Economic Consequences of Auditing Standards:

Evidence from Auditing Standard No. 18 Related Parties

Abstract

In 2014, the PCAOB adopted a new auditing standard - AS 18 Related Parties - to improve auditors' performance in related-party transaction (RPT) auditing. In this study, we investigate the impact of AS 18 on firms' real RPT activities and audit fees by examining six years' data surrounding the effective date of AS 18. Using a matched-pair difference-in-differences approach, we find significantly reduced RPT activities and increased audit fees following the adoption of AS 18. Our findings reveal that AS 18 has a greater impact on small client firms, particularly firms audited by non-Big-4 firms. In contrast, the Big-4 firms had already taken measures to improve their RPT audit procedures. We also find a more pronounced effect for firms with high ex-ante fraud risk.

Keywords Related-Party Transactions; Auditing; PCAOB; AS 18; Economic Consequences of Standards; Corporate Governance; Audit Committee; Big-4; Fraud Risk

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1. Introduction

Related-Party Transactions (RPTs) have been a contributing factor in numerous financial reporting frauds.[1] Despite prominent corporate scandals, the auditing requirements have remained largely unchanged for over 30 years. The PCAOB deems RPTs as a critical area because they have historically represented an increased risk of material misstatements in financial statements. On June 10, 2014, the PCAOB issued Auditing Standard No. 18 (AS 18), *Related Parties*, superseding AU Section 334, *Related Parties*, and AU Section 9334, *Related Parties: Auditing Interpretations of Section 334*. AS 18 requires auditors to perform significantly enhanced auditing procedures on RPTs. The standard establishes requirements regarding "the auditor's evaluation of a company's identification of, accounting for, and disclosure of relationships and transactions between the company and its related parties" (AS 18, paragraph 1). While the PCAOB is particularly interested in obtaining empirical data regarding both benefits and costs that could be related to the newly-issued standard (PCAOB, 2014), to date there is virtually no research that provides a quantitative analysis of the impact of this new standard.

This paper investigates the economic consequence of AS 18 on companies' RPT practices as well as their audit fees. Employing six years of hand-collected data surrounding the adoption of AS 18, we first assess whether companies change their RPT behaviors after the adoption of AS 18. Next, we examine whether auditors charge higher audit fees on RPTs following the enhanced auditing procedures required by AS 18. To obtain greater insight into the impact of AS 18, we condition our analyses on affected firms' size, auditor type, and fraud risks. As not all RPTS are

[1] Enron, Tyco International, and WorldCom are notorious cases involving RPTs.

"created equal," we further assess the differential impact of different types of RPTs based on transaction type. Specifically, following Kohlbeck and Mayhew (2017), we divide RPTs into (1) Business RPTs (e.g., selling, buying, leasing, and M&A activities transactions), which are closer to the firm's core business operation, and (2) Non-Business RPTs (e.g., transactions involving loans, donations to related charities, and consulting and legal services).[2] Non-Business RPTs are more likely to reflect self-dealing rather than efficient contracting.

Our results are consistent with the idea that enhanced auditing procedures constrain companies' opportunistic behaviors. We find strong evidence that, relative to a size-, profitability- and industry-matched control sample, companies subject to the AS 18 regulation reduce their RPT engagement in the post AS 18 period. The reduction concentrates on Non-Business RPTs. The effect is also stronger for companies with smaller size, non-Big-4 auditors, or high fraud risks, suggesting that ex-ante firm characteristics and audit quality play a role in assessing the effectiveness of AS 18.

We further find evidence of increased audit fees after AS 18. In particular, for small firms audited by non-Big-4 auditors, audit fees increase for both Business and Non-Business RPTs. In contrast, for clients of Big-4 audit firms, we only observe an increase in fees for Non-Business RPTs. There is virtually no audit-fee impact of AS 18 for large firms audited by Big-4 auditors. This implies that Big-4 auditors may have already implemented the necessary audit procedures and charged relevant RPT auditing hours for their large client firms prior to the AS 18 adoption. We also find these fee increases are higher for firms with greater fraud risks, further supporting the PCAOB's risk-based "scaled approach" in auditing RPTs, as promoted in AS 18.

In additional analyses, we find a change in RPT governance in the post AS 18 period. This

[2] Kohlbeck and Mayhew (2017) refer to Non-Business RPTs as "tone-based RPTs." We follow their time-consuming and very detailed approach in separating the two types of RPTs.

change is likely in response to the new standard's mandatory requirements for auditors to communicate with companies' audit committees their assessments of firms' RPT control procedures. Specifically, we observe a significant increase in the number of companies that adopt a formal written RPT policy and assign the audit committee as the authoritative committee to review and approve RPTs as a result of AS 18. These effects are stronger for small firms, suggesting another mechanism through which small firms improve their RPT governance besides external auditor monitoring.

This paper contributes in several ways. From a *practical* perspective, it is a timely study to assess the impact of AS 18 on companies' RPT practices. Our article provides empirical evidence on some economic consequences of the new standard, which may help practitioners and investors gain better insight into RPT-related issues. In particular, we demonstrate the role of regulation and auditors in shaping companies' real RPT activities. To our knowledge, this is the first study to document such an association.

From a *policy-making* perspective, the PCAOB's authority over the accounting profession has far-reaching implications on business communities. On one hand, such authority may help improve firm reporting quality and auditing practices; on the other hand, it could add undue burdens to client firms (and audit firms) without well-justified benefits. A better understanding of the costs and benefits of AS 18 will not only help the PCAOB assess the effectiveness of the new standard, it will also aid policymakers and practitioners in considering whether similar standards should be adopted elsewhere.

From an *academic* perspective, the paper adds to research on RPTs by studying the relation between auditing and companies' RPT practices. Although RPTs are potentially a risky practice red-flagged by the PCAOB, they have not yet received significant attention from researchers (see

further discussion in the next section).[3] This study also contributes to research on the effects of PCAOB regulations.[4] As pointed out by DeFond and Zhang (2014, 312), "While there is evidence that some changes brought about by regulatory intervention have improved audit quality, there is also evidence that the costs of these changes are high and it is not clear if there are net benefits." DeFond and Zhang call for more research to understand the nature and extent of regulatory intervention in improving audit and corporate practices in the new regime.

2. Related Literature and Hypotheses Development

2.1 Background of RPT Auditing Standards

RPT auditing procedures have remained largely unchanged since the issuance of AU sec. 335, Related-Party Transactions, in 1975. In 1983, AU sec. 335 was replaced by AU sec. 334. However, the nature and extent of the auditor's responsibilities, as well as the procedures pertaining to related-party auditing, in AU sec. 335 were carried over into AU sec. 334 without significant modifications. AU sec. 334 removed guidance related to accounting considerations and disclosure standards for related parties to avoid unnecessary repetition with similar guidance in SFAS 57, which is now contained in ASC 850.

The PCAOB felt that the existing requirements did not contain sufficient required procedures and were not sufficiently risk based, which could lead to inadequate auditor effort.[5] AS 18, effective since December 15, 2014, is meant to strengthen auditor performance requirements

[3] PCAOB Release No. 2013-001, page 36; PCAOB Release No. 2014-002, page 176.
[4] Abernathy, Barnes, and Stefaniak (2013) provide a synthesis of studies examining the economic consequences of PCAOB activities. They document that 70% of such research are after 2010, showing a growing trend of PCAOB research in more recent years. In the papers examined in this synthesis, only a few directly address the consequences of PCAOB auditing standards on auditors and their firms. The study concludes that "[a]s we learn more about the influence of the PCAOB, many prior views in academic research about the roles of auditors and regulators may warrant reinvestigation or further exploration."
[5] PCAOB Release No. 2014-002, page 3.

in RPT auditing, an area that has historically represented increased risks of material misstatements in financial statements.

Compared to AU sec. 334, regulations in AS 18 differ in several respects. First, AS 18 provides a "scaled approach," establishing basic required procedures rather than just guidance, to assist auditors in identifying red flags that indicate potential risks of material misstatements. These basic procedures are then supplemented by more in-depth procedures corresponding to the facts and circumstances of the company under an audit.[6] Second, AS 18 is risk-based and is designed to align with and build upon risk-assessment standards (AS 12). Under AS 18, auditors are obligated to address the risk of material misstatements arising from other complementary areas of the audit when assessing potential RPT risks. Furthermore, AS 18 adds audit-committee communications, with an aim to ensure a common understanding between the auditor and the audit committee about the existence of related-party relationships and transactions and any significant unusual transactions. The standard requires the auditor to communicate with the audit committee on various aspects of its auditing of RPTs, to obtain relevant information during the auditor's risk-assessment procedures, and to communicate to the audit committee their evaluation of the company's identification of, accounting for, and disclosure of its relationships and transactions with related parties. Finally, AU sec. 334 states that the auditor should place primary emphasis on the adequacy of disclosure of RPTs. In contrast, AS 18 requires that the auditor evaluate both the accounting for, and disclosure of, RPTs.

[6] Such facts and circumstances may include the size of complexity of the transaction, the nature of the company's relationships or transaction with its related parties, and the related risk of material misstatements in the financial statements (PCAOB 2014).

2.2 Prior Research

Given the scale of the fraudulent cases detected that relate to RPTs, it is surprising to observe that studies on RPTs are relatively limited. We believe this is likely due to the time-consuming hand collection of data required to assess RPTs. Existing studies find that RPTs can have a damaging impact on firms because these transactions are often associated with high restatement risks (Kohlbeck and Mayhew, 2017), high likelihood of fraudulent behaviors (Henry, Gordon, Reed, and Louwers, 2012), decreased firm value (Jiang, Lee, and Yue, 2010; Kohlbeck and Mayhew, 2010; Cheung, Rau, and Stouraitis 2006) and increased likelihood of financial distress (Ryngaert and Thomas, 2012).

Gordon et al. (2007) argue that ‘‘internal control has difficulty tracking related-party transactions’’ because of their complexity. External auditing is an alternative to corporate-governance devices for reducing the occurrence of RPTs. External auditors are considered by investors as the first line of defense against fraud (La Porta, Lopez-de-Salinas, and Shleifer, 2006) because they can monitor and discipline managers (Francis and Wang, 2008) and enhance investor protection (Newman, Patterson, and Smith, 2005).

While there is limited prior evidence on the impact of auditors on RPTs, there is hardly any evidence on the impact of the PCAOB auditing standards on companies' RPT practices.[7] Our study contributes by assessing whether an auditing regulation results in a change in firms' RPT behaviors, audit fees, and RPT control procedures.

[7] See Gordon et al. (2007) for a synthesis of literature examining the relation between auditing and RPT. More recently, Bennouri et al. (2015) use a sample of 85 French companies over the period of 2002-2008 and find that companies audited by Big-4 auditors report fewer RPTs. Kohlbeck and Mayhew (2017) find that RPT firms pay lower audit fees over the period of 2001 -2007 (i.e., prior to AS 18). The paper attributes the finding to auditors' limited responsibilities on RPTs and the possibility that RPT firms are associated with lower-quality audit firms.

