How do regulation and deregulation on audit fees influence audit quality?: Empirical Evidence from Japan

Naoki Kasai
Shiga University
Faculty of Economics

Tomomi Takada*
Kobe University
Graduate School of Business Administration

December, 2012

* Corresponding author
Graduate School of Business Administration, Kobe University
2-1 Rokkodai-cho, Nada-ku, Kobe, Hyogo 657-8501, Japan
Tel: +81-78-803-6935
Fax: +81-78-803-6977
takada@pearl.kobe-u.ac.jp

Acknowledgement
The authors gratefully appreciate the helpful comments and suggestions from Iris Stuart and the participants of the 2009 EAA annual congress presentation. Naoki Kasai and Tomomi Takada gratefully acknowledge the financial support by JSPS KAKENHI (Grant Number 24730386 for Kasai and 20330097 and 22330141 for Takada). All errors are the responsibility of the authors.

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Abstract

The Japanese Institute of Certified Public Accountants (JICPA) formerly issued a standard audit fees table in accordance with the Certified Public Accountants Law. This table was intended to serve as a reference for the determination of audit fees, but in practice, the standard fees were applied frequently as substantive upper limits. The table was criticized and blamed for low fees and, thus, inefficient audit services. In response to this criticism, the Certified Public Accountants Law was amended in 2004, and the JICPA discontinued the issuance of the table, and audit fee pricing was no longer quasi-regulated in Japan. In this work, we examine the effects of (de)regulation on audit quality in this institutional setting. We specifically investigate (1) the effects of low audit fees on audit quality prior to deregulation and (2) the effects of higher fees on audit quality after deregulation. We use the accrual quality measure of Dechow and Dichev to capture audit quality. The results show that (1) high fees, not low fees, correlate with poor accrual quality during the period of regulation and (2) accrual quality decreases when audit fees increase after implementing deregulation.

Key words: audit fee, audit quality, regulation, Japan

JEL: M41, M42

1. Introduction

This study investigates the relationship between fees paid to auditors and accrual quality in the Japanese audit market where audit fees were quasi-regulated until 2004. Our study is motivated by three reasons. First, the effects of fees on auditor independence has been scrutinized by the regulators in the international financial markets and discussed in the academic research literature, while audit fees are determined by negotiations between managers or firms and auditors. The European Commission (EC) (European Commission, 2011), however, specified a condition that regulates the total fees that audit firms can receive from specific clients. Specifically, the auditor (or audit firm) that receives 15% or more of their total annual fees from a specific client for two consecutive years is required to inform the appropriate authority of this situation [1]. Whether this requirement improves audit quality is a question for future discussion, but the Japanese market provides an interesting setting to address the question whether regulations on audit fees enhances audit quality. In the Japanese audit market, the Japanese Institute of Certified Public Accountants (JICPA) formerly determined and issued a standard audit fees table in accordance with the Certified Public Accountants Law. Japanese firms used this table to determine the fees payable to their auditors. This table provided only *standard* audit fees, and firms were not required to set fees as the table prescribed. Nevertheless, in practice, the fee levels in the table were used as substantive upper limits on fees. Thus, investigating the effects of audit fees on accrual quality in Japan provides an opportunity to answer the question as to whether (quasi-)regulation on audit fee pricing enhanced audit quality.

Second, focusing on the Japanese market allows us to examine how deregulation of audit fee pricing affects audit quality. Fees paid to Japanese auditors were said to be much lower than fees paid to auditors in other developed countries, such as the US

where the sizes of the firms and the levels of operational complexity were comparable to those in Japan. Low audit fees in Japan were criticized, and concerns increased about inefficient audit services that might be caused by such low audit fees (Fuchida and Litan, 2006). In response to this criticism, the JICPA amended legislation that made it possible to discontinue their standard audit fee tables in April 2004. Audit fees for Japanese firms have increased annually since the deregulation[2]. The economic consequences of the Sarbanes and Oxley Act (SOX) have been investigated in terms of audit quality (Doogar *et al*., 2010; DeFond and Lennox, 2011; Krishnan *et al*., 2011). The economic consequences of the deregulation of the Japanese audit market should be examined in a manner that is similar to the investigations of the consequences of SOX. Furthermore, while restrictions on audit practices have been tightened recently, it is possible that deregulations will be required in the event that these restrictions are found to be excessive. We have little knowledge about what would happen if regulations on audit practices are relaxed. The Japanese market provides an experimental setting that allows us to examine how audit fees influence audit quality following a deregulation.

Third, the debates over the effects of audit fees on audit quality are inclined to center on additional audit fees (fee premiums). Especially in the US market, excess audit fees are issues that are being questioned (DeFond *et al*., 2002; Raghunandan *et al*., 2003; Krishnan *et al*., 2005; Choi *et al*., 2010). However, in the Japanese market, audit fees that are too low are the subject of discussion. Examining the effects of audit fees on accrual quality in the Japanese market that has a unique background on audit pricing is important in the context of the contemporary international auditing market.

Prior research has examined two aspects of the influence of audit fees on audit quality. First, higher audit fees may have a negative effect and may compromise auditors' independence (Frankel *et al*., 2002; Ashbaugh *et al*., 2003). Second, higher

audit fees may have a positive effect and increase the efforts made by auditors (Srinidhi and Gul, 2007; Hoitash *et al*., 2007). If low audit fees diminished the competence of Japanese auditors prior to deregulation, then higher audit fees after deregulation are likely to improve audit quality. However, it is well known that Japanese auditors have relatively little exposure to litigation (Wingate, 1997; Fukukawa *et al*., 2006) and that their audit fees may, consequently, be relatively low. If the relatively low audit fees in Japan were appropriate, then unexpectedly higher fees might compromise auditor independence and result in lower quality audits, even when audit fees are quasi-regulated. The increase in audit fees after the deregulation in 2004 might further compromise auditor independence.

We examine the relationships between audit fees and audit quality for Japanese firms in 2004 (pre-amendment) and 2006 (post-amendment) to detect (1) the effect of so-called low audit fees on audit quality before the deregulation and (2) the effect of the increased fees on audit quality after the deregulation.

We employ the accrual quality measure developed by Dechow and Dichev (2002) as a proxy for audit quality to examine the effects of intentional and unintentional biases in accruals. First, we investigate the relationships between fees and accrual quality during the regulated period of 2004. Next, we investigate whether the subsequent changes in the audit fees affected accrual quality. We break down the 2006 audit fees into two parts: the fee level in 2004 and the change in fee level from 2004 to 2006. We then examine how each fee component relates to accrual quality.

In addition, we separate the 2004 fees into expected and unexpected portions and examine the relationships of these two portions to accrual quality. The conventional wisdom might suggest that it was impossible for auditors to receive abnormally high or low fees from their clients when audit fees were regulated in 2004. However, the audit

fees were determined by negotiations between auditors and their clients during that period, as they are at the present time. Therefore, the fees paid to auditors by firms in 2004 could still differ despite the quasi-regulations. Abnormally high fees might compromise auditor independence, whereas abnormally low fees might deter auditors from completing competent audits. Thus, unexpected audit fees could potentially affect accrual quality, even when audit fee prices are quasi-regulated. Therefore, we break down fees from 2004 and examine their relationships to accrual quality.

