accounting standards.

The PSCORE is a firm-year-specific variable using textual analysis to measure the extent to which an individual company is relying on principles-based or rules-based accounting standards for its financial reporting. This measure was validated by Folsom et al. (2017) through multiple rounds of keyword reviews with technical specialists at a national Big Four firm, and multiple rounds of textual validation against firms' financial reports for correlation with industry-specific keywords and standards. Folsom et al. (2017) create the PSCORE with the following procedures:

1) For each individual financial accounting standard, obtain a standard-specific rules-based or principles-based score (RBC1), as developed by Mergenthaler (2011), and validated by Donelson et al. (2012). RBC1 is a measure of the extent to which each standard is rules-based or principles-based, using four recognized characteristics that differentiate between the two. These characteristics are a) the inclusion of bright-line thresholds, b) allowed legacy exceptions, c) large volumes of implementation guidance, and d) high levels of detail (Folsom et al., 2017). An RBC1 of zero indicates that the standard includes none of these characteristics, and is more principles-based, while an RBC1 of four indicates it includes all of these characteristics and is thus more rules-based. It is worth noting that the RBC1 score varies whenever a standard changes.
2) Calculate a standardized keyword count (REL_IMP_{its}) to measure the relative importance of a particular standard to each firm. Keywords were developed by Folsom et al. (2017), and validated by industry experts, to measure the extent to which each firm's financial reports are affected by principles-based standards. Specifically, this measures the cross-sectional variation in a firm i's reliance upon a particular standard s in a specific year t:

$$\mathbf{REL\_IMP_{its} = (firm\_count_{its} - avg\_firm\_count_{ts}) / Std\_dev(firm\_counts_{ts}) \; .. \quad 2}$$

Where:

The $firm\_count_{its}$ is the number of times firm i mentions standard s's keywords in year t, the $avg\_firm\_count_{ts}$ is the average number of times all other firms mention standard s's keywords in year t, and the Std_dev ($firm\_counts_{ts}$) is the standard deviation of the number of times the keywords for standard s are mentioned in each firm's annual report in year t.[11]

3) For each firm-year-standard, multiply the relative importance (REL_IMP_{its}) and the rule or principle based score (RBC1), then sum over all accounting standards mentioned in this firm's annual report. Finally, negative one is used to adjust the direction of PSCORE, so that firms relying more on principles-based standards receive a higher PSCORE value, and firms relying more on rules-based standards receive a lower PSCORE value.

$$\mathbf{PSCORE_{it} = -1 \times \sum (REL\_IMP_{its} \times RBC1_{ts}) \; ..... \quad 3}$$

The keyword counts for financial accounting standards and the PSCORE measurement are carefully analyzed and validated by Folsom et al. (2017).

3.2. Data and Sample Selection

The PSCORE data were downloaded from Rick Mergenthaler's personal website.[12] We first merge the PSCORE data with the Compustat database for financial information, then merge with the Audit Analytics database for the auditing related information. After excluding the utilities and banking firms, we have a final sample of 8,046 firm-year observations from 2,101 unique firms. The sample period is from 2000 to 2006, because the auditing fee information is only available from the year 2000 and the PSCORE data stops at 2006. This sample attrition process is summarized in Table 1.

One unique feature of our sample is that the firms are all US firms which are under the same legal system and face similar litigation environment. That reduces the external complication to investigate the research question. Furthermore, our measure is a firm-level instrument that measures the extent to which firms' financial reporting is affected by principles-based standards. It is a more precise measure than using IFRS adoption. Therefore, our research context provides a cleaner setting to examine the question and therefore complement prior studies.

[11] A full list of the keywords is listed in the appendix of Folsom et al. (2017).

[12] http://www.biz.uiowa.edu/faculty/rmergenthaler/.

Table 1
Sample Construction Procedure

PSCORE firm year observations (2000-2006)	23,493
Less:	
Missing Compustat information	(8,168)
Missing Audit Analytics information	(5,230)
Utility and Banking industries observations	(2,049)
PSCORE and Audit Fees Sample	**8,046**

3.3. Audit Fee Model

Prior audit pricing literature typically regresses fees against a variety of control variables measuring for attributes that related to audit fees. Following the rich research literature on audit fees (for example, Chang et al., 2010; Hua et al., 2016), we estimate the following audit fee determinants model using the *PSCORE* as the experimental variable to test our hypothesis about whether the auditors' fee decisions are related to their client's accounting standards reliance.

$$\begin{aligned}\textbf{LAUDIT}= {} & \beta_0+\beta_1\times\textbf{PSCORE}+\beta_2\times\textbf{LOGAT}+\beta_3\times\textbf{INVREC}+\beta_4\times\textbf{LEVERAGE}\\ & +\beta_5\times\textbf{QUICK}+\beta_6\times\textbf{FOPS}+\beta_7\times\textbf{NSEG}\ \beta_8\times\textbf{BUSY}+\beta_9\times\textbf{ROA}\\ & +\beta_{10}\times\textbf{BM}+\beta_{11}\times\textbf{LOSS}+\beta_{12}\times\textbf{SPITEM}+\beta_{13}\times\textbf{GCM}+\beta_{14}\times\textbf{SQLAG}\\ & +\beta_{15}\times\textbf{BIGN}+\beta_{16}\times\textbf{EXPERT}+\beta_{17}\times\textbf{TENURE}+\textbf{Year Fixed Effect}\\ & +\textbf{Industry Fixed Effect}+\varepsilon \quad \textbf{.....} \quad \textbf{4}\end{aligned}$$

Where the dependent variable LAUDIT denotes the natural logarithm of fees (in thousands of dollars) paid to auditors for audit services. The PSCORE is the primary experimental variable of this model. We also use the logarithm transformed PSCORE and the quintile score of PSCORE as alternative experimental variables to test the robustness of our results. If the improved earnings quality effect dominates, we expect the coefficient on the experimental variable (β_1) to be negative (positive). Following prior audit fee literature (Gotti et al., 2012), the dependent variable and independent variables are measured in the concurrent year.[13]

The audit fee model includes the following control variables: LOGAT, the auditee size measured by the natural log of total assets; INVREC, the proportion of total assets in inventory and accounts receivable, represents the inherent risk; LEVERAGE, the debt level; QUICK, the quick ratio; FOPS, an indicator variable of whether the client has foreign operation; NSEG, the number of consolidated segments; BUSY, an indicator variable of whether the fiscal year end is December; ROA, a proxy for the client's profitability; BM, book to market ratio; LOSS, an indicator variable of whether the client reports negative earnings; SPITEM, an indicator variable of whether the firm reports special items; GCM, an indicator variable of going concern opinion; SQLAG, square root of the audit reporting lag measured in days; BIGN, an indicator variable of whether the auditor is one of the big N auditors; EXPERT, city level auditor expertise; TENURE number of years of the auditor-client relation. Detailed variable definitions are summarized in Appendix 1.