2.3 Hypotheses

Studies provide evidence that effective regulations play a valid role in restricting opportunistic activities by companies (Ashbaugh-Skaife et al. 2008, Cohen, Dey, and Lys 2013; Iliev, 2010). AS 18 requires management to provide auditors with the names of all related parties and the transactions among them, and to make an assertion in the financial statements that RPTs are conducted on terms equivalent to those prevailing in an arm's-length transaction. AS 18 also requires auditors to obtain written representations from management assuring that there are no side agreements or other arrangements undisclosed to the auditor, to perform sufficient procedures to obtain relevant evidence, and to actively communicate with the audit committees while performing the RPT auditing procedures.

These new external monitoring requirements have the potential to enhance the audit committee's oversight of management and to strengthen the systems and procedures the auditors use to identify and account for RPTs. In turn, this would constrain managements' ability to use RPTs as a tool of opportunistic behavior and lead to the less frequent use of harmful RPTs by management. Additionally, the increased auditor scrutiny can also enhance companies' corporate governance related to RPTs (McConomy, 1998; Manry, Tiras, and Wheatley 2003; Carcello and Li, 2013), resulting in improved internal RPT control procedures. For example, increased communication with the audit committee can improve the committee's awareness of RPT behaviors. Further, the mandatory assessment of firms' RPT control procedure is also likely to promote the initiation of a formal written RPT policy.

With enhanced external and internal monitoring on RPTs following the AS 18 adoption, we anticipate that firms will reduce their opportunistic RPT activities. Furthermore, management may simply avoid the use of RPTs even if these RPTs are not opportunistic as the AS 18 requirements could increase the management's workload to provide the necessary evidence to

justify their involvements in RPTs. The additional workload may outweigh "any cost advantage a company may have from engaging in related-party transactions during its normal course of operation" and hence serve as "a deterrent against their use [of related party transactions]" (PCAOB 2014, 183). Taken together, we expect the adoption of AS 18 will be associated with a reduction of companies' RPT activities, leading to the first hypothesis.[8,9]

H1: Firms decrease their RPT following the adoption of AS 18.

H1 assumes that all RPTs have the same effects. However, prior literature concludes that not all RPTs reflect insider opportunism (e.g., Kohlbeck and Mayhew 2017, 2010; Ryngaert and Thomas 2012).[10] Motivated by Kohlbeck and Mayhew (2017) and Hope, Lu, and Saiy (2019), we break down RPTs into Business RPTs and Non-Business RPTs as Kohlbeck and Mayhew (2017) find that Non-Business RPTs are associated with an increased likelihood of restatements. To the extent that Non-Business RPTs are more likely to reflect insider opportunism, we expect the enhanced external and internal monitoring on RPTs following the AS 18 adoption to have a stronger impact on Non-Business RPTs. We do not propose formal hypotheses but we conduct analyses to investigate whether AS 18 affects these two types of transactions differently.

In its 2014 release document of AS 18, the PCAOB states: "(T)he Board has observed that the facts underlying a significant percentage of the Board's settled disciplinary actions to date have involved auditors' failures to perform sufficient procedures regarding related party transactions.

[8] The hypotheses are stated in the alternative form.
[9] Counter arguments exist. Arguably, it could also be possible that AS 18 may result in increased RPTs (because previously undisclosed RPTs become disclosed under more stringent auditing procedures) or no change of RPTs at all (if enhanced auditing procedures required in AS 18 have already been voluntarily taken by auditors before the AS 18 adoption).
[10] In other words, RPTs may reflect either self-dealing (opportunism) or efficient contracting.

Many of these cases involve smaller audit companies. Likewise, the Board's inspection program has identified a range of deficiencies in auditing related party transactions, particularly with respect to audits of smaller public companies that were conducted by smaller domestic audit companies" (PCAOB 2014, 10).

Echoing the Board's observations, research highlights a heterogeneous quality of Big-4 and non-Big-4 audit firms (see DeFond and Zhang 2014 and Che, Hope, and Langli 2019 for a review of such studies). Big-4 auditors are less likely than non-Big-4 auditors to compromise their independence, as no single client dominates larger audit firms.[11] In addition, Big-4 firms have stronger incentives to protect their reputations and can provide more robust training programs and standardized audit methodologies.[12] Because of the Big-4's superior audit quality, it is likely that they are less likely to be involved in harmful RPTs *ex ante*. Therefore, increased scrutiny of auditors following AS 18 may not decrease Big-4 clients' RPTs to the same extent as that of non-Big-4 clients. As a result, we predict that the effect of AS 18 is more salient in reducing RPTs for clients of non-Big-4 firms than of Big-4 firms:

H1a: The decrease of RPTs is more pronounced for firms audited by non-Big-4 than those audited by Big-4 audit firms.

AS 18 takes a risk-based approach that aligns and builds upon the risk assessment standard AS 12. It requires auditors to heighten their scrutiny in areas that have historically represented a

[11] See DeFond and Zhang (2014) for a review of these studies.
[12] There exist a few studies that provide counter evidence to these assertions. These studies argue that non-Big-4 auditors may not be inferior to Big-4 auditors (Chaney, Jeter, and Shivakumar 2004, Beyer and Sridhar 2006, Bar-Yosef and Sarath 2005). However, the mixed results may arise from research-design deficiencies such as self-selection bias (DeFond and Zhang 2014).

high risk of material misstatements. Based on a number of high-profile scandals, we can easily argue that high fraud risk firms are more likely to be involved in high-risk RPTs. At the same time, auditors are required to take additional steps to audit firms' RPTs more closely, leading to stricter inspection and monitoring. Consequently, we expect AS 18 to have a stronger impact on firms with high fraud risk:

H1b: The decrease of RPTs is more pronounced for firms with high fraud risk than those with low fraud risk

Although there is no existing empirical evidence on the impact of AS 18 on audit fees, prior studies examine how audit fees respond to new regulations. Some studies find increased audit fees when additional auditing procedures are needed (Hogan and Wilkins, 2008) or when auditors' litigation risks are significantly increased (Iliev, 2010; Charles, Glover, and Sharp 2010; Carcello and Li, 2013). Other studies present evidence of decreased audit fees when the new regulation helps improve auditing efficiency (Krishnan, Krishnan, and Song 2011; Doogar, Sivadasan, and Solomon 2010). Overall, these studies show that the change of audit fees generally depends on whether the new regulation increases or decreases audit effort and litigation risk.

We expect audit firms to charge higher audit fees after implementation of AS 18 as a result of the heavier workload it imposes on auditors, higher labor costs, and potentially increased litigation risk. Relative to the previous standard, AS 18 requires more extensive auditing procedures to detect RPT deficiencies. Specifically, it requires auditors to evaluate whether client firms have properly identified all their related parties and the transactions with these related parties. Should auditors identify any omissions, they must treat these omissions as an elevated risk and perform additional procedures to address the higher risk. Between the new procedures to test the accuracy

and completeness of management's identification of related parties and the extra work to control audit risk, the auditors' workload is significantly increased, which should result in higher audit fees. To successfully uncover all RPTs, audit firms may also need to train additional staff. Such increased labor costs would also likely lead to higher audit fees. Furthermore, because AS 18 heightens the auditor's responsibility to obtain assurance that all RPTs are identified, properly accounted for, and disclosed, failure to meet AS 18's requirements by obtaining sufficient evidence can increase litigation risks related to audit quality. This could also lead to higher audit fees.

The PCAOB supports the conjecture that the auditor fee will increase "as a result of the application of the standard and amendments" (PCAOB 2014, 182). The Board recognizes that "there may be increased costs for companies whose auditors must change their methodologies and practices to address the new requirements" (PCAOB 2014, 182). Nevertheless, it should be noted that the Board is uncertain if the increased audit costs will result in increased audit fees or the extent of the audit-fee increase, given the lack of empirical evidence available to provide insights regarding the costs.[13] Taken together, our second hypothesis is:

H2: There is an audit-fee increase associated with RPTs following the adoption of AS 18

Similar to the arguments for H1a and H1b, we expect the effects of AS 18 on audit fees to be more pronounced for firms audited by non-Big-4 audit firms and for firms with high risks:

[13] See PCAOB (2014, 182): "It is not clear to what extent the increased auditor performance requirements would result in increased audit fees. The Board is aware of public reports that have analyzed historical and aggregate data on audit fees, and which suggest that audit fees generally have remained stable in recent years, notwithstanding the fact that the Board and other auditing standard-setters have issued new standards during that period. It is difficult to obtain data that isolates the costs of particular new audit standards, and that would be comparable between companies. In its re-proposal, the Board sought data that might provide information or insight into such costs. As noted above, commenters did not provide data regarding the extent of such costs."

H2a: The increase in audit fees is more pronounced for companies audited by non-Big-4 than those audited by Big-4 audit firms.

H2b: The increase in audit fees is more pronounced for companies with high fraud risk than firms with low fraud risk.

3. Sample Selection and Research Design

3.1 Sample Selection

We hand-collect RPT information from companies' proxy statements from 2011 to 2016. AS 18 has been in effect since December 15, 2014; thus the sample includes three years prior to and three years after the effective date. Because we want to evaluate the impact on Big-4 and non-Big-4 firms separately, we start our sample with all 287 non-financial Russell 3000 companies audited by non-Big-4 firms. Excluding financial and utility firms and firms with missing values, we then match each non-Big-4 client firm with a Big-4 client firm by industry, firm size, and profitability.[14] To control for potentially confounding time-period factors that may coincide with the new standard, we match a group of Canadian firms that are not listed in the U.S. and hence are not subject to AS 18 as a control group. Specifically, for each non-Big-4/Big-4 client firm in our U.S. sample, we match a non-Big-4/Big-4 Canadian firm.

Because the non-Big-4 client firms in the main tests are relatively small, the matched Big-4 client firms in the above sample are smaller than typical clients of Big-4 audit firms.

[14] When matching between Non-Big4 and Big4 clients, we first rank all Russel 3000 firms by total revenue and return on assets in 2014 for each Fama-French 48 industry. Then, for each Non-Big4 client, we identify a Big-4 client with the closest ROA and total revenue in the same industry. On average the calibration is smaller than 5%.

Consequently, in additional analyses we focus our attention on S&P 500 firms that are audited by Big4.[15] The downside to this approach is that it is not possible to match with Canadian firms on firm size as most large Canadian firms are subject to PCAOB because they either use U.S GAAP or have their shares traded on a U.S. exchange.[16]

Figure 1 summarizes the distribution of our samples. Our final sample consists of 133 U.S. non-Big-4 client firms (Group A1), 133 U.S. Big-4 client firms (Group B1), 133 Canadian non-Big-4 client firms (Group A2), 133 Canadian Big-4 client firms (Group B2), and 320 S&P 500 firms (Group C1). The total sample is 5,112 firm-year observations.[17] Table 1 summarizes our sample construction for both the main and additional tests. We cluster standard errors by firm in all regression analyses.