The results of this work show that high fees correlate with poor accrual quality in the pre-amendment period of 2004. The unexpected portions of the audit fees are responsible for this relationship. These results imply that Japanese auditors who received abnormally high fees compromised their independence, even during the period when audit pricing was quasi-regulated. In other words, low audit fees in the Japanese market did not diminish the ability of auditors to complete competent audits in general. Rather, some Japanese auditors enjoyed abnormally high audit fees and compromised their independence. Consistent with this relationship, accrual quality decreases when audit fees increase after the deregulation. The results show that higher audit fees from the pre- to the post-amendment periods correlate with lower accrual quality. The discussion of the low audit fees in the Japanese market might have been unnecessary. The results of our work also suggest that extra fees can compromise auditor independence, even when restrictions on audit fee pricing are imposed.

Our research contributes to the accounting literature in two ways. First, the regulation as well as the deregulation of audit fee pricing is evaluated in terms of their economic consequences. Although the enforcement of auditing practices has been tightened and regulations have been imposed on audit fees, we know very little about their economic consequences. Investigating the Japanese audit market can be a means to

evaluate the effects of regulations on audit fee pricing. Furthermore, our study will provide a helpful perspective for future considerations of regulations and deregulations of audit practices because our study considers both types of practices in the Japanese market.

Second, we extend prior discussions of auditor independence in various countries to Japan, a different country where audit fees are relatively low. Previous studies are inclined to investigate markets where extra audit fees are a matter for concern, such as the US market. Considering the present global audit market, auditors, in practice, will be forced to address issues that differ significantly from those their own countries. For example, Chen and Zhang (2010) showed that despite the international reputations of the Big 4 audit firms, these firms did not help Chinese companies to improve their IFRS compliance relative to local Chinese auditors. It is possible that even reputable international auditors do not fully understand the local accounting practices in China. Because institutional infrastructures are likely to produce unique accounting practices, international audit firms do not necessarily provide high quality audit services throughout the international market. Thus, it will be important to focus on the markets that have unique institutional backgrounds such as Japan, the subject of this investigation.

The remainder of this paper proceeds as follows. A literature review is provided in Section 2. Section 3 explains the Japanese environment and develops hypotheses. Section 4 describes the research design and samples and Section 5 presents empirical results. The results of additional analyses are reported in Section 6. Section 7 concludes this study and provides suggestions for future research.

2. Related literature

The economic consequences of SOX and related regulations of audit markets by authorities have been investigated in several ways. Studies examining the impact of SOX on audit fees and audit quality relate closely to our research[3]. Doogar *et al*. (2010) study the effects of the replacement of Auditing Standard No. 2 (AS2) with Auditing Standard No. 5 (AS5) on audit fees. They find that audit fees in the AS5 period align with auditee fraud risk, while those in the AS2 period do not. The authors conclude that the audit market over-reacted to AS2, which introduced inefficiencies, but AS5 eliminated these inefficiencies. Krishnan *et al*. (2011) also examine the effect of AS5 on audit fees. Their research is motivated by the express purpose of AS5, which was to provide significant cost savings, especially for smaller and less complex firms. Their results clarify that audit fees are lower in the AS5 period relative to the AS2 period, but they found that these cost saving only for larger and more complex firms. Moreover, DeFond and Lennox (2011) show that low quality small audit firms exited the market following SOX, and their former clients subsequently received higher quality audit services from other auditors. They conclude that while the exit of small low quality firms from the market might not be the primary goal of SOX and the PCAOB, this result seems to align with the intent of the PCAOB. These studies demonstrate that SOX and related enforcements by the PCAOB affected audit pricing and quality, but the impacts were not necessarily those that were expected by the authorities.

Furthermore, our research is motivated by studies that use accrual measures, including abnormal accruals and accrual quality, to examine the association between fees paid to auditors and auditor independence. Because of the sudden collapse of giant companies such as Enron in the US, many academic authors in the auditing field launched a closer examination of the relationship between auditor independence and

audit fees. The influence of fees paid to auditors on accrual measures, especially in the case of US firms, has been examined in this context.

Although there are numerous studies examining the relations between fees paid to auditors and accrual measures, the results are mixed. For example, Frankel *et al*. (2002) finds that auditor independence is compromised when clients pay non-audit fees that are high relative to the total audit fees. On the other hand, Ashbaugh *et al*. (2003), Reynolds *et al*. (2004), and Chung and Kallapur (2003) do not find significant negative relationships between fees and audit quality. Furthermore, Larcker and Richardson (2004) and Gul *et al*. (2007) report a negative relationship between non-audit fees and audit quality for only a subset of their samples. Larcker and Richardson (2004) find a negative relationship for firms with weak governance, while Gul *et al*. (2007) report that the negative relation is found only for firms where the auditor tenure is relatively brief (not more than three years). Huang *et al*. (2007) do not find a negative relationship between non-audit fee components and audit quality after the enactment of the SOX. Thus, the results of prior studies regarding US firms generally report that high non-audit fees do not jeopardize auditor independence.

The relationships between fees paid to auditors and accrual measures have been examined in the international context as well. With respect to UK firms, Ferguson *et al*. (2004) find that non-audit services compromise auditor independence. Choi *et al*. (2009) report that the provision of tax services by Korean auditors generally improves audit quality by curtailing opportunistic accounting procedures by the management of firms. Thus, prior studies provide inconsistent evidence regarding the relationship between non-audit fees and accrual measures, which serve as a proxy for audit quality.

As discussed above, prior studies focus on whether higher fees compromise auditor independence and highlight *non-audit fees*. However, the authors sometimes

examine the compromise of auditor independence with regard to the association between *audit fees* and audit quality. Hoitash *et al*. (2007) and Srindhi and Gul (2007) report that high audit fees increase the effort exerted by auditors and the quality of audits. Srinidhi and Gul (2007) posit that audit fees are linked to efforts by auditors, while non-audit fees may compromise auditor independence. They raise the hypothesis that audit fees are likely to reflect efforts because the auditing market is closely regulated and competitive and audits of listed firms are mandated. Srinidhi and Gul (2007) examine whether audit fees positively correlate with accrual quality. They find that expected audit fees correlate with accrual quality, while unexpected fees have no relationship with accrual quality. Frankel *et al*. (2002), Huang *et al*. (2007) and Gul *et al*. (2007) also find a positive relationship between audit fees and accrual measures, although they do not form a hypothesis concerning the relations between audit fees and efforts. In contrast, Hoitash *et al*. (2007) report that expected and unexpected audit fees are negatively associated with accrual quality. Furthermore, Choi *et al*. (2010) find an asymmetric relationship between unexpected audit fees and audit quality measured by abnormal accruals. The results show that abnormal audit fees are negatively associated with audit quality for observations with positive abnormal audit fees, while there is no significant relationship for observations with negative unexpected audit fees.

Consequently, there are conflicting results for the influence of fees paid to auditors on the independence of auditors. According to prior studies, researchers are inclined to posit negative relationships between audit quality and *non-audit fees*, although the results are mixed. In contrast, they posit two possible relationships between *audit fees* and audit quality. Some authors propose that audit fees have a negative effect on auditor independence, and others propose that it has a positive effect on auditors' efforts.

