

The Effect of Auditor Tenure and Client Importance on Discretionary Accruals – Evidence from Audit-Partner Based Data in Taiwan

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ABSTRACT: This study adopts an audit-partner based approach to examine whether and how client importance and audit tenure affect audit quality. The major findings and contributions are as follows. First, we find no evidence that there is a negative effect of audit tenure on audit quality either at the audit-partner or audit-firm levels. On the contrary, a longer auditor-client relationship enhances rather than decreases audit quality. Second, we find no evidence that client importance hurts audit quality at the audit-firm level. Third, if we trace client importance and audit tenure at the audit-partner level, we find that although a higher level of client importance dampens audit quality, their interaction effect enhances audit quality. Particularly, audit quality is lowest on a new and important client but increases when the “short-term” important client turns into a “long-term” important one because this important client becomes a “core” asset to the auditor. Finally, our results based on the audit-partner tenure effect and its interaction effect with client importance traced at the audit-partner level suggest that the audit-partner rotation requirement in the Sarbanes-Oxley Act of 2002 might not be an effective and efficient rule for promoting auditor independence and increasing audit quality.

Keywords: *Audit-Partner Tenure; Audit-Firm Tenure; Auditor Independence; Client Importance.*

Data Availability: *The data employed in this study are available from the source identified in the text.*

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I. INTRODUCTION

This study extends and integrates two lines of auditing research: one that focuses on the effect of *client importance* on audit quality and another that examines the impact of *audit tenure* on audit quality. Regulators, press articles, and academic researchers alike express concerns about whether or not *client importance* and *audit tenure* cause auditors to compromise their independence. While prior studies (e.g., Reynolds and Francis 2001; Johnson et al. 2002; Chung and Kallapur 2003; Myers et al. 2003) investigated these factors separately and did not trace them at the audit-partner level, we examine these factors jointly and trace them at the audit-partner level to investigate whether and how these two factors affect audit quality.¹ Specifically, we attempt to move the audit market research forward by examining behavior at the level of the individual audit partner.

Ensuring auditor independence is crucial to the process of financial reporting since it contributes to the quality of audit reports. Regulators require auditors to be independent in performing attestation services. However, opportunistic behavior could lead auditors to compromise their independence when facing economic incentives or dismissal threats. In response to the wave of recent corporate crises, the effort to deter such behavior is notably shown in the *Sarbanes-Oxley Act of 2002* (hereafter the *SOX Act*). The *SOX Act* contains significant reforms aimed at enhancing auditor independence (e.g., additional partner rotation requirements and restrictions on providing nonaudit or consulting services). However, there are some unique attributes of providing audit services that should be addressed before we can fully understand the implications of the *SOX Act* on auditor independence.

First, since auditing is a credence good, consumers (i.e., buyers or investors) cannot determine the extent of the service that is required *ex ante*, sometimes, not even *ex post* after it has been consumed (Darby and Karni 1973; Firth 1990; Emons 1997). Consequently, seller's (i.e., auditor's) reputation is an important mechanism to ensure

¹ To analyze how audit tenure affects audit quality, Johnson et al. (2002) and Myers et al. (2003) compute audit tenure in terms of audit-firm tenure. To examine whether client importance influences the auditor's reporting strategy, Reynolds and Francis (2001) and Chung and Kallapur (2003) calculate client importance by tracing to the audit practice-office level.

their product value (i.e., audit quality). However, since the occurrence of prominent market failures like Andersen-Enron and some other accounting debacles, users of financial statements find that a brand name of an audit firm in itself is unlikely to fully resolve the information asymmetry in the audit market. These events led some empirical studies to investigate what factors impair auditor independence.

DeAngelo (1981a) defined the level of auditor independence as the conditional probability that, given a breach has been discovered, the auditor will report the breach. Since “unrealized” future quasi-rents will be “realized” only by retaining the specific client, it is unlikely that auditors will be perfectly independent from their clients (DeAngelo 1981a; Watts and Zimmerman 1986).² Considering client-specific quasi-rents of incumbent auditors, DeAngelo (1981b) suggested that auditors with higher quasi-rents specific to other clients are less likely to compromise their independence with a specific client because they have “more to lose” by failing to report a discovered breach in a particular client’s record. She claimed that this collateral aspect increases audit quality supplied by larger audit firms because the auditors with a larger portfolio of clients will mitigate economic dependence less painfully while facing a potential threat of a single client.

Specifically, in auditing theory, there are two competing forces that influence auditors’ reporting strategy when they discover a breach from a given client: *economic dependence* and *reputation protection* (Reynolds and Francis 2001). According to the economic dependence, auditors would compromise their independence and report favorably in order to earn future quasi-rents by retaining clients.³ Alternatively, the reputation protection incentive leads the auditor to refrain from compromising independence to avoid lower audit fees from potential new clients (Davis and Simon 1992) or being fired by some of their existing clients (DeAngelo 1981b). If the important client is the auditor’s “core asset”, i.e., the negative effect of loss reputation is extremely severe, then there is a tradeoff between economic dependence and reputation protection on the important client.

To test the importance of the economic dependence in determining auditor independence, several academic studies used various ratios and/or ranks of audit fees to

² A given period’s client-specific quasi-rent equals the excess of revenue over avoidable costs, including the opportunity cost of auditing the next-best alternative client (DeAngelo 1981a, 116).

³ See Bazerman et al. (1997, 91) for a general discussion of the challenges faced by auditors when they know that the client “... may hire and fire auditors at will.”

nonaudit fees to investigate the effect of nonaudit services on audit quality (e.g., DeFond et al. 2002; Frankel et al. 2002; Francis and Reynolds 2002; Ashbaugh et al. 2003; Francis and Ke 2003).⁴ Alternatively, Chung and Kallapur (2003) claim that the client importance index – the quasi-rents specific to a certain client divided by all other clients' quasi-rents, is a more appropriate measure of the variables relevant to DeAngelo's (1981b) framework. Considering that auditors might care more about revenues obtained from their own practice office as compared to those from the whole audit firm, Reynolds and Francis (2001) and Chung and Kallapur (2003) assessed client importance at the audit-practice-office level as well as at the audit-firm level.⁵ Measuring audit quality as the absolute value of abnormal accruals, they found no evidence supporting a significant association between any of the client importance indexes and the absolute value of abnormal accruals. Since opportunistic behavior of any economic agent originates at an individual level rather than a group of agents, this paper further assesses client importance by tracing it at the audit-partner level.