3.2 Research Design

3.2.1 Impact of AS 18 on RPT (Test of H1)

For the primary analyses, we test the change in RPTs using a difference-in-differences model:

$$RPT = \beta_1 Treat \times Post + \beta_2 Treat + \beta_3 Post + \beta_4 Size + \beta_5 ROA + \beta_6 PB + \beta_7 R\&D + \beta_8 R\&D\ missing + \beta_9 Leverage + \beta_{10} NonBig\text{-}4 + Industry\ Fixed\ Effects + \varepsilon \quad (1)$$

[15] The Big-4 audit 497 of the S&P 500 companies in the year 2016. Excluding financial industry and observations with missing value, *all* our S&P 500 sample firms are audited by Big-4 auditors.
[16] Since we do not find any significant change in RPT behavior, audit fees, or RPT governance for S&P 500 firms after the adoption of AS 18, we do not view it as important to have a control group to further test whether changes are significant.
[17] We use different groups of samples for each test to better meet the analysis requirements.

RPT is measured as the dollar amount of RPT divided by total assets. *Treat* equals one if the firm is subject to AS 18, zero otherwise; *Post* equals one when the sample year is after the effective date of AS 18, and zero otherwise. We expect $\beta_1 < 0$, indicating that in the post period, firms that are affected by AS 18 reduce their RPT engagement.

We include several firm characteristics as control variables based on prior research. *Size* is the natural logarithm of total assets. *ROA* is the return on assets of the firm, defined as net income (before extraordinary items) divided by total assets. *PB* is the price to book ratio, measured as the ratio of market value of total equity over book value of total equity. *R&D* is the research and development expense divided by total assets; *R&D missing* equals one if R&D is missing; zero otherwise. *Leverage* is the ratio of total liabilities to total assets. *NonBig-4* equals one if the firm is audited by one of the non-Big-4 auditors. Definitions of all variables are summarized in the Appendix.

To test whether the AS 18 effects (if any) on RPT are more pronounced for non-Big-4 firms (H1a) and high-risk firms (H1b), we apply models (2) and (3) by focusing only on the U.S. firms and interact *Post* with *NonBig-4* or *Risk*. In both models, we also include a set of control variables that depict firms' governance characteristics.[18] *Firm Age* is the number of years since the firm was initially listed. *Ext. Directors* is the percentage of independent directors on the board. *Inst. Holdings* is the percentage of shares hold by institutional investors. *CEO Duality* equals to one if the CEO is also the Chairman of the board, and zero otherwise. *CEO tenure* is the number of years since the current CEO was appointed.

[18] Models 2 and 3 have the same sets of controls. We use different sets of controls in Model 1 because the corporate governance controls are not available for Canadian firms in our sample.

$$RPT = \beta_1 NonBig\text{-}4 \times Post + \beta_2 Post + \beta_3 NonBig\text{-}4 + \beta_4 Size + \beta_5 ROA + \beta_7 PB + \beta_8 Leverage + \beta_9 R\&D + \beta_8 R\&D\ Missing + \beta_9 Firm\ Age + \beta_{10} Ext.\ Director + \beta_{11} Inst.\ Holdings + \beta_{12} CEO\ Duality + \beta_{13} CEO\ Tenure + + Industry\ Fixed\ Effects + \varepsilon \quad (2)$$

Model (2) tests whether the AS 18 effect (if any) is stronger for non-Big-4 client firms. We expect $\beta_1 < 0$, implying that non-Big-4 client firms reduce more RPTs in the post period.

$$RPT = \beta_1 Risk \times Post + \beta_2 Post + \beta_3 Risk + \beta_4 Size + \beta_5 ROA + \beta_7 PB + \beta_8 Leverage + \beta_9 R\&D + \beta_8 R\&D\ missing + \beta_{10} Ext.\ Director + \beta_{11} Inst.\ Holdings + \beta_{12} CEO\ Duality + \beta_{13} CEO\ Tenure + Industry\ Fixed\ Effects + \varepsilon \quad (3)$$

Model (3) tests if any AS 18 effect is more pronounced for high-risk firms than for low-risk firms. To mitigate the potential impact of the auditor's quality, in model (3) we only focus on clients of Big-4 audit firms. We expect $\beta_1 < 0$, implying high-risk firms reduce more RPTs in the post period.

We construct *Risk* in two steps. In the first step, we use AAERs issued between 2000 and 2016 to construct a logistic probability score using a logit model following Doogar et al. (2010):

$$AAER = \beta_1 Accruals + \beta_2 \Delta Rec + \beta_3 \Delta Inv + \beta_4 \Delta CS + \beta_5 \Delta ROA + \beta_6 issue \quad (4)$$

Accruals are abnormal accruals computed as per Richardson et al. (2005); Δ *Rec* is the change in receivables divided by total assets; Δ *Inv* is the change in inventory divided by total

assets; Δ *CS* is the change in cash sales divided by total assets; Δ *ROA* is change in return on assets, and *Issue* is an indicator for issuance of securities during the year. In the second step, we calculate an expected AAER probability for each firm year. We assign the variable *Risk* a value of one to firms with expected AAER probability above the sample median, and zero otherwise.

3.2.3 Impact of AS 18 on Audit Fees (Test of H2)

To test for potential changes in audit fees, we use the following model.

$$\begin{aligned} Audit\ Fee = \quad & \beta_1 RPT \times Post + \beta_2 RPT + \beta_3 Post + + \beta_4 Size + \beta_5 ROA + \beta_6 Segment \\ & + \beta_7 Loss + \beta_8 Late + \beta_9 Busy + \beta_{10} Quick + \beta_{11} Leverage + \beta_{12} \\ & AR\&Inv + \beta_{13} Foreign\ Operation + \beta_{14} Volatility + \beta_{15} Auditor\ Market \\ & Share + \beta_{16} Customer\ Importance + \beta_{17} Auditor\ Change + \beta_{18} NonBig- \\ & 4 + Industry\ Fixed\ Effects + \varepsilon \end{aligned} \qquad (5)$$

The definitions of *RPT* and *Post* are the same as before. In accordance with H2, we expect $\beta_1 > 0$, meaning that auditors charge higher auditor fees for firms with RPT after the adoption of AS 18. Consistent with prior literature, we control for several firm characteristics that may affect audit fees (Doogar et al., 2010, Carcello and Li, 2013). *Size* is the natural logarithm of total assets. *ROA* is the return on assets of the firm. *Segment* is the number of firm's business segments. *Loss* equals one when the firm reports a negative net income, and zero otherwise. *Late* is the number of days between the filing date and the date of the fiscal year end. *Busy* equals one when the firm's year ends in December, and zero otherwise.[19] *Quick* is the ratio of cash equivalents and accounts

[19] Audit firms generally charge higher audit fees when the firm's year ends in December, given that it is generally the busiest period for auditors.

receivable to current liabilities. *Leverage* is total liabilities over total assets. *AR&INV* is the sum of accounts receivable and inventory over total assets. *Foreign Operation* equals one if the firm has operations in a foreign country. *Volatility* is the standard deviation of ROA over the past five years; *Auditor Market Share* is measured as the audit fees of an auditor divided by total audit fees in a Fama-French 48 industry. *Customer Importance* is the percentage of a firm's audit fees divided by the auditors' total audit fees in a Fama-French 48 industry. *Audit Change* is an indicator that equals one if a firm changes it auditor in a given year, zero otherwise; *NonBig-4* equals one when the firm is audited by a non-Big 4 firm, and zero otherwise. We also include industry fixed effects.

To test if the AS 18 effects on audit fees (if any) are more salient for clients of non-Big-4 firms (H2a), we partition sample firms into clients of non-Big-4 and Big-4 firms, and assess whether the coefficient on *RPT*×*Post* is significantly higher for non-Big-4 client firms. To test if the AS 18 effects on audit fees are stronger for high-risk firms (H2b), we partition sample firms into high-risk and low-risk firms, and observe whether the coefficient on *RPT*×*Post* is higher for high-risk firms.

4. Results

Table 2 provides descriptive statistics. Panel A provides statistics for the treatment firms. Focusing on the "Total" column, on average, 46% of U.S. firms disclosed at least one RPT. Each firm-year discloses 0.89 RPTs and the average RPT amount is approximately 0.86% of total assets ($2.8M).

Panel A further presents descriptive statistics comparing clients of non-Big-4 small, Big-4 small, and Big-4 large firms (i.e., S&P 500).[20] The average RPT amounts for non-Big 4 and Big-4

[20] There is no NonBig-4 large firm group as in U.S. Big-4 auditors dominate the auditing market for large firms.

small client firms are 2.64% and 0.79%, respectively. This suggests that non-Big 4 client firms report more RPTs than matched Big-4 firms and is consistent with prior literature that auditors' reputations are associated with the occurrence of RPTs (Bennouri, Nekhili, and Touron 2015). Business characteristics are mostly comparable between non-Big 4 and Big-4 firms, suggesting these two groups of observation are well matched. For S&P 500 firms, the average RPT is 0.09%, which as expected is smaller than for the other two groups (recall that RPT amounts are scaled by total assets).

Panel B reports the comparison between the treatment group (U.S. firms) and control group (Canadian firms) and shows that the two groups are mostly comparable in their firm characteristics. However, on average, U.S. firms are slightly less leveraged, more profitable, and have higher PB ratios. Table 3 reports the Pearson correlations and shows that large firms, firms audited by non-Big 4 auditors and firms with fewer independent directors, lower institutional holdings, and dual CEOs are more likely to disclose more RPTs. We do not find high correlations between the explanatory variables, suggesting multi-collinearity is not a serious concern in our analyses.[21]

4.2 Main Results

4.2.1 Results of H1 – AS 18 Effects on RPT

In Table 4, we investigate whether firms change their RPT behavior following the adoption of AS 18. In the main analyses we employ RPT transaction amounts as the outcome variable. In Section 5.2 we consider alternative RPT proxies. The sample employed in Column (1) includes both clients of non-Big 4 and Big-4 (small) firms in the U.S. (treatment sample) and matched Canadian firms. As shown in Column (1), the coefficient on *Treat*× *Post* is negative and

[21] The variance inflation factor (VIF) of Treat × Post for the main analysis of H1 is 3.02 and the average VIF is 1.94. The VIF for RPT×Post for H2 is 5.51 and the average VIF is 1.95.

statistically significant (-1.315, t=-2.39), suggesting that compared to firms not subject to the PCAOB regulation, firms subject to PCAOB regulation significantly reduce their RPTs after the adoption of AS 18. This finding provides initial evidence for the idea that U.S. firms' RPT practices are affected by AS 18 (H1).

Post is positive but not significant (0.478, t=1.50), implying that the Canadian firms (control group) do not change their RPT behavior significantly in the post period. Similarly, *Treat* is not significant (5.971, t=1.48), consistent with scaled RPT amounts not being significantly different between U.S. firms (treatment group) and Canadian firms (control group) in the pre-AS 18 period.