3. Institutional background in Japan and hypothesis development

3.1. Audit market in Japan

The fees paid to Japanese auditors are generally much lower than in the US (Fuchida and Litan, 2006). According to Inoue (2006) and JICPA (2008), firm size (measured by assets or sales) is the most important determinant of fees paid to auditors in Japan, though fees do not increase exactly in proportion to firm size. Rather, the increase in fees diminishes as the firm size increases.

Low audit fees in Japan were attributed to the rules prescribed in the Certified Public Accountant Law. In accordance with this Law, JICPA formerly determined a standard fee table for auditors. This table presented the minimum basic fee for each section of the market. For instance, the table indicated that the basic fees for listed firms on the first (second) section of the Japanese stock market[4] were about ten (seven) million JPY in April 2002. These fees were approximately equal to 100,000 (70,000) USD. Execution fees were determined separately for principal and assistant auditors (Tagaya and Naito, 2003).

In 2003, the Certified Public Accounting Law was amended and JICPA discontinued the practice of determining fees. Considering that low audit fees had been criticized (Fuchida and Litan, 2006) before the amendment, audit fees were expected to increase to appropriate levels after deregulation. Indeed, audit fees have increased annually since 2004. Table 1 reports time series of audit fees for Japanese firms from 2004 to 2009 and US companies in 2008. According to Table 1[5], audit fees increased gradually from 2004 to 2009, but rose dramatically from 2008 to 2009 as a result of the Financial Instruments and Exchange Law amendment[6]. However, the fee levels for Japanese firms are still much lower than for US firms, as seen in Table 1. Although firm size and other relevant factors may influence the levels of audit fees, the difference

between audit fees for Japanese and US firms are significant because these two countries are two of the foremost financial markets in the world.

(Insert Table 1 here)

3.2. Hypothesis development

If Japanese auditors did not receive sufficient fees to perform adequate audits prior to deregulation, the average audit quality might have been low because the auditors did not provide appropriate levels of service to their clients. In other words, ability of auditors to complete competent audits might have been diminished. Given this assumption, higher audit fees are expected to improve audit quality because auditors will have adequate resources to perform necessary audit procedures. However, higher audit fees might compromise auditors' independence, even if the low fees were priced fairly during the regulated periods. Under this assumption, higher audit fees jeopardize audit quality. Hence, how audit fees affect audit quality during the regulated period is an empirical question. We first investigate the relationship between audit fees and audit quality before the deregulation.

As seen in Table 1, the audit fees gradually increased since 2004. If low fees for Japanese auditors prior to deregulation decreased the competence of the audits, then higher fees are likely to improve audit quality. On the other hand, if audit fees were priced fairly during the regulated period, then higher fees after the deregulation would compromise audit quality. Therefore, we also investigate whether the increase in audit fees after the deregulation affected audit quality. Thus, the relationships between audit fees and audit quality over the pre- and post-regulated periods are examined. These two analyses allow us to test (1) the effect of low fees on audit quality during the regulated

period, as well as (2) the effect of higher fees on audit quality after the deregulation.

4. Sample and research design

4.1. Sample

We use samples of companies listed on the Japanese stock market in 2004 and 2006. In the first part of our work, we investigate the relationship between audit fees and audit quality during the regulated period in 2004 prior to the deregulation. The relationship between the changes in audit fees from 2004 to 2006 and audit quality is examined in the second part of our work. We examine the companies having 2006 fiscal year end for the following two reasons. First, we intend to control for the effect of dramatic changes in the auditing environment after 2007. For example, one of the Big 4 audit firms, *ChuoAoyama*, was dissolved after a series auditing failures in 2007. The fraud by *Kanebo,* which was audited by *ChuoAoyama*, is often cited as a trigger for the dissolution of that firm (Numata and Takeda, 2010). Moreover, the introduction of auditing of internal control reports made by members of management was likely to change the audit environment in Japan. The Financial Instruments and Exchange Law required auditors to conduct audits on management assessments of internal controls in addition to financial statements from the fiscal year beginning on or after April 2008. To control for these changes, we limit the sample period up to 2006. Second, a few years might elapse before the effects of deregulation are revealed.

Sample observations are obtained for firms whose fiscal year ends in March[7]. Firms who changed the end of their fiscal year, firms engaging in mergers and acquisitions and firms jointly audited by more than two audit firms are excluded from the sample. In addition, we exclude SEC registrants because these firms tend to pay much higher fees to auditors than firms listed only on the domestic Japanese market.

Furthermore, firms from the financial services industry are excluded from this analysis, as in our previous research.

Financial and audit data were collected from *Nikkei NEEDS Financial Quest* and *NEEDS-MT data on directors and audit opinions*. There were 1,773 firms with the necessary data in 2004 and 2,288 firms in 2006. For the examination of the effects of the fee changes from 2004 to 2006, the audit fee data from 2004 were needed. This criterion somewhat reduced the number of firms in the sample that could be used for the analysis of behavior after the deregulation[8]. The final number of firms used for the analysis for behavior in 2006 was 1,755.

4.2. Research design

Regarding previous research that uses accrual measures to examine audit quality, early studies often used abnormal accruals as a proxy for audit quality. By construction, abnormal accruals can capture any intentional bias in accruals made by members of management. Because misstatements in financial reports can include intentional and unintentional biases, the studies using abnormal accruals mainly examine intentional biases made by members of management.

Another accrual measure, DD, which was provided by Dechow and Dichev (2002) is referred to as accrual quality. This measure is thought to capture both intentional and unintentional biases of accruals. Because we intend to explore the effects of all accrual biases on audits that can cause misstatements, we employ the DD accrual measure as a proxy for audit quality in this study[9]. Furthermore, more recent studies such as Hoitash *et al*. (2007), Srinidhi and Gul (2007), Doyle *et al*. (2007) and Ashbaugh *et al*. (2008), use this measure to examine audit quality.

Our first test is to examine the relationship between audit fees and accrual quality

in the regulated period of 2004. For this part of our work, we use the total amount of fees as well as the expected and unexpected components of the fees for the following two reasons. First, several prior studies separate the abnormal portion of audit fees from the total amount of audit fees to examine the independence or quality of the auditors (DeFond *et al*., 2002; Raghunandan *et al*., 2003; Krishnan *et al*., 2005; Choi *et al*., 2010). Because idiosyncratic factors that characterize specific clients, such as size, complexity, or risk, are likely to influence the fees paid to auditors, their overall audit fees consist of *expected* fees and *unexpected* fees (Simunic, 1980; Craswell *et al*., 1995; Choi *et al*., 2010). Researchers often assume that the unexpected portions of audit fees create economic bonds between auditors and clients. Second, although Japanese firms should have audit fees that are prescribed in accordance with the standard audit fee table before the deregulation, the actual amounts of the fees were determined by negotiations between clients and auditors. We therefore expect that some firms paid higher fees than others to their auditors.

For the first part of this work, we construct the following regression model.

