



# Audit quality and engagement partner busyness: The role of internal resource allocation

Suzuki, Katsushi

Takada, Tomomi

---

## (Citation)

Journal of Business Finance & Accounting, 51(5-6):1046-1083

## (Issue Date)

2024-05

## (Resource Type)

journal article

## (Version)

Accepted Manuscript

## (Rights)

This is the peer reviewed version of the following article: [Suzuki, K., & Takada, T. (2024). Audit quality and engagement partner busyness: The role of internal resource allocation. Journal of Business Finance & Accounting, 51, 1046-1083.], which has been published in final form at [<https://doi.org/10.1111/jbfa.12739>]. This article may be...

## (URL)

<https://hdl.handle.net/20.500.14094/0100487298>



## **What moderates audit partner busyness?**

Katsushi Suzuki

Graduate School of International Corporate Strategy

Hitotsubashi University

ksuzuki@ics.hit-u.ac.jp

2-1-2 Hitotsubashi, Chiyoda, Tokyo 101-8439, JAPAN

Tomomi Takada\*

Graduate School of Business Administration

Kobe University

takada@pearl.kobe-u.ac.jp

2-1 Rokkodai, Nada, Kobe, Hyogo, 657-8501, JAPAN

\*Corresponding author

## **Acknowledgements**

The authors gratefully acknowledge the intellectual contributions of Billy Soo and the helpful comments of Masahiro Enomoto, Li-Chun Kuo, David Lau and participants of the research seminar of Kobe University and the University of Auckland, as well as participants of the 2016 annual conference of the Japan Finance Association, the 2017 Auditing Section Midyear Meeting, the 22<sup>nd</sup> International Symposium on Audit Research, and the 2017 Accounting Theory and Practice Conference. This work was supported by JSPS KAKENHI grant numbers 25780282, 17H04783, 21H00726, and 21K01811.

## **Conflict of interest statement**

The authors declare no conflicts of interest associated with this manuscript.

## **What moderates audit partner busyness?**

### **Abstract**

Prior studies have found that engagement partner busyness influences audit effectiveness. The more workload partners have from clients, the busier partners will be, resulting in lower audit quality. However, internal resources available to partners can attenuate the partners' work burden, although the moderating effect of such resources has been mostly overlooked in the literature. As partners' work burden could lessen for a partner with more internal resources, we elaborate on its effect in this study. We examine the following types of internal resources: (1) availability of higher-ranked personnel and (2) accumulated client-specific information. Our results show that engagement partners reduce audit quality for a client when partners bear higher work burden from other clients, for which limited internal resources are available. Moreover, the results indicate that this mutual impact on the audit quality of partners' workload and internal resource availability for other clients is more pronounced for non-Big 4 clients. These results suggest that internal resource allocation is critical for quality control, especially for non-Big 4 audit firms.

**Keywords:** Engagement partner, workload, engagement team, audit firm tenure, partner name, quality control, audit quality, earnings management, audit firm size, Japan

**JEL codes:** M42, M48

## **1 Introduction**

Engagement partner workload has attracted interest as an audit quality determinant. The Center for Audit Quality (CAQ, 2014) and the Public Company Accounting Oversight Board (PCAOB, 2015) reported that higher partner workloads are potential audit quality indicators (AQIs). Specifically, partners' heavy workloads may lead to lower audit quality either because of limited focus and fatigue or the limited time partners can devote to overseeing engagement teams. To alleviate the negative effects of partner busyness, practitioners should utilize internal resources (e.g., experienced personnel, previous work papers, consultations within firms, and shared resources in the firm's network) so that an audit firm's quality controls can maintain high audit quality. The International Standard on Quality Management 1 (ISQM 1) requires that audit firms establish and maintain a quality management system for controlling audit quality. Regardless, prior studies have illustrated the negative impact of higher partner workloads on audit quality (Gul, Ma, & Lai, 2017; Habib, Bhuiyan, & Sun, 2019; Lai, Sasmita, Gul, Foo, & Hutchinson, 2018; Lopez & Peter, 2012; Sundgren & Svanström, 2014; Sweeney & Summers, 2002).

This disequilibrium occurs, at least in part, because audit firms have limited resources. While audit practitioners should use internal resources to attenuate partner workload, these resources are not always available to maintain audit quality for all engagements. While this observation is reasonable, empirical tests are lacking, and whether internal resources attenuate partner workloads cannot be sufficiently confirmed. Hence, this study fills this gap by investigating whether internal resources reduce partners' work burden. We examine the

Japanese market, allowing us to use a large amount of panel data over a long period (i.e., from 2004 to 2021) to measure internal resource availability based on archival data that are inapplicable in other settings.<sup>1</sup>

To investigate the effect of internal resource availability on partner workload, we highlight the following two factors: (1) availability of higher-ranked personnel and (2) accumulated client-specific information.<sup>2</sup> On personnel availability, when more human resources are available for engagement (e.g., Hossain, Yazawa, & Monroe 2017), partners' work burden decreases. Specifically, we highlight the availability of higher-ranked personnel because partner workloads are moderated to a greater extent when important functions can be delegated to experienced personnel.<sup>3</sup> Relative to accumulated client-specific information, prior studies have found that auditors fail to deter questionable financial reporting when their tenure with the client is short (e.g., Davis, Soo, & Trompeter, 2009; Myers, Myers, & Omer, 2003). The results indicate that the accumulated client-specific information due to a longer relationship between an audit firm and a client enables auditors to better acquaint themselves with the client. Thus, we expect accumulated client-specific knowledge owing to longer tenure to reduce a partner's work burden.

---

<sup>1</sup> We describe the merits of focusing on the Japanese market in more detail in Section 2.

<sup>2</sup> Although several other internal resources could be available to audit partners, we focus on these two factors as they are major resources and are measurable using publicly available data in a relatively reliable manner in the Japanese context.

<sup>3</sup> Simply having a larger audit team would not significantly moderate partner workloads as partners are not actively involved in daily client work (e.g., physical examination or checking), which automatically requires more human resources but not critical judgment. Thus, we investigate the availability of higher-ranked personnel and not the availability of the entire team. Nevertheless, as the availability of higher-ranked personnel should, more or less, coincide with the audit team size, our proxy for higher-ranked personnel availability would somewhat capture the effect of the availability of the entire audit team.

