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INCUMBENT AUDIT FIRM-PROVIDED TAX
SERVICES AND CLIENTS WITH LOW FINANCIAL
REPORTING QUALITY.

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Document de Treball núm.14/4

Departament d'Empresa

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Edita / Publisher:

Departament d'Empresa
<http://www.uab.cat/departament/empresa>
Universitat Autònoma de Barcelona
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Edifici B
08193 Bellaterra (Cerdanyola del Vallès), Spain
Tel. 93 5811209
Fax 93 5812555

ISSN:
1988-7736. Documents de Treball (Departament d'Empresa, Universitat Autònoma de Barcelona)

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Incumbent audit firm-provided tax services and clients with low financial reporting quality

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September 2014

Acknowledgements: The authors gratefully appreciate the comments of the seminar participants at the Umeå School of Business and Economics, and at the European Accounting Association Annual Congress in Tallinn, Estonia (2014). Myllymäki gratefully acknowledges the financial support received from the Finnish Foundation for Economic Education, Jenny and Antti Wihuri Foundation, Nordea Bank Foundation, Oskar Öflund's Foundation, and Evald and Hilda Nissi Foundation. All remaining errors are our own.

Incumbent audit firm-provided tax services and clients with low financial reporting quality

Abstract

This study investigates whether incumbent audit firm-provided tax services enhance or impair the likelihood of acknowledging client companies' low financial reporting quality. In particular, we examine the association between tax-related fees and the likelihood of timely restatements, and internal control weakness disclosures among a sample of US companies that all have misstatements in financial information. The empirical findings indicate that companies paying higher tax-related fees are less likely to disclose SOX 404 internal control weakness disclosures, implying that underlying control problems are unacknowledged when incumbent audit firm-provided tax-related fees are higher. However, the findings suggest that just providing both audit and tax-related services does not have an impact on audit quality per se, but rather it is the magnitude of the tax-related fees in particular that counts. We also find some evidence suggesting that companies paying higher tax-related fees have higher likelihood of restatement lags, whereas companies paying smaller tax-related fees to their audit firm restate financial statements in a timelier manner. Overall, the findings suggest that audit scrutiny of client companies with low quality financial reporting is weaker when the magnitude of tax-related fees is higher.

1. INTRODUCTION

This study investigates whether incumbent audit firm-provided tax services enhance or impair the likelihood of acknowledging client companies' low financial reporting quality. Since the audit scandal of Arthur Andersen, investors and regulators have expressed their concerns over the magnitude of incumbent audit firm-provided non-audit services, because they are perceived as a threat on auditors' independence. That is, non-audit services might increase auditors' economic dependence to their clients, leading to lower audit quality. In the U.S., the Sarbanes Oxley Act (SOX) (2002) prohibits audit firms from providing most non-audit services to their audit clients, but permits tax services due to the potential benefits from knowledge spillover to audit quality. After all, audit quality consists of both the likelihood that the auditor discovers a breach (implying expertise and audit effort) and the likelihood that the auditor discloses the breach (implying objectivity and independence) (DeAngelo 1981).

A bulk of prior studies have investigated the association between non-audit fees and audit/financial reporting quality, and reported somewhat mixed results (see Schneider et al. 2006 for a review). After the restrictions on most incumbent audit firm-provided non-audit services (SOX 2002), prior research has especially focused on the influence of tax services in order to examine whether the expected benefits from knowledge spillover outweighs the problems of economic dependence (e.g., Seetharaman et al. 2011; Krishnan and Visvanathan 2011; Paterson and Valencia 2011). In this study, we approach the issue of incumbent audit firm-provided tax services using a sample of companies that all have poor financial reporting quality, i.e., companies with misstatements eventually restated. The misstatements are determined from the restated periods indicated by restatement data. Firstly, we investigate whether tax fees are associated with those misstatements in financial information that remain undiscovered in a fiscal year in ques-

tion, to which we refer as restatement lag. We hence compare companies with restatement lag to those companies with misstatements restated more quickly. Secondly, we investigate whether tax fees are associated with the likelihood of Section 404 internal control weakness disclosures. Based on the view that an occurrence of a misstatement indicates existing internal control weaknesses (e.g., Eilifsen and Messier 2000; Rice and Weber 2012), disclosing material weakness would suggest that the company acknowledges the control weaknesses. The research setting where we have a sample of similar companies in terms of poor accounting quality, allows examining the auditors' professional skepticism in particular.¹ Thus, the underlying assumption is that high quality auditing should lead to discovering any material misstatements and internal control weaknesses, and auditors should require management to acknowledge them. Enhanced knowledge about the client via tax-services could make restatements more timely and material weakness disclosures more likely for companies with poor accounting quality. However, economic dependence may disrupt auditor's professional skepticism, resulting in restatement lags and unacknowledged control problems.

The inferences of the findings in prior studies that investigate the association between incumbent audit firm-provided tax services and financial reporting quality mostly support the knowledge spillover view. For example, Kinney et al. (2004) suggest that tax-related fees reduce the likelihood of restatements, implying the benefits from knowledge spillover. Seetharaman et al. (2011), however, report insignificant association between tax-related fees and restated periods, but significant negative association with tax-related restatements. These studies examine whether or not restatements/misstatements occur. Harris and Zhou (2013) suggest that tax ser-

¹ Nelson (2009) defines professional skepticism as “*indicated by auditor judgments and decisions that reflect a heightened assessment of the risk that an assertion is incorrect, conditional on the information available to the auditor.*” He elaborates that “*In many circumstances the assertion in question will be a client's assertion that the financial statements are free of material misstatement, but the definition could apply to other assertions as well (e.g., attesting to the effectiveness of a client's internal controls).*”

vices lead to reductions of non-tax internal control weaknesses but do not have an effect on tax-related weaknesses. Lower likelihood of restatements and/or internal control weaknesses could, however, also mean reluctance to acknowledge and disclose them. Rice and Weber (2012) examine a sample of companies with existing internal control weaknesses and find that non-audit fees makes it less likely that material weaknesses are disclosed, supporting the economic dependence view. We extend the findings of the prior studies on tax services and investigate the role of audit firm-provided tax services among companies with poor financial reporting quality.

This study uses a sample of fiscal-year observations of US companies from 2005-2012. Only the company-years involving misstatements are included to the sample used in the analyses. In the analyses, we examine the probability of a restatement lag (an indicator variable for company-years where restatement is disclosed after the filing date of internal control opinion) and the probability of internal control material weakness disclosure (an indicator variable for internal control reports disclosing material weaknesses). Our independent variables of interest are (1) an indicator variable with a value of one if the tax fees paid to the incumbent auditor are greater than zero, and zero otherwise (*DTAXFEES*), (2) the tax fees paid to the incumbent auditor divided by square root of total assets (*TAXFEES*), (3) the ratio of tax fees divided by total fees paid to the incumbent auditor (*TAXFEES_TF*), and (4) the ratio of tax fees divided by audit fees paid to the incumbent auditor (*TAXFEES_AF*).

The empirical findings of this study suggest that, in all different model specifications, the indicator variable for tax services is insignificant. This implies that incumbent audit firm-provided tax services do not have either quality-enhancing or quality-impairing impact. However, the results indicate that the continuous variables measuring the magnitude of tax-related fees (*TAXFEES*, *TAXFEES_AF*, and *TAXFEES_AF*) have negative effects on the likelihood of a ma-

terial weakness disclosure, although the significance levels vary across different model specifications. That is, we find evidence implying that the higher (proportional) magnitude of tax fees results in unacknowledged control problems. In most model specifications, tax-related fees are not associated with the likelihood of restatement lags. However, when we further examine the impact of tax-related fees using a sample of only those companies that have paid tax-related fees to their auditors (i.e., observations of zero tax fees are excluded), the results indicate that tax fees divided by total fees and tax fees divided by audit fees are (mostly marginally) significantly associated with higher likelihood of restatement lags and lower likelihood of material weakness disclosures. These findings support the inference that it is the magnitude of the fees in particular that impair the likelihood of acknowledging client companies' financial reporting problems. In sum, this study contributes to the literature investigating incumbent audit firm-provided non-audit fees by suggesting that, among companies with poor accounting quality, greater economic bond with the client due to higher levels of tax-related fees may jeopardize auditors' independence and impair auditor's professional skepticism.