Clearly, firms have related parties for a variety of reasons, and not only to extract private benefits from minority shareholders. In other words, not all RPTs are "created equal." In Columns 2 and 3, we manually decompose RPTs into Non-Business RPTs (NonBusinessRPT) and Business RPTs (BusinessRPT) following Kohlbeck and Mayhew (2017).[22] Kohlbeck and Mayhew (2017) suggest that Non-Business RPTs signal a higher risk of material misstatements and are more likely to represent conflict of interests between insiders and shareholders. We find that *Treat* ×*Post* is significant for Non-Business RPTs (-0.737, t = -2.40), but not for Business RPTs (-0.578, t=-1.32), consistent with the idea that the new standard has the effect of reducing the prevalence of "bad RPTs."[23]

In Table 5, we focus on the treatment (U.S.) firms and investigate how the AS 18's effects on RPT are affected by the type of auditors and ex-ante firm fraud risk. To test H1a, we regress

[22] Business RPTs involve selling, buying, leasing, and M&A. Non-Business RPTs include all other RPTs such as donation, consulting, legal service, etc. See Kohlbeck and Mayhew (2017) and Hope, Lu, and Saiy (2019) for further details.

[23] The difference is not significant though with a t-statistics of 0.73

RPTs on *Non-Big-4* × *Post*, controlling for other firm characteristics.[24] The results are presented in Panel A of Table 5. In Column 1, we find that clients of Big-4 firms reduce their RPTs as the coefficient on *Post* is negative (-0.187, t = -1.85). More importantly, clients of non-Big-4 firms reduce their RPTs to a greater extent as compared to their matched Big-4 client firms. Specifically, *Non-Big-4* × *Post* is negative and significant (-1.704, t=-2.06), consistent with the PCAOB's conjecture that firms audited by non-Big-4 auditors would be more affected by AS 18.

In Column 2 and 3, we find that non-Big-4 firms significantly reduce both Non-Business RPTs (-0.398, t=-1.78) and Business RPTs (-1.296, t=-1.71), while Big-4 firms only reduce their Non-Business RPTs (-0.098, t=-2.28). These findings have two implications. First, the Business RPTs in firms audited by Big-4 auditors are more likely to be efficiently contracted *ex ante* than those in the non-Big-4 firms, in part because of higher auditing quality by Big-4 auditors. Second, Non-Business RPTs are more likely to reflect conflicts of interest; however, prior to the new standard neither Big-4 nor non-Big-4 firms invested sufficiently in auditing these transactions. As a result, when AS 18 *mandates* new auditing procedures, Non-Business RPTs are reduced for firms audited by both types of auditors.

AS 18 is designed to be risk-based and comply with risk-assessment standards. In Table 5, Panel B, we test whether the reduction of RPT is conditional on the firm's expected fraud risk. In line with Doogar et al. (2010), we measure fraud risk using expected AAER probability. Column 1 shows that for firms with high fraud risks, RPT is significantly reduced (-1.765, t=-2.11), while for firms with low fraud risks, the RPT reduction is not significant (-0.128, t=-0.57). In Columns 2 and 3, we find that reduction of Non-Business RPTs is unconditional on risk (-0.183, t=-1.18), but that the reduction of Business RPTs is concentrated on high-risk firms (-1.583, t=-2.21), suggesting

[24] We use the variable "NonBig-4" instead of "Big-4" to avoid the joint test of Big-4 and Big-4 × Post in the regression to show a regulation impact on Big-4 clients.

that Non-Business RPTs are generally inefficient in nature and that Business RPTs (although on average less opportunistic than Non-Business RPTs) are more likely to be opportunistic when the risk is high.

The above results provide evidence that the reduction of RPTs is conditional on auditor type and fraud risks. We next examine whether these two findings are unique given that it is likely that firms with high fraud risk and non-Big-4 auditors are more likely to select each other either proactively or passively. In Panel C, we further partition the sample in Panel B by auditor type and find that the reduction of RPTs concentrates on firms with high risks for both non-Big-4 (-3.636, t = -2.39) and Big-4 firms (=1.196, t = -1.90), suggesting that our RPT findings regarding the auditor type and fraud risks reveal different aspects of AS 18's consequences.

Overall, the results in Panels B and C provide evidence that the RPT reduction is more pronounced for firms with high fraud risk, regardless of auditors' type. The findings are consistent with the argument that when firms have high fraud risk, their RPTs are more likely to relate to opportunistic behavior *ex ante*. When taking a risk-based scalable approach, auditors make greater effort and assert higher scrutiny in the RPT monitoring, leading to a higher degree of reduction in RPTs, supporting H1b.

4.2.2 Audit-Fees Analyses

AS 18 aims to improve RPT auditing by taking a risk-based approach that requires mandatory auditing steps and additional audit procedures correspondent with the situation. The new requirements likely lead to an increased workload for auditors. Auditors in turn may partially or fully transfer this burden to their client firms, increasing the audit fees charged to firms. In Table 6, we investigate whether this increased audit effort is reflected in audit fees. Column 1 shows that, for the full sample, there is no change in audit fees sensitivity to RPTs as the coefficient on

RPT×*Post* (0.003, t=0.69) is not significant. However, when decomposing RPTs into Non-Business RPTs and Business RPTs in Column 2, we find that firms face significantly higher audit fees associated with Non-Business RPTs (0.016, t = 2.50), but not with Business RPTs (0004, t=0.92), suggesting that AS 18 increases the auditor's efforts on RPTs that are most likely to be harmful to minority shareholders.

In Table 7, we further investigate whether the relation detected in Table 6 differs by auditor types and fraud risks. In Panel A, we find that non-Big-4 auditors increase audit fees for both Non-Business RPTs (0.018, t=2.07) and Business RPTs (0.011 t=2.95), while Big-4 auditors only increase their audit fees on Non-Business RPTs (0.046, t=2.42). These results are consistent with our findings in Panel A of Table 5, whereby firms audited by non-Big-4 auditors reduce both Non-Business RPTs and Business RPTs as a result of AS 18, yet firms audited by Big-4 auditors only reduce Non-Business RPTs. This suggests that the reduction of RPTs is a result of increased auditing efforts after the adoption of AS 18.

In Panels B and C of Table 7, we find that the audit-fee increase concentrates on firms with high risk, consistent with PCAOB's assertion that AS 18 is taking a scaled risk-based approach. When the firm's ex-ante risk is high, auditors take more steps and put more effort in RPT auditing, resulting in higher audit fees. Overall, we find evidence that AS 18 significantly changed auditors' efforts in RPT auditing, as proxied by audit fees. Following AS 18, both Big-4 auditors and non-Big-4 auditors increase their audit-fee sensitivity on RPTs. The change is stronger for clients of non-Big-4 firms and for high-risk firms.

5. Additional Analyses and Robustness Tests

5.1 Impact of AS 18 on RPT Governance

One possible mechanism for RPT reduction, as we examine in our primary analyses, is through enhanced auditor monitoring. Another potential mechanism is enhanced internal RPT control. Research shows that audit scrutiny can increase companies' corporate governance and control procedures (McConomy, 1998; Manry et al., 2003; Carcello and Li, 2013). The increased auditor scrutiny could increase companies' corporate governance on RPTs (McConomy, 1998; Manry et al., 2003; Carcello and Li, 2013). Based on prior literature and findings, we explore two possible effects. First, the new standard requires auditors to understand and evaluate the company's RPT control-procedure policies. This enhanced external auditing is expected to promote the initiation of a formal written RPT policy. The PCAOB projects that management may be more attentive to written procedures and responsibilities for RPTs as a result of AS 18. Second, auditors are required in AS 18 to make inquiries of the audit committee members about their understanding of and concerns relating to RPTs and to make additional communication to audit committees about the auditors' evaluation of the company's identification of, accounting for, and disclosure of RPTs. In addition, if the auditor learns of a related-party relationship or transaction that management did not disclose, the auditor must advise the audit committee. These requirements are likely to make the audit committee more closely involved in the RPT audit. If a company's board uses another committee to review and approve RPTs, then the overlapping of RPT assessment between the two committees may make the responsibility unclear and decrease the efficiency of monitoring. As a result, we expect the auditors' involvement with the audit committee, as required by AS 18, to

increase the likelihood for companies to delegate the audit committee as the responsible party for reviewing and approving RPTs rather than other board-level committees.

We argue that following AS 18, firms are more likely to delegate the audit committee responsible for RPT ratification and to adopt a formal written RPT policy because of the increased communication with audit committee and a mandatory assessment of RPT control procedures. We use a logit model to test if there is a change in RPT governance in the post-AS 18 period.

$$\begin{aligned} \textit{Adoption of Control Procedure} = {} & \beta_1 Post + \beta_2 NonBig\text{-}4 + \beta_3 Size + \beta_4 ROA + \beta_5 PB + \beta_6 Leverage + \beta_7 \\ & R\&D + \beta_8 R\&D\ missing + \beta_9 Ext.Director + \beta_{10} Inst.\ Holdings + \\ & \beta_{11} Dual\ Shares + \beta_{12} CEO\ Duality + \beta_{13} CEO\ Tenure + \beta_{13} Exchange \\ & + \beta_{13} Delaware + Industry\ Fixed\ Effects + \varepsilon \end{aligned} \quad (8)$$

For the test of written policy, *Adoption of Control Procedure* equals one if the firm has a written RPT policy. For the test of audit-committee delegation, *Adoption of Control Procedure* equals one if the firm delegates the audit committee as the responsible party for reviewing and approving RPTs. We expect the coefficient on *Post* to be positive, implying that after the adoption of AS 18, companies change their RPT control procedures.

We add two new controls to the regression. *Exchange* equals one if the firm is listed on NASDAQ, and zero otherwise. We add this control because NASDAQ and NYSE have different governance requirements that could affect firms' governance practice. Next, *Delaware* equals one for firms incorporated in Delaware, and zero otherwise. As documented in prior studies, Delaware firms often have different governance practices (e.g., Daines 2001).

Table 8 shows that, in the post-AS 18 period, firms on average are more likely to use the audit committee for RPT ratification (0.336, t=3.81) and to adopt a written RPT policy (0.490,

t=5.25). However, we cannot simply attribute this change in RPT control procedure to AS 18, because we cannot rule out the alternative explanation that RPT governance improves over time without the intervention of regulation.[25,26]

5.2 Alternative RPT Measures

In the main analyses, we measure RPTs using transaction amounts divided by total assets (thus capturing economic importance or materiality). In Table 10, we repeat the main analyses employing alternative measures: the number of RPTs (#RPT) and the existence of RPTs (DRPT). We find significant reduction in both #RPT and DRPT, adding robustness to the argument that there is a reduction of RPTs following the adoption of AS 18. In contrast, we do not find significance in audit-fees change associated with #RPT or DRPT. A plausible explanation is that auditors alter their efforts based on materiality of transactions, not simply on the occurrence of RPTs or number of RPTs, consistent with materiality being a primary auditing principle.