Model (1):

$$DD = \alpha_0 + \beta_1 LNFEE + \beta_2 SALESVLT + \beta_3 OPCYCLE + \beta_4 LNSIZE + \beta_5 LOSSDUM + \varepsilon,$$

High *DD* implies low accrual quality. *LNFEE* is either the audit fees or the total audit fees (the sum of audit and non-audit fees). The distinction between audit and non-audit fees was not very clear, especially when auditors started disclosing their fees. To control for the effects of this ambiguity, we use audit fees and total audit fees for the analysis. Fee variables are measured as the natural logarithm of either audit fees (*LNFEE*) or total audit fees (*LNTOTAL*). Furthermore, Model (1) is also estimated by separating the fee

variables into expected and unexpected portions for audit fees and total audit fees, respectively[10].

Following previous studies such as Dechow and Dichev (2002) and Srinidhi and Gul (2007) we include *SALESVLT*[11], *OPCYCLE*, *LNSIZE*, and *LOSSDUM* as control variables. Higher sales volatility, longer operating cycle or reporting negative earnings are likely to decrease estimation errors in accruals. These variables are expected to have a positive relation to DD. The association of DD with size will be negative because size relates to the stability of firm operations. The definitions of the variables included in the models are shown in Table 2. We do not include variables that relate to auditor characteristics, such as auditor turnover or auditor size, because these factors had no significant relationship with accrual quality in preliminary tests that we conducted[12] (those results are untabulated).

(Insert Table 2 here)

We investigate the relationship between audit fees and accrual quality during the period in which audit fees were quasi-regulated using Model (1). The samples are firms with fiscal years that end in March, 2004. If the fees were generally low and the auditors could not perform sufficient audit procedures to assure that the financial statements were free from material misstatements, then higher audit fees might relate to lower DD values (higher audit quality). Conversely, higher audit fees are related to higher DD values (lower accrual quality) when higher audit fees compromise auditor independence.

For the second part of this work, we investigate the relationship between accrual quality and the change in audit fees from 2004 to 2006. We construct the following

model.

Model (2):

$$DD_{06} = \alpha_0 + \beta_{11} LNFEE_{04} + \beta_{12} \Delta LNFEE_{06} + \beta_2 SALESVLT + \beta_3 OPCYCLE + \beta_4 LNSIZE + \beta_5 LOSSDUM + \varepsilon,$$

In model (2), $\Delta LNFEE_{06}$ is the change in audit fees from 2004 to 2006. Control variables are as defined in model (1)[13]. For model (2), the samples are the firms whose fiscal years end in March, 2006. The basic concept in model (2) is the same as in model (1). However, to assess the relationship between audit fees and accrual quality, we break down the 2006 audit fees into two portions: (1) the fee level in 2004 ($LNFEE_{04}$) and (2) the fee changes from 2004 to 2006 ($\Delta LNFEE_{06}$). Our test variable in model (2) is $\Delta LNFEE_{06}$. How the variable $\Delta LNFEE_{06}$ relates to accrual quality depends on whether fees in 2004 were sufficient to maintain high audit quality (competence). The fee increase will have a negative relationship with DD if the fee levels in 2004 were too low to support sufficient audit procedures and, therefore, the increase in fees resulted in better audit quality. However, if the fees were sufficient to perform adequate auditing procedures in 2004, the auditors compromised their independence when they received higher fees in 2006, and the relationship between the fee changes and DD will be positive. As in model (1), we estimate model (2) when the audit and the total audit fee data (*LNFEE* or *LNTOTAL*) are used and when the expected and unexpected fees are used.

5. Results

5.1. Descriptive Statistics and Univariate Analyses

Table 3 shows the descriptive statistics. We report the statistics only for model (1) in Panel A because there are no significant differences in the statistics for the 2004 and 2006 samples. According to Panel A of Table 3, the non-audit fees are significantly smaller than the audit fees. It is because Japanese auditors have been prohibited to provide certain non-audit services to their audit clients since 2004. Therefore, we assume that the non-audit fees did not have a significant impact on audit quality. This justifies our decision to not focus on the impact of non-audit fees on accrual quality. Panel B shows the statistics for the fee variables from 2004 to 2006. The audit fees increased from 2004 to 2006, which was consistent with Table 1.

(Insert Table 3 here)

The correlation matrix is reported in Table 4. As in Panel A of Table 3, we report the matrix only for the 2004 sample. According to Table 4, the relationships between *DD* and some of the fee variables (*LNFEE*, *LNTOTAL*, *EXFEE* and *EXTOTAL*) are negative. This implies that the accrual quality is higher when the total amount of and the expected portion of fees are higher. In contrast, there are positive correlations between *UNEXFEE* (*UNEXTOTAL*) and *DD* in Table 4, which indicates that unexpected portions of the fees correlate with low accrual quality.

(Insert Table 4 here)

These univariate relations suggest that audit fees influence auditor efforts and, therefore, higher fees produce higher accrual quality. With regard to the unexpected fees, however, higher values correlate with lower accrual quality. These results may imply

that the fee levels in 2004 were sufficient to provide reasonable audit services on average. In the following section, we investigate whether these univariate relations are confirmed in multi-variable settings and examine how the changes in fees from 2004 to 2006 affect accrual quality.

5.2. Multivariate Analyses

Table 5 shows the results for model (1). The results using audit fees, total audit fees, unexpected audit fees, unexpected total audit fees, expected and unexpected audit fees, expected and unexpected total audit fees are reported from the third to the eighth columns. According to Table 5, all but the expected fee variables have positive and statistically significant values. In particular, the coefficients for the audit fees and the total audit fees are 0.007 (t-value=2.75) and 0.008 (t-value=3.40), respectively. These positive and significant coefficients are consistent with the concept that auditors receiving high fees compromise their independence, even during the period when fees are low and quasi-regulated. More important, the unexpected portions, not the expected portions, of the fees are significantly positive. This is further evidence supporting the concept that auditors enjoy abnormally high fees, which jeopardizes their independence. The control variables are generally significant and have the expected signs. In conclusion, the results in Table 5 indicate that higher fees correlate with lower audit quality. Audit fees in 2004 were unlikely to be too low to effectively perform quality audit procedures.

(Insert Table 5 here)

Table 6 shows the results from model (2). Panel A represents the results for the

total amount of fees in 2004 and the changes in fees, while Panel B gives the results obtained with categorized (expected and unexpected) fees in 2004 and the fee changes. The table shows that the coefficients on the change in fees are positive and significant in both panels. These results indicate that fee increases jeopardize audit quality. Concerning the fee levels in 2004, the total amount and unexpected portions are positive and significant at conventional levels, while the coefficients on expected fees have insignificant positive values. These findings are consistent with the results in Table 5. Thus, (abnormally) higher fees compromise audit quality, although fees were believed to be too low to conduct adequate audits before the deregulation. Not all of the control variables are significant, but the signs of the variables with significant coefficients are as we expect.

(Insert Table 6 here)

Thus, the results provided in Tables 5 and 6 suggest that (1) higher fees correlated with lower quality audits during the quasi-regulated period in 2004 and that (2) higher audit fees in 2006 resulted in lower quality audits, as well. Although audit fees for Japanese auditors generally increased from 2004 to 2006, it was likely that these increases jeopardized audit quality.

