The Effects of Multiple Restatements on Audit Fees

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ABSTRACT

Financial restatement is evidence of problems in firms' reporting systems and auditors' failures to detect and/or report material misstatements. Auditors have to put more effort in the engagement to lower detection risk when restatement occurs. When investors incur losses because of misstated reporting, investors can file litigation against auditors. As a result, restatement increases litigation risk. Restatement also signals low audit quality. Auditors face reputational damage when financial statements that they audited contain material misstatements and they fail to report such misstatements. Overall, restatements increase audit effort, litigation risk, and reputation risk. As a result, auditors are expected to charge higher audit fee to cover the increased effort and risks.

This study investigates the relationship between number of restatement and audit fee using the U.S. data. Results show a positive association between number of restatement and audit fee. Moreover, the positive association is larger when firms restate financial statements to decrease net income and when the restatements are related to fraud, accounting rule application failures, and errors. Overall results suggest that auditors adjust audit fee based on increased effort and risks related to firms' restatement history.

Keywords: Multiple Restatements, Audit Fee, Types of Restatements

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บทคัดย่อ

การแก้ไขงบการเงินเป็นหลักฐานของปัญหาในระบบการรายงานทางการเงินของกิจการและเป็นหลักฐานถึงความผิดพลาดของผู้สอบบัญชีในการตรวจและรายงานข้อผิดพลาดอันมีสาระสำคัญในงบการเงิน ผู้สอบบัญชีจะต้องใช้ความพยายามเพิ่มขึ้นในการปฏิบัติงานเพื่อลดความเสี่ยงจากการตรวจสอบเมื่อพบว่าบริษัทลูกค้ามีการแก้ไขงบการเงิน นอกจากนี้ การแก้ไขงบการเงินยังเพิ่มความเสี่ยงของผู้สอบบัญชีด้านคดีความ เมื่อนักลงทุนมีผลขาดทุนเนื่องจากการใช้ข้อมูลจากงบการเงินที่ไม่ถูกต้อง ซึ่งผู้สอบบัญชีได้แสดงความเห็น นักลงทุนอาจฟ้องร้องให้ผู้สอบบัญชีชดใช้ผลขาดทุนดังกล่าว ผู้สอบบัญชีที่ไม่สามารถตรวจพบข้อผิดพลาดอันเป็นสาระสำคัญหรือไม่รายงานข้อผิดพลาดนั้น เป็นเหตุให้บริษัทลูกค้ามีการแก้ไขงบการเงินภายหลังจากที่ผู้สอบบัญชีในการรับรอง ยังอาจต้องเผชิญกับความเสียหายด้านชื่อเสียงซึ่งส่งผลต่อรายได้ในอนาคต จากเหตุผลข้างต้น ผู้สอบบัญชีมีแนวโน้มที่จะเพิ่มค่าสอบบัญชี เพื่อครอบคลุมต้นทุนของงานที่เพิ่มมากขึ้นและชดเชยความเสี่ยงดังกล่าว เมื่อบริษัทลูกค้ามีการแก้ไขงบการเงินในอดีต

งานวิจัยนี้ศึกษาความสัมพันธ์ระหว่างจำนวนครั้งของการแก้ไขงบการเงินกับค่าสอบบัญชีโดยใช้ข้อมูลจากบริษัทในประเทศสหรัฐอเมริกา ผลการจากศึกษาพบว่า จำนวนครั้งของการแก้ไขงบการเงินมีความสัมพันธ์เชิงบวกอย่างมีนัยสำคัญต่อค่าสอบบัญชี นอกจากนี้ ผลการศึกษาแสดงให้เห็นว่า ความสัมพันธ์เชิงบวกดังกล่าวเพิ่มมากขึ้นเมื่อการแก้ไขงบการเงินเป็นการแก้ไขเพื่อลดกำไรสุทธิหรือเป็นการแก้ไขงบการเงินเมื่อข้อผิดพลาดอันเป็นสาระสำคัญเกี่ยวข้องกับการทุจริต การนำมาตรฐานการบัญชีไปใช้อย่างไม่ถูกต้องและความผิดพลาดทางบัญชี โดยสรุป ผู้สอบบัญชีปรับค่าสอบบัญชีโดยประเมินจากปริมาณงานและความเสี่ยงที่เพิ่มขึ้นจากข้อมูลการแก้ไขงบการเงินในอดีตของกิจการ