With these control variables in the audit fee model, we intend to control client attributes, auditor attributes, and engagement attributes (Hay et al., 2006). LOGAT controls for client size which is the most important driver of audit fees. INVREC and SPITEM control the auditee's inherent risk. LEVERAGE and QUICK control the auditee's leverage. FOPS, NSEG, and BM are to control the client complexity. ROA and LOSS control the auditee's profitability. BIGN and EXPERT control for auditor quality.

[13] Results are consistent if we use the lagged experimental variables (DeFond & Lennox, 2011).

Because most companies' fiscal year ends on December 31st, and they are willing to pay more to complete the audit, BUSY is included in the model to control for that. BUSY and SQLAG control for engagement attributes.

IV. RESULTS AND DISCUSSIONS

4.1. Descriptive Statistics

The descriptive statistics of our sample are reported in Panel A of Table 2. The sample firms on average have 2,702 million dollars in assets and pay 614,003 dollars of audit fees. Following prior audit fee literature, we use natural logarithm of these variables in our analysis to mitigate the potential skewness concerns (Hay et al., 2006). The mean of PSCORE is -17.54, which is consistent with Folsom et al. (2017) results. In this sample, about 88 percent of the firm year observations are audited by BIGN auditors. About 28 percent of our sample firms incur operation losses and about 1 percent of our sample firms receive going concern opinions. In general, the sample descriptive statistics are consistent with prior audit fee research (Chang et al., 2010).

Table 2
Descriptive Statistics

Panel A. Summary Statistics (N= 8,046)

Variable Name	Mean	Median	Standard Deviation	25th Percentile	75th Percentile
LAUDIT	6.42	6.35	1.29	5.41	7.32
PSCORE	-17.54	-15.97	8.46	-21.97	-11.64
LOGPSCORE	-2.74	-2.76	0.48	-3.07	-2.45
PQUINTILE	2.71	3.00	1.35	2.00	4.00
LOGAT	6.19	6.14	1.97	4.76	7.45
INVREC	0.31	0.28	0.21	0.16	0.43
LEVERAGE	0.47	0.45	0.26	0.27	0.61
QUICK	2.28	1.56	2.15	1.02	2.67
FOPS	0.61	1.00	0.48	0.00	1.00
NSEG	2.43	2.00	1.64	1.00	3.00
BUSY	0.75	1.00	0.43	1.00	1.00
ROA	-0.01	0.04	0.22	-0.02	0.08
BM	0.53	0.43	0.58	0.25	0.67
LOSS	0.28	0.00	0.45	0.00	1.00
SPITEM	0.66	1.00	0.47	0.00	1.00
GCM	0.01	0.00	0.12	0.00	0.00
SQARL	7.42	7.61	1.69	6.32	8.48
BIGN	0.88	1.00	0.32	1.00	1.00
EXPERT	0.53	0.00	0.49	0.00	1.00
TENURE	10.04	8.00	8.14	4.00	13.00

Panel B. Selected Variables Mean Values Reported by Fama French Industries

Industry	N	LAUDIT	PSCORE	ACQ	DCA	RES	AUTO
Consumer Non-Durables	597	6.38	-15.98	0.03	-0.05	0.07	-0.15
Consumer Durables	291	6.31	-15.56	0.03	-0.05	0.06	-0.15
Manufacturing	1,362	6.51	-17.81	0.03	-0.05	0.07	-0.18
Energy	359	6.39	-22.39	0.03	-0.03	0.07	-0.24

To be continued Table 2.

Panel B. Selected Variables Mean Values Reported by Fama French Industries							
Industry	**N**	**LAUDIT**	**PSCORE**	**ACQ**	**DCA**	**RES**	**AUTO**
Chemicals	348	6.91	-21.00	0.03	-0.03	0.08	-0.17
Business Equipment	2,216	6.12	-18.55	0.05	-0.07	0.07	-0.17
Wholesale and Retail	794	6.16	-15.38	0.03	-0.04	0.10	-0.12
Health Care	1,233	5.77	-14.61	0.05	-0.04	0.05	-0.15
Other	846	6.19	-17.47	0.03	-0.06	0.09	-0.14
All industry	8,046	6.42	-17.54	0.04	-0.05	0.07	-0.16

Panel C. Pearson Correlation Matrix of PSCORE with Earnings Quality Variables								
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**
(1) LAUDIT	-							
(2) PSCORE	**-0.54**	-						
(3) LOGPSCORE	**-0.53**	**0.92**	-					
(4) PQUINTILE	**-0.54**	**0.91**	**0.92**	-				
(5) ACQ	**-0.21**	**0.06**	**0.04**	**0.03**	-			
(6) DCA	**-0.01**	**0.07**	**0.08**	**0.07**	-0.01	-		
(7) RES	**0.11**	**-0.10**	**-0.07**	0.01	**0.02**	-0.01	-	
(8) AUTO	**-0.05**	**0.06**	**0.06**	**0.05**	**-0.02**	0.00	**-0.02**	-

Notes: bold values denote a significance of 0.05. Variables are defined in Appendix 1.

In Panel B of Table 2, we compare the mean values of PSCORE and some earnings quality variables by Fama French industry group and in Panel C we present the Pearson correlations between these variables. Following Xie et al., (2003), the earnings quality variables are used here to proxy firm inherent risks or business risks. Based on the univariate results in these two panels, PSCORE are significantly positively correlated with firm earnings quality, or the firm inherent business risks. We note that the correlation coefficients between PSCORE (LOGPSCORE, or PQUINTILE) and the log of audit fees are negative and statistically significant. Such univariate analysis results imply that relying on more principles-based accounting standards will lower audit fees subject to modeling concerns. Thus, the univariate analysis provides initial evidence supporting the earnings quality effect hypothesis. Next, we further examine the association between audit fees and accounting standards reliance in the multi-variate regressions research setting.