Another important issue that relates to auditor independence is to examine how audit tenure affects audit quality because the *SOX Act* requires audit-partner rotation. Specifically, audit services are considered unlawful if the lead or the coordinating audit partner provides services for a certain client for five consecutive years.⁶ There are pros and cons in the debate of mandatory auditor rotation. For instance, Brody and Moscovice (1998) asserted that auditor rotation enhances greater independence through a reduction of clients' inadequate influence on auditors, and Farmer et al. (1987) pointed out that auditors could be inadequately influenced if they perceive a risk of losing the client when they do not agree with managers' financial reporting preferences. Proponents of *the SOX Act* suggest that rotation could significantly improve the overall quality of an audit and enhance the quality of the financial reporting process. On the contrary, DeAngelo's analysis implies that any tenure effect should be more important in the early years of the auditor-client relationship, where the present value of future quasi-rents is greatest

⁴ The different measures include the ratio of client nonaudit to client total fees (DeFond et al. 2002; Frankel et al. 2002; Francis and Ke 2003), a ranking of client total, audit, and nonaudit fees (Frankel et al. 2002), and total fees (Francis and Reynolds 2002; Ashbaugh et al. 2003).

⁵ To test the economic dependence hypothesis, Reynold and Francis (2001) used the "absolute value of abnormal accruals" and "going concern opinion" approaches while Chung and Kallapur (2003) employed the "absolute value of abnormal accruals" method.

⁶ In fact, in the U.S. audit market, a seven year rotation period for audit partners has been required for quite a long time. Thus, the *SOX Act* is only shortening the rotation period, not introducing it for the first time. Different from the U.S., there is no such mandatory audit-partner (or audit-firm) rotation requirement in Taiwan during our research period.

because auditors have more to lose. Additionally, low-balling theory also implies that it is important for auditors to keep their clients in the early years of engagements to recoup the initial investment in the clients. Thus, these assertions predict that audit quality improves with auditor tenure. Additionally, if the assimilation of client-specific knowledge and development of learning experience is very important for auditors to conduct high quality audits, then mandatory rotation that disturbs the accumulation on client-specific expertise will hurt audit quality.

To assess how audit-firm tenure affects audit quality, Myers et al. (2003) examined the relationship between abnormal accruals and audit-firm tenure. They found no evidence that lengthy audit-firm tenure has a negative effect on audit quality. In fact, their results show that audit-firm tenure enhances, rather than decreases, audit quality. This implies that short audit tenure leads to lower reporting quality because auditing expertise, accumulated by tenure, is important to the auditor's ability to detect accounting irregularities.

Previous studies which empirically examined the association between audit tenure and abnormal accruals (e.g. Johnson et al. 2002; Myers et al. 2003), defined audit tenure as the number of years that a client has retained its "audit firm" rather than the lead or the coordinating "audit partner" which is stated in the *SOX Act*. Whereas Johnson et al. (2002) and Myers et al. (2003) traced audit tenure in terms of audit-firm tenure, we follow the spirit of the *SOX Act* and define audit tenure based on the individual audit partners. Specifically, similar to the prior financial accounting and auditing studies, we use the magnitude of discretionary accruals to proxy for audit quality, and then examine the association between auditor tenure, client importance, and audit quality. In brief, this study explores the potential effect of audit-partner tenure on audit quality in order to directly assess the effectiveness of audit-partner rotation in the *SOX Act*.

This paper emphasizes the *interaction effect*⁷ of client importance and audit tenure for the following two reasons: First, if they have a positive correlation, one may argue that an auditor who faces an "important" client will have a tendency to compromise his independence leading to a longer auditor-client relationship. Therefore, a positive association between audit tenure and client importance provides evidence supportive of

⁷ An *interaction effect* implies that the effect of one independent variable on the dependent variable depends on the level of another independent variable. Thus, interpreting the results based on the individual variables alone may be incomplete.

the audit partner rotation requirement in the *SOX Act*. Otherwise, the concern on auditor independence impairment owing to their interaction effect is alleviated to a certain extent. Second, there are two competing arguments over the effects of audit tenure and client importance on audit quality. One is that auditor independence is the worst under the circumstance where there is a lengthy auditor-client relationship with an “important” client because of the potential negative effect on audit quality from the interaction effect mentioned above. The other is that a long-lasting relationship with an “important” client is the “core” asset of an auditor (or audit-firm), and hence leads to higher audit quality because the expertise and reputation of an auditor is difficult to acquire.

To summarize, this paper investigates whether and how client importance and audit tenure affect audit quality from an audit-partner perspective as well as a whole audit-firm perspective. The major findings and contributions of this paper are as follows. First, we find no negative effect of audit tenure on audit quality either at the audit-partner or the audit-firm levels. In contrast, we find evidence that audit tenure enhances audit quality consistent with prior studies (Chung and Kallapur 2003; Myers et al. 2003). Second, at the audit-firm level, we find no evidence that client importance hurts audit quality similar to Reynolds and Francis (2001) and Chung and Kallapur (2003). Third, the interaction effect of client importance and audit tenure does not impair audit quality when we trace them at the audit-firm level; however, if we trace client importance and audit tenure at the audit-partner level, then a higher level of client importance dampens audit quality, and the interaction effect enhances audit quality. That is, audit quality is the worst on a new and important client but will increase if the “short-term” important client turns into a “long-term” important one because this important client becomes a “core” asset to the auditor. Finally, our evidence from the audit-partner tenure effect and its interaction effect with client importance traced at the audit-partner level suggests that the 5-year audit partner rotation requirement in the *SOX Act* might not be an effective and efficient rule for promoting auditor independence and audit quality.

We organize the rest of this paper as follows. In Section II we explain major variables and propose research questions. In Section III we describe the research design and report our findings, and finally, Section IV concludes this paper.

II. MAIN VARIABLES AND RESEARCH QUESTIONS

Unlike in the U.S. where an audit report only shows the name of an audit firm, an

audit report in Taiwan is signed by two audit partners in addition to a signature representative of an audit firm. As compared to prior studies, the data in Taiwan provides us with an opportunity to investigate how client importance and audit tenure at an individual audit-partner level affect audit quality.