5.3 AS 18 Impact on Small vs. Large Firms

The PCAOB noted that there may be particular risks posed by RPTs engaged in by smaller companies and conjectured that AS 18 may particularly affect smaller companies that rely on RPTs as part of their business model. In its oversight findings, the PCAOB finds that audits of smaller companies are more frequently the subject of inspection findings and enforcement actions that involve RPTs.[27] "*Also it is generally acknowledged that investors are less informed about*

[25] To be precise, for this test we cannot use Canadian firms as a control sample because IFRS does not require RPT governance disclosure.
[26] In untabulated analyses, we find the improvements in RPT governance are not associated with auditor type or fraud risk, consistent with the idea that the communication with the audit committee is mandatory and that the audit of firms' RPT governance increases firms' likelihood to adopt a written RPT policy
[27] PCAOB 2014, Page 10.

companies that are smaller, suggesting that there is a higher degree of information asymmetry for smaller companies."[28] In part because of less information available regarding smaller companies (e.g., they have lower analyst following and press coverage), smaller firms are more likely to engage in harmful RPTs *ex ante*. Thus, the increased auditor scrutiny could have stronger effects on smaller companies than large companies.

Given our sample-selection procedures, our sample consists of mainly smaller firms because we first identify clients of non-Big-4 audit firms and then match each with a Big-4 client firm by size, profitability, and industry. To expand our analysis to large firms, we focus on S&P 500 firms and examine the impact of AS 18 on these large firms in Table 10. All S&P 500 sample firms are audited by Big-4s and they usually have better corporate governance than small firms. Thus, it is not surprising that we find that AS 18 virtually has no impact on S&P 500 firms. There is no significant change in RPT engagement, RPT audit fees, or RPT governance. Consistent with PCAOB's expectation, untabulated analyses reveal that the economic consequences of AS 18 between large firms and small firms are significantly different, suggesting the AS 18 effects are more pronounced for small firms.

5.4 Alternative Risk Measurement

In the main analyses, we measure firm's risk using the expected probability of AAER. In a robustness test, we measure risk as the expected restatement risk. The results show that the economic consequences of AS 18 are also more pronounced when restatement risk is high (untabulated).

[28] PCAOB 2014, Page 192.

6. Conclusion

In 2014, the PCAOB adopted Auditing Standards No. 18 (AS 18) to improve auditors' performance in auditing related-party transactions (RPTs). In this paper, we examine economic consequences of AS 18. We find that after the adoption of AS 18, U.S. firms significantly reduce their RPT involvements. This reduction is more pronounced for smaller firms, firms audited by non-Big4 auditors, and for firms with high fraud risk. We also find firms are more likely to adopt formal written RPT policies and delegate authority to the audit committee in the post AS 18 period. In addition, firms audited by non-Big-4 auditors and with higher fraud risk are subject to higher audit fees, suggesting that non-Big-4 auditors significantly increase their effort in RPT auditing and this increased effort is reflected into the fees.

These findings should be of interest to practitioners, investors, regulators, and academics. We document evidence that the PCAOB regulation did result in positive effects such as a reduction of harmful RPTs and improved RPT control procedures. While the PCAOB auditing standards are designed to improve auditing quality, our study shows that these regulations have greater impact on small firms than on large firms. Our study may warrant more considerations and analysis of the economic consequences on smaller firms for future PCAOB auditing standard setting.

Our results should be interpreted with caution due to the limitations in sample selection and the caveats of matching models. First, there is no control group in the U.S. that are not subject to AS 18. Although we use a group of Canadian firms to test the policy effect, we cannot completely rule out the possibility that other contemporaneous events occurred in the U.S. that could drive our inferences. Second, similar to other research focusing on Big-4 effects, it is difficult to find a matched control group for large clients of Big-4 audit firms.

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Appendix: Variable Definitions

Variables of Interest	Definitions
RPT	Total dollar amount of RPTs divided by total assets.
NonBusiness RPT	Dollar amount of RPTs involving selling, buying, leasing and M&A activities
Business RPT	Dollar amount of RPTs that are not Non-Business RPTs
AuditFee	The logarithm of firm's annual audit fees
Post	An indicator which equals to 1 if a firm's fiscal year is after 2013; zero otherwise
Treat	An indicator which equals to 1 if a firm is subject to AS 18; zero otherwise
Control Variables	Definitions
AAER Prob.	The probability of firms is in the list of Accounting and Auditing Enforcement Releases, zero otherwise
AR&Inv	The sum of account receivable and Inventory divided by total asset.
Auditor Change	An indicator which equals to 1 if a firm changes it auditor in a given year; zero otherwise
Auditor Market Share	The audit revenue for an auditor divided by total audit fees in a Fama French 48 industry
Big 4	An indicator which equals to 1 if a firm is audited by one of the Big-4 auditors; zero otherwise
Busy	An indicator which equals to 1 if a firm has a fiscal year ends at Dec. 31; zero otherwise
CEO Duality	An indicator which equals to 1 if the CEO is also the chair of the Board
CEO Tenue	The number of years during which the CEO has been appointed for
Customer Importance	The percentage of a client's audit fees divided by the auditor's total audit fees in a Fama French 48 industry.
Delaware	An indicator which equals to 1 if the firm is incorporated in Delaware; zero otherwise
Dual Share	An indicator which equals to 1 if the firm have multiple class of shares; zero otherwise.
Firm Age	The number of years since firm's IPO
Foreign Operation	An indicator which equals to 1 if the firms have foreign operations; zero otherwise
Ext. director	The percentage of independent directors over total board numbers.
Industry Competition	The Herfindahl-Hirschman Index of industry market share using revenue.

Inst. Holdings	The percentage of total shares owned by institutional shareholders
Leverage	The ratio of total debt to total assets
Loss	An indicator which equals to 1 if a firm reports net loss in a given year; zero otherwise
Nasdaq	An indicator which equals to 1 if the firm is listed in Nasdaq.
PB	The price to book ratio, measured as the ratio of market value of total equity over book value of total equity
Quick	Quick ratio, measured as cash plus account receivable divided by current liability
R&D	The ratio of total research and development cost to total assets
R&D missing	An indicator which equals to 1 if the value of research and development cost is missing
ROA	Return on asset, measured as the ratio of net income before extraordinary items over total assets
Volatility	The standard deviation of firms ROA over the past five years
Segment	The number of business segments
Size	The logarithm of the firm's total assets
Variables in Additional Tests	
#RPT	Number of RPTs disclosed in a firm's annual filing
DRPT	An indicator which equals to 1 if a firm discloses any RPTs; zero otherwise
Audit Committee	An indicator which equals to 1 if a firm has designated its audit committee as the authority to review and approve RPTs; zero otherwise.
Restate Prob.	The probability of firms restate their statement in a given year
Written Policy	An indicator which equals to 1 if a firm has adopted a written RPT policy; zero otherwise.

Figure 1: Sample Match Procedure

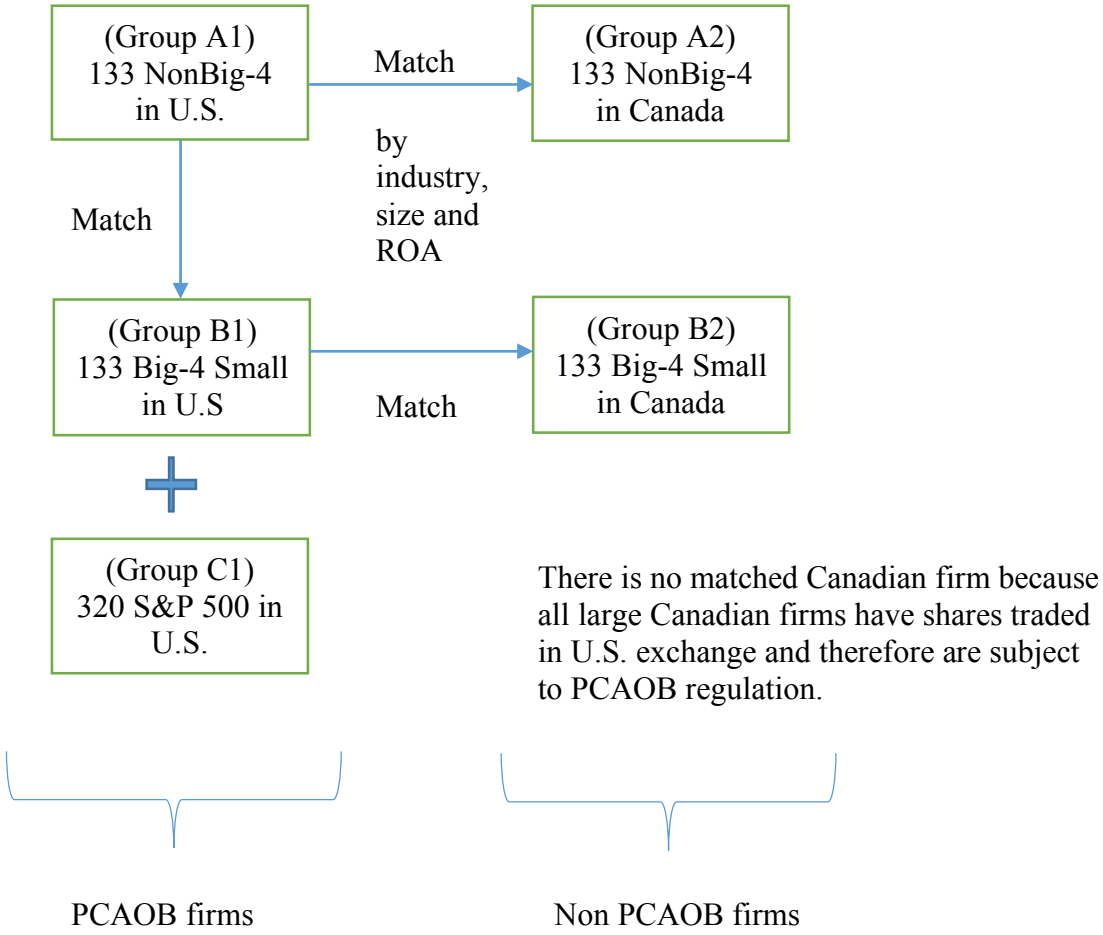

Table 1: Sample Selection

	Initial	Final
Main tests		
All non-Big-4 clients in Russell 3000	483	
Excluding financial and utility firms	-210	
Excluding incomplete RPT disclosures in any year	-123	
Excluding firms missing governance data	-17	
Total non-Big-4 Clients ("non-Big-4 Small")		133
+ Matched Big-4 Clients in Russell 3000 ("Big-4 Small")		133
+ Matched non-PCAOB non-Big-4 clients in Canada		133
+ Matched non-PCAOB Big-4 clients in Canada		133
Total Big-4 and Non-Big-4 Small firms		532
x): Total Number of Years		6
=Total Firm-Year Observations (Big 4 and non-Big 4 Small firms)		3,192
Additional Tests		
All S&P 500 Composite Firms	500	
Excluding financial and utility firms	-123	
Excluding incomplete RPT disclosures in any year	-24	
Excluding firms missing governance data	-33	
Total Large Big-4 clients (Big-4 Large firms)		320
x): Total Number of Years		6
=Total Firm-Year Observations		1,920

Table 2: Descriptive Statistics

Panel A: Big-4 Small, NonBig-4 Small and Big-4 Large (US firms)