4.2. Multi-variate Regression Analysis

Table 3 reports the multivariate regression results of the association between PSCORE and audit fees (LAUDIT). Following prior literature (Krishnan et al., 2013), we cluster the standard errors on the firm level to correct for the time series dependence of audit fees in all regression results in this work. The industry and year fixed effect are controlled however, not reported. Consistent with prior research (e.g., Chang et al., 2010), we find high adjusted R-square (0.84) for the audit fee regressions; fees paid to the auditors are higher for larger size clients (LOGAT), risky clients (LOSS, LEVERAGE), and complex clients (SPITEM, NSEG, FOPS, INVREC, LAG); and fees paid to the auditors are lower for liquid clients (QUICK), stable clients (BM), and better performing clients (ROA). Overall, the directions and significance of coefficients on control variables are consistent with prior literature (Hay et al., 2006; Hay, 2013).

Table 3
Regression Results of PSCORE and Audit Fees

Variables	(1)	(2)	(3)
PSCORE	-0.017***		
	(-12.38)		
LOGPSCORE		-0.264***	
		(-12.29)	
PQUINTILE			-0.091***
			(-12.54)
LOGAT	0.432***	0.437***	0.439***
	(53.62)	(55.25)	(55.94)
INVREC	0.264***	0.256***	0.251***
	(6.40)	(6.21)	(6.10)
LEVERAGE	0.090**	0.099**	0.103**
	(2.08)	(2.25)	(2.37)
QUICK	-0.024***	-0.025***	-0.025***
	(-6.84)	(-6.81)	(-6.78)
FOPS	0.260***	0.258***	0.257***
	(13.60)	(13.34)	(13.35)
NSEG	0.059***	0.061***	0.062***
	(9.30)	(9.56)	(9.75)
BUSY	0.202***	0.201***	0.204***
	(11.12)	(11.06)	(11.20)
ROA	-0.321***	-0.322***	-0.321***
	(-8.49)	(-8.42)	(-8.45)
BM	-0.065***	-0.066***	-0.068***
	(-4.27)	(-4.31)	(-4.38)
LOSS	0.046***	0.051***	0.050***
	(2.74)	(2.94)	(2.99)
SPITEM	0.086***	0.085***	0.083***
	(6.59)	(6.58)	(6.38)
GCM	0.080*	0.081*	0.079
	(1.69)	(1.68)	(1.39)
SQLAG	0.053***	0.052***	0.057***
	(11.29)	(11.32)	(12.32)
BIGN	0.226***	0.219***	0.214***
	(8.17)	(7.86)	(7.79)
EXPERT	0.072***	0.073***	0.073***
	(4.35)	(4.41)	(4.39)
TENURE	0.005***	0.005***	0.005***
	(4.54)	(4.52)	(4.44)
Intercept	2.705***	2.627***	3.018***
	(38.66)	(29.78)	(37.46)
Industry Fixed Effects	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes
N	8,046	8,046	8,046
Adjusted R^2	0.84	0.84	0.83

Notes: Table 3 presents the results of estimating the OLS regression model in equation (1) with the experimental variable PSCORE (column 1), LOGPSCORE (column 2), and PQUINTILE (column 3). The dependent variable is the natural log of auditing fee in thousands of dollars. See Appendix 1 for all variable definitions. All continuous variables used in this model are winsorized at the 1st and 99th percentiles to control for the effect of outliers. ***, **, and * indicate significance at 1%, 5%, and 10% levels, respectively (two-tailed tests). T-statistics are reported in parentheses.

The coefficients of our experimental variables PSCORE, LOGPSCORE, and PQUINTILE are all negative and statistically significant in Table 3. These results are consistent with the univariate analysis, which suggest that auditors charge less for their clients relying on more principles-based accounting standards because of the earnings quality improvements associated with these standards. Therefore, the hypothesis about the negative relationship between the audit fees and principles-based accounting standards are supported. According to the regression coefficient of PSCORE as reported in Table 3, one unit of this variable increase corresponds to a 1.7% audit fee discount, which is over ten thousand dollars in audit fee savings.[14]

Next, we examine the contextual nature of the association between audit fees and principles-based accounting standards reliance. Specifically, we explore channels through which principles-based accounting impacts audit fees. The context factors we want to examine are consistent with the three channels that PSCORE may impact audit fees. The first is improved financial reporting quality. We include three proxies: pre and post Sarbanes-Oxley era, the percentage of institutional ownership, and the industry specialist. If principles-based accounting improves financial reporting and lowers the auditor risk premium, we should observe a more salient effect in those settings where high financial reporting quality is demanded or is more important. The second is litigation risk, which is proxied by the Altman bankruptcy score. If principles-based accounting intensifies litigation risk, the negative impact of principles-based accounting on audit fees will be neutralized in firms with high litigation risk. The last is audit complexity, which is proxied by the foreign income ratio. Similarly, if principles-based accounting increases audit complexity, the negative impact of principles-based accounting on audit fees will also be lessened in firms in complicated operating environment.

The Sarbanes-Oxley act (SOX) has dramatically changed the corporate governance environment for public firms. For example, Section 302 of the SOX act requires a company's principal executive and financial officers to certify their company's financial statements. Cohen et al. (2008) document that accrual-based earnings management declines significantly in the post-SOX era when higher financial reporting quality is demanded. If the auditors offer a discount to their clients who rely more on principles-based accounting standards because of the earnings quality improvements associated with such standards, we expect such fee discount effects will be more pronounced in the post-SOX era because the earnings quality will be further improved by the SOX act. To test this moderating effect, we add an interaction term of PSCORE and SOX to the baseline audit fee regression model. The regression results are reported in Table 4 Panel A. As expected, we find the coefficients of our interaction terms are all negative and statistically significant.

Insert Table 4 here.