To empirically test our expectations, we determine the proxies to be used in the model. On partner workload, we use the sum of logged audit fees received from a partner's clients as this measure can represent the extent to which the partner must allocate their resources to those engagements. It should be noted that when we measure the workload of firm  $i$ 's partner  $j$ , we use the sum of the audit fees received from all of partner  $j$ 's clients, except for firm  $i$  during year  $t$ . This is because we assume that the extent to which the partner can allocate their resources to firm  $i$  is determined by the partner's busyness with the rest of their clients.

For audit quality, we use the absolute value of abnormal accruals as the primary measure. Moreover, to confirm robustness, we use two alternative measures—restatements and going-concern issuance before bankruptcy. Proxies are used to quantify internal resources, namely, higher-ranked personnel and client-specific knowledge. To determine higher-ranked personnel availability, we leverage Japan's unique circumstances. Specifically, we use the number of vice-partners assigned to an audit engagement because a different number of engagement partners, i.e., a lead partner and, generally, one or more vice-partners, are assigned to a client. Moreover, all engagement partners' names are disclosed in the audit reports in Japan.<sup>4</sup> To measure client knowledge, we use audit firm tenure as per the literature.<sup>5</sup>

In examining our expectations, quantitatively determining whether internal resources reduce a partner's workload is the most difficult issue since the actual moderating effect is not observable from the outside when using archival data. Thus, we assume that although greater

---

<sup>4</sup> The Japanese CPA Act requires audit firms to designate one or more engagement partners for individual audit contracts. Hence, more than one engagement partner is generally assigned to a client. Section 2 presents the details.

<sup>5</sup> We do not use partner tenure as a proxy for accumulated knowledge as partners are required to rotate every 5 or 7 years in an audit assignment in Japan. To alleviate the impact of this regulatory requirement, we use audit firm tenure.

partner workload leads to lower audit quality (e.g., Gul, Ma, & Lai, 2017; Sundgren & Svanström, 2014), this negative relationship is less pronounced when internal resources successfully reduce partners' work burden. In the empirical analysis, we separate a partner's entire workload, as measured by audit fees into (1) those for the partner's clients other than firm  $i$  for which there are more internal resources and (2) those for the partner's clients other than firm  $i$  for which there are fewer internal resources. We use a benchmark to split partner workload for clients, according to internal resource availability. On the availability of higher-ranked personnel, clients with two or more (one or zero) vice-partners are categorized as having more (fewer) internal resources. For accumulated client-specific knowledge, clients with audit firm tenure equal to or longer (lesser) than 3 years are categorized as having more (fewer) internal resources. We test how these two measures correlate with audit quality for firm  $i$ .

Our main analysis indicates that partners compromise audit quality only when workloads are higher if these workloads come from the partner's clients other than firm  $i$ , for which internal resources are not sufficiently available. First, we find that the absolute values of abnormal accruals for firm  $i$  are positively related to the sum of the logged audit fees received by partner  $j$  of firm  $i$  from the clients other than firm  $i$ , for which one or no vice-partners are available. Second, the absolute abnormal accruals for firm  $i$  are positively related to the sum of the logged audit fees received by partner  $j$  of firm  $i$  from the clients other than firm  $i$ , for which the audit firm has a tenure lower than 3 years. Moreover, our analysis also reveals that audit quality for firm  $i$  diminishes most when partner  $j$ 's workload increases for clients other than firm  $i$ , for which both types of internal resources are less available. Significant results are

maintained for the subsample of firms with positive abnormal accruals but not for that with negative abnormal accruals. These results indicate that higher-ranked personnel availability and client-specific information attenuate a partner's work burden, consistent with our predictions. Moreover, the impact of internal resource availability on audit quality is material, especially for firms engaging in opportunistic earnings management.

We confirm that the main results are maintained when we address measurement issues in utilizing abnormal accruals and when we use an alternative busyness measure weighted by client sales. Moreover, our analyses using alternative audit quality measures produce expected results. For both alternative audit quality measures, we find the moderating effects of internal resources on the relationship between partner busyness and audit quality. However, the results for the availability of client-specific information remain relatively weak. While some additional analyses weaken the statistical significance of the results, they do not alter the following implication: internal resource availability eases partners' workload.

Furthermore, we estimate the regression models separately for the Big 4 and non-Big 4 clients. We find that the impact of internal resource availability on audit quality for other clients is observed only for non-Big 4 clients. Non-Big 4 auditors may not successfully manage internal resources, as evident by the PCAOB detecting deficiencies in quality controls more often for non-Big 4 auditors (Hermanson, Houston, & Rice, 2007). Taken together, our result implies that when the work burden increases on partners for other clients with limited internal resources, the audit quality for a client is compromised for non-Big 4 audit firms as their audit resource allocation is less effective.

Overall, our results reveal that audit firms allocating sufficient higher-ranked personnel per client or performing systematic controls to assign new clients to partners successfully balance their partner workloads to maintain audit quality. However, our results also suggest that heavy partner workloads could compromise audit quality owing to disequilibrium of internal resource controls. As internal resource allocation is a quality control issue for audit firms, our results support that quality controls do not maintain audit quality for all engagements. Thus, internal resource availability has a more critical role in maintaining audit quality, especially for non-Big 4 audit firms, whose quality controls could be less efficient than those of Big 4 audit firms.

Our contributions to the literature are threefold. First, our findings highlight the potential of auditor workload to function as an AQI because, while audit quality decreases as partner workload increases, internal resources can ease partners' workload. Literature on the relationship between partner busyness and audit quality is somewhat mixed (Goodwin & Wu, 2016; Habib et al., 2019; Lai et al., 2018; Sundgren & Svanström, 2014). These mixed results may be partly because moderating factors are not considered. Moreover, our research is similar to that of Gul et al. (2017), who find that partner busyness does not influence audit quality when the partner has a longer tenure with the analyzed firm. However, our research interests inherently differ from theirs as we investigate whether client-specific knowledge attenuates *partners' workload related to the client*. Conversely, Gul et al. (2017) find that knowledge about a client can prevent compromised audit quality to the client when the partner's workload

with their other clients is high. Moreover, we examine the availability of higher-ranked personnel as another internal resource that can moderate a partner's work burden.