	U.S. non-Big-4 Small		U.S. Big-4 Small		U.S. Big-4 Large		Total	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
$RPT (%)	2.65	19.04	0.79	4.73	0.10	0.53	0.86	9.59
#RPT	0.99	1.39	0.67	1.14	0.95	1.40	0.89	1.35
DRPT	0.49	0.50	0.39	0.49	0.48	0.50	0.46	0.50
Written Policy	0.32	0.47	0.37	0.48	0.55	0.50	0.45	0.50
Audit Committee	0.63	0.48	0.74	0.44	0.39	0.49	0.53	0.50
AuditFee ($mil)	0.75	0.64	1.22	1.25	8.74	10.50	5.05	8.56
AAER Prob.	0.00	0.00	0.00	0.00	0.00	-	0.00	0.00
Auditor Change	0.06	0.23	0.03	0.18	0.01	0.08	0.03	0.16
Auditor Market Share	0.04	0.08	0.25	0.11	0.29	0.11	0.22	0.15
Big 4	-	-	1.00	-	1.00	-	0.76	0.43
Busy	0.70	0.46	0.74	0.44	0.71	0.45	0.72	0.45
CEO Tenure	8.65	7.81	9.65	8.04	6.39	5.67	7.70	6.98
CEO Duality	0.42	0.49	0.43	0.50	0.64	0.48	0.54	0.50
Customer Importance	0.39	0.39	0.04	0.09	0.15	0.18	0.18	0.27
Delaware	0.62	0.49	0.66	0.47	0.62	0.49	0.63	0.48
Late	79.92	17.98	78.30	18.63	53.76	8.25	65.83	18.86
Foreign Operation	0.33	0.47	0.38	0.49	0.37	0.48	0.36	0.48
Dual Share	0.05	0.22	0.07	0.26	0.05	0.21	0.05	0.23
Firm Age	14.90	5.94	13.57	5.88	17.07	4.87	15.72	5.59
Industry Competition	0.06	0.04	0.06	0.04	0.06	0.04	0.06	0.04
Ext. Director	75.63	11.86	79.72	11.67	84.13	9.08	81.06	11.01
Inst. Holdings	78.17	26.61	85.36	24.07	75.79	13.75	78.65	20.49
AR & INV	0.23	0.17	0.23	0.16	0.20	0.14	0.21	0.16
Leverage	0.16	0.28	0.20	0.27	0.29	0.17	0.24	0.23

Size (Logat)	5.75	1.24	5.93	1.04	9.71	1.22	7.87	2.27
Loss	0.24	0.43	0.33	0.47	0.05	0.22	0.16	0.37
Exchange	0.69	0.46	0.66	0.47	0.25	0.43	0.45	0.50
PB	5.01	32.41	4.70	12.62	4.26	5.54	4.54	17.37
Quick	2.98	3.74	2.82	2.77	1.53	1.17	2.18	2.52
Restate Prob.	0.02	0.03	0.02	0.03	0.02	0.02	0.02	0.02
R&D	0.10	0.18	0.13	0.24	0.06	0.05	0.09	0.15
R&D missing	0.38	0.49	0.33	0.47	0.39	0.49	0.37	0.48
ROA	(0.03)	0.36	(0.03)	0.36	0.07	0.08	0.02	0.26
Volatility	0.12	0.26	0.10	0.21	0.03	0.05	0.07	0.17
Segment	5.01	3.61	5.17	3.31	8.17	5.07	6.71	4.64

Panel B: Control Group (Canada) vs. Treatment Group (U.S.)

	Canada				U.S.					
	Big-4 Small		NonBig-4 Small		Big 4 Small		Non-Big-4 Small		Total	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
$RPT	0.67	3.74	2.19	6.62	0.79	4.73	2.65	19.04	1.49	9.62
#RPT	0.80	1.06	1.11	1.06	0.67	1.14	0.99	1.39	0.88	1.16
DRPT	0.46	0.50	0.65	0.48	0.39	0.49	0.49	0.50	0.50	0.50
Post	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
Leverage	0.59	0.94	0.94	2.22	0.20	0.27	0.16	0.28	0.48	1.26
Logat	5.37	2.16	5.43	1.94	5.93	1.04	5.75	1.24	4.91	2.22
Loss	0.37	0.48	0.47	0.47	0.33	0.47	0.24	0.43	0.41	0.49
PB Ratio	3.29	38.09	2.76	28.31	4.70	12.62	5.01	32.41	3.38	28.05
R&D	0.06	0.21	0.10	0.27	0.13	0.24	0.10	0.18	0.10	0.25
R&D Missing	0.61	0.49	0.51	0.50	0.33	0.47	0.38	0.49	0.45	0.50
ROA	(0.14)	0.83	(0.62)	1.64	(0.03)	0.36	(0.03)	0.36	(0.21)	0.99

Table 2 provides descriptive statistics for the sample. Variables are defined in the Appendix. Panel A compares U.S. sub-samples that are subjected to AS 18. Panel B compares U.S. sample groups with Canadian control sample groups.

Table 3: Pearson Correlation Matrix

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	$RPT																		
2	#RPT	0.09***																	
3	DRPT	0.10***	0.72***																
4	Written Policy	-0.04	0.02	-0.00															
5	Audit Committee	-0.00	-0.02	-0.07***	-0.01														
6	audit_feesM	-0.04*	0.05*	0.07***	0.14***	-0.23***													
7	post	0.01	-0.03	-0.03	0.05*	0.01	0.02												
8	AAER Prob.	0.03	-0.03	-0.04*	0.02	0.02	-0.01	-0.05**											
9	Auditor Change	-0.01	-0.01	-0.01	-0.02	0.04*	-0.07***	0.05*	0.00										
10	Auditor Market Share	-0.09***	-0.01	0.01	0.13***	-0.17***	0.32***	-0.02	0.02	-0.04*									
11	Big 4	-0.10***	-0.04*	-0.04	0.14***	-0.11***	0.28***	-0.00	0.03	-0.11***	0.69***								
12	Busy	0.04*	-0.07***	-0.07***	0.06**	-0.04	0.09***	-0.01	-0.05*	-0.01	0.07***	0.02							
13	CEO Tenure	0.00	0.05*	0.10***	-0.16***	0.08***	-0.12***	-0.00	0.02	0.01	-0.11***	-0.08***	-0.02						
14	CEO Duality	-0.05*	0.01	0.03	0.05*	-0.12***	0.12***	-0.04*	0.10***	-0.03	0.15***	0.13***	0.02	0.18***					
15	Customer Importance	0.02	0.06**	0.09***	-0.04	-0.11***	0.16***	-0.04	0.00	-0.03	-0.38***	-0.45***	0.00	0.04*	0.02				
16	Delaware	0.04*	-0.02	0.01	-0.02	0.03	0.01	-0.00	-0.02	-0.02	-0.03	0.01	0.15***	-0.02	-0.12***	-0.00			
17	Late	0.12***	0.02	0.03	-0.19***	0.16***	-0.31***	-0.08***	-0.04*	0.11***	-0.34***	-0.42***	0.13***	0.14***	-0.11***	0.10***	0.03		
18	Foreign Operation	0.04	-0.08***	-0.08***	-0.01	-0.05*	0.07***	0.01	-0.01	-0.01	0.01	0.04	0.01	-0.01	-0.02	0.05**	0.08***	-0.05*	
19	Dual Share	-0.02	0.05*	0.11***	-0.08***	0.03	-0.03	-0.02	-0.02	-0.03	-0.02	0.01	-0.06**	0.09***	-0.06**	-0.01	0.04*	0.02	0.01
20	Firm Age	0.01	-0.00	0.02	-0.04	-0.10***	0.09***	0.10***	-0.04	-0.00	0.05**	0.08***	-0.14***	0.01	0.04	0.04	-0.20***	-0.21***	0.05*
21	Industry Competition	-0.01	0.04*	0.03	-0.01	-0.06**	0.06**	-0.03	0.05*	-0.02	0.02	-0.00	-0.04	-0.01	0.01	0.38***	-0.01	0.02	0.06**
22	Ext. Director	-0.02	-0.23***	-0.21***	0.09***	-0.12***	0.26***	0.01	0.07***	-0.05**	0.25***	0.27***	0.07***	-0.18***	0.09***	-0.05*	0.05*	-0.28***	0.05*
23	Inst. Holdings	-0.08***	-0.14***	-0.08***	0.03	0.08***	-0.03	-0.07***	0.11***	-0.01	-0.04	0.01	-0.02	-0.05*	-0.03	-0.02	0.17***	-0.06**	-0.06**
24	AR & INV	0.00	0.03	0.04*	-0.04*	0.02	0.01	-0.01	0.14***	0.01	-0.06**	-0.07**	-0.23***	0.04	-0.01	0.08***	-0.04	0.06**	0.09***
25	Leverage	0.37***	0.04*	0.06**	0.05*	-0.11***	0.13***	0.08***	0.07***	-0.07***	0.17***	0.18***	0.17***	-0.08***	0.03	-0.10***	-0.05*	-0.09***	-0.10***
26	Logat	-0.12***	0.09***	0.09***	0.19***	-0.29***	0.65***	0.04	0.05**	-0.11***	0.49***	0.52***	0.03	-0.18***	0.23***	-0.07***	-0.04*	-0.66***	0.00
27	Loss	0.08***	-0.07***	-0.05*	-0.09***	0.18***	-0.14***	0.05*	-0.05*	0.04	-0.13***	-0.12***	0.11***	0.01	-0.15***	-0.03	0.12***	0.30***	0.03
28	Nasdaq	0.01	-0.04	-0.03	-0.17***	0.35***	-0.31***	-0.00	0.05*	0.09***	-0.26***	-0.26***	-0.10***	0.17***	-0.14***	-0.02	0.03	0.29***	0.01
29	PB Ratio	-0.00	-0.01	0.01	-0.01	0.04*	-0.03	0.05*	0.01	-0.01	-0.02	-0.01	0.03	0.03	0.01	0.05*	0.05*	0.02	0.02
30	Quick	-0.01	-0.07***	-0.04*	-0.07***	0.12***	-0.13***	-0.00	-0.07***	0.08***	-0.17***	-0.18***	-0.01	0.09***	-0.10***	0.00	0.08***	0.17***	-0.02
31	Restate Prob.	0.01	0.02	0.02	-0.05*	0.10***	-0.08***	-0.24***	0.18***	0.01	-0.05*	-0.03	0.08***	0.05*	-0.01	0.04	0.03	0.10***	-0.10***
32	R&D	0.20***	-0.04*	-0.04	-0.06**	0.11***	-0.11***	-0.00	-0.00	0.01	-0.09***	-0.07**	0.09***	0.10***	-0.10***	-0.05*	0.04*	0.21***	0.02
33	R&D missing	-0.02	0.10***	0.10***	-0.05*	-0.01	-0.01	0.00	-0.08***	-0.01	0.02	-0.01	0.18***	0.03	0.00	-0.05*	-0.05*	0.03	-0.20***
34	ROA	-0.26***	0.03	0.03	0.05*	-0.09***	0.07***	-0.03	-0.01	-0.01	0.11***	0.11***	-0.09***	-0.06**	0.07***	0.02	-0.04*	-0.24***	-0.01
35	Volatility	0.16***	-0.04*	-0.02	-0.07**	0.11***	-0.13***	-0.01	-0.03	0.04*	-0.14***	-0.15***	0.09***	0.05*	-0.10***	-0.01	0.06**	0.24***	0.00
36	Segment	-0.05*	-0.04*	-0.04*	0.11***	-0.15***	0.44***	-0.01	0.02	0.00	0.25***	0.20***	-0.01	-0.13***	0.06**	0.12***	0.01	-0.24***	0.28***