คำสำคัญ: การแก้ไขงบการเงินหลายครั้ง ค่าสอบบัญชี ประเภทของการแก้ไขงบการเงิน

1. Introduction

Audit Analytics (2011) reports that from the year 2001 to 2010 the number of restatements reaches the peak in 2006 with 1,795 restatements from 1,566 filers. Then the number declines during the year 2007 to 2009 and increase again in the year 2010. These financial restatements serve as evidence for problems in firms' reporting systems and auditors' failures to detect and/ or report material misstatements. Audit risk is a combination of control risk, inherent risk, and detection risk. Restatements affect auditor's effort because restatements reflect an increase in control risk and/or inherent risk. To maintain an acceptable level of audit risk, auditors have to reduce detection risk by putting more effort into the engagement. In addition, financial restatement harms investors' wealth. Market reacts negatively when firms announce restatement. For example, Palmrose et al. (2004) report an abnormal return of –9% over 2-day restatement announcement window. In a more recent study by Hennes et al. (2008), restatements because of irregularities result in cumulative abnormal returns of –13.64% while restatements because of errors result in cumulative abnormal return of –1.93%. When investors incur losses due to misstated reporting, investors can file litigation against auditors. As a result, restatement increases litigation risk. Moreover, restatements signal low audit quality. Audit quality is a joint probability that an auditor discovers a breach in clients' accounting systems, and reports the breach (DeAngelo 1981). Auditors face reputational damage when the financial statements that they audited contain material misstatements and they fail to report such misstatements. Overall, restatements increase audit effort, litigation risk, and reputation risk. As a result, auditors are expected to charge higher audit fee to cover the increase in effort and risks.

This study investigates the relationship between number of restatements and audit fee. The samples are U.S. firms that have audit fee information for the fiscal year 2004–2015. Final sample is composed of 39,392 firm-year observations and 7,004 firms.

The results show a significant positive association between number of restatement and audit fee. Audit fee increases about 8% per a restatement. For a subsample of firms that report internal control problems under Sarbanes – Oxley Act Section 404, both the number of restatements and the existence of internal control weakness are associated with higher audit fees. The positive association between audit fee and number of restatement is more pronounced when the restatement reduces net income. This finding implies that auditors perceive adverse restatements to correct overstated earnings as a reflection of risks and increase audit fee to compensate the risks. Restatements because of accounting rule application failures, financial fraud, irregularities and misrepresentations, and accounting errors also increase audit fee. In an additional test, the number of periods without financial restatement is associated with reduced audit fees. Overall results suggest that auditors

adjust audit fee based on effort and risks related to firms' restatement history.

This study belongs to audit fee and financial restatement research area. Empirical results provide evidence on auditors' risk assessment based on firms' restatement history. To the best of the authors' knowledge, this is the first study that investigates the relationship between the number of restatements and audit fee. Restatements do not only increase cost of capital of the firms and losses to investors, but they also increase audit costs charged by the audit firms. This study also extends audit research on audit fee and internal control weakness. In addition, this study provides evidence on auditor industry expertise and audit fee. Ferguson and Stokes (2002) find no strong evidence of fee premium in Australia audit market after the year 1990 for Big N auditors who are leaders in industries. Menon and Williams (2001) study audit fee in the US market for the period from the year 1980 to 1997. They find no evidence of fee premium and industry expertise in US audit market. This study provides evidence on another side of the argument as our regression results show significant positive relationship between audit fee and audit industry expertise. The finding suggests that auditors earn fee premium from their industry expertise.

The remainder of the study is organized as follows. The next section provides theoretical background and develops hypotheses. Section III describes sample selection processes and the audit fee model used in this study. Section IV reports univariate and regression results. The last section provides the discussion of results and their implications.

2. Background and Hypothesis Development

Audit fees are comprised of production costs, expected present value of future losses, and profit (Simunic 1980; Menon and Williams 2001). Financial restatements have an impact on audit fees through production costs and expected present value of future losses. Audit risk model defines audit risk as a combination of inherent risk, control risk, and detection risk. Restatement signals problems in firms' reporting system. Auditors can view restatement as a red flag for high inherent risk and/or control risk. To maintain audit risk at an acceptable level, auditors have to lower detection risk by putting more effort into the engagements. Production costs are results of quantity of resources utilized by the auditor in performing the audit examination and per-unit factor cost of resources (Simunic 1980). Restatements should, therefore, increase production costs, and thus increase audit fees.

Auditors' lawsuit is a conjunction of stakeholders' losses and auditors' failures (Palmrose 1988). Restatements harm investors' wealth. Palmrose et al. (2004) report an abnormal return of −9% over 2-day restatement announcement window. In a more recent study by Hennes et al. (2008), restatements because of irregularities result in cumulative abnormal returns of −13.64% while restatements because of errors result in cumulative abnormal return of −1.93%. Restatements reflect an acknowledgement that

original financial statements published were not in accordance with GAAP[1] (Palmrose and Scholz 2004). Therefore, restatements increase auditors' litigation risk. DeAngelo (1981) defines quality of audit services as a joint probability that an auditor discovers a breach in the client's accounting system, and reports the breach. Accounting restatement is evidence of auditor's failure to detect or to report material misstatement in client's financial statements before the financial statements are issued. As a result, restatements can tarnish auditors' reputation of providing high audit quality. Reputation is important for auditors because it is a key factor to attract new clients and maintain current clients. The U.S. Government Accountability Office (GAO) (2008) reports that reputation of auditors is an important factor for companies to hire their auditors. Overall, restatements increase auditors' expected future losses through increasing litigation risk and reputation loss. As restatements increase both production costs and expected future losses for auditors, auditors are expected to adjust audit fees to cover such costs.