The rest of the paper is organized as follows. The next section summarizes the literature on the relation between non-audit services and financial reporting quality, and develops the hypotheses. Section three describes the data and the methodology. Results are reported in section four, followed by conclusions.

2. BACKGROUND AND HYPOTHESES DEVELOPMENT

During the past 30 years, audit firms have expanded their business areas to consultancy services, such as taxation, mergers and acquisitions, and risk management. Audit quality research has investigated the possible benefits and disadvantages of an audit firm providing both audit and non-audit services to the same client on a concurrent basis. There are two conflicting hypotheses

of the association between incumbent auditor-provided non-audit services and audit quality. Knowledge spillover view suggests that information acquired in consulting flows to the audit partner, improving the quality of the audit (and vice versa) (e.g., Simunic 1984). However, these services are economically important to the audit firms. High non-audit fees increase auditor's economic dependence on the clients, thereby possibly impairing audit quality (e.g., Simunic 1984).²

Prior studies have reported mixed results on the association between non-audit fees and audit/financial reporting quality (see Schneider et al. 2006 for a review). While the findings of Frankel et al. (2002), Ferguson et al. (2004), and Kanagaretnam et al. (2011) imply that non-audit fees impair auditor independence, DeFond et al. (2002), Ashbaugh et al. (2003), Chung and Kallapur (2003), Raghunandan et al. (2003), and Reynolds et al. (2004) do not find a statistically significant association between non-audit fees and audit/financial reporting quality.

The findings of an experiment by Joe and Vandervelde (2007) indicate that although knowledge spillover improves audit risk assessment, auditors seem to be less skeptical in identifying specific factors indicative of fraud when they provide both audit and non-audit services. Rice and Weber (2012) examine a sample of companies with existing internal control weaknesses and find that non-audit fees make it less likely that material weaknesses are disclosed. Their findings hence support the economic dependence view. Prior research has also investigated market perceptions of incumbent audit firm-provided non-audit services (e.g., Krishnan et al. 2005; Francis and Ke 2006; Khurana and Raman 2006), and the findings generally imply that investors perceive non-audit services impairing auditor independence.

² As defined by DeAngelo (1981), audit quality consists of both the likelihood that the auditor discovers a breach and the likelihood that the auditor discloses the breach.

In 2002, the U.S. Congress passed the Sarbanes-Oxley Act (SOX), which involves greater regulation on audit firms, among other things. In order to enhance audit quality by securing auditor independence, SOX provisions and SEC rules have prohibited audit firms from offering audit and certain non-audit services to the same client on a concurrent basis. Because of potential benefits from knowledge spillover, tax services are permitted, but with specific requirements for providing such services. For example, an audit committee must approve in advance all audit firm-provided tax services, tax-related fees paid to the audit firm must be reported separately, and there are limitations to the scope of the tax consulting (SEC 2003; PCAOB 2005).

There are some prior studies examining the effects of tax services on client's financial reporting quality. The underlying assumption in most of these studies is that higher quality auditing ought to manifest in higher quality financial reporting by the client company. Kinney et al. (2004) find a negative association between restatements of financial statements and tax fees. They interpret this result as suggesting that there are benefits from tax consulting to the audit quality. Seetharaman et al. (2011) examine the association between restated periods and tax-related fees, but do not find statistically significant results. However, they report a significant negative relation, when the restatements relate to tax issues. Choi and Lee (2009) find that incumbent audit firm-provided tax services are associated with lower client discretionary accruals. Huang et al. (2007) find mostly insignificant associations between tax fees and proxies for financial reporting quality (some weak evidence of lower abnormal accruals, but insignificant association with meeting or beating earnings benchmarks). Krishnan and Visvanathan (2011) suggest that tax services have a negative impact on loss avoidance. Gleason and Mills (2011) find improvement in estimates for tax reserves when the audit firm also provides tax services. Harris and Zhou (2013) suggest that tax services lead to reductions of non-tax internal control weaknesses

but do not have an effect on tax-related weaknesses. In addition to the studies examining the client company's financial reporting quality, Robinson (2008) finds a positive association between tax fees and the likelihood that the auditor issues a going concern opinion prior to bankruptcy filing. In summary, these studies support the view of knowledge spillover or find insignificant associations. However, a few prior studies have found indications suggesting that tax fees may have a negative effect on audit quality. Using an experiment, Favere-Marchesi (2006) find that the joint provision of audit and tax services lead to significantly lower fraud-risk assessments. Paterson and Valencia (2011) find that recurring audit firm-provided tax services create knowledge spillover, but nonrecurring tax services seem to have a detrimental impact on auditor independence.

In this study, we approach the issue of incumbent audit firm-provided tax services using a sample of companies with poor financial reporting quality, i.e., companies with misstatements. The misstatements are determined from restatement data, and the focus is on the restated periods. Rather than examining the years of restatement announcements, it is more appropriate to concentrate on the restated periods including misstatement in order to determine the company-years with poor accounting quality. First, we investigate whether tax-related fees are associated with those misstatements in financial information that remain undiscovered in a fiscal year in question, to which we refer as restatement lag. Second, we investigate whether tax-related fees are associated with the likelihood of internal control weakness disclosures among companies with misstatements. SOX Section 404 requires the management of listed companies to disclose their assessment on the effectiveness of internal control over financial reporting.³ The underlying as-

³ This section became effective for accelerated filers in 2004. In addition to the management assessment, Section 404 requires the company's external auditor to attest the assessment. Since 2007 smaller listed companies have also been annually reporting their assessment of internal control effectiveness, but auditor's internal control disclosure is

sumption is that an occurrence of a misstatement indicates internal control weaknesses (e.g., Eilfsen and Messier 2000; Leone 2007; Rice and Weber 2012). Therefore, utilizing a sample of companies with misstatements (eventually restated), we examine whether tax fees has an impact on whether or not company has disclosed the existing material weaknesses.

This research setting where we utilize a sample of companies that all have low financial reporting quality allows examining auditors' professional skepticism in a context of joint provision of tax services and audit services. Given the cost (threat to auditor independence) and benefit (knowledge spillover) associated with tax services, it is not obvious how tax services affect audit quality. Enhanced knowledge about clients via tax services could make restatements more timely and material weakness disclosures more likely in companies with poor accounting quality. However, economic dependence might disrupt auditor's professional skepticism, resulting in restatement lags and unacknowledged control problems. Thus, we state the following two hypotheses without directional expectations:

H1: There is a significant association between restatement lag and incumbent audit firm-provided tax services among companies with poor financial reporting quality.

H2: There is a significant association between disclosure of internal control weaknesses and incumbent audit firm-provided tax services among companies with poor financial reporting quality.

3. DATA AND METHODOLOGY

3.1. Sample and model specification

not required. Thus, our sample includes company-year observations with both auditor internal control reports and management-only internal control reports.

The data used in this study consist of company-year observations of US listed companies from years 2005–2012. We start the sample selection by gathering from Audit Analytics all the companies located in the US that have issued the SOX Section 404 mandated internal control reports. Then we obtain restatement data and audit fee data (also from Audit Analytics), and combine these with the internal control data. Finally, we extract the financial data from Thomson Financial database.

The samples used in the analyses consist of companies with poor financial reporting quality based on occurrences of misstatements (eventually restated). Specifically, we examine the restatement disclosure data, focusing on the restated periods, that is, the periods including misstatements. The restatement data include the period beginning and ending dates for which the company is restating. The restatement can affect an entire fiscal year, multiple fiscal years, or only a part of the fiscal year.

In order to investigate the first hypothesis, we estimate the following logit model⁴:

$$\begin{aligned}
 REST_LAG = & \alpha + \beta_1 taxservices + \beta_2 AUDITFEES + \beta_3 AUDITRELATED + \beta_4 OTHERFEES \\
 & + \beta_5 BIG4 + \beta_6 GC + \beta_7 ACHANGE + \beta_8 LOGTA + \beta_9 LOGNBS + \beta_{10} FOREIGN \\
 & + \beta_{11} RESTRUCT + \beta_{12} ACQ + \beta_{13} LOSS + \beta_{14} LEV + \beta_{15} PRIORICW \\
 & + \text{annual fixed effects} + \text{industry fixed effects} + \varepsilon
 \end{aligned}
 \tag{1}$$

The dependent variable in Model (1) is *REST_LAG*, which is a dummy variable equal to one if the restatement announcement took place after the filing date of internal control report, and zero otherwise. If more than one restatement announcement affects the same fiscal-year, *REST_LAG* is coded one only if each announcement date takes place after the filing date of internal control report. The rationale in the analyses using Model (1) is to compare company-years where misstatements were more timely restated to those company-years where misstatements

⁴ Because we are estimating conditional probability, we use logistic analysis, where normal distributions of variables are not required.

were restated only at the later periods (restatement lag). We assume that better audit quality would manifest in lower likelihood of restatement lags.