6. Additional Analyses

6.1. Analysis using firms listed in the first section

As stated in section 3.1, standard audit fees were determined separately for firms listed in each section of the Japanese stock market. We do not control for the sections in estimating the fee model in Appendix A because the section listings for firms are likely

to relate to firm size, which is controlled in the model. Nevertheless, the fact that standard fees were determined with respect to each section might influence the fee levels even after the standard fees remained undisclosed. Moreover, the characteristics of listed firms often differ in some respects between the sections, which may influence the relationship between fees and accrual quality.

We then estimate models (1) and (2) with only the firms listed in the first section to confirm whether the results in Tables 5 and 6 are robust. These results (untabulated) are qualitatively similar for total audit fees, but not necessarily for audit fees. In particular, the coefficients for the total amount of fees, the unexpected fees, and the changes in fees are positive and significant at the conventional level for model (1) as well as model (2) with respect to total audit fees. Concerning audit fees, only the coefficient for the unexpected fees for model (2) is positive and significant at the 10% level, but the rest of the coefficients on the fees have insignificant positive values. Although the coefficients on some fee variables lose statistical significance for audit fees, the results with the firms listed in the first section do not contradict the results in Tables 5 and 6. Our overall results indicate that higher fees correlate with lower accrual quality by Japanese auditors.

6.2. Analysis with separated fee changes

In model (2), we examine the relationships between the fee changes from 2004 to 2006 and accrual quality. Because we expect the effect of fee increases on accrual quality to be more apparent, we focus on the fee changes from 2004 to 2006. However, the fee changes between 2004 and 2006 can be separated into changes that occurred between 2004 and 2005 and those that took place between 2005 and 2006. To investigate which changes influenced the decrease in accrual quality, we separated the audit fees in 2006

into the following categories: (1) the fee level in 2004 ($LNFEE_{04}$), (2) the fee changes from 2004 to 2005 ($\Delta LNFEE_{05}$) and (3) the fee changes from 2005 to 2006 ($\Delta LNFEE_{06}$). Model (2) is then re-estimated with these separated fee variables and controls.

(Insert Table 7 here)

Table 7 shows the results that were obtained with the three fee variables. Panel A shows the results for the total amount of fees, while Panel B gives the results for expected and unexpected fees. According to the results, the coefficients for the change from 2005 to 2006 are positive and significant at conventional levels for both audit fees and total audit fees. With respect to the change from 2004 to 2005, the coefficients are significant and positive only for the total audit fees. Hence, these results imply that the fee increases from 2005 to 2006 were mainly responsible for the decrease of accrual quality in 2006.

7. Conclusions

The relationship between fees paid to auditors and accrual quality in the Japanese audit environment during the period in which audit fee pricing was quasi-regulated and deregulated is investigated in this study. The results show that higher fees correlate with lower accrual quality in the quasi-regulated period of 2004. In addition, the results indicate that the unexpected portion of the fees are responsible for this relationship. These results imply that Japanese auditors who receive abnormally high fees compromised their independence during the period when audit fees were believed to be too low and fee pricing was quasi-regulated. Consistent with this relation, our results also show that increases in fees from 2004 to 2006 correlate with lower accrual quality.

Thus, higher audit fees from the pre- to the post-deregulated period would decrease the accrual quality. Discussion about the low audit fees in the past Japanese audit market might be unnecessary. Rather, the results indicate that abnormally high fees compromised auditor independence, even when the standard audit fees were disclosed and the fees were lower.

In the Japanese audit environment where the JICPA formerly determined the standard audit fees, low fees paid to auditors were criticized. However, the results obtained in this study imply that auditors' independence could be compromised when audit fees are high even in an environment where fee prices are regulated. Our results indicate that regulations on audit fees do not necessarily improve audit quality.

There are some limitations in our research. Audit effectiveness can be measured in various ways, such as audit opinions or the frequency of restatements. However, we focus on accrual quality to measure audit quality. In future research, audit quality should be measured in different ways and its relation to audit fees examined in the context of the Japanese audit market. Furthermore, our results might not be generally applicable because we examine Japanese firms only in 2004 and 2006. Even with these limitations, this study provides new evidence concerning the relationship between audit fees and accrual quality in the Japanese audit market, and it also provides a new insight into the discussion over the regulations on audit fee pricing.

Appendix A

We separate 2004 fees into expected and unexpected portions to estimate Models (1) and (2). Following Simunic (1980), Craswell *et al*. (1995) and others, we construct the following model to estimate the expected fee levels. We then estimate the unexpected fees by deducting the estimated fees from the actual fees.

$$LNFEE = \alpha_0 + \delta_1 LNSIZE + \delta_2 SUBS + \delta_3 LEV + \delta_4 LOSSDUM + \delta_5 BIG4 + \varepsilon, \quad (3)$$

LNSIZE and *LOSSDUM* were defined in Table 2. *LNFEE* is either the audit fee (*LNFEE*) or the total audit fee (*LNTOTAL*), *SUBS* is equal to the natural logarithm of the number of subsidiaries, *LEV* is equal to the total debt divided by the average total assets and *BIG4* is equal to one if the firm is audited by the Big 4 (and zero otherwise).

The demand for audit services is likely to increase with firm size, leading to a positive association between firm size and audit fee. We include *LNSIZE* to control for client size. Audit fees are inclined to be higher for clients with more complex business operations. We set the variable *SUBS* to proxy for client complexity. Additionally, we include *LEV* and *LOSSDUM* to proxy for a client's risk characteristics. Since auditors charge higher fees for risky clients (Simunic and Stein, 1996). Lastly, we set *BIG4* to capture the effect of audit quality differentiation on audit fees. All the coefficients of these variables are expected to be positive (Simunic, 1980; Craswell *et al*., 1995; Choi *et al*., 2010). The results are reported in Table 8. The variables are significant, and the signs are consistent with previous studies except for *LEV*.

(Insert Table 8 here)

Appendix B

With regard to the accrual quality (*DD*), we follow Dechow and Dichev (2002) to form the estimation model.

$$\frac{TCA_t}{SIZE} = \alpha_0 + \gamma_1 \frac{CFO_{t-1}}{SIZE} + \gamma_2 \frac{CFO_t}{SIZE} + \gamma_3 \frac{CFO_{t+1}}{SIZE} + \varepsilon , \qquad (4)$$

where *TCA* is the operating accruals and *CFO* is the cash flow from operations. The *TCA* is equal to (Δcurrent assets - Δcash) - (Δcurrent liabilities - Δshort term debt included in current liabilities). The DD is measured as the absolute value of the residual in the above regression. The equation is estimated in the cross-section for each industry; and the industry classifications are based on the *Tosho* (Tokyo Stock Exchange) industrial classifications. According to Francis *et al*. (2005), we estimate equation (4) for the industries having at least 20 firms in year *t*. The results are reported in Tables 9 and 10.

(Insert Tables 9 and 10 here)

NOTES

[1] EC (2011) also specifies the upper limits (10%) that audit firms can receive from a certain client for financial audit-related services.

[2] However, the most influential factor on these fee increases in recent years seems to be that auditors are required to conduct audits of internal control reports in addition to financial statements, according to the amendment of the Financial Instruments and Securities Law. Although the audits of internal control reports went into effect in the business year beginning on or after April 2008, the costs to begin the audits have been accrued since the 2007 business year.