We next examine how the result reported in the main regression varies with different levels of institutional ownership. Prior research (Ke et al., 1999) finds that institutional investors usually have long investment horizons and are more independent from management. Such investors are more likely to monitor managers to protect their investment. Consistent with this reasoning, Ramalingegowda and Yu (2012) find evidence that institutional investors demand higher levels of accounting conservatism

[14] Following Chang et al. (2010), we use the following equation to estimate the audit fee discount: 614,003*0.017= 10,438, where 614,003 is the audit fee sample mean and 0.017 is the regression coefficient of the PSCORE.

and substantially reduce bankruptcy risk. For firms with higher institutional ownership levels and relying on more principles-based accounting standards, we expect a more pronounced audit fee discount effect since the earnings quality will be further improved by the monitoring effect from the institutional owners. To test this moderating effect, we add an interaction term of PSCORE and IOR to the baseline audit fee regression model. The regression results are reported in Table 4 Panel B. We find partial support to our moderating effect prediction in column 2 and column 3 results.

Table 4
Estimating the OLS Regression Model in Equation (4)

Panel A. Moderating Effect of SOX Act			
Variables	**(1)**	**(2)**	**(3)**
PSCORE*SOX	-0.005***		
PSCORE	-0.013***		
LOGPSCORE*SOX		-0.152***	
LOGPSCORE		-0.211***	
PQUINTILE*SOX			-0.052**
PQUINTILE			-0.071***
SOX	0.587***	0.436***	0.784***
Control Variables	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes
N	8,046	8,046	8,046
Adjusted R^2	0.83	0.82	0.82
Panel B. Moderating Effect of Institutional Holders			
Variables	**(1)**	**(2)**	**(3)**
PSCORE*IOR	-0.001		
PSCORE	-0.016***		
LOGPSCORE*IOR		-0.141**	
LOGPSCORE		-0.197***	
PQUINTILE*IOR			-0.048**
PQUINTILE			-0.061***
IOR	-0.104	-0.281**	0.072
Control Variables	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes
N	7,296	7,296	7,296
Adjusted R^2	0.84	0.83	0.83
Panel C. Moderating Effect of Industry Auditing Expertise			
Variables	**(1)**	**(2)**	**(3)**
PSCORE*EXPERT	-0.004**		
PSCORE	-0.015***		
LOGPSCORE*EXPERT		-0.067**	
LOGPSCORE		-0.237***	
PQUINTILE*EXPERT			-0.025**
PQUINTILE			-0.079***
EXPERT	-0.087	0.109	0.141**
Other Control Variables	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes
N	8,046	8,046	8,046
Adjusted R^2	0.84	0.83	0.83

To be continued Table 4 (Panel D).

Panel D. Moderating Effect of Bankruptcy Risk			
Variables	**(1)**	**(2)**	**(3)**
PSCORE*ALTMANZ	0.002***		
PSCORE	-0.018***		
LOGPSCORE*ALTMANZ		0.004***	
LOGPSCORE		-0.291***	
PQUINTILE*ALTMANZ			0.002***
PQUINTILE			-0.098***
ALTMANZ	0.003	-0.007	-0.005*
Control Variables	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes
N	8,008	8,008	8,008
Adjusted R^2	0.84	0.83	0.83
Panel E. Moderating Effect of Business Complexity			
Variables	**(1)**	**(2)**	**(3)**
PSCORE*FRATIO	0.009		
PSCORE	-0.013***		
LOGPSCORE*FRATIO		0.342	
LOGPSCORE		-0.241***	
PQUINTILE*FRATIO			0.105
PQUINTILE			-0.087***
FRATIO	0.296	0.943	0.288
Control Variables	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes
N	3,635	3,635	3,635
Adjusted R^2	0.82	0.81	0.81

Notes: Table 4 presents the results of estimating the OLS regression model in equation (4) with the experimental variable PSCORE (column 1), LOGPSCORE (column 2), and PQUINTILE (column 3) and moderating variables SOX (Panel A), IOR (Panel B), EXPERT (Panel C), ALTMANZ (Panel D), and FRATIO (Panel E). The dependent variable is the natural log of auditing fee in thousands of dollars. See Appendix 1 for other variable definitions. The other control variables are not reported for simplicity reason. All continuous variables used in our models are winsorized at the 1st and 99th percentiles to control for the effect of outliers. ***, **, and * indicate significance at 1%, 5%, and 10% levels, respectively (two-tailed tests). T-statistics are reported in parentheses.

Next, we investigate whether the fee savings from higher reliance on principles-based accounting standards will vary between firms with industry-expert auditors and firms without. Prior research (Balsam et al., 2003; Reichelt & Wang, 2010) documents that the earnings quality is better for companies hiring industry auditing specialists, because the industry auditing specialists have more resources and better technology to perform more effective audits. Therefore, we also predict that firms hiring industry auditing experts and relying on more principles-based accounting standards will enjoy a more pronounced audit fee discount effect since the earnings quality will be further improved by more effective audits. Similarly, we incorporate an interaction term of EXPERT and PSCORE into the audit fee regression model. The coefficients of the interaction terms are all negative and significant as reported in Table 4 Panel C. The results support our early prediction of the auditing expertise moderating effect on the association of audit fees and principles-based accounting standards reliance.

Next, we test how the impact of PSCORE on audit fees will vary across different firm litigation risk levels. Prior literature suggests that the likelihood of firm financial distress increases the litigation risk (Simunic & Stein, 1996). Since a higher Altman Zscore is corresponding to lower likelihood of bankruptcy, we predict that the firms have less litigation risk exposure (higher Z score) and relying on more principles-based accounting standards will enjoy a less pronounced audit fee discount effect. We incorporate an interaction term of ALTMANZ and PSCORE into the audit fee regression model, and the results are reported in Table 4 Panel D. As expected, the coefficients of the interaction terms are positive and significant. These results support the moderating effect of the firm litigation risk level on the association of audit fees and principles-based accounting standards reliance.

Lastly, we test whether the business complexity could moderate the association between PSCORE and audit fees. Because it is likely that foreign operations will increase a client's complexity to audit (Chang et al., 2010), we use the foreign income ratio to proxy the business complexity here. Since it will be harder to audit foreign income than the domestic income, we expect the firms having more foreign income and relying on more principles-based accounting standards will offset the audit fee discount observed in the baseline regression. We add an interaction term of FRATIO and PSCORE into our baseline regression model, and the results are reported in Table 4 Panel E. We note the coefficients of the interaction terms are positive however not significant. This evidence does not support business complexity as a moderating factor for the PSCORE and audit fee relationship.