Second, we contribute to resource allocation literature in audit engagements (Fukukawa, Mock, & Wright, 2011; Hackenbrack & Knechel, 1997; O'Keefe, Simunic, & Stein, 1994; Stein, Simunic, & O'Keefe, 1994). Although the literature establishes certain determinants of audit resource allocation using audit hour data, there is a lack of evidence regarding the impact of resource allocation decisions on audit outcomes. We provide new evidence that allocating sufficient higher-ranked personnel is critical for maintaining audit quality as it alleviates a partner's work burden. While our study focuses on human resource allocation and does not use audit hour data, this study contributes to the literature by clarifying the outcome of audit firms' resource allocation decisions. Moreover, the results have implications for audit practitioners by demonstrating that they must allocate appropriate internal resources for quality control.

Finally, our study has implications for the debate on audit-firm rotation. Although views on the efficacy of audit firm rotation in improving audit quality are mixed (e.g., Casterella & Johnston, 2013), our study shows that partners suffer from higher workloads attributable to the audit firm's newly acquired clients. This finding informs policymakers about the potential negative implications of rules such as mandatory firm rotation. Under mandatory firm rotation, audit firms serve new clients more often, which could increase their partner's work burden and, ultimately, lower the audit quality of partners' client portfolio.

The remainder of this paper is organized as follows. Section 2 explains Japan's institutional background. Section 3 presents a literature review and research hypotheses

development. Section 4 describes the sample and data. Sections 5 and 6 present the results and additional evidence, respectively. Finally, Section 7 concludes the study.

## **2 Institutional background**

Japan's Financial Instruments and Exchange Act (FIEA) prescribes a financial disclosure system for public companies. Specifically, public firms in Japan must prepare and file an annual securities report (*Yuka Shoken Hokokusho*) with the Financial Services Agency within 3 months of the fiscal year-end, and the financial statements compiled in the report must be audited by a certified public accountant (CPA) or audit firm.<sup>6</sup> While Japan does not adopt both the International Financial Reporting Standards and the International Standards on Auditing, its domestic standards have been revised to be qualitatively equivalent to international standards. Over 3,700 companies were listed on Japanese stock exchanges as of December 2022, with domestic firms representing more than 99% of the listed companies. The World Bank states that in 2020, Japan had the third-largest market capitalization of listed domestic companies worldwide.<sup>7</sup> Furthermore, an oligopolistic audit market has been a concern in Japan, as in other developed markets (GAO, 2003; Knechel, 2015), as the market share of the Big 4 in the country is higher than 70%. Thus, Japan has a large capital market wherein audits of financial statements prepared by public companies are mandatory and the audit market is comparable to other international counterparts in the developed countries.

---

<sup>6</sup> The Companies Act also requires large private companies to have financial statements audited. Large (private) companies are defined as stock companies that satisfy either of the following criteria: (1) stated equity capital on the balance sheet of at least 500 million Japanese yen or (2) total liabilities of at least 20 billion Japanese yen.

<sup>7</sup> Data were obtained from the World Bank website (<http://data.worldbank.org/indicator/>).

However, the Japanese audit market is unique in terms of what is stipulated by the CPA Act regarding the format of audit reports to be attached to financial statements. Engagement partners are required to include their CPA qualifications and sign and seal reports. Moreover, as the CPA Act requires audit firms to designate one or more engagement partners for individual audit clients, more than one engagement partner is generally assigned to a client.<sup>8</sup> Although all engagement partners bear equal unlimited liability to the client, the CPA Act designates the engagement partner who first signs the audit report as the lead partner who oversees the audit and supervises relevant affairs. Given this designation, other partner(s) will likely play supporting roles as vice-partners.<sup>9</sup>

Accordingly, the Japanese market is suitable for our research for the following reasons. First, audit partners' names are available for a longer period due to the disclosure system (our sample period is from 2004 to 2021), meaning we can utilize a large amount of panel data for our analysis. Second, data on higher-ranked personnel within an audit team (i.e., the number of vice-partners) are available from companies' disclosures. Third, considering the international importance and comparability of the Japanese market, our results have implications for other markets. Thus, we focus on the Japanese market and test the hypotheses in the next section.

---

<sup>8</sup> Apart from engagement partners, review partner(s) must be assigned to an engagement, as per the Standard on Quality Control for Audits in Japan. Engagement partners' names are listed in the top-right corner of an audit report, with the engagement partner whose name appears first being the lead partner, while the names of review partners are not disclosed on the audit reports issued to Japanese companies.

<sup>9</sup> Additionally, as per the CPA Act, we assume the lead partner plays the main role in the engagement. Specifically, the Act dictates that the lead partners of large audit firms are not allowed to provide audit services on financial statements for more than 5 consecutive years, whereas the other partners are allowed to provide these services for up to seven years (Article 34-11-4). Essentially, the eligibility of lead and vice-partners is determined differently for large audit firms to maintain their independence. This suggests that lead partners play different and more critical roles than other partners in the Japanese market.

### **3 Literature review and hypotheses development**

#### ***3.1 Hypothesis regarding partner busyness***

The literature argues that measuring the factors at the audit partner level is important to investigate audit quality determinants (e.g., Chen, Dai, Kong, & Tan, 2017; Gul, Wu, & Yang, 2013; Ittonen, Vähämaa, & Vähämaa, 2013; Lennox & Wu, 2018). Indeed, several indicators measured at the partner level are suggested in relation to AQIs. Partner workload is one of those measures (CAQ, 2014; FEE, 2016; PCAOB, 2015), and several studies have concluded that a heavy workload for audit partners compromises audit quality (Habib et al., 2019; Lai et al., 2018; Lopez & Peter, 2012; Persellin, Schmidt, & Wikins, 2019; Sundgren & Svanström, 2014; Sweeney & Summers, 2002).