[3] Li (2009) and Amir *et al*. (2010) also examine the economic consequences of the SOX in terms of audit quality.

[4] In Japan, the Tokyo Stock Exchange (TSE) is the largest stock market and there are several local markets, such as the Osaka Stock Exchange (OSE) and the Nagoya Stock Exchange (NSE).

[5] The statistics in Table 1 are somewhat biased because the analysis includes SEC-registered Japanese firms. The fee level for SEC-registered firms is much higher than for domestic firms. The mean (median) value of the audit fees for SEC registrants is 1102.4 (781.0) million JPY and 47.8 (30.0) million JPY for domestic firms, when the statistics are measured for the firms that have fiscal years that ended from April 2008 to March 2009. Table 1 reports these biased statistics because we have comparable audit fee data only for firms that include SEC registrants.

This study, however, concerns only Japanese domestic firms. The statistics for our sample are given in Table 3.

[6] The amended law requires auditors to conduct audits on managerial assessments of internal controls in addition to financial statements. Audit fees are raised throughout the market to include these additional audits. This law amendment was referred to as J-SOX because it was influenced by the enactment of the Sarbanes-Oxley Act in the US.

[7] More than 70% of the listed Japanese companies end their fiscal years in March.

[8] Hayashi et al. (2005) show that more than 200 firms that ended their fiscal years in March 2004 did not disclose the fees they paid to their auditors.

[9] Estimation process is explained in Appendix B.

[10] Estimation process is explained in Appendix A.

[11] We estimated the model using (1) cash flow volatility instead of sales volatility and (2) sales as well as cash flow volatilities for the robustness test, since several previous studies control for cash flow volatility in regressions using DD. The results were qualitatively similar to the results using the sales volatility.

[12] In addition, Japanese firms rarely changed auditors, and more than 80% of listed companies were audited by the Big 4 during our sample period (see also Numata and Takeda, 2010; Skinner and Srinivasan,2012). These considerations potentially induce the insignificant relationship between accrual quality and auditor turnover/size. The Japanese Big 4 auditors at the period we examine are *Azusa*, *Chuo-Aoyama*, *Shinnihon*, and *Thomatsu*, which all were aligned with the international Big 4 audit firms.

[13] We confirm that the results using (1) cash flow volatility instead of sales volatility and (2) sales as well as cash flow volatilities are qualitatively unchanged for model (2).

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Table 1 Audit fee statistics

	N	*Mean*	*Median*	*Std.*	*Min*	*Max*
2004	1,497	31.9	N/A	88.6	1.0	2,118.0
2005	3,332	31.8	N/A	N/A	0.2	2,887.0
2006	3,360	35.2	N/A	N/A	0.2	3,223.0
2007	3,938	36.1	19.0	155.9	1.0	4,494.0
2008	3,940	39.8	20.8	170.8	2.0	4,957.0
2009	3,844	58.5	31.0	164.2	0.02	4,362.0
2008 (US)	5,060	170.6	61.1	N/A	0.15	10,780.0

The details for the data and source information are as follows: The 2004 information reports the data of listed Japanese firms having fiscal year ending in March 2004 (Hayashi *et al*., 2005); the 2005 and 2006 information reports data of listed and non-listed Japanese firms having a fiscal year ending in March 2005 and in March 2006 (Zeimukenkyukai, 2007); the 2007 information reports the data of listed Japanese firms having a fiscal year ending from April 2006 to March 2007 (Machida *et al*., 2008); the 2008 information reports the data of listed Japanese firms having a fiscal year ending from April 2007 to March 2008 (Matsumoto *et al*., 2008), the 2009 information reports the data of listed Japanese firms having a fiscal year ending from April 2008 to March 2009 (Hayashi *et al*., 2010), the 2008 (US) information reports the data of US firms listed on NYSE, AMEX, or NASDAQ as of 2008 (Hayashi et al., 2010). For Japanese firms, fees are measured in million JPY. For comparability, fees for US firms are measured in 10 thousand USD because the dollar-yen exchange rate during these periods was on average about 1USD=100JPY.

Table 2 Definitions of variables

Variables	*Descriptions*
FEE =	audit fees (millions of JPY)
NONFEE =	non-audit fee (millions of JPY)
TOTAL =	total audit fees (millions of JPY)
LNFEE =	natural logarithm of audit fees
LNTOTAL =	natural logarithm of total audit fees
EXFEE =	expected log of audit fees
EXTOTAL =	expected log of total audit fees
UNEXFEE =	unexpected component of audit fees
UNEXTOTAL =	unexpected component of total audit fees
DD =	absolute value of residuals from annual cross-sectional estimation of Dechow and Dichev (2002) model
Assets =	average total assets (in millions of JPY)
LNSIZE =	natural logarithm of average total assets
SALESVLT =	the standard deviation of sales from 2002 to 2006, scaled by sales
OPCYCLE =	365 / (sales/average accounts receivables) + 365 / (cost of goods sold / average inventory)
LOSSDUM =	an indicator variable equal to one if the audit client reported a loss in current fiscal year, or zero otherwise

Table 3 Descriptive statistics

Panel A: Variables of the 2004 sample						
	Mean	Std Dev	1st Qrt	Median	3rd Qrt	*N*
FEE (in millions of JPY)	20.216	12.143	13.000	17.000	23.000	1,773
NONFEE(in millions of JPY)	1.449	5.983	0.000	0.000	0.000	1,773
TOTAL(in millions of JPY)	21.666	15.802	14.000	18.000	24.000	1,773
EXFEE	2.889	0.352	2.640	2.849	3.102	1,773
EXTOTAL	2.930	0.380	2.660	2.889	3.161	1,773
UNEXFEE	0.000	0.255	-0.170	0.010	0.174	1,773
UNEXTOTAL	0.000	0.276	-0.181	0.000	0.184	1,773
Assets (in millions of JPY)	147530.834	557194.554	13784.500	31696.000	87406.750	1,773
DD	0.027	0.033	0.007	0.017	0.034	1,773
SALESVLT	0.069	0.068	0.024	0.047	0.086	1,773
OPCYCLE	144.703	73.785	91.870	141.135	188.462	1,773
LOSSDUM	0.117	0.322	0.000	0.000	0.000	1,773
Panel B: Fee variables (in millions of JPY)						
	Mean	Std Dev	1st Qrt	Median	3rd Qrt	*N*
FEE2004	20.234	12.173	13.000	17.000	23.000	1,755
NONFEE2004	1.463	6.021	0.000	0.000	0.000	1,755
TOTAL2004	21.698	15.857	14.000	18.000	24.000	1,755
FEE2005	21.667	15.029	14.000	18.000	24.000	1,755
NONFEE2005	1.804	10.353	0.000	0.000	0.000	1,755
TOTAL2005	23.471	20.866	14.000	19.000	26.000	1,755
FEE2006	22.656	16.841	14.000	19.000	25.000	1,755
NONFEE2006	2.094	12.791	0.000	0.000	0.000	1,755
TOTAL2006	24.751	23.898	14.000	19.000	26.000	1,755

Notes: Panel A shows the statistics for the samples from model (1), which consists of Japanese listed companies that had fiscal years that ended in March, 2004. Panel B shows descriptive statistics for the fee variables from 2004 to 2006. All variables are defined in Table 2.

