The Relationship between Principles-based Accounting Rules and Audit Fees

ABSTRACT

This paper examines the relations between principles-based accounting standards and audit fees. Our empirical evidence suggests auditors charge a lower fee when firms' standards are more principles based. Further analyses indicate this fee saving is more pronounced for firms with stronger corporate governance and firms in post-SOX era. 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 cost/benefit of principles-based accounting standards, as well as to the literature of the determinants of audit fees.

Keywords: principles-based accounting standards; rules-based accounting standards; auditing; audit fees.

JEL Classifications: M40, M41, M42.

Data Availability: Data used in the analyses are obtained from public sources described in the text.

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 (Brochet, Jagolinzer, and Riedl 2013; Byard, Li, and Yu 2011; Chan, Hsu, and Lee 2013; Jamal, Colson, Bloomfield, Christensen, Moehrle, and Ohlson 2010; Schipper 2003). 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 adoption of International Financial Reporting Standards (IFRS) on audit fees (De George, Ferguson, and Spear 2013; Kim, Liu, and Zheng 2012). 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 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]

[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 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

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, Landsman, and Lang 2008; Folsom, Hribar, Mergenthaler, and Peterson 2016; Jamal and Tan 2010; Agoglia, Doupnik and Tsakumis 2011). 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, McInnis and Mergenthaler 2012; Gimbar, Hansen, and Ozlanski 2016).

Staff finds both sets of standards to be a combination of both approaches. (Page 27, SEC 2013)". 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.

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, McInnis, and Mergenthaler 2016) and use the *PSCORE* (described in greater detail in the ‘‘Research Methodology’’ section), a well-validated empirical measure, as our proxy of firms’ reliance on principles-based accounting standards. Our sample consists of 8,046 firm-year observations from 2,101unique 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 understand better the channels through which principle-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 environment 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 reduces audit fees because of improved financial reporting quality and increases audit fees through increased litigation risk, our baseline regression result indicates a dominance of 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

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

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 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 2,101unique 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.

[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)".

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Principles-based Standards or Rules-based Standards

Currently there are two sets of well-recognized, high quality accounting standards, i.e., 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. 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).

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 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 thresholds.[7] Consequently the application of IAS 17 requires more professional judgement and it is not as easily manipulated.

[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; 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: 3. The lease term is for the major part of the economic life of the asset even if title is not transferred;

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.

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, Peters, and Pratt (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, Peters, and Pratt (2005) further separate the non-audit risk into two components: residual litigation risk and nonlitigation risk. The audit fee model is:

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

where

E(tac) = total expected audit cost;

4. 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.

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

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, Francis, and Taylor 1995; Ashbaugh, LaFond, and Mayhew 2003; Hogan and Wilkins 2008; Whisenant, Sankaraguruswamy, and Raghunandan 2003, Kim et al. 2012). Hay, Knechel, and Wong (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 (Hribar, Kravet, and Wilson 2014; Lobo and Zhao 2013; Kim et al. 2012). Furthermore, since higher financial reporting qualitycan substantially lower auditors' litigation exposure, it can *lower* the risk-based audit fees as well (Chung et al. 2013; Skinner and Srinivasan 2012).[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

[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, Neel and Wang (2013), evidence from experimental studies is mixed (Jamal and Tan, 2010; Gimbar, Hansen, and Ozlanski, 2016 TAR; Cornell et al. 2017; Kadous and Mercer, 2016). We thank one anonymous reviewer for pointing this out.

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. (Badertscher et al. 2014; Venkataraman, Weber, and Willenborg 2008; Seetharaman, Gul, and Lynn 2002). 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 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 increase 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.

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, Raghunandan, and Forgione (2009) find, for nonprofit organizations, size and complexity explains the majority of fees variance. 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.

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.

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 (Chan et al. 2013; Barth et al. 2008). For example, IFRS emphasizes more 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

[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.

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 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 and Rama 2006; Salman and 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.

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 a 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. (2016) 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:

H1: 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, McInnis, and Mergenthaler (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 and Tan 2010; Agoglia et al. 2011), 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, Pomeroy, and Stern (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. (2016) find evidence that managers use the discretion to manage earnings when firms are near 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 (Donelson et al. 2012; Schipper 2003). 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.