Hoitash et al. (2008) use financial restatement as a control variable in examining relationship between internal control quality and audit pricing. Their regressions show a significant positive relationship between restatement as a dummy variable and audit fee. The current study extends Hoitash et al. (2008) by employing the number of restatement instead of the dummy variable. As indicated by the Acting Chief Accountant of SEC in 2006 (Scott 2006), over half of restatements are caused by ordinary books and records deficiencies or simple misapplications of accounting standards. Single restatement may occur just because of mistakes by firms and auditors. Good internal controls should be able to prevent subsequent restatement in these same areas. Multiple restatements, however, are more likely to occur when the management intends to misreport financial statements, or ignore or cannot solve internal control problems. Factors that affect the likelihood of restatement may still exist and result in multiple restatements. Multiple restatements frequently expose shareholders to negative market reaction (Files et al. 2014). As the number of restatements may signal high level of control risk, inherent risk, litigation risk, and reputation risk, auditors may adjust audit fee to cover such risks. The first hypothesis to reflect the expected relationship between the number of restatements and audit fee is as follow:

H1: There is a positive association between the number of restatements and audit fee.

Losses to investors and stakeholders in the case of understated earnings are expected to be lower than in the case of overstated earnings.

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[1] Palmrose and Scholz (2004) study excludes retroactive restatements required by GAAP for accounting changes and subsequent events. In this study, we exclude two restatement categories from Audit Analytics: GAAP-Changes in Accounting Principles FASB/EITF or Foreign GAAP, and Retrospective revisions to prior year financials for consistency. Description of the two categories from Audit Analytics is in Appendix A.

Pierre and Anderson (1984) investigate lawsuits against public accountants and document no lawsuit for the case of undervaluation of assets, understatement of revenues, or overstatement of expenses. Pratt and Stice (1994) find that audit fees reflect amount of audit evidence collected and litigation risk premiums. As overstated earnings restatements increase litigation risk, audit fee is expected to be higher when restatements involve overstated earnings. On the other hand, auditors may perceive understated restatement as having the same level of control risk and put the similar amount of effort in auditing understated earnings firms as they do for overstated earnings firms. When auditors are related to restatement, they incur reputation damage. Auditors may lose other clients and lose opportunity to attract new clients. As a result, auditors may view clients who previously report understated earnings as risky as clients who previously report overstated earnings. The second hypothesis in an alternative form, without the direction of association is as follow:

H2: The association between number of restatement and audit fee is different between restatements that relate to overstated earnings and restatements that relate to understated earnings.

The last hypothesis considers the effect of restatement type and the association between number of restatements and audit fee. Audit Analytics separates restatements into large four groups: 1) Accounting rule (GAAP/FASB) application failures 2) Financial fraud, irregularities and misrepresentations, 3) Errors in accounting and clerical applications, and 4) Other significant issues. Based on the Committee of Sponsoring Organizations of the Treadway Commission (COSO), one of the components of internal control is control environment. *"Control Environment sets the tone for the organization, influencing the control consciousness of its people. It is the foundation for all other components of internal control, providing discipline and structure"* (www.coso.org). Management integrity is an important part of control environment. As a result, restatements that relate to intentional misstatement (fraud) indicate severe problem in reporting system because they usually involve unethical behavior of management. Restatement firms with severe internal control problems are more likely to restate their financial statements again. Auditors have to put more effort in detecting material misstatements in these firms. Auditors are not responsible for detecting fraud. However, if fraud results in material misstatement and auditors fail to detect it, auditors can be sued for investors' losses from the misstatement. Restatements related to fraud increase auditors' litigation risk and reputation damage. Therefore, auditors should adjust audit fee to cover risk premium. Restatements involve accounting rule application failures is another category that auditors may pay more attention. This type of restatement raises question about audit and accounting competency. Auditors may face higher reputational damage when this type of restatement occurs. Restatements due to errors in accounting and clerical applications should have

lowest effect on audit fee. They reflect problems in internal control but not management intention to falsify financial statements. The last hypothesis is stated as follow:

H3: The positive associations between number of restatement and audit fee are different based on restatement types.

3. Method
Sample Selection

Samples are from Audit Analytics database with audit fee information for the fiscal year end 2004 to 2015. Restatement information is also from Audit Analytics database with restatement filings between the years 2000 to 2015. Financial information is from Compustat database. Audit Analytics restatement records are mainly from press releases, 8Ks, 10Ks, 10KAs, 10Qs, and 10QAs. Restatements in the categories of change in accounting principles and retrospective revision to prior year financials for consistency are excluded from the sample because they are not misstatements or errors in reporting. Audit Analytics may create an initial restatement notification based on 8K filing or press release and create another notification once 10Q or 10K are filed with new information. However, the new notification will be created only when there is significant new information. In this study, we try our best to identify and remove observations with the same restatement to reduce the redundancy. However, the effect of double counting restatement, if still left, will be biased against our findings.