Correlation Matrix (Continued)

	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
19 Dual Share																	
20 Firm Age	0.03																
21 Industry Competition	-0.04*	0.06**															
22 Ext. Director	-0.13***	0.06**	0.02														
23 Inst. Holdings	0.04	-0.14***	0.07***	0.16***													
24 AR & INV	-0.02	0.05*	0.17***	-0.07***	0.13***												
25 Leverage	0.02	0.03	-0.08***	0.13***	-0.05*	-0.19***											
26 Logat	-0.01	0.23***	-0.04	0.35***	-0.02	-0.12***	0.27***										
27 Loss	-0.05*	-0.21***	-0.06**	-0.07***	-0.06**	-0.12***	0.05**	-0.35***									
28 Nasdaq	-0.01	-0.03	0.00	-0.27***	0.09***	0.05*	-0.22***	-0.49***	0.16***								
29 PB Ratio	0.01	-0.03	-0.01	-0.03	-0.00	-0.03	0.05*	-0.06**	0.09***	0.05*							
30 Quick	-0.03	-0.05*	0.01	-0.14***	0.01	-0.13***	-0.20***	-0.34***	0.15***	0.25***	0.00						
31 Restate Prob.	0.04*	-0.12***	-0.05*	-0.03	0.02	0.05**	-0.01	-0.12***	0.20***	0.06**	-0.01	-0.00					
32 R&D	-0.02	-0.11***	-0.05*	-0.06**	-0.19***	-0.19***	0.24***	-0.30***	0.37***	0.17***	0.03	0.11***	0.09***				
33 R&D missing	0.06**	0.04	-0.19***	-0.03	-0.03	-0.15***	0.22***	0.15***	-0.10***	-0.18***	-0.02	-0.15***	0.27***	0.01			
34 ROA	0.03	0.14***	0.05**	0.06**	0.20***	0.16***	-0.30***	0.28***	-0.51***	-0.07***	-0.02	-0.06**	-0.08***	-0.82***	0.07***		
35 Volatility	-0.03	-0.17***	-0.05*	-0.09***	-0.18***	-0.17***	0.18***	-0.31***	0.36***	0.11***	0.02	0.11***	0.01	0.69***	-0.08***	-0.68***	
36 Segment	-0.06**	0.15***	0.18***	0.24***	-0.01	0.11***	-0.02	0.42***	-0.15***	-0.26***	-0.06**	-0.13***	-0.04	-0.18***	-0.08***	0.14***	-0.18***

Table 3 presents the Pearson correlation matrix. ***, **, and * indicate two-tailed statistical significance at the 1%, 5%, and 10% levels, respectively. Variables are defined in the Appendix.

Table 4: Test of H1 - AS 18 Effect on RPT

Dependent = $RPTs	(1) RPTs	(2) NonBus RPTs	(3) Bus RPTs	(4) |(2)-(3)|
Treat × Post	-1.315**	-0.737**	-0.578	0.159
	(-2.39)	(-2.40)	(-1.32)	(0.73)
Treat	5.971	0.015	5.956*	
	(1.48)	(0.01)	(1.72)	
Post	0.478	0.341	0.137	
	(1.50)	(1.27)	(0.88)	
Size	-0.280*	-0.190	-0.090	
	(-1.74)	(-1.56)	(-0.86)	
ROA	-0.068	0.212	-0.280	
	(-0.15)	(0.59)	(-1.05)	
PB Ratio	-0.004	-0.005	0.001	
	(-0.96)	(-1.11)	(0.50)	
R&D	-0.828	-0.831	0.004	
	(-0.79)	(-1.06)	(0.01)	
R&D missing	-0.240	-0.478	0.238	
	(-0.48)	(-1.30)	(0.73)	
Leverage	0.259	0.360	-0.102	
	(0.96)	(1.51)	(-0.62)	
NonBig-4	0.450	0.692	-0.242	
	(0.92)	(1.59)	(-0.90)	
Fixed Effects	Yes	Yes	Yes	
Observations	3,192	3,192	3,192	
Adj.R2	0.189	0.065	0.153	

Table 4 reports regression results where $RPT is the dependent variable in column 1 with t-statistics reported in parentheses below each coefficient. Fama-French 48 fixed effects are included in each model and standard errors are clustered at the firm level. ***,**,* indicate two-tailed statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 5: AS 18 Effects on RPTs Conditional on Auditor Types or Fraud Risks

Panel A: AS 18 Effect on RPTs Conditional on Auditor Types

	(1)	(2)	(3)	(4)
Dependent = $RPTs	RPTs	NonBusiness RPTs	Business RPTs	|(2)-(3)|
Nonbig4 × Post	-1.704**	-0.398*	-1.296*	0.898
	(-2.06)	(-1.78)	(-1.71)	(1.35)
Post	-0.187*	-0.098**	-0.082	0.016
	(-1.85)	(-2.28)	(-1.14)	(0.04)
NonBig-4	3.362	0.898	1.528	0.63
	(0.62)	(0.60)	(0.34)	(0.02)
Size	-0.157**	-0.033*	-0.098**	
	(-2.30)	(-1.71)	(-2.47)	
ROA	1.277	0.285	0.647	
	(1.46)	(1.44)	(1.35)	
PB Ratio	-0.009	-0.003	-0.008	
	(-1.31)	(-1.33)	(-1.62)	
Leverage	1.786	0.543	0.798	
	(1.34)	(1.19)	(1.29)	
R&D	0.518	-0.041	-0.174	
	(0.33)	(-0.13)	(-0.28)	
R&D Missing	-0.644	-0.074	-0.021	
	(-1.59)	(-1.13)	(-0.16)	
Firm Age	-0.038	-0.012	-0.029	
	(-1.52)	(-1.57)	(-1.42)	
Ext. Director	-0.016	-0.004	-0.008	
	(-0.92)	(-0.70)	(-0.91)	
Inst. Holdings	-0.001	-0.001	0.001	
	(-0.10)	(-0.41)	(0.10)	
Dual Share	-0.530*	-0.061	-0.213**	
	(-1.72)	(-1.46)	(-2.57)	
CEO Tenure	-0.011	-0.003	-0.011	
	(-0.73)	(-0.56)	(-1.48)	
CEO Duality	0.209	0.049	0.042	
	(0.83)	(0.79)	(0.33)	
Fixed Effects	Yes	Yes	Yes	
Observations	1,596	1,596	1,596	
Adj.R2	0.368	0.167	0.278	

Panel B: AS 18 Effect on RPTs Conditional on Fraud Risks

Dependent =	(1) RPTs	(2) NonBusiness RPTs	(3) Business RPTs	(4) |(2)-(3)|
Risk × Post	-1.765**	-0.183	-1.583**	1.400***
	(-2.11)	(-1.18)	(-2.21)	(5.43)
Post	-0.128	-0.183**	0.056	0.239
	(-0.57)	(-2.23)	(0.26)	(1.16)
Risk	4.377	0.448	3.929*	(0.63)***
	(1.52)	(0.52)	(1.69)	(3.11)
Controls	Yes	Yes	Yes	
Fixed Effects	Yes	Yes	Yes	
Observations	1,596	1,596	1,596	
Adj.R2	0.195	0.096	0.151	

Panel C: AS 18 Effect on RPTs Conditional on Auditor Types and Fraud Risks

Dependent =	(1) All RPTs	(2) All RPTs	(3)
Auditors =	Nonbig4	Big4	|(1)-(2)|
Risk × Post	-3.636**	-1.196*	2.440***
	(-2.39)	(-1.90)	(2.38)
Post	-0.035	-0.103	0.239
	(-0.04)	(-0.28)	(0.01)
Risk	18.624**	-3.630	22.254***
	(2.17)	(-1.31)	(6.58)
Controls	Yes	Yes	
Fixed Effects	Yes	Yes	
Observations	798	798	
Adj.R2	0.397	0.069	

Table 5 reports regression results where $RPT is the dependent variable in with t-statistics reported in parentheses below each coefficient. Fama-French 48 fixed effects are included in each model and standard errors are clustered at the firm level***,**,* indicate two-tailed statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 6: Test of H2 - AS 18 Effect on Audit Fees

Dependent =	(1) AuditFee	(2) AuditFee
RPT × Post	0.003	
	(0.69)	
RPT	-0.003	
	(-0.71)	
Non-Business RPT × Post		0.016**
		(2.50)
Non-Business RPT		-0.001
		(-0.46)
Business RPT × Post		0.004
		(0.92)
Business RPT		-0.004
		(-0.85)
Post	0.006	0.004
	(0.21)	(0.14)
Size	0.440***	0.445***
	(14.16)	(14.18)
ROA	-0.110***	-0.117***
	(-2.63)	(-2.88)
Segment	0.026***	0.026***
	(2.88)	(2.84)
Loss	0.162***	0.163***
	(3.45)	(3.47)
Late	0.001	0.001
	(0.85)	(0.92)
Busy	0.045	0.045
	(0.79)	(0.79)
Quick	-0.024***	-0.024***
	(-3.20)	(-3.21)
Leverage	-0.002	-0.054
	(-0.02)	(-0.59)
AR & INV	0.458**	0.450**
	(2.24)	(2.20)
Foreign Operation	0.123**	0.121**
	(2.28)	(2.25)
Volatility	0.127	0.131*
	(1.61)	(1.66)
Auditor Market Share	0.167	0.164
	(0.65)	(0.63)
Customer Importance	-0.053	-0.055
	(-0.54)	(-0.56)
Auditor Change	-0.518***	-0.529***

	(-4.07)	(-4.13)
NonBig-4	-0.410***	-0.412***
	(-5.19)	(-5.21)
Fixed Effects	Yes	Yes
Observations	1,596	1,596
Adj.R2	0.560	0.561

Table 6 reports regression results where the natural logarithm of audit fees is the dependent variable with t-statistics reported in parentheses below each coefficient. Fama-French 48 fixed effects are included in each model and standard errors are clustered at the firm level. ***,**,* indicate two-tailed statistical significance at the 1%, 5%, and 10% levels, respectively**.**