In order to investigate the second hypothesis, we estimate the following logit model:

$$\begin{aligned}
 MW404 = & \alpha + \beta_1 taxservices + \beta_2 AUDITFEES + \beta_3 AUDITRELATED + \beta_4 OTHERFEES \\
 & + \beta_5 BIG4 + \beta_6 GC + \beta_7 ACHANGE + \beta_8 LOGTA + \beta_9 LOGNBS + \beta_{10} FOREIGN \\
 & + \beta_{11} RESTRUCT + \beta_{12} ACQ + \beta_{13} LOSS + \beta_{14} LEV + \beta_{15} PRIORICW \\
 & + \text{annual fixed effects} + \text{industry fixed effects} + \varepsilon
 \end{aligned}
 \tag{2}$$

The dependent variable in Model (2) is *MW404*, which is a dummy variable equal to one if a company disclosed an internal control report indicating material weaknesses, and zero otherwise. Since the sample used in the analyses consists of company-years with misstatements, material weakness disclosures could be expected to indicate that control problems have been acknowledged. The data on section 404 material weaknesses consists of both auditor internal control reports and management-only reports (see also footnote three). The assumption is that, in case of high quality auditing, auditors would require management to acknowledge existing material weaknesses also when they are not issuing their own internal control report. Additionally, we use the variable *MW404FIRST*, which is set to one, if a company discloses internal control material weaknesses for the first time, and zero otherwise.

Both Model (1) and Model (2) include the same explanatory variables. *Taxservices* represents the four alternative variables for tax-related fees, which are examined separately in the analyses: *DTAXFEES* is set as one, if tax-related fees are greater than zero, and zero otherwise; *TAXFEES* measures the magnitude of tax fees, and is calculated by dividing tax-related fees paid to the incumbent auditor by the square root of total assets (see Kinney et al. 2004);

TAXFEES_TF is the ratio of tax-related fees paid to the incumbent auditor divided by total fees⁵; *TAXFEES_AF* is the ratio of tax-related fees paid to the incumbent auditor divided by audit fees.

The control variables are adapted from prior studies investigating the likelihood of restated financial statements (Seetharaman et al. 2011) and the non-disclosure of existing material weaknesses (Rice and Weber 2012). *AUDITFEES* controls for the effect of audit effort, and is calculated as audit fees scaled by the square root of total assets (see e.g., Kinney et al. 2004; Rice and Weber et al. 2012). Similarly, audit related fees (*AUDITRELATED*) and all other auditor fees (*OTHERFEES*) are scaled by the square root of total assets. To control for the effect of audit firm size, an indicator variable for the Big 4 audit firms (*BIG4*) is included to the model (see e.g., Seetharaman et al. 2011). Indicator variables for going concern opinion (*GC*) and for change of the signing audit firm from previous year (*ACHANGE*) are also included to the model. Company size is controlled by including the natural logarithm of total assets (*LOGTA*) to the model (e.g., Seetharaman et al. 2011). Complex companies might have more difficulties to establish and maintain higher quality accounting system. To control for the effect of company complexity, we include to the model the natural logarithm of the number of business segments (*LOGNBS*) (e.g., Seetharaman et al. 2011). Moreover, we include to the model indicator variables for companies reporting geographic segment(s) other than the U.S. (*FOREIGN*), restructuring expenses/charges (*RESTRUCT*) and exemptions to the internal control assessment due to acquisition (*ACQ*).⁶ Poorly performing companies may have more incentive to manage earnings, and/or have less resource to maintain high quality accounting system. Thus, we add to the model an indicator variable for companies reporting negative income in either previous or current company year (*LOSS*) to control for financial performance. On one hand, highly leveraged companies might try to avoid vio-

⁵ Total fees is the sum of audit fees, audit related fees, tax-related fees, and other fees.

⁶ This information is based on Audit Analytics data where it is indicated if exemptions to the assessment of internal controls over financial reporting were identified.

lating debt covenants by managing earnings (e.g., Seetharaman et al. 2011). On the other hand, these companies might be under a closer monitoring leading to more conservative reporting (e.g., Seetharaman et al. 2011). Thus, we include to the model leverage (*LEV*) calculated as total debt divided by total assets.⁷ Finally, we control for the disclosure of previous year's internal control effectiveness (*PRIORICW*). *PRIORICW* is set to one if a company identified internal control weaknesses in the previous year based on either Section 404 disclosure or Section 302 quarterly disclosure. SOX Section 302 relates to quarterly reporting and requires management to assess the effectiveness of disclosure controls and procedures. Finally, year and industry (according to the 17 industry classifications by Fama and French) fixed effects control for temporal variation and industry differences. All the variables used in the analyses are defined in Table 1.

INSERT TABLE 1 ABOUT HERE

The analyses are conducted using 1) total sample of restated company-years and 2) sample of company-years where only first restated years are included. The number of observations in the samples are the following⁸:

1) Total samples of restated company-years

- Model (1) used to examine the probability of a restatement lag: 2,749 observations (1,343 unique companies)
- Model (2) used to examine the probability of a material weakness disclosure: 2,584 observations (1,312 unique companies). If a restated internal control report was issued and the material weaknesses were stated only in the restated report, the observation is excluded from the sample.

⁷ Observations with *LEV*>1 are excluded to mitigate outliers.

⁸ Exclusions from the sample are primarily related to missing values on variables needed in the analyses, but also to some extreme cases or possible data errors in financial dates (which are used to determine years including misstatements) and inconsistencies in auditor names between datasets.

- Additionally, we examine the probability of a first time material weakness disclosure: 2,262 observations (1,174 unique companies). If an internal control report indicating material weaknesses is issued repeatedly (i.e., other than first time material weakness report), the observation is excluded from the sample.
- 2) Sample of restated company-years: only first restated years included. A restatement may affect multiple fiscal years. We conduct the analyses also using a sample where continuous misstatement years have been excluded and examine only the first restated fiscal years.
- Model (1) used to examine the probability of a restatement lag: 1,374 observations (1,096 unique companies)
 - Model (2) used to examine the probability of a material weakness disclosure: 1,297 observations (1,051 unique companies)
 - Additionally, investigation of first time material weaknesses: 1,131 observations (941 unique companies)

3.2. Descriptive statistics

The descriptive statistics of the variables used in the empirical analyses are presented in Panel A of Table 2. The mean of the dependent variable *REST_LAG* indicates that 63 percent of the sample observations are restatement lag observations. Moreover, 21 percent of the sample observations include 404 material weaknesses and 10 percent first time material weaknesses. The dummy variable for tax fees (*DTAXFEES*) indicates that 70 percent of the company-year observations include incumbent auditor-provided tax services. The means (medians) of tax fees scaled by the square root of total assets (*TAXFEES*) is 0.165 (0.045), the ratio of tax fees to total fees

(*TAXFEES_TF*) is 0.074 (0.039), and the ratio of tax fees to audit fees (*TAXFEES_AF*) is 0.105 (0.044). The means (medians) of audit fees divided by the square root of total assets (*AFEES*) is 1.596 (1.263), audit related fees divided by the square root of total assets (*AUDITRELATED*) is 0.124 (0.027), and other fees divided by the square root of total assets (*OTHERFEES*) is 0.028 (0.000). Seventy-three percent of the company-years are audited by one of the Big 4 audit firms, seven percent of the sample observations have a going concern opinion, and approximately eight percent have changed their signing auditor from previous year.