Signatures of Audit Reports in Taiwan

Since there are three signatures in an audit report in Taiwan (one is the audit firm and the others are names of two audit partners), this paper provides various definitions for audit tenure. We define audit-firm tenure *TENUREF* (*TENUREA*) as the number of consecutive years in which the audit-firm–client (audit-partner–client) relationship exists. Since at certain times one audit partner resigns and the other remains, there exist two definitions for *TENUREA*. More specifically, let the vector $(x, y)_t$ represent two audit partners, x and y , who attest to financial statements in year t . Thus $(x, y)_t, (x, z)_{t-1}, (y, z)_{t-2}$, represents a particular sequence of audit-partner signatures. Using this sequence, if we trace auditor x then *TENUREA* equals two; if we trace auditor y then *TENUREA* equals one. To be consistent with the definition of the rotation requirement in the *SOX Act* for the lead “or” the coordinating audit partner, we define, *TENUREA*, as the longest number of consecutive years for which either incumbent auditor has attested to an audit. In the example given above, *TENUREA* equals two.⁸

There exists one more reason for this paper to investigate the longest number of audit-partner tenure only. In practice, a lead audit partner and a concurrent audit partner play different roles in an audit engagement; thus, it is valuable to discriminate their roles individually on the quality of financial reporting. However, in Taiwan, the one who signs first does not represent his/her character as a lead or a concurrent audit partner, which constraints this study to trace tenure and client importance variables at a lead audit partner based.

Client Importance Index

Unlike in the U.S., where audit and nonaudit fee data are publicly available,⁹ firms

⁸ We also tried censoring the variables *TENUREF* and *TENUREA* when they are above ten years to reduce the potential effects of outliers. In other words, if the uncensored value of *TENUREF* (or *TENUREA*) is above 10, then the censored value of *TENUREF* (or *TENUREA*) becomes 10. Our main results are not sensitive to using the censored data.

⁹ In November 2000, the SEC in the U.S. issued Final Rule S7-13-00, *Revision of Commission’s Auditor Independence Requirements* that requires companies to disclose their “audit fees”, “financial information systems design and implementation fees”, and “all other fees” in the proxy statements filed after February 5, 2001.

in Taiwan are not mandated to disclose audit fees unless the following specific conditions apply: (1) the ratio of client nonaudit to audit fees is at or above 25%, or the amount of nonaudit fees is at or above NT\$500,000; (2) the audit-firm changed in a given year in which the subsequent audit firm has fewer audit fees than the previous one; and (3) the audit fees are fewer than 15% of those in the previous year.

Obviously, using the observations with audit fee data in Taiwan creates a serious sample selection bias problem. In addition, since firms are mandated to disclose audit fee information in proxy statements filed after the effective date of January 31, 2003, we would have a limited number of observations to conduct our analysis. Based on these reasons, instead of directly using audit/nonaudit fee data as in Chung and Kallapur (2003), we follow the method of Reynolds and Francis (2001) and use a certain client's $\log(\text{sales})$ relative to the sum of $\log(\text{sales})$ at the audit-firm level as well as at the audit-partner level. Specifically, to find the client importance index at the audit-partner level, we first calculate the client importance index for each audit partner separately and then compute their average (recall that there are two audit partners in an audit report in Taiwan).¹⁰ We denote by *IMPF* and *IMPA* the client importance indexes at the audit-firm and the audit-partner levels, respectively.¹¹

Research Questions

Myers et al. (2003) found no evidence that audit-firm tenure negatively affects audit quality and Chung and Kallapur (2003) discovered no evidence that client importance at the audit-practice-office level is negatively related to audit quality. By tracing our data at the audit-partner level as well as at the audit-firm level, we further investigate *whether* and *how* audit tenure and client importance affect the quality of financial reporting.

Since it is important for regulators, users of financial statements, and researchers to understand the effects of audit tenure and client importance on audit quality, we begin by examining whether there is a *positive* association between client importance and audit tenure. If so, one may reasonably question whether auditors who face an "important" client have tendencies to compromise their independence and, in turn, purposely lengthen the auditor-client relationship. This skepticism implies that a mandatory audit-firm or

¹⁰ Our non-tabulated results show that our conclusions are qualitatively unchanged when we use the audit-partner with the longer audit-partner tenure to calculate client importance index.

¹¹ We also measure client importance by the relative $\log(\text{assets})$ of clients. The results using $\log(\text{sales})$ and $\log(\text{assets})$ are qualitatively the same.

audit-partner rotation requirement would be effective in such situations. Specifically, a positive association between audit tenure and client importance is a necessary condition to justify the previous skepticism. If not, however, the concern on auditor independence impairment stemming from the *interaction* of audit tenure and client importance is somewhat alleviated. Our first research question examines the association between audit tenure and client importance.

RQ1: Tracing at the audit-firm and the audit-partner levels, this paper examines the correlation between audit tenure and client importance.

Regulators, financial statement users, and researchers are more concerned about whether and how client importance and audit tenure affect audit quality. Since its introduction in the *Jones Model* (Jones 1991), prevailing accounting studies have used abnormal accruals as the variable of choice to proxy for reporting quality¹² (e.g., Defond and Jiambalvo 1994; Subramanyam 1996; Defond and Subramanyam 1998; Becker et al. 1998; Teoh et al. 1998a, b; Klein 2002; Matsumoto 2002; Nelson et al. 2002). Numerous prior studies on audit quality have also adopted abnormal accruals to explore how other factors (e.g., Big 5 and non-Big 5; board of directors; audit services and non-audit services) affect audit quality (e.g., Becker et al. 1998; Klein 2002; Nelson 2002). Our second research question addresses whether audit tenure and/or client importance affects audit quality, when the latter is proxied by abnormal accruals. We also examine how the interaction of audit tenure and client importance affects abnormal accruals because of the following two competing arguments. On the one hand, if auditor independence is the worst in an environment where there is a lengthy auditor-client relationship with an “important” client, there will be a positive association between the interaction effect and abnormal accruals. On the other hand, if having a long-lasting relationship with an “important” client constitutes the “core” asset of an auditor (or audit-firm), the auditor caring for his reputation will provide higher audit quality and, in turn, we will find an inverse relation between the interaction effect and abnormal accruals. Hence, we ask the following research question:

¹² In addition to abnormal accruals, there are some other proxies used to examine the relation between audit-firm tenure and reporting quality such as the persistence of accruals into future earnings (Johnson et al. 2002), current accruals (Myers et al. 2003), special items and market-based measures like earnings response coefficients (Ghosh and Moon 2005).

RQ2: Tracing at the audit-partner level, this paper explores whether and how audit tenure, client importance, and their interaction affect firms' abnormal accruals.