Audit Analytics database includes all types of filers; accelerated filers, non-accelerated filers, funds and trusts, new company registrations, small business filers and foreign registrants. Combining data from Audit Analytics and Compustat results in final samples of 39,392 firm-year observations and 7,404 unique firms. Table 1 Panel A separates the sample into non-restatement, single restatement, and multiple restatement observations. There are 11,110 single restatement observations (28%) and 6,922 multiple restatements observations (18%) in the sample. The results then may be subject to limited generalizability and cannot be applied to all firms since our final samples are accounted for only observations without any missing data for our models.

Table 1 Panel B reports samples by restatement types. Audit Analytics separates restatements into large four groups: 1) Accounting rule (GAAP/FASB) application failures, 2) Financial fraud, irregularities and misrepresentations, 3) Errors in accounting and clerical applications, and 4) Other significant issues. Accounting rule application failures restatement is the most common type of restatements (94%) in our restatement samples. Table 1 Panel B also separates samples into restatements that improve net earnings or understated earnings restatements and restatements that adversely affect net earnings or overstated earnings restatements. 84% of restatement sample are in overstated earnings restatement group. In Panel C, samples are grouped by the number of restatements submitted during study period.

Table 1 Sample Selection

Panel A: Restatement and non-restatement observations

	Number of Observation
Non-Restatement	21,360
Single Restatement	11,110
Multiple Restatements	6,922
Total observations	**39,392**

Panel B: Numbers of Restatement Observations by Restatement Types

Restatement Type	No. of Obs with	No. of Obs without
1. Accounting rule (GAAP/FASB) application failures	16,911	1,121
2. Financial fraud, irregularities and misrepresentations	361	17,671
3. Errors in accounting and clerical applications	1,016	17,016
4. Other significant issues	1,464	16,568

Restatement Type	No. of Obs
Restatement - Improve	2,853
Restatement - Adverse	15,179
Total	**18,032**

Panel C: Numbers of Observations by Numbers of Restatements

Number of Restatement	Number of Observation
1	11,110
2	4,322
3	1,683
4	589
5	217
6	56
7	21
8	16
9	10
10	8
Total	**18,032**

Research Design

We modify fee model based on previous studies (Simunic and Stein 1996; Menon and Williams 2001; Ettredge et al. 2007; Hogan and Wilkins 2008; Abbott et al. 2003; Carcello et al. 2002; Hoitash et al. 2008)

$$
\begin{aligned}
\text{Fee} = {} & \beta_0 + \beta_1\text{RestNum} + \beta_2\text{Big4} \\
& + \beta_3\text{Expert} + \beta_4\text{Asset} + \beta_5\text{NumSeg} \\
& + \beta_6\text{SegRevenue} + \beta_7\text{InvRec} + \beta_8\text{CR} \\
& + \beta_9\text{Lev} + \beta_{10}\text{ROA} + \beta_{11}\text{Growth} \\
& + \beta_{12}\text{LOSS} + \varepsilon_t
\end{aligned}
$$

Fee	=	natural log of audit fees for the year
RestNum	=	cumulative number of restatement submitted since year 2000
Big4	=	1 if auditor is a Big 4 auditor; 0 otherwise.
Expert	=	1 if auditor is an industry expertise auditor; 0 otherwise.
Asset	=	natural log of total asset
NumSeg	=	natural log of numbers of business and geographic segments
SegRevenue	=	proportion of revenues segments to total revenue
InvRec	=	proportion of inventory and accounts receivable to total assets
CR	=	current ratio
Lev	=	total liabilities/total assets
ROA	=	income before extraordinary items/ total assets
Growth	=	percent change in revenue
LOSS	=	1 if firms report loss; 0 otherwise.

The number of restatement (*RestNum*) variable includes cumulative restatements from the year 2000 up to each of the period examined. Audit fee is the annual audit fee for the fiscal year. The coefficient of the *RestNum* variable is expected to be positive under H1.

In an additional test, the main model is expanded to include *ICWeak* as a proxy to capture the existence of internal control weaknesses reported under SOX Section 404. *ICWeak* is a dummy variable which equals 1 for firms that receive adverse report on internal control over financial reporting, 0 otherwise. The Sarbanes-Oxley Act Section 404 requires management to assess the effectiveness of the internal control structure and procedures for financial reporting at the end of the most recent fiscal year. The Act also requires registered public accounting firm that prepares or issues the audit report to attest to, and report on, the assessment made by the management. Raghunandan and Rama (2006) find that firms report material weakness under Section 404 pay higher audit fee compared to firms without internal control problems for the fiscal year 2004 but not for the fiscal year 2003. Krishnan et al. (2008) and Hoitash et al. (2008) report that audit fees for firms that report internal control weaknesses under SOX Section 404 are more likely to be higher than firms that do not have internal control weaknesses. Good internal control can prevent and detect errors in financial reporting system before such errors go to final financial reports. Once a restatement occurs, good internal control should be able