The average value of total assets is 9,730 million dollars with a median value of 735 million. The average number of business segments is 2.625. Approximately 46 percent of the observations have foreign operations, 24 percent have reported restructuring expenses/charges, and 10 percent indicate an exception to the assessment of internal controls due to acquisition. In about 49 percent of the company-years, companies report a loss in either the current or previous year. The mean (median) leverage is 0.247 (0.197). On average, 23 percent of the sample observations have disclosed internal control weaknesses based on section 404 disclosure or 302 disclosure in the previous year.

Panel B of Table 2 displays Pearson correlation coefficients among the selected variables. The two highest correlations among the independent variables occur between *BIG4* and *LOGTA* (0.563), and *TAXFEES* and *AUDITRELATED* (0.462). The variance inflation factors (untabulated) do not indicate problems with multicollinearity.

INSERT TABLE 2 ABOUT HERE

3.3. Univariate tests

Panel A of Table 3 reports the univariate results when the sample is partitioned into two groups based on the restatement lag variable (*REST_LAG*). The mean differences examined are

DTAXFEES, *TAXFEES*, *TAXFEES_TF*, and *TAXFEES_AF*. The statistical significances are based on t-tests for continuous variables and chi-square test for dummy variables. The descriptive test results for the total sample indicate that companies with restatement lags are more likely to have tax fees (*DTAXFEES* is marginally significant difference at the 0.10 level), and have higher proportions of tax fees to total fees (*TAXFEES_TF*) and tax fees to audit fees (*TAXFEES_AF*) (significant at the 0.01 level) compared to companies with misstatements discovered before filing the internal control report. Moreover, the results of a sample that includes only the first restated years indicate that companies with restatement lags have higher tax-related fees (*TAXFEES*, *TAXFEES_TF*, *TAXFEES_AF*).

Panel B of Table 3 reports the univariate results when the sample is partitioned into two groups based on the material weakness disclosure variable (*MW404*). These descriptive results indicate that companies disclosing material weaknesses have significantly lower tax-related fees compared to those who do not acknowledge their control problems. In the total sample, the differences are significant with the variables *DTAXFEES*, *TAXFEES_TF*, and *TAXFEES_AF*. In the sample that includes only the first restated years, all the variables of tax-related fees are significantly different between companies that disclose weaknesses and those that do not disclose them.

INSERT TABLE 3 ABOUT HERE

4. RESULTS

We estimate Model (1) to test whether tax services are associated with the likelihood of a restatement lag, and Model (2) to test whether tax services are associated with the likelihood of a material weakness disclosure. The logistic regression results are reported in Table 4. Panel A of Table 4 reports the results for the dummy variable of tax services (*DTAXFEES*). These results indicate that in each model specification (*REST_LAG*, *MW404*, *MW404FIRST*), the indicator

variable for tax-related fees is insignificant, suggesting that incumbent audit firm-provided tax-services are not associated with audit quality.

Panel B of Table 4 reports the results for the continuous variable *TAXFEES*, which represents the magnitude of tax-related fees. Columns (1) and (4) indicate that tax-related fees are not associated with restatement lags. However, *TAXFEES* is marginally significantly associated with lower likelihood of material weakness disclosures in the sample that includes only the first restated years [column (5)]. Moreover, higher tax-related fees are negatively associated with the likelihood of first time material weakness disclosures [columns (3) and (6)].

Panel C of Table 4 reports the results for the variable tax-related fees to total fees (*TAXFEES_TF*). These results show that *TAXFEES_TF* is not significantly associated with the likelihood of restatement lags [columns (1) and (4)]. However, the results indicate that the proportion of tax-related fees from total fees is significantly (at the 0.05 level) and negatively associated with the likelihood of material weakness disclosures (columns (2), (3), (5), and (6)).

Panel D of Table 4 shows the results for the ratio of tax-related fees to audit fees. *TAXFEES_AF* is significantly (at the 0.05 level) and positively associated with the likelihood of restatement lags, but only in the total sample of misstatements [column (1)]. The results in columns (3) and (6) suggest that the likelihood of first time material weakness disclosures is lower when tax-related fees are higher.

INSERT TABLE 4 ABOUT HERE

Additionally, we estimate Model (1) and Model (2) for only those companies that have paid tax-related fees to their audit firm. That is, we exclude from the sample those observations where tax-related fees are zero. The results are reported in Table 5. These results indicate that the magnitude of tax-related fees is associated with higher likelihood of restatement lags: *TAXFEES*

is significant at the 0.05 level [column (4) of Panel A]; *TAXFEES_TF* is significant at the 0.10 level [columns (1) and (4) of Panel B]; *TAXFEES_AF* is significant at the 0.05 level [columns (1) and (4) of Panel C]. Moreover, the magnitude of tax-related fees is associated with a lower likelihood of material weakness disclosures: *TAXFEES* is significant at the 0.10 level [columns (3), (5), (6) of Panel A]; *TAXFEES_TF* is significant at the 0.10 level [columns (2), (3), (6) of Panel B] and significant at the 0.05 level [column (5) of Panel B]; *TAXFEES_AF* is significant at the 0.10 level [column (3)].

INSERT TABLE 5 ABOUT HERE

In summary, we do find some evidence suggesting that companies paying higher tax-related fees to their audit firm are more likely to have restatement lag of misstated financial statement. The results show more consistently across different model specifications that tax-related fees are associated with lower likelihood of material weakness disclosures. Especially the higher proportion of tax fees over total fees or audit fees appears to have a significant influence on the material weakness disclosures. However, providing tax-related services does not itself affect the likelihood of restatement lags or material weakness disclosures. Rather it is the magnitude of the fees that counts.

The results of the control variables indicate that *AUDITFEES* is significantly and negatively (positively) associated with the likelihood of restatement lag (material weakness disclosure) in nearly every model specification, which suggests that higher audit effort leads to higher probability that misstatements are restated and control problems acknowledged (e.g., Blankley et al. 2012). Surprisingly, the dummy variable for Big 4 audit firms is positive (negative) in restatement lag (material weakness disclosure) estimations. Auditor change from previous year is negatively (positively) associated with restatement lag (material weakness disclosure). Moreover, the

indicator variable *LOSS* is negatively (positively) associated with restatement lags (material weakness disclosures). Also restatement lag (material weakness disclosure) is less likely (more likely) if control problems have been acknowledged in the previous year (*PRIORICW*). Other control variables have more variation in their significance levels in different model specifications.

5. CONCLUSIONS

Although SOX (2002) prohibits most incumbent audit firm-provided non-audit services, tax services remain allowed because of potential benefits from knowledge spillover. We have empirically examined whether tax-related fees paid to the incumbent auditor are associated with the likelihood of 1) restatement lag of misstated financial statement and 2) material weakness disclosure of misstatement companies. Collectively, our findings suggest that providing tax-related services does not itself have a significantly positive or negative impact on audit quality. However, the empirical findings of this study provide some evidence that higher levels of tax-related fees are associated with restatement lags, and stronger evidence on the association between higher tax-related fees and unacknowledged internal control problems. That is, the findings of the current study indicate that, among companies with misstatements in financial statements, the misstatements and control problems are more likely to remain undiscovered during the fiscal year in question when the tax-related fees paid to the audit firm are higher. These findings have implications to regulators and company stakeholders as well as to audit profession.