RESEARCH METHODOLOGY

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 (2016) 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. (2016) 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 1) the inclusion of bright-line thresholds, 2) allowed legacy exceptions, 3) large volumes of implementation guidance, and 4) high levels of detail (Folsom 2016). 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 (2016), 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*:

$$REL\_IMP_{its} = (\text{firm\_count}_{its} - \text{avg\_firm\_count}_{ts}) / \text{Std\_dev}(\text{firm\_counts}_{ts}) \quad (2)$$

The firm_count_{its} is the number of times firm *i* mentions standard *s*'s keywords in year *t*, the $\text{avg\_firm\_count}_{ts}$ 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.

$$PSCORE_{it} = -1 \times \sum (REL\_IMP_{its} \times RBC1_{ts}) \qquad (3)$$

The keyword counts for financial accounting standards and the *PSCORE* measurement are carefully analyzed and validated by Folsom et al. (2016).

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 2,101unique 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.

[Insert Table 1 here]

[11] A full list of the keywords is listed in the Appendix of Folsom et al. (2016).
[12] http://www.biz.uiowa.edu/faculty/rmergenthaler/

Audit Fee Model

This study examines whether the auditors' fee decisions are related to their client's accounting standards reliance. Following the rich research literature on audit fees (for example, Chang, Cheng, and Reichelt 2010; Hua, Liu, Sun, and Yu 2016), we estimate the following audit fee determinants model using the *PSCORE* as the experimental variable to test our hypothesis.

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

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. 2010), 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

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

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. 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.

RESULTS

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. (2016) 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).

[Insert Table 2 here]

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, Davidson, and DaDalt (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 principle-based accounting standards will lower audit fees subject to modeling concerns. Thus, the univariant 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 multivariate regressions research setting.

[Insert Table 3 here]

Multi-variate Regression Analysis

Table 3 reports the multivariate regression results of the association between *PSCORE* and audit fees (*LAUDIT*). Following prior literature (Krishnan, Sun, Wang, and Yang 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).

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 principle-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 principle-based accounting standards are supported. According to the regression coefficient of *PSCORE* as reported in Table 3, one unit of this variable increase is corresponding to 1.7% audit fee discount, which is over ten thousand dollars audit fee savings.[14]

[Insert Table 4 here]

Next, we examine the contextual nature of the association between audit fees and principle-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

[14] Following Chang et al. (2014), 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*.

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 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, Dey, and Lys (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 principle-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.

We next examine how the result reported in the main regression varies with different levels of institutional ownership. Prior research (Ke, Petroni, and Safieddie 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 and substantially reduce bankruptcy risk. For firms with higher institutional ownership levels and relying on more principle-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.

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, Krishnan, and Yang 2003; Reichelt and 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 and 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 principle-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.

[Insert Table 4 here]

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.

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.

[Insert Table 5 here]

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.

[Insert Table 6 here]

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.

[Insert Table 7 here]

CONCLUSION

To our best 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. (2016) 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.

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 implication for regulators and standard setters.

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APPENDIX 1
Variable Definitions

Variables		Definitions
Dependent variable		
LAUDIT	=	Natural logarithm of audit fees in thousands of U.S. dollars.
Experimental variables		
PSCORE	=	Principle-based accounting score as defined by Folsom et al. 2016.
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.

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

TABLE 2

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
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**	-

Bold values denote a significance of 0.05. Variables are defined in Appendix 1.

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

Note: 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. ***, **, * indicate significance at 1%, 5%, and 10% levels, respectively (two-tailed tests). T-statistics are reported in parentheses.

TABLE 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 Intuitional 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

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

Note: 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. ***, **, * indicate significance at 1%, 5%, and 10% levels, respectively (two-tailed tests). T-statistics are reported in parentheses.

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)
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*** (14.65)	0.273*** (14.98)	0.272*** (14.90)
Industry Fixed Effects	Yes	Yes	Yes
N	6,896	6,896	6,896
Adjusted R^2	0.17	0.17	0.16

Note: 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. ***, **, * indicate significance at 1%, 5%, and 10% levels, respectively (two-tailed tests). T-statistics are in parentheses.

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

Note: 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. ***, **, * indicate significance at 1%, 5%, and 10% levels, respectively (two-tailed tests). T-statistics are reported in parentheses.

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)

Note: 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. ***, **, * indicate significance at 1%, 5%, and 10% levels, respectively (two-tailed tests). T-statistics are reported in parentheses.