to help management detect the same mistake and prevent another incident of restatement. Therefore, firms with higher effectiveness of internal control structure and procedures for financial reporting should have lower incidence of multiple restatements. Clients' good internal control can lower auditors' effort and litigation risk. On the other hand, when firms report problems in their internal control structure, auditors can view this as a red flag for high control risk and inherent risk. Control weaknesses in restatement firms increase the likelihood of another restatement, and thus increase risk. Accounting numbers are less reliable and auditors have to increase substantive tests and extensive analyses. The expected sign for the coefficient of this term is positive. We also test H1 on subsample of observations with restatement. The results will provide evidence on the effect of multiple restatement without non-restatement observations as the base line.

For hypothesis 2 testing, an interaction term RestNum*Adverse is added to the main model to examine the effect of overstated earnings restatement. Variable RestNum*Adverse is for observations that have adverse restatements or restatements that relate to previously overstated earnings in the latest restatement.

In the last hypothesis testing, interaction terms RestNum*Acc, RestNum*Fraud, RestNum*Error, and RestNum*Other are added to the model to represent particular types of restatements based on Audit Analytics. The four types are 1) Accounting rule (GAAP/FASB) application failures – RestNum*Acc, 2) Financial fraud, irregularities and misrepresentations – RestNum*Fraud, 3) Errors in accounting and clerical applications – RestNum*Error, and 4) Other significant issues – RestNum*Other. The positive or negative coefficient of each of these restatement type variables reflect the risks borne by auditors that are impounded into audit fee.

This study include Big4 and Expert variables to control for audit fee premium evidenced in prior studies. Big4 is a dummy variable with a value of one if the company's financials are audited by one of the Big4 auditor, and a value of zero otherwise. Francis (1984) and Francis and Simon (1987), among others, report that Big N auditor earn fee premium. Expert is dummy variable for auditor expertise. Expert equals 1 if the auditor is the top auditor who have highest fee in NAICS 2-digit industry. Craswell et al. (1995) find evidence supporting fee premium for industry specialist auditors in Australian market. They document 34% premium for Big 8 auditors who are industry specialists compare to Big 8 auditors who are not industry specialists. However, later study by Ferguson and Stokes (2002) do not find strong support for fee premium in Australia audit market after the year 1990 for Big N auditors who are leaders in industries. Ferguson et al. (2003) explains that Australia market perceives audit industry expertise at city level rather than at firm level. Menon and Williams (2001) study audit fee in the US market for the period from the year 1980 to 1997. They find no evidence of fee premium and industry expertise in US audit market. This study includes Expert to control for

the relationship (if any) of audit fee and auditor industry expertise.

Other controls variables are based on previous studies (i.e. Simunic 1980; Simunic and Stein 1996; Ferguson et al. 2003; Carcello et al. 2002; Hoitash et al. 2008). *Asset,* the natural log of total asset, is a measure of client size. Previous studies find positive relationship of client size and audit fee. *NumSeg,* the natural log of number of business segments and geographic segments, captures the complexity of the client. *SegRevenue* is the proportion of revenues from segments to total revenues. It captures client complexity. Expected sign for *NumSeg* and *SegRevenue* is positive. *InvRec* is inventory and receivable over total assets. Pratt and Stice (1994) find that audit fees reflect amount of audit evidence collected and litigation risk premiums. Receivable and inventory are related to subjective judgment in determining their values. Menon and Williams (2001) find decline in the coefficient of *InvRec*. They explain that auditors have more efficient in auditing these assets which results in lower production cost and auditors pass the cost saving to clients. In addition, clients with poor financial condition are more likely to incur losses to stakeholders and auditors are more likely to be sued for the losses (Pratt and Stice 1994). *CR,* the current ratio as computed by total current assets divided by total current liabilities, is a proxy for client liquidity risk. Similarly, *Lev,* leverage computed as total liabilities over total assets, represents solvency risk. *ROA,* return on asset as measured by total income before extraordinary items divided by

total assets. *Growth* is percentage growth in total revenue comparing to last year total revenue. Growth firms have risk of reporting error because their internal control system may not pace up with the growth (Kinney and McDaniel 1989). High sales growth can increase volume of transaction and result in overburden internal control system (Pratt and Stice 1994). Auditors perceive of the risk thus increase audit fee to compensate risk premium. *LOSS* is dummy variable equals 1 for firms report net loss; 0 for firms report net profit. Loss increases litigation risk for auditors. The expected sign for *Loss* is positive.