While audit partners can become distracted because of their heavy workloads from having multiple clients, audit firms commonly assign more than one client to an audit partner (PCAOB, 2015). Hence, as partner workloads increase, partners are expected to face time and resource constraints that may negatively affect their level of professional skepticism. This leads to physical and mental exhaustion, ultimately resulting in low audit quality. Workload compression is considered a leading cause of partner exhaustion since listed companies have similar reporting timetables owing to the large proportion of listed companies sharing the same fiscal year-end, such as December in the US (CAQ, 2014; Lopez & Peter, 2012).

However, audit firms' quality controls should enable audit practitioners to maintain audit quality at the reasonable level. As audit firms expect workload compression, they should

carefully assign clients to partners and have internal resources available for their partners to maintain audit quality (Goodwin & Wu, 2016). Moreover, audit firms may strategically obtain more clients in an industry to develop expertise and increase their presence while maintaining audit quality (e.g., Chang, Hsu, & Ma, 2022).

Nevertheless, as auditors may face situations wherein some factors are beyond their control, a negative association between handling multiple clients and maintaining audit quality can be observed. Goodwin and Wu (2016) find a significantly negative relationship between partner busyness and audit quality when the Australian market experienced an exogenous shock (e.g., Arthur Andersen's demise and enactment of rigorous new rules). Moreover, as audit firms have limited resources, they may not always be flexible enough to modify resource allocation to meet audit resource demand in practice, and the authorities have explicitly expressed concerns about the negative impact of partner busyness on audit quality (PCAOB, 2015). We therefore develop the following directional hypothesis:

*H1: The lead partner's excessive workload negatively affects audit quality.*

To measure the lead partner's workload, we use the sum of the logged audit fees received by firm  $i$ 's lead partner  $j$  from clients other than firm  $i$  for year  $t$ . As the literature shows that auditors required to allocate more resources receive higher audit fees (e.g., Bronson, Ghosh, & Hogan, 2017; Hogan & Wilkins, 2008; Zaman, Hudaib, & Haniffa, 2011), we use audit fees as a proxy for partner workload.

### ***3.2 Hypothesis regarding moderating factors***

While a heavy workload can compromise a partner's audit quality, an audit firm's quality control can moderate this effect. ISQM 1 requires audit firms to establish and maintain a quality control system to manage audit quality at both firm and engagement levels. Hence, a partner's workload is moderated by the internal resources provided by the audit firm's quality management system. We examine this notion empirically as it should be reasonable despite being under-examined in the literature.

For internal resources that can moderate partner workload, we highlight two factors: availability of higher-ranked personnel and accumulated client information. For the first factor, recent studies have found that appropriate staffing is essential for achieving quality audits (e.g., Aobdia, Choudhary, & Newberger, 2022; Christensen, Newton, & Wilkins, 2021; Hossain et al., 2017). More specifically, staff members' excessive working hours (Christensen et al., 2021), lower levels of managers' productivity (Aobdia et al., 2022), and smaller audit team size (Hossain et al. 2017) decrease audit quality. Thus, the literature suggests that appropriate staffing is essential to effectively use internal resources available to partners and maintain high-quality audits.

Building on these findings, we consider higher-ranked personnel as one of the internal resources available to engagement partners and examine whether a higher level of availability attenuates partners' busyness. As whether partners can delegate some of their important functions to the personnel or not, is essential to reducing their busyness, we highlight higher-ranked personnel. While partners are not actively involved in daily client work (e.g., collecting

audit evidence), they supervise and direct the work of an audit team. Simply having more team members may not attenuate partners' work burden. Rather, partners' work burden could be better moderated if the partner had more higher-ranked audit team personnel on the audit team. In line with this, Ittonen and Trønnes (2015) show that two engagement partners provide better quality audits than one engagement partner. Thus, we use the number of vice-partners as a proxy for the availability of higher-ranked personnel that can attenuate the lead partner's work burden and propose the following hypothesis:

*H2: Greater vice-partner availability alleviates a partner's work burden.*

The second internal resource we examine is client information. Auditors can accumulate client-specific information through documentation or other tangible/intangible forms through their clients relationships (DeAngelo, 1981). An audit firm is likely to be more acquainted with a client when it has a long-term relationship with them (e.g., Carcello & Nagy, 2004; Davis et al., 2009; Johnson, Khurana, & Reynolds, 2002; Myers et al., 2003). More client-specific information allows partners to conduct audits more effectively and efficiently by reducing the time needed to interact with client personnel and gain an understanding of the company.<sup>10</sup>

---

<sup>10</sup> However, existing results on the relationship between audit firm tenure and audit quality are mixed. Johnson et al. (2002) and Myers et al. (2003) find a positive relationship between audit firm tenure and audit quality. Conversely, Davis et al. (2009) indicate that audit firm tenure has a nonlinear relationship with audit quality. Despite these mixed results, findings are generally consistent in that a short firm tenure is associated with low-quality audits, probably owing to a lack of knowledge about the client. Therefore, whether auditors can linearly improve audit quality as tenure increases is not necessarily clear, but a shorter tenure does compromise audit quality. AICPA (1992) reveals that the allegations of audit failure occur approximately three times more often in the first 2 years of engagement relative to other engagements. According to this premise, we develop our third hypothesis by simply positing that auditors with a short tenure are not knowledgeable about the client.

In the context of the accumulated client-specific information available to partners, Gul et al. (2017) find that a partner's higher workload with other clients does not affect audit quality for a client if the partner has a longer tenure with the client. Hence, a partner's client-specific experience cultivates partners' better understanding of the client, which in turn diminishes the negative impact of the partner's busyness on the audit quality for the client. By extending the results to our research interest, we consider the client-specific information accumulated within the audit firm as one of the internal resources available to a partner and examine whether the internal resource can reduce partners' workload with the client. Based on prior evidence, we use a benchmark of 3 years for the auditor–client relationship to identify whether the audit firm has sufficient experience with a client to conduct audits effectively and efficiently (e.g., AICPA, 1992; Johnson et al., 2002; Read & Yezegel, 2016). The above discussion leads us to develop the following hypothesis:

*H3: Greater knowledge about the client alleviates partners' work burden.*

To investigate H2 and H3, we divide the lead partner's workloads into two parts: (1) those for their clients other than firm *i* where the partner has more internal resources and (2) those for their clients other than firm *i* where the partner has limited internal resources. We then examine the effects of different internal resource availability levels on a partner's workload by highlighting their impact on audit quality.