Taken together, the cross-sectional results presented in Table 4 suggest an individual effect of financial statement quality and the litigation risk channel, through which the PSCORE can affect audit fees, however it does not suggest the same effect through the business complexity channel. The dominance of the financial reporting quality channel leads to the overall negative relationship observed in the baseline regression.

4.3. Robustness Tests

A potential endogenous relation between PSCORE and audit fees is a valid concern for our analysis. One possible origin for such endogeneity is the omitted correlated variable problem. To mitigate this concern, we perform "change" analysis for our regression model to examine whether auditors change the audit fees in response to the change of our experimental variables. The results are reported in Table 5. Despite the small sample size because of the change analysis requirement, the coefficients of our experimental variables change of PSCORE, LOGPSCORE, and PQUINTILE, continue to be negative and statistically significant on the 1% level. Therefore, our change analysis results are, in general, consistent with the results reported in Table 3.

Table 5
Regression Results of Change of PSCORE and Change of Audit Fees

Variables	CH_LAUDIT	CH_LAUDIT	CH_LAUDIT
CH_PSCORE	-0.008***		
	(-6.22)		
CH_LOGPSCORE		-0.116***	
		(-5.76)	
CH_PQUINTILE			-0.035***
			(-5.34)
CH_LOGAT	0.009***	0.011***	0.010***
	(4.59)	(5.25)	(5.32)

To be continued Table 5.

Variables	CH_LAUDIT	CH_LAUDIT	CH_LAUDIT
CH_INVREC	0.052***	0.042***	0.041***
	(3.53)	(2.77)	(2.78)
CH_LEVERAGE	-0.042***	-0.040***	-0.042***
	(-2.95)	(-2.79)	(-2.91)
CH_QUICK	-0.001	-0.001	-0.001
	(-0.42)	(-0.57)	(-0.59)
FOPS	0.019**	0.020**	0.019**
	(2.35)	(2.41)	(2.42)
NSEG	-0.004*	-0.004*	-0.004*
	(-1.88)	(-1.90)	(-1.87)
BUSY	-0.034***	-0.033***	-0.032***
	(-4.68)	(-4.53)	(-4.41)
CH_ROA	-0.041***	-0.042***	-0.043***
	(-2.71)	(-2.76)	(-2.70)
CH_BM	-0.026***	-0.020***	-0.021***
	(-4.15)	(-3.03)	(-3.12)
LOSS	-0.023**	-0.022**	-0.016**
	(-2.29)	(-2.14)	(-2.02)
SPITEM	0.009	0.010	0.010
	(0.97)	(1.07)	(1.08)
GCM	0.044	0.042	0.041
	(1.17)	(1.12)	(1.06)
CH_SQLAG	0.023***	0.022***	0.023***
	(9.61)	(9.34)	(9.41)
BIGN	0.057***	0.053***	0.054***
	(4.41)	(4.17)	(4.19)
EXPERT	0.034***	0.033***	0.034***
	(4.32)	(4.27)	(4.24)
TENURE	-0.003***	-0.003***	-0.004***
	(-7.47)	(-7.48)	(-7.31)
Intercept	0.267***	0.273***	0.272***
	(14.65)	(14.98)	(14.90)
Industry Fixed Effects	Yes	Yes	Yes
N	6,896	6,896	6,896
Adjusted R^2	0.17	0.17	0.16

Notes: Table 5 presents the results of estimating the OLS regression of the change model equation (4). The dependent variable is the change of natural log of auditing fee from year t-1 to year t. See Appendix 1 for other variable definitions. All continuous variables used in our models are winsorized at the 1st and 99th percentiles to control for the effect of outliers. ***, **, and * indicate significance at 1%, 5%, and 10% levels, respectively (two-tailed tests). T-statistics are in parentheses.

As another way to further mitigate endogeneity concerns, we construct an attributed matched sample. For each above experimental variable (PSCORE, LOGPSCORE, or PQUINTILE) median value sample firm, we find a matched firm from the below experimental variable median value sample firm with similar control variable attributes. We re-estimate our regressions in the matched samples and the results are reported in Table 6. The experiment variables continue to be negative and statistically significant on the 1% level, which are consistent with the Table 3 results.

Table 6
Regression Results of PSCORE and Audit Fees - PSM

Variables	(1)	(1)	(1)
PSCORE	-0.018***		
	(-11.19)		
LOGPSCORE		-0.267***	
		(-10.26)	
PQUINTILE			-0.101***
			(-12.08)
LOGAT	0.424***	0.426***	0.419***
	(43.39)	(44.59)	(40.52)
INVREC	0.252***	0.266***	0.215***
	(4.79)	(5.01)	(4.26)
LEVERAGE	-0.005	-0.002	0.007
	(-0.09)	(-0.04)	(0.52)
QUICK	-0.033***	-0.036***	-0.026***
	(-7.99)	(-8.13)	(-6.16)
FOPS	0.318***	0.299***	0.265***
	(14.68)	(13.62)	(10.78)
NSEG	0.047***	0.046***	0.046***
	(6.28)	(6.04)	(5.32)
BUSY	0.194***	0.190***	0.192***
	(8.71)	(8.69)	(8.34)
ROA	-0.404***	-0.363***	-0.341***
	(-8.44)	(-7.79)	(-7.02)
BM	-0.040**	-0.041**	-0.048**
	(-2.27)	(-2.28)	(-2.47)
LOSS	0.061***	0.053**	0.065***
	(2.79)	(2.38)	(2.69)
SPITEM	0.089***	0.102***	0.091***
	(5.59)	(6.34)	(5.44)
GCM	0.073	0.059	0.067
	(1.06)	(1.02)	(1.05)
SQLAG	0.047***	0.046***	0.057***
	(7.41)	(7.35)	(8.11)
BIGN	0.193***	0.189***	0.229***
	(5.41)	(5.40)	(6.99)
EXPERT	0.078***	0.077***	0.062***
	(3.87)	(3.81)	(2.76)
TENURE	0.005***	0.005***	0.006***
	(4.02)	(3.65)	(4.21)
Intercept	2.861***	2.245***	3.161***
	(29.87)	(23.94)	(29.53)
Industry Fixed Effects	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes
N	4,348	4,316	3,922
Adjusted R^2	0.77	0.77	0.74

Notes: Table 6 presents the results of estimating the OLS regression model in equation (1) with the experimental variable PSCORE (column 1), LOGPSCORE (column 2), and PQUINTILE (column 3) in the propensity matched samples. The dependent variable is the natural log of auditing fee in thousands of dollars. See Appendix 1 for all variable definitions. All continuous variables used in this model are winsorized at the 1st and 99th percentiles to control for the effect of outliers. ***, **, and * indicate significance at 1%, 5%, and 10% levels, respectively (two-tailed tests). T-statistics are reported in parentheses.