III. RESEARCH DESIGN AND FINDINGS

Dependent Variables

Following Barton (2001), Chung and Kallapur (2003), and the conventional accounting and auditing literature, we employ the absolute value of the modified Jones-model abnormal accruals $|DAC|$ to proxy for audit quality using the following regression:

$$ACC = a_1(1/TA_{-1}) + a_2[(\Delta SALES - \Delta AR)/TA_{-1}] + a_3(PPE/TA_{-1}) + e, \quad (1)$$

where ACC is total accruals deflated by beginning-of-year total assets, and here, following Hribar and Collins (2002), total accruals is measured as earnings before discontinued operations and extraordinary items less operating cash flows; the subscript -1 is the lag period; $\Delta SALES$ is change in sales; ΔAR is change in account receivables; PPE is gross property, plant, and equipment; and e is an error term. We estimate equation (1) cross-sectionally for all firms in each sample year and each industry using ordinary least squares, and use the regression residuals as a proxy for abnormal accruals.¹³

Independent Variables

The main explanatory variables in this study are *IMPORTANCE* (includes *IMPF* and *IMPA*) and *TENURE* (includes *TENUREF* and *TENUREA*). We trace these variables at the audit-firm and audit-partner levels in order to calculate client importance and audit tenure, respectively.

Following Chung and Kallapur (2003), we add the following control variables: (1) current operating cash flows divided by their beginning-of-year total assets (*OCF*); (2) lag net income divided by its beginning-of-year total assets (*ROA₋₁*); (3) lag total

¹³ Similar to Chung and Kallapur (2003, 939), we use data on Big 5 and non-Big 5 firms to fit equation (1), even though the non-Big 5 sample is excluded in the final analysis.

accruals divided by their beginning-of-year total assets (ACC_{-1}); (4) interactions of each of the above variables with dummies indicating whether the variables are positive (i.e., OCF^+ , ROA_{-1}^+ , and ACC_{-1}^+); (5) the natural logarithm of the firm's total assets (TA); (6) an indicator variable $ISSUE$ whose value equals one if the firm issued new shares for cash during the year, and zero otherwise; and (7) some indicator variables of years ($YEAR$) and industries ($INDUSTRY$).¹⁴ Specifically, we control for $\log(TA)$ because of the fact that large firms have larger and more stable accruals (Dechow and Dichev 2002), and control for OCF and ROA_{-1} because Dechow et al. (1995) showed that abnormal accruals depend on these variables. Similar to Chambers (1999), we include ACC_{-1} to capture the predictable component of total accruals as estimated by equation (1). Finally, since our dependent variable is the absolute value of abnormal accruals, we interact each of OCF , ROA_{-1} , and ACC_{-1} with a dummy indicating the variable is positive. Therefore, we use the following regression:¹⁵

$$\begin{aligned}
|DAC| = & b_0 + b_1 TENURE + b_2 IMPORTANCE + b_3 TENURE \times IMPORTANCE \\
& + b_4 \log(TA) + b_5 OCF + b_6 OCF^+ + b_7 ACC_{-1} + b_8 ACC_{-1}^+ + b_9 ROA_{-1} \\
& + b_{10} ROA_{-1}^+ + b_{11} ISSUE + \sum b_{12-26} \cdot Industry + \sum b_{27-30} \cdot Year + \varepsilon, \quad (2)
\end{aligned}$$

where:

$|DAC|$ = the absolute value of abnormal accruals calculated by the error term from model (1);

¹⁴ As Compared to Chung and Kallapur (2003), the only variable we exclude is ACQ (a dummy variable to indicate whether the firm acquired another firm during the year) because the variable is not available from our data source. In addition, following Myers et al. (2003), we tried incorporating a new control variable AGE (the number of years since the firm was listed) in the empirical work and found that our conclusions did not change.

¹⁵ Although we estimate discretionary accruals within each year and industry, we still control industry and year in equation (2) for avoiding some omitted factors that might not be captured in running equation (1) by separating year and industry. The results are qualitatively similar when we omit the year and industry effects in equation (2).

TENURE = the number of years in the auditor-client relationship calculated by audit-firm tenure (*TENUREF*) and audit-partner tenure (*TENUREA*) since the firms were listed in Taiwan Stock Exchange Corporations and Gretai Securities Market;¹⁶

IMPORTANCE = ratio of log(sales) of a certain client to all clients' log(sales) at the audit-firm level (*IMPF*) and at the audit-partner level (*IMPA*);

TA = current total assets measured in NT dollars;

OCF = current operating cash flows ÷ *TA* in year -1;

$OCF^+ = 0$ if $OCF < 0$, and $= OCF$ if $OCF \geq 0$;

ACC_{-1} = lag total accruals ÷ *TA* in year -2 (ACC_{-1}^+ is defined as in OCF^+);

ROA_{-1} = lag net income ÷ *TA* in year -2 (ROA_{-1}^+ is defined as in OCF^+);

ISSUE = 1 if the firm issued new shares for cash during the year, and 0 otherwise;

ε = the error term.

Sample Selection

We search the Taiwan Economic Journal Database (TEJ) for firms listed in the Taiwan Stock Exchange Corporation and Gretai Securities Market between 1998 and 2002. Table 1 summarizes the sample selection procedure. Our initial sample is comprised of 3,737 observations. From this initial sample, we deleted financial institutions because $|DAC|$ might not be a meaningful measure for these firms (203 observations (n)). We also eliminated firms with non-calendar years ($n = 10$), missing data required for tracing audit tenure ($n = 108$), firms with non-Big 5 auditors ($n = 684$), firms with missing data required for calculating the dependent and independent variables ($n = 29$), and industries with less than eight firm-years for fitting $|DAC|$ estimation ($n = 60$). This process resulted in a final sample with 2,643 firm-years.¹⁷

[Insert TABLE 1 Here]

¹⁶ *Taiwan Stock Exchange Corporation* and *Gretai Securities Market* are organizations that are similar to the New York Stock Exchange or American Stock Exchange in the U.S. These two exchange markets are the main stock exchange institutions in Taiwan. In addition, we tried censoring these variables above 10 to reduce the potential effects of outliers (see footnote 8 for more details).

¹⁷ Even though we deleted 1,094 observations using the process shown in Table 1, we included these observations in the denominator to calculate the variable *IMPORTANCE*.

Descriptive Statistics and Correlations Analysis

Table 2 presents descriptive statistics of $|DAC|$ and different measurements of audit tenure and client importance for our sample firms, and Table 3 reports the correlation coefficients among these variables. Since Table 3 shows that the correlation between $IMPF$ and $IMPA$, 0.030, is very low, any conclusions based on analyzing client importance traced at the audit-firm level cannot be extended to the audit-partner level. However, the correlation between $TENUREF$ and $TENUREA$ equals .854 (p -value $< 1\%$), which implies that the evidence obtained using $TENUREF$ could apply to the audit-partner level to some extent. The high correlation of $TENUREF$ and $TENUREA$ is reasonable because a high $TENUREA$ generates a higher $TENUREF$. Despite the high correlation coefficient between $TENUREA$ and $TENUREF$, their effects on $|DAC|$ might be different because the client-specific experience and/or the client-specific quasi-rents traced at the audit-partner level may not be the same as that traced at the audit-firm level. Finally, regarding **RQ1** where we examine the association between client importance and audit tenure, we do not find statistically positive correlation between $TENUREF$ and $IMPF$, $\text{corr}(TENUREF, IMPF) = 0.010$, and between $TENUREA$ and $IMPA$, $\text{corr}(TENUREA, IMPA) = -0.069$. Therefore, our data do not support the argument that auditors facing important clients will have longer auditor-client relationships with these vital clients.