### ***3.3 Audit quality measures***

We use the absolute value of abnormal accruals to measure audit quality. Unsigned abnormal accruals capture the extent to which auditors allow their clients to engage in opportunistic earnings recognition. Furthermore, using this measure is beneficial as it enables us to capture audit quality level as a continuous variable (DeFond & Zhang, 2014). To estimate abnormal accruals, we use the modified Jones model with a control for the firm performance of the CFO (Dechow, Sloan, & Sweeney 1995; Kothari, Leone, & Wasley, 2005). Regressions are estimated cross-sectionally on an annual basis based on the two-digit Nikkei industry code.

However, we acknowledge that measurement error issues may exist in any model used to detect abnormal accruals, as discussed in the literature (DeFond & Zhang, 2014). Thus, we use two types of dichotomous variables as alternative audit quality proxies. The first is whether a firm's financial statements are restated. The second measure is the auditors' issuance of going-concern opinions before bankruptcy. We report the results of using these alternative measures in the additional analysis section.

## **4 Sample and regression model**

### ***4.1 Sample***

We collect our sample from the Nikkei NEEDs, NEEDS-FinancialQUEST, and NPM Manager databases. We obtained auditor-related data from the Nikkei NEEDs database, which contains lead and vice-partner names (Japanese kanji characters), audit firm names (Japanese kanji characters), audit firm codes assigned by the data vendor, company identifiers, and fiscal year-

end dates, all of which are available from March 2001. Using this dataset allows us to identify a lead partner because the database compiles partner names in the order they appear on the audit reports. In this way, we determine the lead partner's workload, and to this end, we identify the name and audit firm code of the lead partner and determine the clients assigned to each lead partner during a given fiscal year. Audit fee data are also obtained from the Nikkei NEEDS database but are available only from March 2004 as audit fee disclosure has been required for public companies in Japan only since that time. Thus, using these databases, we can measure partner- and audit firm-related variables for the analysis from March 2004 to March 2021 for the main analysis using abnormal accruals as an audit quality measure.

Data regarding financial statements are retrieved from NEEDS-FinancialQUEST, while data on market capitalization are obtained from the NPM Manager. We excluded firms that had not been listed for at least 3 years to identify audit firm tenure, those with missing data for the regression analysis, those with negative book values of equity, those in the financial industry, and those with audit reports signed by more than one audit firm (joint audits). Accordingly, the final sample consists of 57,513 firm-year observations for the main analysis.

## ***4.2 Regression model***

The regression model used to test H1 is as follows, where a higher level of absolute abnormal accruals ( $|Abacc|$ ) implies lower audit quality:

$$|Abnacc_{it}| = \beta_0 + \beta_1 BUSY_{ijt} + \beta_2 Fem_{ijt} + \beta_3 Career_{ijt} + \beta_4 Pten_{ijt} + \beta_5 BIG_{it} + \\ \beta_6 Ften_{it} + \beta_7 Vice\_D_{it} + \beta_8 FDep_{it} + \beta_9 Fee_{it} + \beta_{10} Size_{it} + \beta_{11} Grow_{it} + \beta_{12} Lev_{it} + \\ \beta_{13} ROA_{it} + \beta_{14} Loss_{it} + \beta_{15} Invrec_{it} + \beta_{16} TACC_{it} + \sum \gamma_n MONTH\_D_{it} + \sum \delta_j IND\_D_{it} + \\ \sum \theta_k YEAR\_D_{it} + \varepsilon_{it}.$$

Our test variable, *BUSY*, equals the sum of the logged audit fees received by the lead partner *j* of firm *i* from their clients other than firm *i* in year *t*.<sup>11</sup> This test variable for H1 captures the level of the workload of the lead partner *j* who is assigned to firm *i*. To calculate *BUSY* precisely, we include the lead partner *j*'s clients that are excluded from the sample, for example, due to unavailability of necessary data to calculate control variables if their audit fee data is available.

As audit partner or audit firm characteristics influence audit quality (e.g., DeFond & Zhang, 2014), we include several audit-related control variables. Specifically, as the literature (Gul et al., 2013; He, Sidhu, & Taylor, 2019; Ittonen et al., 2013) finds that a partner's characteristics influence audit quality, we control for the gender (*Fem*) and length of career (*Career*) of lead partner *j*. Furthermore, as the literature also indicates that an audit partner's tenure affects audit quality (Carey & Simnett, 2006), we include the lead partner *j*'s tenure with firm *i* (*Pten*) in the model.

---

<sup>11</sup> Although partners could simultaneously have private firm clients, we do not include private firms as partner's clients. First, auditor data for private firms are unavailable. Second, prior studies (Goodwin & Wu, 2016; Gul et al., 2017; Habib et al., 2019) do not include private firms in their client totals. JICPA (2016) reported that audits for public companies under the FIEA and those for private firms under the Companies Act represented 67.3% and 25.7% of the total audit fee revenue, respectively, in 2014. While this number may not be trivial, we assume that, on average, partners have equivalent burdens for private firm clients as we are not aware that certain types of partners are inclined to have more private clients. Nevertheless, not including private firms as other clients for a partner may be a limitation for our study.

For audit firm factors, we also include a variable indicating whether the audit firm is one of the Big 4 (*BIG*), as Big 4 auditors may have incentives to provide high-quality audits (DeAngelo, 1981; Skinner & Srinivasan, 2012).<sup>12</sup> Moreover, we include audit firm tenure (*Ften*) with firm *i* as we do at the partner level. To control for the availability of higher-ranked personnel to firm *i*, we include a dichotomous variable, *Vice\_D*, which equals 1 if firm *i* has two or more vice-partners in the partner team. Moreover, the model also controls for the audit firm's fee dependence on firm *i* (*FDep*) and audit fees paid to the audit firm (*Fee*). This is because fee dependence and the amount of audit fees may influence audit quality (Balsam, Krishnan, & Yang, 2003; Choi, Kim, & Zang, 2010; Craswell, Stokes, & Laughton, 2002).