In addition to the change analysis and propensity matched sample analysis, we also test whether our results are sensitive to the control variable selection. The results are reported in Table 7. The first 6 rows report the results of adding alternative earnings quality control variables to our regression models, and we continue to find consistent results. Lastly, we also find our results are robust if we cluster the standard errors on both the firm and year level, or in Fama- MacBeth regressions, as reported in the last two rows of Table 7.

Table 7
Robustness Tests

Variables	LAUDIT
(1) Using abnormal audit fees as additional control variable	
PSCORE	-0.012***
	(-5.12)
ABNFEE	0.977**
	(123.72)
(2) Using non audit fees as additional control variable	
PSCORE	-0.013***
	(-12.09)
LOGNAS	0.095***
	(14.36)
(3) Using accrual quality as additional control variable	
PSCORE	-0.016***
	(-10.85)
ACQ	1.704***
	(5.73)
(4) Using discretionary accrual as additional control variable	
PSCORE	-0.018***
	(-12.24)
DCA	0.290***
	(4.60)
(5) Using restatement as additional control variable	
PSCORE	-0.017***
	(-12.07)
RES	0.152***
	(7.36)
(6) Using earnings autocorrelation as additional control variable	
PSCORE	-0.018***
	(-12.01)
AUTO	-0.004
	(-0.26)
(7) Cluster on both firm and year level	
PSCORE	-0.013***
	(-2.97)
(8) Fama-MacBeth Regressions	
PSCORE	-0.018***
	(-11.39)

Notes: Table 7 summarize the results of estimating the OLS regression model in equation (1) with additional control variables, ABNFEE, LOGNAS, ACQ, DCA, RES, and AUTO. The dependent variable is the natural log of auditing fee in thousands of dollars. See Appendix 1 for other variable definitions. The other control variables are not reported for simplicity reason. All continuous variables used in our models are winsorized at the 1st and 99th percentiles to control for the effect of outliers. ***, **, and * indicate significance at 1%, 5%, and 10% levels, respectively (two-tailed tests). T-statistics are reported in parentheses.

V. CONCLUSION

To the best of our knowledge, our study is the first to examine the relations between principles-based accounting standards and audit fees. Although audit fee research is quite mature, no prior study investigates the links between principles-based accounting standards and audit fees. We fill the void by taking advantage of a firm-level empirical proxy of principles-based accounting standards developed by Folsom et al. (2017) and used by other studies in this area (Donelson et al., 2012).

Our empirical results suggest a negative relationship between principles-based accounting standards and audit fees. Subsequent analyses suggest this negative relationship is more salient when high reporting quality is demanded. The results are consistent with the argument that principles-based accounting standards improve financial reporting quality and lower auditor's risk exposure.

One unique feature of our sample is that the firms are all US firms which are under the same legal system and face similar litigation environment. That reduces the external complication to investigate the research question. Furthermore, our measure is a firm-level instrument that measures the extent to which firms' financial reporting is affected by principles-based standards. It is a more precise measure than using IFRS adoption. Therefore, our research context provides a cleaner setting to examine the question and therefore complement prior studies.

This study is subject to some limitations. First, due to the limitation of the sample period in the original empirical proxy of principles-based accounting standards, our sample period covers only a limited number of years. Second, although we have attempted diligently to include many determinants of audit fees identified in prior literature and adopted sophisticated econometrics measures, our results may still be subject to the bias of possible correlated omitted variables.

This study adds to the literature of audit fees by documenting a negative relation between principles-based accounting standards and audit fees. The results also shed light on the debate of the costs and benefits of transforming current U.S GAAP to principles-based accounting standards. It thus has strong policy implications for regulators and standard setters.

REFERENCES

Advisory Committee on the Auditing Profession. (2008). *Final report of the advisory committee on the auditing profession to the U.S. department of the treasury*. Retrieved January 27, 2025 from https://home.treasury.gov/news/press-releases/hp1158.

Agoglia, C. P., Doupnik, T. S., & Tsakumis, G. T. (2011). Principles-based versus rules-based accounting standards: The influence of standard precision and audit committee strength on financial reporting decisions. *The Accounting Review, 86*(3), 747-767.

Ahmed, A. S., Neel, M., & Wang, D. (2013). Does mandatory adoption of IFRS improve accounting quality? Preliminary evidence. *Contemporary Accounting Research*, *30*(4), 1344-1372.

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

Badertscher, B., Jorgensen, B., Katz, S, & Kinney, W. (2014, May). Public equity and audit pricing in the United States. *Journal of Accounting Research*, *52*(2), 303-339. https://doi.org/10.1111/1475-679X.12041.

Balsam, S., Krishnan, J., & Yang, J. S. (2003). Auditor industry specialization and earning quality. *Auditing: A Journal of Practice & Theory*, *22*(2), 71-79.

Barth, M. E., Landsman, W. R., & Lang, and M. H. (2008). International accounting standards and accounting quality. *Journal of Accounting Research*, *46*(3), 467-498.

Brochet, F., Jagolinzer, A. D., & Riedl, E. J. (2013). Mandatory IFRS adoption and financial statement comparability. *Contemporary Accounting Research*, *30*(4), 1373-1400.

Byard, D., Li, Y., & Yu, Y. (2011). The effect of mandatory IFRS adoption on financial analysts' information environment. *Journal of Accounting Research*, *49*(1), 69-96.

Chan, A. L., Hsu, A. W., & Lee, E. (2013). Does mandatory IFRS adoption affect the credit ratings of foreign firms cross-listed in the US? *Accounting Horizons*, *27*(3), 491-510.

Chang, H., Cheng, C. S. A., & Reichelt, K. J. (2010). Market reaction to auditor switching from big4 to third-tier small accounting firms. *Auditing: A Journal of Practice & Theory*, *29*(2), 83-114.

Chung, H. H., Wynn, J. P., & Yi, H. (2013). Litigation risk, accounting quality, and investment efficiency. *Advances in Accounting*, *29*(2), 180-185.