[Insert TABLE 2 Here]

[Insert TABLE 3 Here]

To address whether and how audit tenure and client importance affect $|DAC|$ (**RQ2**), we partition our full sample by $IMPF$, $IMPA$, $TENUREF$, and $TENUREA$, and present the corresponding statistics in Panels B through E in Table 2. We can see from Panel B (i.e., grouping by $IMPF$) and Panel C (i.e., grouping by $IMPA$) that $|DAC|$ does not vary much among different groups. We estimate the following regression to formally test this result:

$$|DAC| = b_0 + b_1 MIDDLE + b_2 HIGH + \varepsilon, \quad (3)$$

where *MIDDLE* and *HIGH* are indicator variables as defined below. We partition the full sample into three equal groups by *IMPF* in Panel B (and by *IMPA* in Panel C). The variable *MIDDLE* equals one if the firm falls in the middle group, and zero otherwise; the variable *HIGH* equals one if the firm falls in the highest group, and zero otherwise. Therefore, the coefficient b_0 represents the mean of $|DAC|$ in the smallest group. The estimated coefficient b_1 (b_2) is the difference in the mean of $|DAC|$ between the smallest group and the middle (highest) group; $b_1 - b_2$ represents the difference in the mean of $|DAC|$ between the middle group and the highest group. The second (third) column of Panel F shows that there is no significant difference in $|DAC|$ between the three groups if we focus on *IMPF* (*IMPA*). Consequently, we find no association between client importance and audit quality at either the audit-firm or audit-partner levels.

Next we examine the association between audit tenure and $|DAC|$. Both Panel D (i.e., grouping by *TENUREF*) and Panel E (i.e., grouping by *TENUREA*) show that the variation in $|DAC|$ between the different groups is large. Consistent with Myers et al. (2003), it appears that there exists an inverse association between audit tenure and $|DAC|$. For a more rigorous analysis, we estimate the following regression:

$$|DAC| = b_0 + b_1 MIDDLE + b_2 LONG + \varepsilon, \quad (4)$$

where *MIDDLE* and *LONG* are indicator variables as defined below. We partition the full sample into three groups by *TENUREF* in Panel D (and by *TENUREA* in Panel E). The variable *MIDDLE* equals one if *TENUREF* (*TENUREA*) belongs to the set {4, 5, 6, 7}, and zero otherwise; the variable *LONG* equals one if *TENUREF* (*TENUREA*) is at or above 8, and zero otherwise. When we partition the full sample into three groups by *TENUREF* (and by *TENUREA*) and estimate equation (4), we find evidence in Panel F that there is a significant inverse association between audit tenure and $|DAC|$, both using audit-partner tenure (in the fourth column) and audit-firm tenure (in the last column). Therefore, we find a result similar to Myers et al. (2003) indicating that auditors with longer audit-firm tenure place greater constraints on management reporting decisions. Additionally, the evidence can also be extended to audit-partner tenure. However, because of the inability to control for important influences on accruals at this univariate analysis, we perform the multivariate regressions to examine the research issues next.

Regression Findings

To answer our second research question, we estimate equation (2) and report the results for audit tenure and client importance at the audit-firm level and the audit-partner level in Table 4 and Table 5, respectively. For consistency, we trace client importance at the audit-firm level when we measure audit-firm tenure and at the audit-partner level when we measure audit-partner tenure.

Table 4 reports the results of whether and how *TENUREF* and *IMPF* affect $|DAC|$, where the middle (last) column excludes (includes) the control variables. Our main results are not sensitive to the inclusion of the control variables when we focus on the audit-firm level. Since a higher $|DAC|$ represents lower reporting quality, a negative estimated coefficient in equation (2) implies a positive effect of this factor on audit quality. Consistent with Myers et al. (2003, p. 791) and Chung and Kallapur (2003, p. 944), we find a significant inverse relationship between $|DAC|$ and audit-firm tenure ($b_1 = -0.002$ and p -value $< .01$ in the last column); therefore, audit-firm tenure does not negatively affect audit quality when the latter is proxied by the absolute value of abnormal accruals. In contrast, audit-firm tenure enhances, rather than, dampens audit quality.

In addition, similar to the findings of Chung and Kallapur (2003), we find no evidence that client importance, traced at the audit-firm level, has a significant positive association with abnormal accruals.

[Insert TABLE 4 Here]

Table 5 reports empirical findings and shows that our main results do not change if we exclude the control variables. Similar to the findings in Table 4, there is a significant inverse relationship between audit-partner tenure and $|DAC|$ ($b_1 = -0.001$ and p -value $< .10$ in the last column). Combining the findings of the effects of *TENURE* on $|DAC|$ in Table 4 and Table 5 shows that previous research results on the association between audit-firm tenure and $|DAC|$ could be directly applied to a scenario of audit-partner tenure. Given these results and the high correlation between *TENUREF* and *TENUREA* (coefficient is 0.854 in Table 3), these findings contribute to the auditor-client relationship body of research by extending the boundary of its explanation to an

audit-partner level.

However, the results on explaining $|DAC|$ are different when we focus on client importance and its interaction with audit tenure traced at the audit-partner level. Particularly, while there is no significant role of $IMPF$ or $IMPF \times TENUREF$ in explaining $|DAC|$ at the audit-firm level as shown in Table 4, we can see from Table 5 that the effect of $IMPA$ or $IMPA \times TENUREA$ becomes significant when we trace at the audit-partner level. The positive coefficient on $IMPA$ ($b_2 = 0.039$ and p -value $< .10$ in the last column) implies that at the audit-partner level, an increase in client importance is associated with a larger $|DAC|$. Unlike Reynolds and Francis (2001) and Chung and Kallapur (2003) who found no association between client importance traced at the audit-practice-office level and $|DAC|$, by tracing at the audit-partner level, we find a positive association between client importance and $|DAC|$. This evidence supports the notion that greater client-specific quasi-rents impair audit quality, when quasi rents are proxied by the client importance index and measured as its relative $\log(\text{sales})$ to all other clients' $\log(\text{sales})$ traced at the audit-partner level. Further, this evidence indicates that the distinct effect of client importance on audit quality could only be found by discriminating between client importance at the audit-firm level and that at the audit-partner level. In summary, our results are drastically different when we trace $IMPORTANCE$ and $TENURE$ at the audit-partner level.