Table 4 Correlation matrix

	DD	*LNFEE*	*LNTOTAL*	*UNEXFEE*	*UNEXTOTAL*	*EXFEE*	*EXTOTAL*	*SALESVLT*	*OPCYCLE*	*LNSIZE*	*LOSSDUM*
DD	1.000										
LNFEE	-0.116	1.000									
LNTOTAL	-0.097	0.975	1.000								
UNEXFEE	0.068	0.592	0.554	1.000							
UNEXTOTAL	0.103	0.550	0.591	0.933	1.000						
EXFEE	-0.194	0.805	0.801	0.001	-0.002	1.000					
EXTOTAL	-0.195	0.804	0.802	0.001	-0.002	0.999	1.000				
SALESVLT	0.321	-0.155	-0.119	0.043	0.098	-0.225	-0.225	1.000			
OPCYCLE	0.007	0.064	0.039	0.030	-0.008	0.057	0.054	0.044	1.000		
LNSIZE	-0.209	0.790	0.786	0.001	-0.001	0.981	0.979	-0.231	0.070	1.000	
LOSSDUM	0.183	-0.058	-0.068	-0.001	0.000	-0.074	-0.085	0.177	0.081	-0.122	1.000

Notes: Pearson correlations are reported. All variables are defined in Table 2.

Table 5 Cross-sectional regression results for accrual quality on audit fees and control variables in the quasi-regulated period.

Independent Variables	*Expected Signs*	*LNFEE*		*LNTOTAL*		*UNEXFEE*		*UNEXTOTAL*		*UNEXFEE &EXFEE*		*UNEXTOTAL &EXTOTAL*	
Intercept		0.046***	(6.78)	0.048***	(7.00)	0.049***	(7.22)	0.049***	(7.29)	0.044***	(5.95)	0.047***	(6.88)
LNFEE		0.007***	(2.75)										
LNTOTAL				0.008***	(3.40)								
UNEXFEE						0.007**	(2.54)			0.007**	(2.54)		
UNEXTOTAL								0.009***	(3.25)			0.009***	(3.26)
EXFEE										0.013	(1.25)		
EXTOTAL												0.010	(1.14)
SALESVLT	+	0.129***	(7.73)	0.127***	(7.60)	0.129***	(7.72)	0.126***	(7.59)	0.130***	(7.73)	0.127***	(7.60)
OPCYCLE	+	0.000	(-0.25)	0.000	(-0.10)	0.000	(-0.30)	0.000	(-0.18)	0.000	(-0.20)	0.000	(-0.08)
LNSIZE	−	-0.004***	(-5.33)	-0.005***	(-5.83)	-0.003***	(-4.99)	-0.003***	(-5.06)	-0.006**	(-2.28)	-0.005**	(-2.23)
LOSSDUM	+	0.011***	(3.93)	0.012***	(3.95)	0.012***	(4.03)	0.012***	(4.06)	0.011***	(3.66)	0.011***	(3.81)
N		1,773		1,773		1,773		1,773		1,773		1,773	
Adj. R²		0.137		0.139		0.137		0.139		0.137		0.139	

Notes:
The regression model is:

$$DD = \alpha_0 + \beta_1 LNFEE + \beta_2 SALESVLT + \beta_3 OPCYCLE + \beta_4 LNSIZE + \beta_5 LOSSDUM + \varepsilon. \quad (1)$$

p-values are from two-tailed tests. t-statistics (White (1980) heteroscedasticity consistent t-statistics) are reported in parenthesis.
*** , ** , * represent significant at the 0.01, 0.05 and 0.10 levels or better, respectively.
See Table 2 for the definitions of variables.

Table 6 Cross sectional regression tests of accrual quality on audit fees, fee changes and control variables in deregulated period

Panel A: Results with total amount of fees					
Independent Variables	*Expected Signs*	*LNFEE*		*LNTOTAL*	
Intercept		0.037***	(6.157)	0.038***	(6.430)
LNFEE		0.004*	(1.649)		
ΔLNFEE		0.008*	(1.712)		
LNTOTAL				0.005**	(2.088)
ΔLNTOTAL				0.008***	(2.593)
SALESVLT	+	0.079***	(7.124)	0.078***	(7.101)
OPCYCLE	+	0.000	(0.806)	0.000	(0.816)
LNSIZE	−	-0.003***	(-3.898)	-0.003***	(-4.193)
LOSSDUM	+	0.012***	(4.511)	0.011***	(4.495)
N		1,755		1,755	
Adj. R²		0.107		0.109	
Panel B: Results with expected and unexpected fees					
Independent Variables	*Expected Signs*	*LNFEE*		*LNTOTAL*	
Intercept		0.043***	(6.070)	0.042***	(6.687)
UNEXFEE		0.006**	(2.236)		
EXFEE		-0.010	(-1.047)		
ΔLNFEE		0.008*	(1.652)		
UNEXTOTAL				0.007***	(2.739)
EXTOTAL				-0.010	(-1.328)
ΔLNTOTAL				0.008***	(2.600)
SALESVLT	+	0.077***	(6.997)	0.076***	(6.956)
OPCYCLE	+	0.000	(0.787)	0.000	(0.793)
LNSIZE	−	0.000	(0.101)	0.000	(0.223)
LOSSDUM	+	0.012***	(4.707)	0.012***	(4.729)
N		1,755		1,755	
Adj. R²		0.108		0.111	

Notes:
The regression model is:

$$DD = \alpha_0 + \beta_{11}\, LNFEE + \beta_{12}\ \ \Delta LNFEE + \beta_2\, SALESVLT + \beta_3\, OPCYCLE + \beta_4\, LNSIZE + \beta_5\, LOSSDUM + \varepsilon. \quad (2)$$

p-values are from two-tailed tests. t-statistics (White (1980) heteroscedasticity consistent t-statistics) are reported in parenthesis.
*** , ** , * represent significant at the 0.01, 0.05 and 0.10 levels or better, respectively.
See Table 2 for the definitions of variables.

Table 7 Cross sectional regression tests of accrual quality on audit fees, separated audit fee changes and control variables

Panel A: Results with total amount of fees

Independent Variable	*Expected Sign*	*LNFEE*		*LNTOTAL*	
Intercept		0.036***	(5.943)	0.038***	(6.463)
LNFEE04		0.004	(1.585)		
ΔLNFEE0504		0.000	(-0.030)		
ΔLNFEE0605		0.017**	(2.456)		
LNTOTAL04				0.005**	(2.072)
ΔLNTOTAL0504				0.008**	(1.957)
ΔLNTOTAL0605				0.008*	(1.925)
SALESVLT	+	0.079***	(7.138)	0.078***	(7.105)
OPCYCLE	+	0.000	(0.761)	0.000	(0.816)
LNSIZE	−	-0.003***	(-3.694)	-0.003***	(-4.180)
LOSSDUM	+	0.011***	(4.436)	0.011***	(4.496)
N		1,755		1,755	
Adj. R²		0.109		0.108	

Panel B: Results with expected and unexpected fees

Independent Variable	*Expected Sign*	*LNFEE*		*LNTOTAL*	
Intercept		0.042***	(5.890)	0.042***	(6.741)
UNEXFEE		0.006**	(2.165)		
EXFEE		-0.010	(-1.039)		
ΔLNFEE0504		0.000	(-0.046)		
ΔLNFEE0605		0.016**	(2.397)		
UNEXTOTAL				0.007***	(2.727)
EXTOTAL				-0.010	(-1.329)
ΔLNTOTAL0504				0.008**	(2.023)
ΔLNTOTAL0605				0.008*	(1.897)
SALESVLT	+	0.077***	(7.011)	0.076***	(6.961)
OPCYCLE	+	0.000	(0.744)	0.000	(0.793)
LNSIZE	−	0.000	(0.132)	0.000	(0.223)
LOSSDUM	+	0.012***	(4.629)	0.012***	(4.733)
N		1,755		1,755	
Adj. R²		0.110		0.110	

Notes:

The table presents the results of cross-sectional regression tests of accrual quality on audit fees and control variables with a total amount of fees in Panel A and with expected and unexpected fees in Panel B.