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Table 1
Variable definitions

<u>Variable</u>	<u>Definition</u>
REST_LAG	A dummy variable with a value of one if the restatement announcement took place after the filing date of internal control opinion, and zero otherwise.
MW404	A dummy variable with a value of one if a company disclosed weaknesses in internal controls over financial reporting based on Section 404, and zero otherwise.
MW404FIRST	A dummy variable with a value of one if a company disclosed weaknesses in internal controls over financial reporting based on Section 404 for the first time, and zero otherwise.
DTAXFEES	A dummy variable with a value of one if a company paid tax related fees to the auditor, zero otherwise.
TAXFEES	Tax related fees paid to the incumbent auditor scaled by the square root of total assets.
TAXFEES_TF	Tax related fees paid to the incumbent auditor scaled by total fees.
TAXFEES_AF	Tax related fees paid to the incumbent auditor scaled by audit fees.
AFEES	Audit fees scaled by the square root of total assets.
AUDITRELATED	Audit related fees scaled by the square root of total assets.
OTHERFEES	Other fees scaled by the square root of total assets.
BIG4	A dummy variable with a value of one if the auditor is one of the four largest audit firms, and zero otherwise.
GC	A dummy variable with a value of one if a company received a going concern opinion, and zero otherwise.
ACHANGE	A dummy variable with a value of one if the signing audit firm changed from the previous fiscal year, and zero otherwise.
LOGTA	The natural logarithm of total assets
LOGNBS	The natural logarithm of the number of business segments reported by the company.
FOREIGN	A dummy variable with a value of one if a company reported geographic segment(s) other than the US, and zero otherwise.
RESTRUCT	A dummy variable with a value of one if a company reported restructuring expenses / charges, and zero otherwise.
ACQ	A dummy variables with a value of one if an exemption to the assessment of internal controls indicates acquisition(s) during the past year, and zero otherwise.
LOSS	A dummy variable with a value of one if the net income before extraordinary items is negative in year t or t-1, zero otherwise.
LEV	Total debt divided by total assets
PRIORICW	A dummy variable with a value of one if the company disclosed either Section 404 material weaknesses or Section 302 weaknesses in the previous year, and zero otherwise.
YEAR	A dummy variable for the fiscal years 2005–2012
INDUSTRY	A dummy variable for Fama and French 17 industry classifications

Table 2
Descriptive statistics

Panel A: Distributional statistics

Variable	Mean	Std.	Min	25%tile	Median	75%tile	Max	N
REST_LAG	0.628	0.483	0.000	0.000	1.000	1.000	1.000	2,749
MW404	0.214	0.410	0.000	0.000	0.000	0.000	1.000	2,584
MW404FIRST	0.103	0.303	0.000	0.000	0.000	0.000	1.000	2,262
DTAXFEES	0.696	0.460	0.000	0.000	1.000	1.000	1.000	2,749
TAXFEES	0.165	0.384	0.000	0.000	0.045	0.192	8.818	2,749
TAXFEES_TF	0.074	0.094	0.000	0.000	0.039	0.115	0.553	2,749
TAXFEES_AF	0.105	0.164	0.000	0.000	0.044	0.142	1.693	2,749
AFEES	1.596	1.379	0.029	0.717	1.263	2.052	24.417	2,749
AUDITRELATED	0.124	0.358	0.000	0.000	0.027	0.118	7.727	2,749
OTHERFEES	0.028	0.239	0.000	0.000	0.000	0.002	7.115	2,749
BIG4	0.730	0.444	0.000	0.000	1.000	1.000	1.000	2,749
GC	0.069	0.253	0.000	0.000	0.000	0.000	1.000	2,749
ACHANGE	0.084	0.277	0.000	0.000	0.000	0.000	1.000	2,749
Total assets (mil- lions)	9729.710	96053.390	0.003	182.666	735.445	2728.510	3222422.000	2,749
Segments	2.625	1.809	1.000	1.000	2.000	4.000	10.000	2,749
FOREIGN	0.458	0.498	0.000	0.000	0.000	1.000	1.000	2,749
RESTRUCT	0.242	0.428	0.000	0.000	0.000	0.000	1.000	2,749
ACQ	0.101	0.302	0.000	0.000	0.000	0.000	1.000	2,749
LOSS	0.492	0.500	0.000	0.000	0.000	1.000	1.000	2,749
LEV	0.247	0.230	0.000	0.040	0.197	0.384	0.996	2,749
PRIORICW	0.225	0.418	0.000	0.000	0.000	0.000	1.000	2,749

Panel B: Pearson's correlations coefficients

	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
DTAXFEES (1)	0.284	0.525	0.425	0.081	0.054	0.028	0.222	-0.155	-0.171	0.262	0.158	0.194	0.098	0.034	-0.101	0.000	-0.096
TAXFEES (2)		0.627	0.709	0.299	0.462	0.287	0.141	-0.055	-0.068	0.105	0.120	0.174	0.141	0.025	0.004	-0.013	-0.044
TAXFEES_TF (3)			0.943	-0.018	0.055	0.023	0.121	-0.089	-0.086	0.136	0.093	0.097	0.089	0.014	-0.076	-0.002	-0.113
TAXFEES_AF (4)				-0.014	0.235	0.163	0.096	-0.078	-0.071	0.123	0.091	0.079	0.078	0.012	-0.056	0.000	-0.101
AFEES (5)					0.171	0.068	0.184	0.016	-0.051	-0.067	0.123	0.378	0.271	0.079	0.145	-0.088	0.214
AUDITRELATED (6)						0.415	0.044	-0.016	-0.017	0.056	0.074	0.076	0.064	0.055	0.027	0.035	-0.010
OTHERFEES (7)							0.056	-0.027	-0.027	0.114	0.049	0.070	0.041	0.018	-0.005	-0.004	0.015
BIG4 (8)								-0.321	-0.272	0.563	0.251	0.257	0.218	0.115	-0.204	0.082	-0.191
GC (9)									0.183	-0.458	-0.166	-0.157	-0.063	-0.091	0.256	0.063	0.194
ACHANGE (10)										-0.253	-0.104	-0.104	-0.069	-0.054	0.131	0.002	0.139
LOGTA (11)											0.370	0.166	0.122	0.122	-0.344	0.175	-0.230
LOGNBS (12)												0.181	0.128	0.107	-0.148	0.077	-0.054
FOREIGN(13)													0.341	0.121	-0.068	-0.146	-0.025
RESTRUCT (14)														0.066	0.072	-0.020	-0.013
ACQ (15)															-0.090	0.005	-0.054
LOSS (16)																0.085	0.166
LEV (17)																	-0.006
PRIORICW (18)																	

Notes:

See Table 1 for variable definitions.

Bold text in the Pearson correlations matrix indicates significance at the 0.05 level.

Table 3

Univariate results

Panel A: Restatement lags

	<u>Total sample of restated</u>			<u>Sample of restated company-years:</u>		
	<u>company-years</u>			<u>only first restated year included</u>		
	<u>REST_LAG=1</u>	<u>REST_LAG=0</u>		<u>REST_LAG=1</u>	<u>REST_LAG=0</u>	
	<u>n=1,727</u>	<u>n=1,022</u>		<u>n=908</u>	<u>n=466</u>	
DTAXFEES	0.708	0.674	*	0.666	0.663	
TAXFEES	0.170	0.156		0.161	0.126	**
TAXFEES_TF	0.080	0.066	***	0.074	0.062	**
TAXFEES_AF	0.114	0.090	***	0.107	0.082	***

Panel B: Section 404 material weaknesses

	<u>Total sample of restated</u>			<u>Sample of restated company-years:</u>		
	<u>company-years</u>			<u>only first restated year included</u>		
	<u>MW404=1</u>	<u>MW404=0</u>		<u>MW404=1</u>	<u>MW404=0</u>	
	<u>n=554</u>	<u>n=2,030</u>		<u>n=281</u>	<u>n=1,016</u>	
DTAXFEES	0.610	0.724	***	0.577	0.696	***
TAXFEES	0.153	0.172		0.111	0.164	***
TAXFEES_TF	0.054	0.080	***	0.047	0.078	***
TAXFEES_AF	0.075	0.114	***	0.064	0.110	***

Notes:

See Table 1 for the variable definitions. The statistical significances are based on t-tests for continuous variables and chi-square test for dummy variables.