Cohen, D. A., Dey, A., & Lys. (2008). Real and accrual-based earnings management in the pre- and post- sarbanes-Oxley periods. *The Accounting Review*, *83*(3), 757-787.

Cornell, R., Magro, A., & Warne, R. (2017). Understanding investors' propensity to litigate: The role of perceived reporting flexibility and assessed management responsibility for harmful events. *Journal of Applied Accounting Research*, *18*(3), 317-340.

Craswell, A., Francis, J., & Taylor, S. (1995). Audit brand name reputations and industry specializations. *Journal of Accounting & Economics*, *20*, 297-322.

Dalatu, G. Z., Leah., K. N., & Mustapha, L. O. (2022). Issues of control in accounting: A comparative analysis of IAS 27 and IFRS 10. *European Journal of Accounting, Auditing & Finance Research*, *10*(8), 39-47.

De George, E., Ferguson, C. B., & Spear, N. A. (2013). How much does IFRS cost? IFRS Adoption and Audit Fees. *The Accounting Review*, *88*(2), 429-462.

Dechow, P. M. & Dichev, I. D. (2002). The quality of accruals and earnings: The role of accrual estimation errors**.** *The Accounting Review, 77*(s-1), 35-59.

DeFond, M., & Lennox, C. S. (2011). The effect of SOX on small auditor exits and audit quality. *Journal of Accounting & Economics*, *52*(1), 21-40.

Deloitte. (2008). *2008 IFRS Survey: Where are we today?* New York, NY: Deloitte & Touche LLP.

Donelson, D. C., J. M., McInnis, J. M., & Mergenthaler, R. D. (2016). Explaining rules-based characteristics in U.S. GAAP: Theories and evidence. *Journal of Accounting Research, 54*(3), 827-861.

Donelson, D. C., McInnis, J. M., & Mergenthaler, R. D. (2012). Rules-based accounting standards and litigation. *The Accounting Review, 87*(4), 1247-1279.

Fama, F., & French, K. R. (1997). Industry costs of equity. *Journal of Financial Economics*, *43*(2), 153-193

Folsom, D., Hribar, P., Mergenthaler, R. D., & Peterson, K. (2017). Principles-based standards and earnings attributes. *Management Science*, *63*(8), 2592-2615.

Gimbar, C., Hansen, B., & Ozlanski, M. E. (2016). The effect of critical audit matter paragraphs and accounting standard precision on auditor liability. *The Accounting Review*, *91*(6), 1629-1646.

Gotti, G., Han, S., Higgs, J. L., & Kang, T. (2012). Managerial stock ownership, analyst coverage and audit fee. *Journal of Accounting, Auditing & Finance*, *27*(3), 412-437. Doi: 10.1177/0148558X11409158.

Grenier, J., Pomeroy, B., & Stern, M. (2015). The effects of accounting standard precision, auditor task expertise, and judgment frameworks on audit firm litigation exposure. *Contemporary Accounting Research*, *32*(1), 336-357.

Hay, D. (2013). Further evidence from meta-analysis of audit fee research. *International Journal of Auditing*, *17*(2), 162-176.

Hay, D. C., Knechel, W. R., & Wong, N. (2006). Audit fees: A meta-analysis of the effect of supply and demand attributes. *Contemporary Accounting Research*, *23*(1), 141-191.

Herz, R. H. (2003). A year of challenge and change for the FASB. *Accounting Horizons*, *17*(3), 247-255.

Hogan, C. E., & Wilkins, M. S. (2008). Evidence on the audit risk model: Do auditors increase audit fees in the presence of internal control deficiencies? *Contemporary Accounting Research*, *25*(1), 105-126.

Houston, R., Peters, M., & Pratt, J. (1999). The audit risk model, business risk and audit-planning decisions. *The Accounting Review*, *74*(3), 281-298.

Houston, R., Peters, M., & Pratt, J. (2005). Nonlitigation risk and pricing audit services. *Auditing: A Journal of Practice & Theory*, *24*(1), 37-53.

Hribar, P., Kravet, T., & Wilson, R. (2014). A new measure of accounting quality. *Review of Accounting Studies*, *19*(1), 506-538.

Hua, S., Liu, Z., Sun, X. C., & Yu, J. (2016). Auditor bargaining power and audit fee lowballing. *Advances in Business Research*, *7*(1), 81-89.

Jamal, K., & Tan, H. (2010). Joint effects of principles-based versus rules-based standards and auditor type in constraining financial managers' aggressive reporting. *The Accounting Review*, *85*(4), 1325-1346.

Jamal, K., Colson, R. H., Bloomfield, R. J., Christensen, T. E., Moehrle, S. R., & Ohlson, J. (2010). A research based perspective on SEC's proposed rule on roadmap for potential use of financial statements prepared in accordance with International Financial Reporting Standards (IFRS) by U.S. issuers. *Accounting Horizons*, *24*(1), 139-147.

Kadous, K., & Mercer, M. (2016). Are juries more likely to second-guess auditors under imprecise accounting standards? *Auditing: A Journal of Practice & Theory*, *35*(1), 101-117.

Kanakriyah, R. (2020). Model to determine main factors used to measure audit fees. *Academy of Accounting & Financial Studies Journal*, *24*(2), 1-13

Ke, B., Petroni, K., & Safieddine, A. (1999). Ownership concentration and sensitivity of executive pay to accounting performance measures: Evidence from publicly and privately-owned insurance companies. *Journal of Accounting & Economics*, *28*, 185-209.

Kim, J., Liu, X., & Zheng, I. (2012). The impact of mandatory IFRS adoption on audit fees: Theory and evidence. *The Accounting Review*, *87*(6), 2061-2094.

Kothari, S. P., Leone, A. J., & Wasley, C. E. (2005, February). Performance matched discretionary accrual measures. *Journal of Accounting & Economics*, *39*(1), 163-197.

KPMG. (2007). *International financial reporting standards: The quest for a global language*. London, U.K.: KPMG LLP.

Krishnan, G. V., Sun, L., Wang, Q., & Yang, R. (2013). Client risk management: A pecking order analysis of auditor response to upward earnings management risk. *Auditing: A Journal of Practice & Theory*, *32*(2), 147-169.