We control for several firm characteristics (*Size*, *Grow*, *Lev*, *ROA*, *Loss*, and *Invrec*), which are used in prior studies to control for other factors that induce management's opportunistic earnings recognition (Dekeyser, Gaeremynck, Knechel, & Willekens, 2021; Frankel, Johnson, & Nelson, 2002; Ittonen & Trønnes, 2015). We also include total accruals in period *t*-1 (*TACC*) to control for the impact of accrual reversals (DeFond & Park, 2001). Furthermore, we include fiscal year-end month indicators to control for the effect of audit work compression during busy seasons (Lopez & Peter, 2012)<sup>13</sup> and industry and year dummies. For brevity, the results presented in the tables do not include the three dummy variables. Appendix A provides variable definitions.

---

<sup>12</sup> Although the Japanese Big 4 audit firms have their own Japanese audit firm name (Aarta, Azusa, Shinnihon (current EY Japan), Tohmatsu), each is an affiliate of the international Big 4s (PwC, KPMG, EY, and Deloitte, respectively).

<sup>13</sup> In Japan, more than 70% of public firms use March as the fiscal year end.

To test H2, we divide *BUSY* in the following way. *BUSY* is divided into *LVice* and *HVice*. *LVice* and *HVice* represent the sums of the logged audit fees received by firm *i*'s lead partner *j* from their clients other than firm *i*, for which the partner has one or no vice partner and two or more vice partners, respectively.<sup>14</sup> Then, *LVice* and *HVice* replace *BUSY* in the model. Similarly, to test H3, we divide *BUSY* into *STenure* and *LTenure*, which represent the sum of the logged audit fees received by firm *i*'s lead partner *j* from their clients other than firm *i*, for which the audit firm has less than 3 years of tenure and 3 or more years of tenure, respectively. *STenure* and *LTenure* replace *BUSY* in H3. These separations are represented as:

$$BUSY_{ijt} = LVice_{ijt} + HVice_{ijt},$$

$$BUSY_{ijt} = STenure_{ijt} + LTenure_{ijt}.$$

It should be noted that we aim to investigate whether internal resources alleviate a partner's work burden. However, the moderating effect of internal resources is not directly observable from outside. Hence, we expect that partner *j*'s audit quality for firm *i* is compromised as the partner *j*'s workload increases for their clients other than *i*, for which internal resources are scarce. Conversely, we expect a non-negative impact of partner *j*'s workload on audit quality for firm *i* if partner *j*'s workload comes from clients other than firm *i*, for which internal resources are sufficiently provided.

Therefore, we expect *LVice* to be positively associated with absolute abnormal accruals because partner *j*'s work burden for other clients for which fewer higher-ranked personnel

---

<sup>14</sup> Investigating the ratio of the work burden regarding partners' clients with sufficient internal resources relative to partners' entire workload is technically possible. However, this ratio cannot represent the extent to which the workload is heavy, even though the negative outcome of the work burden is revealed only when this burden is severe in an absolute (not relative) sense. Therefore, we use the workload level for *HVice* and *LVice* (or *LTenure* and *STenure*) and not the workload ratio.

available should remain high. This, in turn, leads to a negative impact on partners' audit quality for firm  $i$ . Conversely, we expect that  $HVice$  could be positively associated with absolute abnormal accruals, but the coefficient should not be significantly different from 0. As partner  $j$ 's work burden with other clients for which more higher-ranked personnel are available should be lower, the partner can maintain audit quality for firm  $i$ . Similarly, we expect  $STenure$  to be positively associated with absolute abnormal accruals, whereas  $LTenure$  could be positively related to absolute abnormal accruals but not significantly different from 0.

## 5 Results

### 5.1 Descriptive statistics

The descriptive statistics presented in Panel A of Table 1 indicate that lead partners face different levels of internal resource availability with their clients. Panel A reveals that the sum of logged audit fees for clients with fewer vice-partners ( $LVice$ ) is higher than that for those with more vice-partners ( $HVice$ ). Moreover, Panel A indicates that the sum of the logged audit fees for clients with a shorter tenure ( $STenure$ ) is slightly higher than for those with a longer tenure ( $LTenure$ ). Therefore, on average, lead partners face a higher work burden from their clients with scarce internal resources than from those with sufficient internal resources.

Panel B of Table 1 reports the number of firms with nonzero and zero values for the busyness variables. Specifically, of the 57,513 sample firms, approximately 89% (51,010/57,513) have a nonzero value for  $BUSY$ , indicating that 89% of our sample reflects a partner with more than one client and 11% reflects a partner with only one client (firm  $i$ ). For

other busyness variables, 83% (47,617/57,513) have nonzero values for *LVice*, whereas 41% (23,499/57,513) have nonzero values for *HVice*. *STenure* has nonzero values for 75% of the observations (43,201/57,513), and *LTenure* has nonzero values for 68% of the observations (39,394/57,513).

## 5.2 Partner busyness and abnormal accruals

Table 2 presents the results of the multivariate model. Models 1 to 3 in Table 2 illustrate the results of testing H1 to H3. The positive and significant coefficient of *BUSY* is consistent with H1. Models 2 and 3 reveal that *LVice* and *STenure* have significantly positive values; conversely, *HVice* and *LTenure* have insignificantly negative values. These results are consistent with H2 and H3, indicating that internal resources (i.e., higher-ranked personnel and client-specific knowledge) attenuate the lead partner's work burden.

With respect to the control variables, the coefficients of *BIG* and *Ften* generally have significantly negative values, consistent with the notion that larger audit firms and longer audit firm tenure relate to higher audit quality. The positive and significant coefficients of *Fee* imply that audit quality is lower when audit firms receive higher audit fees.<sup>15</sup> The control variables for a firm's financial fundamentals are generally significant, indicating that we chose relevant control variables that influence the absolute value of abnormal accruals. The negative and significant coefficients on *TACC* represent accrual reversals.