Table 4
Multivariate results

Panel A: The indicator variable for tax-related fees > 0 (DTAXFEES)

Dependent variable	Total sample of restated company-years						Sample of restated company-years: only first restated year included					
	(1)		(2)		(3)		(4)		(5)		(6)	
	REST_LAG		MW404		MW404FIRST		REST_LAG		MW404		MW404FIRST	
	Est.	Wald chi- square	Est.	Wald chi- square	Est.	Wald chi- square	Est.	Wald chi- square	Est.	Wald chi- square	Est.	Wald chi- square
DTAXFEES	-0.063	0.44	-0.066	0.25	-0.226	1.75	-0.203	2.04	-0.103	0.30	-0.209	0.80
AUDITFEES	-0.196	20.52 ***	0.417	51.52 ***	0.466	40.27 ***	-0.264	17.73 ***	0.339	17.68 ***	0.247	6.48 ***
AUDITRELATED	0.150	1.39	-0.122	0.57	-0.009	0.00	0.455	5.32 **	-0.213	0.76	-0.226	0.26
OTHERFEES	-0.196	0.75	0.032	0.03	-0.037	0.02	-0.130	0.20	-0.018	0.00	-1.500	1.41
BIG4	0.452	11.69 ***	-0.845	27.07 ***	-0.841	13.96 ***	0.922	26.40 ***	-0.976	17.96 ***	-1.023	9.42 ***
GC	-0.159	0.72	0.601	6.61 **	0.381	1.21	0.113	0.21	0.225	0.52	0.193	0.19
ACHANGE	-0.518	9.85 ***	0.886	22.67 ***	1.083	20.65 ***	-0.548	7.37 ***	1.044	16.00 ***	1.092	12.10 ***
LOGTA	-0.014	0.24	-0.083	4.35 **	-0.121	4.92 **	-0.044	1.14	-0.059	1.01	-0.049	0.37
LOGNBS	0.095	2.13	-0.103	1.22	-0.036	0.09	0.133	1.67	0.122	0.76	0.126	0.47
FOREIGN	0.188	3.17 *	-0.348	5.32 **	-0.384	3.92 **	0.244	2.21	-0.501	4.95 **	-0.221	0.62
RESTRUCT	0.038	0.11	-0.099	0.39	-0.107	0.28	-0.268	2.66	-0.064	0.08	-0.025	0.01
ACQ	0.146	0.99	0.028	0.02	0.223	0.89	0.098	0.21	0.207	0.52	0.339	1.03
LOSS	-0.214	4.93 **	0.434	10.13 ***	0.484	7.39 ***	-0.519	13.46 ***	0.846	18.04 ***	0.852	9.64 ***
LEV	0.221	1.26	-0.009	0.00	-0.114	0.10	0.205	0.50	-0.493	1.71	-0.468	0.88
PRIORICW	-0.908	68.89 ***	1.113	77.44 ***	-1.963	31.30 ***	-0.409	5.70 **	1.576	68.99 ***	-1.247	7.42 ***
Intercept	0.088	0.17	-0.854	8.28 ***	-1.326	11.19 ***	0.528	2.85 *	-1.180	8.09 ***	-1.790	9.85 ***
Annual fixed effects?	Yes		Yes		Yes		Yes		Yes		Yes	
Industry fixed effects?	Yes		Yes		Yes		Yes		Yes		Yes	
Likelihood ratio												
Chi-Square	353.5	<.0001	612.1	<.0001	257.2	<.0001	185.4	<.0001	373.4	<.0001	119.7	<.0001
R ²	0.12		0.21		0.11		0.13		0.25		0.10	
N	2,749		2,584		2,262		1,374		1,297		1,131	

Panel B: The magnitude of tax-related fees (TAXFEES)

Dependent variable	Total sample of restated company-years						Sample of restated company-years: only first restated year included					
	(1)		(2)		(3)		(4)		(5)		(6)	
	REST_LAG		MW404		MW404FIRST		REST_LAG		MW404		MW404FIRST	
	Est.	Wald chi- square	Est.	Wald chi- square	Est.	Wald chi- square	Est.	Wald chi- square	Est.	Wald chi- square	Est.	Wald chi- square
TAXFEES	0.132	1.16	-0.205	1.46	-0.394	3.16 *	0.389	2.22	-0.880	3.74 *	-1.970	6.15 **
AUDITFEES	-0.206	20.89 ***	0.431	49.89 ***	0.494	42.78 ***	-0.292	18.91 ***	0.376	17.79 ***	0.318	8.12 ***
AUDITRELATED	0.090	0.37	-0.031	0.03	0.192	0.98	0.355	2.85	-0.153	0.31	-0.204	0.21
OTHERFEES	-0.214	0.77	0.077	0.16	0.114	0.26	-0.098	0.12	-0.032	0.01	-1.603	1.51
BIG4	0.447	11.41 ***	-0.845	27.05 ***	-0.857	14.60 ***	0.904	25.52 ***	-0.953	17.09 ***	-0.980	8.67 ***
GC	-0.158	0.70	0.605	6.69 ***	0.386	1.24	0.113	0.21	0.231	0.55	0.239	0.30
ACHANGE	-0.506	9.52 ***	0.893	23.13 ***	1.102	21.05 ***	-0.507	6.46 **	1.035	15.89 ***	1.098	12.15 ***
LOGTA	-0.017	0.38	-0.082	4.16 **	-0.120	4.78 **	-0.053	1.68	-0.057	0.93	-0.051	0.39
LOGNBS	0.091	1.98	-0.102	1.21	-0.033	0.07	0.125	1.48	0.128	0.84	0.148	0.64
FOREIGN	0.181	2.97 *	-0.357	5.64 **	-0.407	4.45 **	0.225	1.87	-0.506	5.08 **	-0.229	0.66
RESTRUCT	0.036	0.10	-0.101	0.40	-0.110	0.30	-0.274	2.75 *	-0.056	0.06	0.035	0.01
ACQ	0.156	1.12	0.013	0.00	0.196	0.70	0.122	0.32	0.198	0.47	0.350	1.08
LOSS	-0.213	4.89 **	0.437	10.27 ***	0.496	7.75 ***	-0.504	12.78 ***	0.827	17.06 ***	0.763	7.86 ***
LEV	0.223	1.28	-0.007	0.00	-0.094	0.07	0.197	0.46	-0.478	1.60	-0.425	0.72
PRIORICW	-0.898	67.49 ***	1.104	75.72 ***	-2.010	31.49 ***	-0.384	4.98 **	1.552	65.75 ***	-1.305	7.70 ***
Intercept	0.072	0.12	-0.896	9.34 ***	-1.456	13.81 ***	0.459	2.20	-1.207	8.41 ***	-1.798	10.07 ***
Annual fixed ef- fects?	Yes		Yes		Yes		Yes		Yes		Yes	
Industry fixed ef- fects?	Yes		Yes		Yes		Yes		Yes		Yes	
Likelihood ratio												
Chi-Square	354.1	<.0001	613.5	<.0001	259.1	<.0001	185.9	<.0001	378.4	<.0001	128.5	<.0001
R ²	0.12		0.21		0.11		0.13		0.25		0.11	
N	2,749		2,584		2,262		1,374		1,297		1,131	

Panel C: The ratio of tax-related fees to total fees (*TAXFEES_TF*)

Dependent variable	Total sample of restated company-years							Sample of restated company-years: only first restated year included						
	(1)		(2)		(3)			(4)		(5)		(6)		
	REST_LAG		MW404		MW404FIRST			REST_LAG		MW404		MW404FIRST		
	Est.	Wald chi- square	Est.	Wald chi- square	Est.	Wald chi- square	Est.	Wald chi- square	Est.	Wald chi- square	Est.	Wald chi- square	Est.	Wald chi- square
TAXFEES_TF	0.700	2.40	-1.364	4.31 **	-2.350	5.28 **	0.592	0.71	-2.356	5.25 **	-3.981	5.47 **		
AUDITFEES	-0.194	20.12 ***	0.412	50.44 ***	0.458	40.30 ***	-0.268	17.74 ***	0.333	17.00 ***	0.238	5.85 **		
AUDITRELATED	0.135	1.13	-0.099	0.40	0.047	0.06	0.428	4.73 **	-0.216	0.73	-0.256	0.30		
OTHERFEES	-0.186	0.66	0.029	0.02	-0.044	0.02	-0.102	0.12	-0.040	0.02	-1.651	1.62		
BIG4	0.443	11.21 ***	-0.839	26.33 ***	-0.839	13.82 ***	0.911	26.03 ***	-0.968	17.67 ***	-1.000	9.07 ***		
GC	-0.156	0.68	0.592	6.45 **	0.380	1.22	0.120	0.24	0.211	0.46	0.217	0.25		
ACHANGE	-0.499	9.22 ***	0.875	22.14 ***	1.082	20.48 ***	-0.503	6.37 **	1.013	15.22 ***	1.071	11.69 ***		
LOGTA	-0.017	0.38	-0.081	4.10 **	-0.119	4.70 **	-0.052	1.60	-0.056	0.93	-0.044	0.29		
LOGNBS	0.089	1.90	-0.098	1.13	-0.033	0.07	0.126	1.51	0.125	0.80	0.137	0.54		
FOREIGN	0.177	2.81 *	-0.357	5.65 **	-0.396	4.24 **	0.223	1.83	-0.511	5.18 **	-0.222	0.62		
RESTRUCT	0.031	0.08	-0.092	0.34	-0.095	0.22	-0.268	2.64	-0.062	0.08	-0.003	0.00		
ACQ	0.153	1.09	0.014	0.00	0.202	0.75	0.117	0.30	0.195	0.46	0.329	0.97		
LOSS	-0.211	4.79 **	0.427	9.84 ***	0.467	6.91 ***	-0.510	13.08 ***	0.821	16.83 ***	0.785	8.23 ***		
LEV	0.222	1.28	-0.008	0.00	-0.106	0.09	0.193	0.44	-0.461	1.50	-0.442	0.80		
PRIORICW	-0.898	67.50 ***	1.104	75.99 ***	-1.981	31.54 ***	-0.397	5.33 ***	1.563	68.01 ***	-1.259	7.50 ***		
Intercept	0.021	0.01	-0.800	7.53 ***	-1.295	11.08 ***	0.419	1.84	-1.080	6.70 ***	-1.668	9.01 ***		
Annual fixed ef- fects?	Yes		Yes		Yes		Yes		Yes		Yes			
Industry fixed ef- fects?	Yes		Yes		Yes		Yes		Yes		Yes			
Likelihood ratio Chi-Square	355.2	<.0001	616.1	<.0001	261.6	<.0001	184.0	<.0001	378.2	<.0001	126.1	<.0001		
R ²	0.12		0.21		0.11		0.13		0.25		0.11			
N	2,749		2,584		2,262		1,374		1,297		1,131			