The regression model is:

$$DD = \alpha_0 + \beta_{11} LNFEE_{04} + \beta_{12} \Delta LNFEE_{05} + \beta_{13} \Delta LNFEE_{06} + \beta_2 SALESVLT + \beta_3 OPCYCLE + \beta_4 LNSIZE + \beta_5 LOSSDUM + \varepsilon. \quad (2)$$

p-values are from two-tailed tests. t-statistics (White (1980) heteroscedasticity consistent t-statistics) are reported in parenthesis. *** , ** , and * represent significance at the 0.01, 0.05 and 0.10 levels or better, respectively. See Table 2 for the definitions of variables.

Table 8 Estimation of results of the fee regressions in 2004

Panel A: Audit Fees			
Independent Variables	*Expected Signs*	*Coefficient*	*t-statistic*
Intercept		0.719***	(10.687)
LNSIZE	+	0.192***	(27.594)
SUBS	+	0.070***	(9.008)
LEV	+	-0.053*	(-1.714)
LOSSDUM	+	0.048**	(2.335)
BIG4	+	0.064***	(3.874)
N		1,776	
Adj. R²		0.647	
Panel B: Total Fees			
Independent Variable	*Expected Sign*	*Coefficient*	*t-statistic*
Intercept		0.593***	(8.551)
LNSIZE	+	0.202***	(28.208)
SUBS	+	0.079***	(10.036)
LEV	+	-0.014	(-0.438)
LOSSDUM	+	0.042*	(1.943)
BIG4	+	0.097***	(5.842)
N		1,776	
Adj. R²		0.664	

Notes:
The regression model is:

$$LNFEE = \alpha_0 + \beta_1 LNSIZE + \beta_2 SUBS + \beta_3 LEV + \beta_4 LOSSDUM + \beta_5 BIG4 + \varepsilon. \qquad (3)$$

p-values are from two-tailed tests. t-statistics (White (1980) heteroscedasticity consistent t-statistics) are reported in parenthesis.
*** , ** , * represent significant at the 0.01, 0.05 and 0.10 levels or better, respectively.

Table 9 Estimation results of accrual quality in 2004

	Independent Variables					
Industry	*Intercept*	*CFOt-1*	*CFOt*	*CFOt+1*	*N*	*Adjusted R²*
Stone, Clay & Glass Products	-0.001	0.041	-0.532	0.380	51	0.324
Pulp & paper	0.010	0.055	-0.090	0.008	20	0.394
Drug	-0.008	0.007	-0.160	0.219	40	0.255
Chemicals	0.000	0.041	-0.036	-0.012	169	0.009
Services	0.015	0.347	-0.529	-0.001	147	0.241
Other Manufacturing	0.012	-0.023	-0.456	0.149	72	0.419
Wholesale Trade	0.011	0.213	-0.773	0.200	248	0.598
Machinery	-0.002	0.196	-0.443	0.232	182	0.297
Metal Products	-0.002	0.064	-0.528	0.347	73	0.321
Construction	0.000	0.106	-0.686	0.161	160	0.507
Retail Trade	0.021	0.095	-0.551	0.124	129	0.278
Communication Services	0.008	-0.092	-0.079	0.122	175	0.056
Foods	0.015	0.268	-0.653	0.128	97	0.297
Precision Equipment	0.021	0.065	-0.572	0.146	36	0.674
Textile Products	0.012	0.236	-0.798	0.152	53	0.657
Warehousing & Harbor Transportation	0.001	-0.292	0.170	0.033	37	0.058
Iron & Steel	0.019	-0.396	0.080	-0.020	50	0.040
Electric Equipment	-0.004	0.126	-0.392	0.283	209	0.307
Electric & Gas	0.000	0.164	-0.462	0.350	20	0.095
Non-ferrous Metal	-0.006	0.598	-0.728	0.120	32	0.617
Real Estate	0.042	0.059	-1.301	0.085	54	0.810
Transportation Equipment	-0.010	0.353	-0.387	0.194	92	0.215
Trucking	-0.003	0.158	-0.141	-0.024	59	0.092

Notes:
The table presents mean coefficient estimates for an accrual quality model based on 23 industry regressions and an adjusted R^2.

Table 10 Estimation results of accrual quality in 2006

	Independent Variables					
Industry	*Intercept*	*CFOt-1*	*CFOt*	*CFOt+1*	*N*	*Adjusted R²*
Stone, Clay & Glass Products	0.021	0.320	-0.468	-0.089	52	0.356
Pulp & paper	-0.012	0.414	-0.359	0.131	20	0.151
Drug	-0.030	0.152	0.169	0.895	41	0.280
Chemicals	0.005	0.276	-0.268	0.066	178	0.068
Services	0.047	0.035	-0.494	0.050	186	0.277
Other Manufacturing	0033	0.107	-0.429	-0.115	78	0.167
Wholesale Trade	0.019	0.233	-0.626	0.132	264	0.489
Machinery	0.012	0.146	-0.514	0.286	196	0.383
Metal Products	-0.002	0.246	-0.315	0.121	74	0.096
Construction	0.016	0.170	-0.688	-0.016	172	0.606
Retail Trade	0.020	0.197	-0.702	0.243	142	0.369
Communication Services	0.040	0.167	-0.571	0.121	218	0.270
Foods	0.018	0.300	-0.560	0.032	103	0.235
Precision Equipment	0.005	0.663	-0.679	0.217	38	0.454
Textile Products	0.005	0.682	-1.079	0.136	54	0.574
Warehousing & Harbor Transportation	-0.009	-0.030	0.090	0.193	38	0.027
Iron & Steel	0.023	0.307	-0.299	-0.161	53	0.268
Electric Equipment	0.008	0.124	-0.573	0.411	227	0.362
Electric & Gas	0.004	0.089	-0.255	0.084	20	0.357
Non-ferrous Metal	0.066	-0.191	-0.660	0.144	38	0.301
Real Estate	0.063	0.022	-0.934	-0.003	64	0.916
Transportation Equipment	0.007	0.278	-0.437	0.103	95	0.261
Trucking	0.000	0.257	-0.308	0.095	60	0.005

Notes:
The table presents mean coefficient estimates for an accrual quality model based on 23 industry regressions and an adjusted R^2.