---

<sup>15</sup> Whether this result indicates that higher fees compromise audit quality should be cautiously considered because any third factors (e.g., the complexity of accounting estimates) can influence the relation.

In addition to independently examining the effects of higher-ranked personnel availability and accumulated client-specific knowledge on partner busyness in Models 2 and 3, we investigate the combined effect of these two factors on audit quality. Thus, we create new test variables, *LVice\_STenure* and *Others*. *LVice\_STenure* equals the sum of the logged audit fees received by firm *i*'s partner *j* from their clients other than firm *i* where one or no vice-partner is assigned and the audit firm tenure is less than 3 years. *Others* is the sum of the logged audit fees from the rest of the partner's clients other than firm *i*. Model 4 in Table 2 reports that the estimated coefficient of *LVice\_STenure* is significantly positive, with its value being the greatest relative to the rest of the busyness variables in Models 1 to 3. Hence, not having both internal resources greatly diminishes audit quality.

Although we use abnormal accruals as an audit quality measure, we are aware of some measurement issues in abnormal accruals estimation. To address this, we utilize other proxies for audit quality and report the results in Section 6. Nevertheless, using accruals as a proxy, we examine the impact of these issues on our results in the following two ways. First, we use working capital accruals, instead of total accruals, and employ the method by McNichols (2002) to measure the deviation of accruals from the normal level. Second, we address the issue demonstrated by Chen, Hribar, and Melessa (2018) regarding the two-stage procedure to examine the determinants of abnormal accruals.<sup>16</sup> As per their suggestion and the method employed by Ahmed, Li, and Xu (2020), we include all the independent variables used to estimate abnormal accruals as additional control variables in our main regression model to

---

<sup>16</sup> Although their caution is directed mainly to the use of signed abnormal accruals, they mention that the identified issue should matter even when using the absolute value of abnormal accruals (Chen et al., 2018, p. 756)

alleviate the issue. The untabulated results show that the variables that capture a shortage of internal resources (*BUSY*, *LVice*, *STenure*, and *LVice\_STenure*) consistently have positive and significant coefficients for both analyses.<sup>17</sup>

Accordingly, Table 2 supports H1, H2, and H3. These results may explain the mixed evidence provided by previous studies (Goodwin & Wu, 2016; Habib et al., 2019; Lai et al., 2018; Sundgren & Svanström, 2014). By controlling for internal resource availability as a moderating factor on partner busyness, we could uncover how partner busyness and the availability of internal resources for the partners influence audit quality.

### ***5.3 Partner busyness and income-increasing earnings management***

Earnings management has different implications depending on whether it is income-increasing or income-decreasing. Income-increasing earnings management is considered more problematic as it is induced by opportunistic management incentives to maximize managers' private benefits at the stakeholders' expense (e.g., Becker, DeFond, Jambalvo, & Subramanyam, 1998). Therefore, we examine whether different results for the subsamples with positive and negative abnormal accruals can be observed.

Table 3 presents the results of this study. Panels A and B present the results for subsamples with zero or positive abnormal accruals and negative abnormal accruals, respectively. Panel A provides results similar to those in Table 2, where the coefficients of

---

<sup>17</sup> However, the results are relatively weakened for the subsample analysis based on the signs of abnormal accruals, which is reported in the next section. For both tests, *BUSY*, *LVice*, *STenure*, and *LVice\_STenure* are constantly positive for the subsample of positive abnormal accruals, while some lose statistical significance. Moreover, in using McNichols' measure, all the busyness variables have positive and significant coefficients for the subsample of negative abnormal accruals. The change in the results should be noted.

*BUSY*, *LVice*, *STenure*, and *LVice\_STenure* are significant and positive. By contrast, the busyness variables in Panel B are positive, but none are significant. These results illustrate that the negative impact of a partner's busyness on audit quality and the moderating effect of internal resources on the impact is observed only for the subsample of firms with income-increasing earnings management. Essentially, partner busyness and internal resource availability for clients in a partner's portfolio have more critical impact on audit quality when the client intends to engage in opportunistic earnings management.

#### ***5.4 Consideration of the impacts of endogeneity on the result***

It should be noted that the potential endogeneity between partner busyness and audit quality may make our results less reliable. To address potential endogeneity, partner- or firm-level fixed effects could be used (Goodwin & Wu, 2016). However, this method could generate other measurement issues because the workload of a partner does not vary significantly from year to year, as shown in Appendix B. Therefore, we carefully examine the characteristics of endogeneity and their impacts on our results if we do not address the issue.

We consider that partners' characteristics are unobservable factors affecting both partner busyness and audit quality, given that a partner's client portfolio is determined conditionally on their psychological (innate) or acquired characteristics, including partners' preference for work, ability, and expertise (Goodwin & Wu, 2016). The literature shows that certain personality types relate to overwork (workaholic), and capable people have more

appointments (e.g., Adams, Hermalin, & Weisbach, 2010; Fich & Shivasani, 2006; Ng, Sorensen, & Feldman, 2007).

To identify the impact of endogeneity on our results, we consider how those characteristics of partners influence partner busyness and audit quality. On psychological characteristics, the literature has documented that personality traits such as obsessive-compulsive personality, narcissism, and perfectionism induce overwork (Clark, Lechok, & Taylor, 2010; Ng et al., 2007). Although literature examining the impact of auditors' personality on audit quality is very limited, recent studies have shown that narcissistic auditors are resilient to clients' pressure, in turn increasing audit quality (Chou, Pittman, & Zhuang, 2021; Church, Dai, Kuang, & Liu, 2020). Regarding the impact of acquired skills, audit firms are likely to assign more clients to partners with strong reputations. Partners with more assignments can develop their capabilities based on their experience with a broader range of clientele or diversified audit team members. If so, partners with high capabilities become busier while providing higher-quality audits relative to other partners. Prior studies have documented that competent partners provide high-quality audits (Gul et al., 2013; Aobdia, Lin, & Petacchi, 2015). In summary, unobservable partner characteristics that make audit partners busier are likely to positively affect audit quality.