4. Results
Descriptive Statistics and Univariate Results

Table 2 shows descriptive statistics of variables in the regression models. Non-restatement observations have highest audit fee on average. The difference in the mean values of audit fee between non-restatement and single restatement groups is significant. A possible explanation is that non-restatement firms tend to be larger firms and firm size is a significant predictor of audit fee. The proportion of non-restatement firms that hire Big 4 auditors and auditors with industry expertise is higher than the proportions for single and multiple restatement observations. The implication here is that Big 4 auditors and industry expert auditors can lower the likelihood of restatement or restatement firms are less likely to hire Big 4 auditors and industry expert auditors. Restatement firms are smaller than non-restatement firms as measured by total assets. Large firms may have more efficient

Table 2 Descriptive Statistics

Variables	Non-Restatement (n = 13,?10)		Single Restatement (n = 11,110)		Diff. in Means Non-Restatement - Single Restatement	t-stat*	Multiple Restatements (n = 6,922)		Diff. in Means Single Restatement - Multiple Restatements	t-stat*
	Mean	Median	Mean	Median			Mean	Median		
Fee	13.398	13.469	13.3??	13.508	0.056	**3.160**	13.348	13.487	-0.005	-0.230
Big4	0.711	1.000	0.62?	1.000	0.087	**15.720**	0.555	1.000	0.069	**9.110**
Expert	0.198	0.000	0.187	0.000	0.011	**2.340**	0.189	0.000	-0.002	-0.360
Asset	5.908	5.911	5.607	5.747	0.301	**16.030**	5.425	5.688	0.182	**4.540**
NumSeg	0.657	0.000	0.718	0.000	-0.062	**-4.790**	0.830	0.000	-0.112	**-6.430**
SegRevenue	1.494	0.000	1.580	0.000	-0.086	-0.590	1.599	0.0??	-0.019	-0.180
InvRec	0.226	0.183	0.237	0.195	-0.011	**-5.050**	0.242	0.198	-0.004	-1.400
CR	4.963	1.920	2.653	1.781	2.309	**1.980**	4.557	1.610	-1.903	-0.970
LEV	1.210	0.483	1.591	0.527	-0.3??	-1.330	8.298	0.569	-6.707	-1.700
ROA	-0.181	0.032	-0.337	0.023	0.156	**2.200**	-1.851	0.009	1.514	1.520
Growth	149.168	8.391	145.123	6.162	4.046	0.060	206.374	4.664	-61.251	-0.430
LOSS	0.354	0.000	0.404	0.000	-0.051	**-8.?10**	0.465	0.000	-0.060	**-7.950**

* Bold indicates significance level at P < 0.05.

internal controls over financial reporting that can prevent misstatements. Multiple restatements observations are the most complex as indicated by number of business and geographic segments. Non-restatement observations have higher current ratio and ROA compared to single restatement observations. The proportion of observations with net loss is highest for multiple restatement samples and lowest for non-restatement samples.

Multiple Regressions

Table 3 reports correlation matrices among variables in the regressions. There are high correlation between firm size as measured by natural log of total assets and Big 4 auditor. Larger firms hire larger auditors. In addition, both variables have high correlation with audit fees. Variance Inflation for *LEV* and *ROA* are above 10. There could be a problem of multicollinearity. In a robustness test, we remove both variables from the model. The results are the same as in the main model.

Regression results for hypothesis 1 are in Table 4. In the first regression, the coefficient of *RestNum* is significant and positive. The finding supports the first hypothesis. There is a positive association between the number of restatement and audit fee. The result indicates that audit fee increases around 8% for each restatement, controlling for other variables in the model. Control variables are significantly associated with audit fee, including *Big4*, *Asset*, *NumSeg*, *TagRevenue*, *InvRec*, *CR*, *Lev*, and *Loss*. The findings support previous studies that Big N

auditors earn fee premium (Francis 1984; Francis and Simon 1987). Firm size and complexity are positively associated with audit fee. Auditors also adjust audit fee to compensate higher litigation risk when firms have high leverage and when firms report net loss. *Expert* is marginally significant in the model (p = 0.061). This extends evidence on auditor industry expertise and audit fee. The evidence goes towards Craswell et al. (1995) study that find evidence supporting fee premium for industry specialist auditors. The finding suggests that auditors get fee premium because of their industry expertise.

The second regression includes *ICweak* to capture internal control weakness over financial reporting. After including *ICWeak* variable, the coefficient of *RestNum* is still significant. This indicates that the association between number of restatement and audit fee remains the same no matter the firms have internal control weakness or not. The increase in audit fee comes from the effect of the number of restatement and the existence of internal control deficiency.

The last regression is based on samples of restatement only. The results are the same as the first two regressions. *RestNum* is positively associated with audit fee. In an additional test (not tabulated), we add a variable *TimeNoRest*, which is number of years from the latest restatement, to reflect periods without restatement. The coefficient of *TimeNoRest* is −0.008 (p = 0.0165). The interpretation is that the auditor perceives that firms with longer restatement-free periods are less risky than firms that just had a restatement.