Lobo, G. J., & Zhao, Y. (2013). Relation between audit effort and financial report misstatements: Evidence from quarterly and annual restatements. *The Accounting Review*, *88*(4), 1385-1412.

McNichols, M. F. (2002). Discussion of the Quality of Accruals and Earnings: The Role of Accrual Estimation Errors. *The Accounting Review*, *77*(s-1), 61–69.

Mergenthaler, R. D. (2011). *Principles-based versus rule-based standards and accounting irregularities*. Working paper, University of Iowa, Iowa City.

Palmrose, Z. (1986). Audit fees and audit size: Further evidence. *Journal of Accounting Research*, *24*(1), 97-110.

Raghunandan, K., & Rama, D. V. (2006). Sox section 404 material weakness disclosures and audit fees. *Auditing: A Journal of Practice & Theory*, *25*(1), 99-114.

Ramalingegowda, S., & Yu, Y. (2012). Institutional ownership and conservatism. *Journal of Accounting & Economics*, *53*(1), 98-114.

Reichelt, K. J., & Wang, D. (2010). National and office specific measures of auditor industry expertise and effects on audit quality. *Journal of Accounting Research*, *48*(3), 647-686

Salman, F., & Carson, E. (2009). The impact of the Sarbanes-Oxley Act on the audit fees of Australian listed firms. *The International Journal of Auditing*, *13*(2), 127-140.

Schipper, K. (2003). Principles-based accounting standards. *Accounting Horizons*, *17*(1), 61-72.

Securities & Exchange Commission (SEC). (2013). *Work plan for the consideration of incorporating international financial reporting standards into the financial reporting system for U.S. issuers*. Final staff report. https://www.sec.gov/spotlight/globalaccountingstandards/ifrs-work-plan-final-report.pdf.

Seetharaman, A., Gul, F. A., & Lynn, S. (2002). Litigation risk and audit fees: Evidence from UK firms cross-listed on US markets. *Journal of Accounting & Economics*, *33*(1), 91–115.

Simunic, D. (1980). The pricing of audit services: Theory and evidence. *Journal of Accounting Research*, *18*(1), 161-190.

Simunic, D., & Stein, M. (1996). The impact of litigation risk on audit pricing: A review of the economics and the evidence. *Auditing: A Journal of Practice & Theory 15*, 119-134.

Skinner, D. J., & Srinivasan, S. (2012). Audit quality and auditor reputation: Evidence from Japan. *The Accounting Review*, *87*(5), 1737-1765.

Sundvik, D. (2019). The impact of principles-based vs rules-based accounting standards on reporting quality and earnings management. *Journal of Applied Accounting Research*, *20*(1), 78-93.

Tawiah, V. K. (2022). Does the impact of IFRS on audit fees differ between early and late adopters? *International Journal of Accounting & Information Management*, *30*(1), 1-21.

Venkataraman, R., Webber, J., & Willenborg, M. (2008). Litigation risk, audit quality, and audit fees: Evidence from initial public offerings. *The Accounting Review*, *83*(5), 1315-1345.

Vermeer, T. E., Raghunandan, K., & Forgione, D. A. (2009). Audit fees at US non-profit organizations. *Auditing: A Journal of Practice & Theory*, *28*(2), 289-303.

Whisenant, S., Sankaraguruswamy, S., & Raghunandan, K. (2003). Evidence on the joint determinations of audit and non-audit fees. *Journal of Accounting Research*, *41*(4), 721-744.

Xie, B., Davidson, W., & DaDalt, P. J. (2003). Earnings management and corporate governance: The role of the board and the audit committee. *Journal of Corporate Finance*, *9(*3), 295-316.

Zhang, X, Cao, L., Li, W., Zhao, Q., & Li, L. (2023). Does litigation risk increase audit effort? *Asia-Pacific Journal of Accounting & Economics, 30*(4), 951-970.

Appendix 1
Variable Definitions

Variables	Definitions
Dependent variable	
LAUDIT	: Natural logarithm of audit fees in thousands of U.S. dollars.
Experimental variables	
PSCORE	: Principles-based accounting score as defined by Folsom et al. 2017.
LOGPSCORE	: -1*LOG (-1*PSCORE).
PQUINTILE	: The quintile score of PSCORE.
Control variables and partition variables	
LOGAT	: Natural logarithm of total assets (AT) in millions of U.S. dollars
INVREC	: Sum of inventories and receivables, divided by total assets
LEVERAGE	: Total debts deflated by total assets
QUICK	: Current assets except inventory divided by current liabilities
FOPS	: 1 if firm has a foreign operation, and 0 otherwise
NSEG	: The number of business segments
BUSY	: 1 if fiscal year end is December, and 0 otherwise
ROA	: Income before extraordinary items deflated by total assets
BM	: Book-to-market ratio
LOSS	: 1 if the firm report loss for current year, and 0 otherwise
SPITEM	: 1 if the firm reports a special item, and 0 otherwise
GCM	: 1 if firm receives a going concern opinion, and 0 otherwise
SQARL	: Square root of number of days from fiscal year end date to the audit report date
BIGN	: 1 if the firm is a client of big 5 audit firm, and 0 otherwise
EXPERT	: 1 if an auditor is the metropolitan statistical area (MSA) industry level expert as defined by Reichelt and Wang (2010), 0 otherwise
TENURE	: Number of years for an auditee served by a specific auditor
ABNFEE	: Abnormal audit fees as defined by Eshleman and Guo (2014)
LOGNAS	: Natural logarithm of non-audit fees in thousands of U.S. dollars
AQ	: Accrual quality as defined by Dechow and Dechiv (2002) model as modified by McNichols (2002) in the cross section for each Fama and French (1997). Larger values of AQ indicating higher accruals quality
DCA	: Discretionary accrual as defined by Kothari et al (2005)
RES	: 1 if a firm announced a restatement in the current year.
AUTO	: Earnings autocorrelation as defined by Bryan et al (2018)
SOX	: 1 if fiscal year is larger than 2004, 0 otherwise
IOR	: Percentage of institutional holders
ALTMANZ	: Altman's (1968) Z-score inverse measure of distress risk. Larger values of ZSCORE indicate lower distress risk
FRATIO	: Percentage of foreign income ratio
CH_	: When "CH_" is prefixed to a variable, it means the change in the value of the variable from year t-1 to year t