Panel D: The ratio of tax-related fees to audit fees (*TAXFEES_AF*)

Dependent variable	Total sample of restated company-years						Sample of restated company-years: only first restated year included					
	(1)		(2)		(3)		(4)		(5)		(6)	
	REST_LAG		MW404		MW404FIRST		REST_LAG		MW404		MW404FIRST	
	Est.	Wald chi- square	Est.	Wald chi- square	Est.	Wald chi- square	Est.	Wald chi- square	Est.	Wald chi- square	Est.	Wald chi- square
TAXFEES_AF	0.570	4.56 **	-0.644	2.54	-1.330	4.59 **	0.594	2.08	-0.992	1.90	-2.286	3.49 *
AUDITFEES	-0.192	19.69 ***	0.412	50.62 ***	0.458	40.27 ***	-0.266	17.49 ***	0.332	17.22 ***	0.234	5.81 **
AUDITRELATED	0.087	0.46	-0.063	0.15	0.114	0.36	0.384	3.73 *	-0.171	0.43	-0.211	0.21
OTHERFEES	-0.210	0.74	0.050	0.07	0.041	0.02	-0.102	0.12	-0.021	0.01	-1.593	1.53
BIG4	0.444	11.21 ***	-0.844	26.80 ***	-0.846	14.10 ***	0.909	25.86 ***	-0.970	17.83 ***	-1.007	9.18 ***
GC	-0.155	0.67	0.594	6.47 **	0.379	1.21	0.120	0.24	0.217	0.49	0.210	0.24
ACHANGE	-0.498	9.23 ***	0.881	22.46 ***	1.088	20.65 ***	-0.502	6.36 ***	1.033	15.76 ***	1.082	11.86 ***
LOGTA	-0.018	0.41	-0.082	4.18 **	-0.118	4.68 **	-0.052	1.62	-0.058	0.99	-0.046	0.31
LOGNBS	0.088	1.85	-0.100	1.17	-0.034	0.08	0.125	1.47	0.124	0.78	0.135	0.53
FOREIGN	0.177	2.83 *	-0.358	5.66 **	-0.401	4.35 **	0.222	1.83	-0.511	5.21 **	-0.229	0.66
RESTRUCT	0.029	0.07	-0.094	0.35	-0.102	0.26	-0.270	2.67	-0.063	0.08	-0.012	0.00
ACQ	0.157	1.14	0.015	0.01	0.201	0.74	0.121	0.32	0.197	0.47	0.332	0.99
LOSS	-0.212	4.82 **	0.432	10.04 ***	0.478	7.23 ***	-0.508	12.95 ***	0.830	17.29 ***	0.799	8.55 ***
LEV	0.226	1.32	-0.012	0.00	-0.103	0.08	0.190	0.43	-0.476	1.60	-0.440	0.80
PRIORICW	-0.898	67.62 ***	1.108	76.72 ***	-1.980	31.50 ***	-0.392	5.19 **	1.563	68.04 ***	-1.256	7.50 ***
Intercept	0.016	0.01	-0.827	8.09 ***	-1.339	11.89 ***	0.405	1.72	-1.135	7.60 ***	-1.710	9.59 ***
Annual fixed ef- fects?	Yes		Yes		Yes		Yes		Yes		Yes	
Industry fixed ef- fects?	Yes		Yes		Yes		Yes		Yes		Yes	
Likelihood ratio												
Chi-Square	357.1	<.0001	614.5	<.0001	260.6	<.0001	185.2	<.0001	375.6	<.0001	124.3	<.0001
R ²	0.12		0.21		0.11		0.13		0.25		0.10	
N	2,749		2,584		2,262		1,374		1,297		1,131	

Notes:

See Table 1 for variable definitions. Statistical significances based on two-tailed tests at the 1 percent, 5 percent, and 10 percent levels are denoted by ***, **, and *, respectively. Statistical significances are calculated by clustering the standard errors within companies (Petersen 2009). For brevity, the results for the industry and year fixed effects are not reported.

Table 5

Additional tests: Only observations with tax related fees>0 (*DTAXFEES=1*)Panel A: The magnitude of tax-related fees (*TAXFEES*)

Dependent variable	Total sample of restated company-years						Sample of restated company-years: only first restated year included					
	(1)		(2)		(3)		(4)		(5)		(6)	
	REST_LAG		MW404		MW404FIRST		REST_LAG		MW404		MW404FIRST	
	Est.	Wald chi- square	Est.	Wald chi- square	Est.	Wald chi- square	Est.	Wald chi- square	Est.	Wald chi- square	Est.	Wald chi- square
TAXFEES	0.195	1.91	-0.234	1.97	-0.372	2.83 *	0.671	4.17 **	-1.007	3.19 *	-1.957	3.62 *
AUDITFEES	-0.226	17.41 ***	0.455	40.85 ***	0.521	30.96 ***	-0.318	13.66 ***	0.405	16.87 ***	0.364	4.26 **
AUDITRELATED	0.159	0.95	-0.054	0.09	0.212	0.70	0.353	2.12	0.012	0.00	-0.065	0.03
OTHERFEES	-0.455	3.82 *	0.337	1.93	0.273	1.10	-0.951	1.08	0.766	0.40	0.581	0.14
BIG4	0.551	9.39 ***	-1.213	31.61 ***	-1.248	19.35 ***	1.081	19.80 ***	-1.442	20.37 ***	-1.777	16.99 ***
GC	-0.606	4.10 **	0.634	3.36 *	0.381	0.46	-0.469	1.58	0.540	1.33	0.538	0.54
ACHANGE	-0.438	3.14 *	0.483	2.76 *	0.587	2.32	-0.315	0.97	0.242	0.26	0.315	0.31
LOGTA	-0.056	2.36	-0.049	0.94	-0.062	0.73	-0.088	2.46	0.002	0.00	0.035	0.10
LOGNBS	0.163	3.99 **	-0.078	0.48	-0.132	0.70	0.069	0.26	0.352	3.51 *	0.351	1.77
FOREIGN	0.086	0.42	-0.408	4.77 **	-0.575	5.08 **	0.102	0.22	-0.817	6.74 ***	-0.501	1.28
RESTRUCT	0.127	0.90	-0.113	0.36	-0.042	0.03	-0.153	0.52	-0.145	0.26	-0.199	0.25
ACQ	0.272	2.49	-0.185	0.56	-0.028	0.01	0.488	3.43 *	0.105	0.08	0.392	0.76
LOSS	-0.259	4.54 **	0.523	8.99 ***	0.566	6.11 **	-0.571	10.46 ***	0.976	12.78 ***	0.988	7.39 ***
LEV	0.181	0.50	0.144	0.18	-0.044	0.01	0.209	0.30	-0.279	0.28	-0.274	0.17
PRIORICW	-1.079	61.37 ***	1.129	52.57 ***	-2.202	19.24 ***	-0.599	7.20 ***	1.598	36.29 ***	-1.417	4.47 **
Intercept	0.239	0.75	-1.102	8.36 ***	0.194	0.48	0.524	1.76	-1.493	7.37 ***	-2.479	9.55 ***
Annual fixed effects?	Yes		Yes		Yes		Yes		Yes		Yes	
Industry fixed effects?	Yes		Yes		Yes		Yes		Yes		Yes	
Likelihood ratio												
Chi-Square	293.5	<.0001	388.2	<.0001	175.0	<.0001	169.4	<.0001	246.0	<.0001	100.8	<.0001
R ²	0.14		0.19		0.10		0.17		0.25		0.12	
N	1,912		1,807		1,612		914		869		773	