Table 3 Spearman Correlations above Diagonal, Pearson Correlations below Diagonal

	Fee	RestNum	Big4	Expert	Asset	NumSeg	segrev	InvRec	CR	LEV	ROA	Growth	LOSS
Fee		-0.005		0.281	0.875	0.171	0.129	-0.034	-0.058	0.125	0.307	-0.012	-0.337
RestNum	-0.002		-0.1		-0.059	0.059	0.057	0.031	-0.097	0.115	-0.099	-0.073	0.084
Big4	0.631	-0.115		0.352	0.640	0.074	0.053	-0.125	0.062	0.011	0.247	0.029	-0.262
Expert	0.275	-0.017	0.352		0.279	0.036	0.029	-0.072	-0.021	0.024	0.101	-0.002	-0.121
Asset	0.870	-0.059	0.626	0.279		0.163	0.133	-0.134	-0.097	0.116	0.407	0.021	-0.447
NumSeg	0.199	0.063	0.091	0.042	0.184		0.978	0.100	0.082	-0.046	0.120	-0.076	-0.119
segrev	0.009	0.005	0.005	0.000	0.011	0.979		0.082	0.073	-0.043	0.108	-0.083	-0.109
InvRec	-0.105	0.027	-0.173	-0.089	-0.185	0.077	0.082		0.123	0.027	0.117	-0.025	-0.079
CR	-0.024	-0.004	-0.013	-0.006	-0.014	-0.006	0.073			-0.697	0.182	0.043	-0.093
LEV	-0.029	0.014	-0.020	-0.007	-0.048	-0.008	-0.043	-0.007			-0.254	-0.080	0.154
ROA	0.028	-0.015	0.021	0.007	0.043	0.009	0.108	0.004		-0.956		0.204	-0.844
Growth	-0.019	0.003	-0.020	-0.008	-0.019	-0.010	-0.083	-0.008		-0.001	-0.001		-0.166
LOSS	-0.334	0.080	-0.262	-0.121	-0.447	-0.125	-0.109	-0.042	0.005	0.016	0.024	0.005	

* Bold indicates significance level at P < 0.05.

Table Regression Results Testing H1: Numbers of Restatement and Audit Fee Association

Variable	Full Model			Model with SOX 404			Only Restatement Samples		
	Coefficient	t-statistics	Pr > |t|	Coefficient	t-statistics	Pr > |t|	Coefficient	t-statistics	Pr > |t|
Intercept	10.066	362.240	<0.0001	10.079	195.310	<0.0001	10.201	244.290	<0.0001
RestNum	0.08c	10.160	<0.0001	0.061	6.480	<0.0001	0.067	5.730	<0.0001
Big4	0.49	5.300	<0.0001	0.368	13.590	<0.0001	0.601	19.360	<0.0001
Expert	0.036	1.78	0.074	0.051	2.420	0.016	0.058	1.990	0.047
Asset	0.463	100.12	<0.0001	0.474	70.790	<0.0001	0.436	67.130	<0.0001
NumSeg	0.043	6.770	<0.0001	0.022	3.150	0.002	0.032	3.700	0.000
SegRevenue	0.000	3.650	0.000	0.000	3.010	0.003	0.000	3.130	0.002
InvRec	0.574	14.070	<0.0001	0.073	15.690	<0.0001	0.568	9.820	<0.0001
CR	0.000	−3.140	0.002	−0.000	−1.300	0.195	0.000	−5.230	<0.0001
LEV	0.001	3.140	0.002	0.109		<0.0001	0.000	1.930	0.054
ROA	0.002	2.150	0.031	0.005	2.830	0.005	0.001	1.430	0.152
Growth	0.000	−0.010	0.994	0.000	23.260	0.000	0.000	−1.890	0.059
LOSS	0.233	18.190	<0.0001	0.193	12.430	<0.0001	0.210	11.870	<0.0001
ICWeak				0.343	10.790	<0.0001			
R^2		78.37%			69.63%			78.67%	
No. of observations		39,392			24,112			18,032	
No. of clusters		7,404			4,430			3,621	

Table 5 presents regression results testing hypothesis 2 and 3. The coefficient of *RestNum*Adverse* is positive and marginally significant (0.049, p = 0.075). This implies that the positive relationship between number of restatements and audit fee is more pronounced when the latest restatement is an adverse restatement. Investors incur losses when firm overstated earnings and they may file a lawsuit against the auditors. As a result, the auditors view overstated earnings firms as having additional risks.

The last regression model includes four variables to partition restatements into each type of restatement as indicated by Audit Analytics. 1) Accounting rule (GAAP/FASB) application failures – *RestNum*Acc*, 2) Financial fraud, irregularities and misrepresentations – *RestNum*Fraud*, 3) Errors in accounting and clerical applications – *RestNum*Error*, and 4) Other significant issues – *RestNum*Other*. The results indicate that the number of restatements is positively associated with audit fee after controlling for the effects of restatement types. In addition, the type of latest restatement that relate to accounting rule application failures, financial fraud, irregularities and misrepresentations, errors in accounting and clerical applications is positively associated with audit fee. Restatements due to accounting rule application failures may indicate the complexity of the clients' operations and applications of accounting standards to the clients' operations.