Finally, the coefficient of the cross term of $IMPA$ and $TENUREA$ is significantly negative ($b_3 = -0.010$ and p -value $< .01$ in the last column of Table 5). Whereas a positive b_2 implies that an “important” client is associated with a larger $|DAC|$, a negative b_3 indicates that $|DAC|$ becomes smaller when the important client has had a longer relationship with the auditor. Combining the empirical findings of a positive b_2 and a negative b_3 , we make the following inferences. Client-specific expertise accumulated by audit tenure in the auditing process is very helpful in producing greater understanding and in improving the ability to identify and evaluate audit risks. While providing audit services to a “new and important client”, the auditor without enough client-specific knowledge and experience has a tendency to retain this client. Therefore, audit quality is worse in an initial engagement with higher client importance. However, if the “short-term” important client turns into a “long-term” important one, then audit quality will increase because this important client has already become a “core” asset of

the auditor.¹⁸

[Insert TABLE 5 Here]

Policy Implications to Section 203 of the SOX Act of 2002

Although previous empirical work found no significant evidence to support the argument that client importance has negative effects on audit quality, our paper provides such a link because we accounted for the joint effects of *TENURE* and *IMPORTANCE*. Formally, we derive the total differentiation of equation (2) given a certain level of $|DAC|$ and omitting the control variables. This yields the marginal rate of substitution of these two factors, denoted by *MRS*, based on a constant level of $|DAC|$:¹⁹

$$\left. \frac{d(IMPORTANCE)}{d(TENURE)} \right|_{|DAC|=\text{constant}} = -\frac{b_1 + b_3 IMPORTANCE}{b_2 + b_3 TENURE}. \quad (5)$$

Since Table 5 shows that $b_1 < 0$, $b_2 > 0$, $b_3 < 0$, and the variables *IMPORTANCE* and *TENURE* are both positive, the sign of *MRS* depends only on the sign of the denominator. A positive *MRS* implies that a longer audit-partner tenure is needed to compensate for a fixed level of $|DAC|$ with an auditee whose client importance index is higher. From equation (5), we find *MRS* to be positive when:

¹⁸ To further test the relationship between client importance and tenure, we omitted the variables *TENUREA* and the cross term *TENUREA*×*IMPORTANCE*, and let *TENURE* = 1, 2, ..., or 10. We then estimated equation (2) sequentially for different levels of *TENURE* (i.e., from 1 to 10) to obtain a series of coefficients on the variable tenure, $b_{2,T}$ ($T = 1, 2, \dots, 10$). Since the coefficient b_2 in equation (2) measures the effect of *IMPORTANCE* on $|DAC|$, we regressed $b_{2,T}$ on T and found $b_{2,T} = 0.0241 - 0.0075 T + \varepsilon$, where ε is an error term. Although the slope of T (-0.0075) is not significant (p -value = .21), the evidence is consistent with our argument that the effect of *IMPORTANCE* on $|DAC|$ decreases with *TENURE*.

¹⁹ *MRS* is calculated by $\frac{\partial |DAC|}{\partial TENURE} d(TENURE) + \frac{\partial |DAC|}{\partial IMPORTANCE} d(IMPORTANCE) = 0$.

$$TENURE < -\frac{b_2}{b_3}. \quad (6)^{20}$$

Using the last column in Table 5 and equation (6), we find *MRS* to be positive when *TENUREA* is at most 3.90 years. Thus, the condition that the auditors facing important clients need longer tenure to decrease the level of *|DAC|* holds only for *TENUREA* is lower than four years. As four years passed by, *MRS* becomes negative, which represents the function of auditor tenure to alleviate the negative effect of client importance on reporting quality is less important. Specifically, the long-term important clients have become the core assets to the auditors, whose *|DAC|*, on average, is lower than those of the other clients. It means that the reputation protection incentive constitutes a mechanism for the auditors to perform high-quality audit services.

However, the evidence collected from client importance and tenure, both traced at the audit-partner level, shows that an audit partner needs four years to obtain the client-specific expertise and experience which are essential for the auditor to maintain audit quality if the auditor faces an auditee with a higher client importance index. Regarding the audit-partner tenure effect and the interaction effect of auditor tenure and client importance, we suggest that the 5-year audit-partner rotation restriction in section 203 of the *SOX Act* might not be an effective and efficient rule for improving audit quality.

IV. SUMMARY AND CONCLUSIONS

This paper investigates the effects of audit tenure and client importance, both traced at the audit-partner and audit-firm levels, on audit quality as proxied by the absolute value of abnormal accruals. The main question behind the related literature and our work is to test whether and how the level of client importance and lengthy audit tenure impair the overall quality of an audit and, in turn, damage the quality of financial reporting. While prior studies (e.g., Reynolds and Francis 2001; Johnson et al. 2002; Chung and Kallapur 2003; Myers et al. 2003) explored these issues by tracing them at the audit-firm or audit-practice-office level, we calculate these variables at the audit-partner level as well as the audit-firm level. Consistent with economic theory, which is founded on the behavior of the individual instead of a group of agents, auditors should care more about

²⁰ Note that, since b_3 is negative, the condition to hold $b_2 + b_3 TENURE > 0$ should be $TENURE < -b_2/b_3$.

their own revenues than those of the audit-practice office or the whole audit firm. Hence, we believe that evidence collected from an audit-partner level is more appropriate for answering our research questions.

The major findings and contributions of this paper are as follows. Consistent with prior literature, we find no evidence that there is a negative effect of audit tenure on audit quality at the audit-partner or audit-firm levels. Specifically, prior studies and our work both find that the auditor-client relationship enhances rather than impairs audit quality. As for the effect of client importance, we find no evidence that client importance damages audit quality at the audit-firm level. However, considering the interaction effect of client importance and audit tenure traced at the audit-partner level, we find that although a higher level of client importance dampens audit quality, audit quality will increase as long as the important clients are audited by an auditor with higher audit-partner tenure who has obtained the client-specific knowledge and experience. In other words, audit quality is the worst on new and important clients but increases when the “short-term” important clients turn into “long-term” important ones because these important clients have become “core” assets of the auditor. Finally, combining a total differential analysis with the empirical findings from audit-partner tenure and its interaction effect with client importance traced at the audit-partner level, we suggest that the 5-year audit-partner rotation requirement in the *SOX Act* might not be an effective and efficient rule for promoting auditor independence and increasing audit quality.