Panel B: The ratio of tax-related fees to total fees (TAXFEES_TF)

Dependent variable	Total sample of restated company-years						Sample of restated company-years: only first restated year included					
	(1)		(2)		(3)		(4)		(5)		(6)	
	REST_LAG		MW404		MW404FIRST		REST_LAG		MW404		MW404FIRST	
	Est.	Wald chi- square	Est.	Wald chi- square	Est.	Wald chi- square	Est.	Wald chi- square	Est.	Wald chi- square	Est.	Wald chi- square
TAXFEES_TF	1.051	3.51 *	-1.483	3.67 *	-2.070	2.95 *	1.530	2.97 *	-3.182	5.21 **	-4.623	3.69 *
AUDITFEES	-0.199	15.19 ***	0.422	39.83 ***	0.463	26.78 ***	-0.258	10.83 ***	0.325	13.76 ***	0.208	2.66
AUDITRELATED	0.228	2.87 *	-0.140	0.66	0.040	0.03	0.454	4.29 **	-0.100	0.24	-0.115	0.11
OTHERFEES	-0.396	3.50 *	0.262	1.23	0.177	0.39	-0.940	1.04	0.707	0.34	0.617	0.16
BIG4	0.549	9.28 ***	-1.213	31.10 ***	-1.235	18.70 ***	1.090	20.33 ***	-1.460	21.22 ***	-1.767	17.32 ***
GC	-0.612	4.17 **	0.632	3.38 *	0.382	0.47	-0.464	1.55	0.530	1.28	0.539	0.56
ACHANGE	-0.443	3.20 *	0.475	2.62	0.591	2.36	-0.319	1.00	0.220	0.20	0.268	0.23
LOGTA	-0.054	2.14	-0.052	1.08	-0.070	0.93	-0.083	2.22	-0.006	0.01	0.030	0.08
LOGNBS	0.161	3.94 **	-0.079	0.49	-0.130	0.69	0.071	0.28	0.339	3.28 *	0.336	1.63
FOREIGN	0.087	0.43	-0.419	5.05 **	-0.570	5.13 **	0.101	0.22	-0.831	7.00 ***	-0.488	1.29
RESTRUCT	0.121	0.81	-0.097	0.26	-0.015	0.00	-0.138	0.43	-0.160	0.32	-0.264	0.42
ACQ	0.265	2.41	-0.179	0.53	-0.005	0.00	0.476	3.29 *	0.112	0.10	0.371	0.70
LOSS	-0.256	4.40 **	0.512	8.65 ***	0.542	5.63 **	-0.576	10.65 ***	0.958	12.26 ***	1.003	7.55 ***
LEV	0.178	0.48	0.152	0.20	-0.031	0.00	0.185	0.23	-0.244	0.22	-0.255	0.15
PRIORICW	-1.081	61.83 ***	1.131	52.99 ***	-2.161	18.75 ***	-0.615	7.62 ***	1.616	38.25 ***	-1.356	4.07 **
Intercept	0.099	0.12	-0.905	5.53 **	-1.486	7.55 ***	0.361	0.80	-1.148	4.10 **	-2.100	7.19 ***
Annual fixed ef- fects?	Yes		Yes		Yes		Yes		Yes		Yes	
Industry fixed ef- fects?	Yes		Yes		Yes		Yes		Yes		Yes	
Likelihood ratio Chi-Square	295.1	<.0001	389.9	<.0001	175.6	<.0001	167.0	<.0001	246.3	<.0001	99.8	<.0001
R ²	0.14		0.19		0.10		0.17		0.25		0.12	
N	1,912		1,807		1,612		914		869		773	

Panel C: The ratio of tax-related fees to audit fees (TAXFEES_AF)

Dependent variable	Total sample of restated company-years						Sample of restated company-years: only first restated year included					
	(1)		(2)		(3)		(4)		(5)		(6)	
	REST_LAG		MW404		MW404FIRST		REST_LAG		MW404		MW404FIRST	
	Est.	Wald chi- square	Est.	Wald chi- square	Est.	Wald chi- square	Est.	Wald chi- square	Est.	Wald chi- square	Est.	Wald chi- square
TAXFEES_AF	0.755	5.71 **	-0.646	1.99	-1.211	2.99 *	1.059	4.44 **	-1.168	1.81	-2.238	2.11
AUDITFEES	-0.195	14.61 ***	0.423	39.92 ***	0.463	26.69 ***	-0.253	10.52 ***	0.328	14.13 ***	0.210	2.81 *
AUDITRELATED	0.160	1.29	-0.095	0.29	0.130	0.29	0.372	2.73 *	-0.005	0.00	-0.031	0.01
OTHERFEES	-0.453	4.53 **	0.302	1.53	0.264	1.03	-0.994	1.16	0.848	0.49	0.794	0.27
BIG4	0.549	9.24 ***	-1.216	31.59 ***	-1.235	18.76 ***	1.086	20.14 ***	-1.445	21.10 ***	-1.750	17.30 ***
GC	-0.608	4.13 **	0.627	3.32 *	0.375	0.45	-0.464	1.57	0.518	1.23	0.497	0.48
ACHANGE	-0.444	3.22 *	0.473	2.61	0.588	2.34	-0.326	1.04	0.230	0.23	0.275	0.24
LOGTA	-0.054	2.14	-0.051	1.05	-0.067	0.86	-0.083	2.20	-0.005	0.00	0.036	0.10
LOGNBS	0.160	3.87 **	-0.079	0.49	-0.131	0.70	0.069	0.26	0.341	3.31 *	0.322	1.50
FOREIGN	0.088	0.45	-0.412	4.89 **	-0.574	5.18 **	0.101	0.22	-0.805	6.60 **	-0.472	1.21
RESTRUCT	0.118	0.78	-0.101	0.29	-0.020	0.01	-0.141	0.45	-0.163	0.33	-0.291	0.52
ACQ	0.270	2.47	-0.176	0.51	-0.012	0.00	0.482	3.38 *	0.103	0.08	0.352	0.63
LOSS	-0.257	4.44 **	0.518	8.82 ***	0.549	5.77 **	-0.577	10.65 ***	0.981	12.91 ***	1.030	8.00 ***
LEV	0.186	0.53	0.138	0.17	-0.044	0.01	0.189	0.24	-0.293	0.31	-0.297	0.20
PRIORICW	-1.082	62.18 ***	1.137	53.65 ***	-2.159	18.83 ***	-0.609	7.48 ***	1.620	38.76 ***	-1.349	4.11 **
Intercept	0.099	0.12	-0.980	6.58 **	-1.559	8.52 ***	0.374	0.88	-1.355	6.18 **	-2.312	8.96 ***
Annual fixed ef- fects?	Yes		Yes		Yes		Yes		Yes		Yes	
Industry fixed ef- fects?	Yes		Yes		Yes		Yes		Yes		Yes	
Likelihood ratio												
Chi-Square	297.1	<.0001	388.5	<.0001	175.5	<.0001	168.5	<.0001	243.1	<.0001	97.8	<.0001
Adj. R ²	0.14		0.19		0.10		0.17		0.24		0.12	
N	1,912		1,807		1,612		914		869		773	

Notes:

See Table 1 for variable definitions. Statistical significances based on two-tailed tests at the 1 percent, 5 percent, and 10 percent levels are denoted by ***, **, and *, respectively. Statistical significances are calculated by clustering the standard errors within companies (Petersen 2009). For brevity, the results for the industry and year fixed effects are not reported.

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