Such difficulties are not likely to lessen over time. As a result, auditors may identify this type of restatement as having a high possibility to recur. Restatements related to fraud imply significant weakness in internal control. In addition, they usually involve the management. Management is an important factor affecting control environment. Auditors perceive high control risk when restatements related to fraud incur. Moreover, auditors face higher litigation risk when firms experience fraud restatements. For the positive association of restatements related to errors in accounting and clerical applications and audit fee, the possible explanation is that the auditors put some concerns over misstatements due to errors. Misstatements due to errors should be easily detected by companies' internal control because of lack of intention to hide the misstatements. Having restatements due to errors signals internal control problems in the companies' reporting system. The interaction terms *RestNum*Acc* and *RestNum*Error* is significantly associated with reduced audit fee. Most of the restatements in the sample are in the first category. The variable *RestNum*, *RestAcc*, and *RestError* may capture all the effects on audit fee from these types of restatements and the interaction terms provide a protective effect of these restatements on audit fee. Overall, the positive associations between number of restatement and audit fee are different based on restatement types.

Table 5 OLS Regression Results Testing H2 and H3: Numbers of Restatement and Audit Fee Association by Restatement Types

	Coefficient	t-statistics	Pr > ltl	Coefficient	t-statistics	Pr > ltl
Intercept	10.296	116.730	< 0.0001	9.970	67.390	< 0.0001
RestNum	0.033	1.270	0.204	**0.215**	3.160	0.002
Adverse	−0.055	−0.910	0.361			
Acc				**0.287**	2.190	0.029
Fraud				**0.333**	2.240	0.025
Error				**0.276**	2.120	0.034
Other				0.050	0.640	0.520
RestNum*Adverse	**0.049**	1.780	0.075			
RestNum*Acc				−0.141	−2.170	0.030
RestNum*Fraud				−0.039	−0.640	0.520
RestNum*Error				**−0.154**	−2.220	0.027
RestNum*Other				0.032	0.810	0.416
Big4	0.434	11.450	< 0.0001	0.434	11.490	< 0.0001
Expert	0.063	2.180	0.030	0.059	2.070	0.039
Asset	0.446	46.240	< 0.0001	0.445	46.250	< 0.0001
NumSeg	0.020	2.120	0.034	0.022	2.320	0.020
SegRevenue	0.000	3.180	0.002	0.000	3.190	0.001
InvRec	0.883	9.010	< 0.0001	0.861	9.840	< 0.0001
CR	−0.008	−2.150	0.031	−0.009	−2.180	0.029
LEV	0.078	1.930	0.054	0.076	1.870	0.062
ROA	−0.015	−0.890	0.372	−0.015	−0.920	0.358
Growth	0.000	−1.450	0.148	0.000	−1.350	0.176
LOSS	0.165	8.010	< 0.0001	0.162	7.850	< 0.0001
ICWeak	0.386	10.110	< 0.0001	0.383	10.040	< 0.0001
R^2		65.58%			65.78%	
No. of observations		11,392			11,392	
No. of clusters		2,219			2,219	

5. Conclusion

This study investigates the relationship between number of restatements and audit fee. The samples include all observations that have audit fee information for the fiscal year 2004–2015. The results show significant positive association between number of restatements and audit fee. For a subsample of firms that report internal control problems under Sarbanes–Oxley Act Section 404, both the number of restatements and the existence of internal control weakness are positively associated with audit fees. The positive association between audit fee and number of restatement is more pronounced for restatements to lower overstated net income. This finding implies that auditors perceive adverse restatements to have some additional risks. Restatements because of accounting rule application failures, financial fraud, irregularities and misrepresentations, errors in accounting and clerical applications result in a significant increase in audit fee. Restatements related to fraud imply significant weakness in internal control and possible integrity problem of the management. Auditors perceive high risk for firms with restatement due to fraud. Overall results suggest that auditors adjust audit fee based on effort and risks related to firms' restatement history.

This study belongs to audit fee and financial restatement research area. Empirical results provide auditors' risk adjustment evidence on firms' restatement history. Restatements do not only increase cost of capital of the firms and losses to investors, but they also increase audit cost of the firms. This study extends audit research on audit fee and the existence of internal control weakness. In addition, this study provides evidence on an inconclusive argument about auditor industry expertise and audit fee. The results from this study support the argument that auditors earn fee premium when they are industry specialists.

As a caveat, Audit Analytics restatement database records some observations of the same restatement incidence in separate lines. We try our best to exclude such redundant observations; however, some redundancies may still exist and may cause measurement error in the number of restatements. Nevertheless, such measurement error will lead to bias against finding support for our hypotheses.

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