There are some research limitations and suggestions in this paper. First, because accounting and auditing practice in corporate governance (Francis et al. 2003) and earning opacity (Bhattacharya et al. 2003) are in essence different around the world, our findings may not fully reflect the effects of audit tenure and client importance in other countries, such as the ability to generalize conclusions to a post-Sarbanes Oxley United States audit market. Second, owing to a relatively small geographic area like Taiwan, we do not further partition our sample into sub-groups by audit-practice office. This limits us from directly comparing results between the audit-firm, the audit-practice-office, and the audit-partner levels. One can consider a large country whose audit report shows the name(s) of the audit-partner(s) like China, to reexamine the issue. Third, although we adopt the approach used by Reynolds and Francis (2001), in which they calculate the client importance indexes by the relative $\log(\text{sales})$ of clients, it is more suitable to use audit and/or nonaudit fees to proxy the client-specific quasi-rents as in Chung and Kallapur (2003). Therefore, our results may be subject to measurement error due to the data limitation in Taiwan. Fourth, to calculate audit-firm and audit-partner tenure, we

only trace to the date when the firms became listed in the Taiwan Stock Exchange Corporation and the Greta Securities Market. We cannot test whether our conclusions would be different if audit tenure is traced to earlier dates. Finally, since corporate managers or firms choose both abnormal accruals and audit tenure, our results may be subject to the self-selection bias problem.

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TABLE 1**Sample Selection: 1998 to 2002**

Selection Mode (by firm-years)	Observations
Listed in Taiwan Stock Exchange Corporations and Gretai Securities Market*	3,737
Less: Financial institutions	(203)
Firms with non-calendar year	(10)
Missing data required for tracing audit tenure	(108)
Firms with non-Big 5 auditors	(684)
Missing data required for calculating the dependent and independent variables	(29)
Industries with less than 8 firm-years	(60)
Total available data	2,643

* The Taiwan Stock Exchange Corporation and the Gretai Securities Market are organizations similar to the New York Stock Exchange or American Stock Exchange in the U.S. These two exchange markets are the main stock exchange institutions in Taiwan.

TABLE 2
Descriptive Statistics

Panel A: Full Sample (n = 2,643)

Variables	<u>Mean</u>	<u>Median</u>	<u>Std. Deviation</u>
<i>TENUREF</i>	5.315	4.000	4.686
<i>TENUREA</i>	4.671	3.000	3.950
<i>IMPF</i>	0.010	0.008	0.022
<i>IMPA</i>	0.177	0.141	0.124
<i>DAC</i>	0.086	0.054	0.100

Panel B: Grouping by Client Importance at the Audit-Firm Level

Variables	Low (n = 881)		Middle (n = 881)		High (n = 881)	
	<u>Mean</u>	<u>Median</u>	<u>Mean</u>	<u>Median</u>	<u>Mean</u>	<u>Median</u>
<i>TENUREF</i>	5.092	3.000	5.185	4.000	5.667	4.000
<i>TENUREA</i>	4.380	3.000	4.448	3.000	5.186	4.000
<i>IMPF</i>	0.007	0.006	0.009	0.008	0.014	0.010
<i>IMPA</i>	0.169	0.122	0.174	0.144	0.188	0.160
<i>DAC</i>	0.085	0.055	0.083	0.051	0.089	0.056

Panel C: Grouping by Client Importance at the Audit-Partner Level

Variables	Low (n = 881)		Middle (n = 881)		High (n = 881)	
	<u>Mean</u>	<u>Median</u>	<u>Mean</u>	<u>Median</u>	<u>Mean</u>	<u>Median</u>
<i>TENUREF</i>	5.339	4.000	5.182	3.000	5.423	4.000
<i>TENUREA</i>	4.942	4.000	4.693	3.000	4.378	3.000
<i>IMPF</i>	0.009	0.008	0.012	0.008	0.009	0.009
<i>IMPA</i>	0.088	0.089	0.146	0.141	0.297	0.250
<i>DAC</i>	0.083	0.054	0.083	0.053	0.090	0.055

TABLE 2 (continued)

Panel D: Grouping by Audit Tenure at the Audit-Firm Level

Variables	Short (n = 1,285)		Middle (n = 714)		Long (n = 644)	
	Mean	Median	Mean	Median	Mean	Median
<i>TENUREF</i>	1.862	2.000	5.088	5.000	12.455	12.000
<i>TENUREA</i>	1.994	2.000	4.804	5.000	9.866	10.000
<i>IMPF</i>	0.009	0.008	0.011	0.008	0.011	0.009
<i>IMPA</i>	0.183	0.145	0.171	0.137	0.173	0.143
<i>DAC</i>	0.105	0.070	0.079	0.051	0.055	0.035

Panel E: Grouping by Audit Tenure at the Audit-Partner Level

Variables	Short (n = 1,357)		Middle (n = 786)		Long (n = 500)	
	Mean	Median	Mean	Median	Mean	Median
<i>TENUREF</i>	2.393	2.000	6.024	5.000	12.130	11.000
<i>TENUREA</i>	1.908	2.000	5.053	5.000	11.570	11.000
<i>IMPF</i>	0.009	0.008	0.011	0.008	0.011	0.009
<i>IMPA</i>	0.186	0.148	0.170	0.137	0.164	0.133
<i>DAC</i>	0.103	0.068	0.074	0.048	0.057	0.036

Panel F: Preliminary Analysis – Grouping by Client Importance or Audit Tenure

$$|DAC| = b_0 + b_1 MIDDLE + b_2 LONG \text{ (or HIGH)} + \varepsilon$$

Variables:	<u>IMPF</u>	<u>IMPA</u>	<u>TENUREF</u>	<u>TENUREA</u>
<i>Intercept</i>	0.085 ($p < .01$)	0.083 ($p < .01$)	0.105 ($p < .01$)	0.103 ($p < .01$)
<i>MIDDLE</i>	-0.003 ($p > .10$)	-0.000 ($p > .10$)	-0.026 ($p < .01$)	-0.029 ($p < .01$)
<i>LONG (or HIGH)</i>	0.003 ($p > .10$)	0.007 ($p > .10$)	-0.050 ($p < .01$)	-0.046 ($p < .01$)
<u>H₀: $b_1 = b_2$ (at 5% significant level)</u>	Insignificant	Insignificant	Significant	Significant

TENUREF = the length of the audit-firm–client relationship;

TENUREA = the length of the longest number of years for either incumbent auditor in the audit engagement;

IMPF = the client importance index with relative log(sales) at the audit firm level;

IMPA = the client importance index with relative log(sales) at the average audit-partner level;

|*DAC*| = the absolute value of abnormal accruals, the residual from model (1).