Table 7: AS 18 Effects on Audit Fees Conditional on Auditor Types or Fraud Risks

Panel A: AS 18 Effects on Audit Fees Conditional on Auditor Types

Dependent = Log (fees)	(1)	(2)	(3)	(4)	(5)	(6)
	Nonbig4	Big4	Nonbig4	Big4	|(1)-(2)|	|(3)-(4)|
RPT × *Post*	0.006	0.005			0.001	
	(1.64)	(0.89)			0.08	
RPT	-0.007**	0.014***			0.021***	
	(-2.05)	(2.97)			(13.46)	
NonBusiness RPT × *Post*			0.018**	0.046**		0.028*
			(2.07)	(2.42)		(1.85)
NonBusiness RPT			-0.003	0.012		0.015
			(-1.31)	(0.93)		(1.40)
Business RPT × *Post*			0.011***	0.001		0.01***
			(2.95)	(0.26)		(2.79)
Business RPT			-0.011***	0.015***		0.026***
			(-3.07)	(3.50)		(22.49)
Post	-0.042	0.075*	-0.044	0.073*	0.117***	0.117***
	(-0.86)	(1.88)	(-0.90)	(1.85)	(3.57)	(3.63)
Controls	Yes	Yes	Yes	Yes		
Fixed Effects	Yes	Yes	Yes	Yes		
Observations	798	798	798	798		
Adj.R2	0.563	0.476	0.565	0.476		

Panel B: AS 18 Effects on Audit Fees Conditional on Fraud Risk

Dependent = Log (fees)	(1)	(2)	(3)	(4)	(5)	(6)
	High Risk	Low Risk	High Risk	Low Risk	|(1)-(2)|	|(3)-(4)|
RPT × Post	0.001	-0.001			0.002	
	(0.29)	(-0.23)			(0.18)	
RPT	-0.002	0.002			0.004	
	(-0.45)	(0.54)			(0.67)	
NonBusiness RPT × Post			0.025***	-0.034		0.059***
			(2.95)	(-1.38)		(7.70)
NonBusiness RPT			-0.007	0.000		0.007
			(-1.06)	(0.00)		(1.02)
Business RPT × Post			0.002	0.002		0.000
			(0.54)	(0.58)		(0.00)
Business RPT			-0.002	-0.001		0.001
			(-0.50)	(-0.17)		(0.08)
Post	-0.005	0.033	-0.007	0.035	0.038	0.042
	(-0.10)	(1.10)	(-0.14)	(1.11)	(0.46)	(0.53)
Controls	Yes	Yes	Yes	Yes		
Fixed Effects	Yes	Yes	Yes	Yes		
Observations	798	798	798	798		
Adj.R2	0.496	0.630	0.497	0.630		

Panel C: AS 18 Effects on Audit Fees Conditional on Auditor Types and Fraud Risk

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Dependent= log(fees)								
Auditor=	NonBig4		Big4		NonBig4		Big4	
Risk =	High	Low	High	Low	High	Low	High	Low
RPT × *Post*	0.004	0.002	0.001	0.013				
	(1.16)	(0.44)	(0.13)	(1.28)				
RPT	-0.005*	-0.001	0.012**	0.011*				
	(-1.89)	(-0.25)	(2.60)	(1.76)				
NonBusiness RPT × *Post*					0.032**	-0.029	0.043**	0.149
					(2.13)	(-1.38)	(2.23)	(1.22)
NonBusines RPT					-0.006	-0.003	0.030	0.006
					(-1.36)	(-0.57)	(0.70)	(0.50)
Business RPT × *Post*					0.008***	0.008	-0.003	0.013
					(3.17)	(0.96)	(-1.04)	(1.34)
Business RPT					-0.007***	-0.006	0.012***	0.014
					(-3.77)	(-0.79)	(2.69)	(1.00)
Post	-0.055	0.013	0.052	0.098**	-0.061	0.016	0.053	0.093**
	(-0.66)	(0.26)	(0.65)	(2.15)	(-0.72)	(0.30)	(0.65)	(2.26)
Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	399	399	399	399	399	399	399	399
Adj.R2	0.496	0.619	0.387	0.577	0.498	0.619	0.387	0.577

Table 7 reports cross-sectional analysis results where logarithm of audit fees is the dependent variable with t-statistics reported in parentheses below each coefficient. Fama-French 48 fixed effects are included in each model and standard errors are clustered at the firm level. ***,**,* indicate two-tailed statistical significance at the 1%, 5%, and 10% levels, respectively**.** Sample in Panel A is partitioned by Audit Type; Sample in Panel B is partitioned by the median of fraud risk; Sample in Panel C is two way partitioned by Audit Type and Fraud Risk.

Table 8: AS 18 effect on RPT Governance

Dependent =	(1) Audit Committee	(2) Written Policy
Post	0.336***	0.490***
	(3.81)	(5.25)
Size	0.120	0.130
	(0.89)	(1.07)
ROA	-0.735	0.959*
	(-1.17)	(1.90)
PB Ratio	0.072**	-0.002
	(2.28)	(-0.49)
Leverage	-0.326	-0.508
	(-0.93)	(-0.94)
R&D	0.224	1.031
	(0.16)	(1.12)
R&D Missing	0.252	-0.551*
	(0.86)	(-1.94)
Firm Age	-0.029	-0.079***
	(-1.25)	(-3.23)
Ext. Director	0.023*	-0.003
	(1.89)	(-0.27)
Inst. Holdings	-0.002	0.001
	(-0.37)	(0.14)
Dual Share	0.506	-0.479
	(0.85)	(-0.81)
CEO Tenure	0.006	-0.040**
	(0.30)	(-1.98)
CEO Duality	0.065	0.189
	(0.24)	(0.77)
Exchange	1.410***	-0.182
	(4.76)	(-0.66)
Delaware	0.033	-0.294
	(0.11)	(-1.04)
Non-Big-4	-0.373	-0.075
	(-1.34)	(-0.29)
Fixed Effects	Yes	Yes
Observations	1,596	1,596
Pseudo R2	0.109	0.072

Table 8 reports LOGIT regression results where the adoption of certain RPT governance practice is the dependent variable with t-statistics reported in parentheses below each coefficient. Fama-French 48 fixed effects are included in each model and standard errors are clustered at the firm level. ***,**,* indicate two-tailed statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 9 Alternative RPT Measures

Panel A: Alternative RPT Measures for RPT Tests

	(1)	(2)
Dependent =	#RPTs	DRPTs
Treat × Post	-0.212***	-0.157*
	(-2.69)	(-1.67)
Treat	-0.941*	-1.379*
	(-1.88)	(-1.77)
Post	-0.014	-0.107
	(-0.24)	(-0.87)
All Controls	Yes	Yes
Fixed Effects	Yes	Yes
Observations	3,192	3,192
Adj.R2	0.068	0.063

Panel B: Alternative RPT Measures for Audit-Fee Tests

Dependent = Log (fees)	(1)	(2)	(3)	(4)
RPTs=	#RPTs	#RPTs	DRPTs	DRPTs
RPT × Post	-0.002		0.003	
	(-0.08)		(0.05)	
RPT	-0.015		0.019	
	(-0.64)		(0.35)	
NonBusiness RPT × Post		-0.073		-0.091
		(-0.66)		(-0.71)
NonBusiness RPT		-0.023		-0.031
		(-0.37)		(-0.40)
Business RPT × Post		0.019		0.041
		(0.68)		(0.69)
Business RPT		-0.039		-0.022
		(-1.22)		(-0.37)
Post	0.025	0.019	0.027	0.020
	(0.72)	(0.56)	(0.70)	(0.57)
Controls	Yes	Yes	Yes	Yes
Fixed Effects	Yes	Yes	Yes	Yes
Observations	1,596	1,596	1,596	1,596
Adj.R2	0.556	0.556	0.555	0.555

Table 9 reports main analysis results using alternative RPT measures with t-statistics reported in parentheses below each coefficient. In Panel A Column 1, the dependent variable is the #RPTs; In Panel A Column 2, the dependent variable is the DRPTs; In Panel B Column 1 and 2, the dependent variable is the #RPTs; In Panel B column 3 and 4, the dependent variable is the DRPT. Fama-French 48 fixed effects are included in each model and standard errors are clustered at the firm level. ***,**,* indicate two-tailed statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 10 Alternative Firm Size (i.e., Tests on Large S&P 500 Firms)

Panel A: RPT Tests for S&P 500 Firms

	(1)	(2)	(3)	(4)	(5)
Dependent = RPTs	RPTs	Non-Business RPTs	Business RPTs		
AAER Risk=				High	Low
Post	-0.014	-0.004	-0.011	-0.021	0.000
	(-0.88)	(-0.49)	(-0.80)	(-0.72)	(0.01)
All Controls	Yes	Yes	Yes	Yes	Yes
Fixed Effects	Yes	Yes	Yes	Yes	Yes
Observations	1,920	1,920	1,920	960	960
Adj.R2	0.063	0.057	0.038	0.095	0.037

Panel B: Audit Fees Test for S&P 500 Firms

	(1)	(2)	(3)	(4)	(5)	(6)
Dependent = Log (fees)						
	Full Sample	High Risk	Low Risk	Full Sample	High Risk	Low Risk
RPT × *Post*	-0.002	-0.007	0.035			
	(-0.07)	(-0.19)	(1.02)			
RPT	0.042	0.033	0.032			
	(1.51)	(1.06)	(0.92)			
Non-Business RPT × *Post*				0.006	0.195	0.043
				(0.04)	(1.02)	(0.06)
Non-Business RPT				-0.005	-0.038	0.037
				(-0.22)	(-0.85)	(1.13)
Bus RPT × *Post*				0.019	-0.174	0.017
				(0.53)	(-0.76)	(0.51)
Bus RPT				0.049*	0.051**	0.035
				(1.84)	(2.59)	(0.75)
Post	0.118***	0.139***	0.099***	0.118***	0.137***	0.099***
	(8.36)	(5.32)	(4.26)	(8.33)	(5.23)	(4.19)
	(-2.46)	(-1.48)	(-2.41)	(-2.46)	(-1.45)	(-2.41)
All Controls	Yes	Yes	Yes	Yes	Yes	Yes
Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,920	960	960	1,920	960	960
Adj.R2	0.784	0.790	0.787	0.784	0.790	0.786

Panel C: RPT Governance Test for S&P 500 Firms

	(1)	(2)	(3)	(4)	(5)	(6)
Dependent =	Audit Committee	Audit Committee	Audit Committee	Written Policy	Written Policy	Written Policy
AAER Risk=	Full Sample	High	Low	Full Sample	High	Low
Post	-0.018	0.037	-0.043	0.033	-0.033	-0.029
	(-0.26)	(0.27)	(-0.34)	(0.43)	(-0.23)	(-0.22)
All Controls	Yes	Yes	Yes	Yes	Yes	Yes
Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	1,920	960	960	1,920	960	960
Pseudo R2	0.110	0.124	0.119	0.084	0.106	0.092

Table 10 reports main analysis results using S&P 500 composite firms as the sample with t-statistics reported in parentheses below each coefficient. Fama-French 48 fixed effects are included in each model and standard errors are clustered at the firm level. ***,**,* indicate two-tailed statistical significance at the 1%, 5%, and 10% levels, respectively**.** All S&P 500 firms in our sample are audited by Big 4 auditors. Panel A investigate the AS 18 effects on RPT behaviors for S&P 500 firms; Panel B investigates the AS 18 effects on audit fees for S&P 500 firms; Panel C investigates the RPT governance change around the adoption of AS 18 for S&P 500 firms.