MIDDLE = 1 if the firm belongs to the “middle” group when appropriate, and 0 otherwise;

LONG (or HIGH) = 1 if the firm belongs to the “long” or “high” group when appropriate, and 0 otherwise.

TABLE 3
Correlation Matrix of Audit-Firm Tenure, Audit-Partner Tenure and Client Importance ($n = 2,442$)

	<i>TENUREF</i>	<i>TENUREA</i>	<i>IMPF</i>	<i>IMPA</i>
<i>TENUREF</i>				
<i>TENUREA</i>	0.854***			
<i>IMPF</i>	0.010	0.025		
<i>IMPA</i>	-0.028	-0.069***	0.030	
<i> DAC </i>	-0.211***	-0.197***	0.015	0.036

*** indicates that the Pearson correlations are significantly different from zero at the 1 percent levels in two-tailed tests. See Table 2 for the definitions of the variables.

TABLE 4
Regressions of Absolute Abnormal Accruals on
Client Importance and Audit Tenure at the Audit-Firm Level ($n = 2,643$)

$$|DAC| = b_0 + b_1TENUREF + b_2IMPF + b_3TENUREF \times IMPF \\
+ b_4\log(TA) + b_5OCF + b_6OCF^+ + b_7ACC_{-1} + b_8ACC_{-1}^+ + b_9ROA_{-1} \\
+ b_{10}ROA_{-1}^+ + b_{11}ISSUE + \sum b_{12-26} \cdot Industry + \sum b_{27-30} \cdot Year + \varepsilon$$

Variable	Coefficients (t-stat)		Coefficients (t-stat)	
<i>Intercept</i>	0.108	(30.386) ***	0.014	(0.581)
<i>TENUREF</i>	-0.004	(-12.113) ***	-0.002	(-4.994) ***
<i>IMPF</i>	0.128	(0.610)	0.089	(0.873)
<i>TENUREF</i> × <i>IMPF</i>	-0.010	(-0.438)	-0.036	(-1.505)
<i>SIZE</i>			0.002	(1.363)
<i>OCF</i>			-0.720	(-13.220) ***
<i>OCF</i> ⁺			1.001	(14.056) ***
<i>ACC</i> ₋₁			-0.050	(-1.544)
<i>ACC</i> ₋₁ ⁺			0.126	(2.913) ***
<i>ROA</i> ₋₁			-0.001	(-1.297)
<i>ROA</i> ₋₁ ⁺			0.000	(0.501)
<i>ISSUE</i>			0.017	(5.228) ***
<i>Adjusted R</i> ²		0.044		0.354

*, ** and *** indicate significance at $p < 0.1$, $p < 0.05$ and $p < 0.01$, respectively, on two-tailed tests. Fixed effects of years and industries are included but not reported. Standard errors are in parentheses and are based on White (1980), if necessary.

$|DAC|$ = the absolute value of abnormal accruals calculated as the residual from model (1);
TENUREF = the length of audit tenure calculated by audit-firm tenure;
IMPF = ratio of log(sales) to total log(sales) at the *audit-firm level*;
TA = current total assets measured in NT dollars;
OCF = current operating cash flows ÷ *TA* in year -1;
OCF⁺ = 0 if *OCF* < 0, and = *OCF* if *OCF* ≥ 0;
ACC₋₁ = lag total accruals ÷ *TA* in year -2 (*ACC*₋₁⁺ is defined as in *OCF*⁺);
ROA₋₁ = lag net income ÷ *TA* in year -2 (*ROA*₋₁⁺ is defined as in *OCF*⁺);
ISSUE = 1 if the firm issued new shares for cash during the year, and 0 otherwise.

TABLE 5
Regressions of Absolute Abnormal Accruals on
Client Importance and Audit Tenure at the Audit-Partner Level ($n = 2,643$)

$$|DAC| = b_0 + b_1TENUREA + b_2IMPA + b_3TENUREA \times IMPA \\
+ b_4 \log(TA) + b_5OCF + b_6OCF^+ + b_7ACC_{-1} + b_8ACC_{-1}^+ + b_9ROA_{-1} \\
+ b_{10}ROA_{-1}^+ + b_{11}ISSUE + \sum b_{12-26} \cdot Industry + \sum b_{27-30} \cdot Year + \varepsilon$$

Variable	Coefficients (t-stat)		Coefficients (t-stat)	
<i>Intercept</i>	0.100	(18.462) ***	0.012	(0.509)
<i>TENUREA</i>	-0.004	(-4.889) ***	-0.001	(-1.764) *
<i>IMPA</i>	0.049	(1.842) *	0.039	(1.755) *
<i>TENUREA</i> × <i>IMPA</i>	-0.008	(-1.901) *	-0.010	(-2.764) ***
<i>SIZE</i>			0.002	(1.219)
<i>OCF</i>			-0.721	(-13.235) ***
<i>OCF</i> ⁺			1.002	(14.075) ***
<i>ACC</i> ₋₁			-0.055	(-1.690) *
<i>ACC</i> ₋₁ ⁺			0.132	(3.072) ***
<i>ROA</i> ₋₁			-0.001	(1.239)
<i>ROA</i> ₋₁ ⁺			0.000	(0.506)
<i>ISSUE</i>			0.017	(2.894) ***
<i>Adjusted R</i> ²		0.039		0.355

*, ** and *** indicate significance at $p < 0.1$, $p < 0.05$ and $p < 0.01$, respectively, on two-tailed tests. Fixed effects of years and industries are included but not reported. Standard errors are in parentheses and are based on White (1980), if necessary.

$|DAC|$ = the absolute value of abnormal accruals calculated as the residual from model (1);
TENUREA = the length of audit tenure calculated by audit-partner tenure;
IMPA = ratio of log(sales) to total log(sales) at the *audit-partner* level ;
TA = current total assets measured in NT dollars;
OCF = current operating cash flows ÷ *TA* in year -1;
OCF⁺ = 0 if *OCF* < 0, and = *OCF* if *OCF* ≥ 0;
ACC₋₁ = lag total accruals ÷ *TA* in year -2 (*ACC*₋₁⁺ is defined as in *OCF*⁺);
ROA₋₁ = lag net income ÷ *TA* in year -2 (*ROA*₋₁⁺ is defined as in *OCF*⁺);
ISSUE = 1 if the firm issued new shares for cash during the year, and 0 otherwise.