However, we expect partner busyness to decrease audit quality. If the direction of the bias is inconsistent with the hypothesis being tested, it makes the statistical test becomes more conservative (Larcher & Rusticus, 2010, p. 195). In other words, the endogeneity owing to partners' characteristics (e.g., narcissism and capability) should not seriously impact the

inference of our results. Moreover, we include several auditor-related control variables. Some of these variables (e.g., *Fem* and *Career*) can capture partners' characteristics. Using these variables would partially ease endogeneity concerns in our regression model. Therefore, we employ the ordinary least squares method as our main result.<sup>18</sup>

## 6 Additional analyses

### 6.1 Alternative measure of partner busyness

Although we use the sum of the logged audit fees received from a lead partner's clients as a measure of partner busyness, audit fees could also be influenced by auditor reputation and bargaining power, which are unrelated to the current partner's workload. Thus, we consider an alternative measure for partner busyness, specifically, the sum of the logged sales for partners' clients other than firm *i*. Our test variables are *BUSY\_Sales*, *HVice\_Sales*, *LVice\_Sales*, *LTenure\_Sales*, *STenure\_Sales*, *LVice\_STenure\_Sales*, and *Others\_Sales*, corresponding to *BUSY*, *HVice*, *LVice*, *LTenure*, *STenure*, *LVice\_STenure*, and *Others*, respectively.<sup>19</sup>

Table 4 reports the results using busyness variables weighted by client sales. Panels A and B report the results of using subsamples with nonnegative and negative abnormal accruals, respectively. Panel A of Table 4 shows that the coefficients of *BUSY\_Sales* *LVice\_Sales*,

---

<sup>18</sup> Nevertheless, we apply the 2SLS method to address the possible adverse impact owing to endogeneity on our results. We identify two instrumental variables to capture the geographical intensity of partners' clients (quantified by the Herfindahl–Hirschman Index based on the location of the client's headquarters) and to capture the proportion of risky firms for which more complicated audit judgments are required (quantified by the number of the audit firm's clients receiving a going concern opinion in year *t* deflated by the number of partners the audit firm has in that year). Untabulated results indicate that applying the 2SLS method produces qualitatively similar results to the main results based on the OLS method.

<sup>19</sup> We also confirm that the results are consistent when using number of clients as partners' workload measure (results are untabulated).

*STenure\_Sales*, and *LVice\_STenure\_Sales* are positive and significant, as in Panel A of Table

3. Conversely, no busyness variables are statistically significant in Panel B of Table 4, which is consistent with Panel B of Table 3. Hence, Table 4 indicates that our results are robust when using alternative measurements of partner busyness.

## **6.2 Alternative measure of audit quality**

As abnormal accruals are a noisy measure of audit quality (DeFond & Zhang, 2014), we conduct an additional analysis using two alternative measures of audit quality, namely, restatement and going concern issuance to bankrupt firms.<sup>20</sup>

For the first measure, we use a dichotomous variable based on whether a firm restates its disclosed financial statements. This variable equals 1 in year  $t$  if the firm's financial statements for year  $t$  are restated after the initial disclosure and 0 if otherwise.<sup>21</sup> For this analysis, we employ a probit model and use the same control variables as those used in the main analysis, using abnormal accruals as an audit quality measure. However, we do not use *TACC* as a control since accrual reversals are irrelevant in the restatement context. We use firm-year observations from March 2008 to March 2016 because the database we use provides restatement data beginning in March 2008. The sample period ends in 2016 to consider the duration wherein misstatements of financial statements were revealed after financial reporting.

---

<sup>20</sup> As DeFond and Zhang (2014) state, no single measure can perfectly capture audit quality. Hence, the literature generally utilizes more than one audit quality measure (e.g., Chen et al., 2017; Goodwin & Wu, 2016; Tanyi & Litt, 2017).

<sup>21</sup> We define restatement firm-years for which any key items on the financial statements are restated after the initial disclosure. Period  $t$  is defined as a fiscal-year for which the financial statements are misstated. Thus, restatement could occur after year  $t$ . Restatements include minor or simple errors in addition to material misstatements as the database compounds all restatements announced by the listed firms regardless of the misstatement materiality. For the institutional background regarding the misreporting of the Japanese listed firms, see Song, Oshiro, and Shuto (2016).

Table 5 shows that *LVice* and *LVice\_STenure* are significantly positive, whereas *BUSY* and *STenure* are positive but insignificant. Although *HVice* has a significantly negative value, the significance level is marginal. These results indicate that firms are more likely to restate their financial statements when partners' work burden increases from the following types of clients other than firm *i*: 1) those for which fewer vice-partners are available and 2) those lacking both higher-ranked personnel and client information. Therefore, the availability of higher-ranked personnel for other clients is critical for partners in conducting audits to ensure that misstatements do not occur.

With respect to the second measure, we test whether a going-concern opinion is issued before the bankruptcy. If a bankrupt firm does not receive a going concern opinion prior to bankruptcy, the quality of the firm's audit is considered low (e.g., Chung, Sonu, Zang, & Choi, 2019; Sundgren & Svanström, 2014). Thus, we expect a negative relationship between busyness variables and going-concern issuance to bankrupt firms if work burden compromises audit quality.

We develop a probit model with control variables identical to those in the main analysis. As with the analysis using restatement as an audit quality measure, we drop *TACC* as a control variable. Our sample period is from March 2008 to March 2021, and bankrupt firms are identified from the TEIKOKU DATABANK database. To obtain a reasonable number of sample observations, we use the data from the 3 years before bankruptcy.

Table 6 reports the results.<sup>22</sup> *Fem* is dropped as all observations in the sample have a value of 0. The results show that *BUSY*, *LVice*, and *LVice\_STenure* are negative and significant, while *STenure* is negative but insignificant. The other busyness variables, *HVice*, *LTenure*, and *Others*, have insignificant positive/negative values. These results indicate the importance of the availability of higher-ranked personnel to moderate the negative impact of partner busyness on audit quality, consistent with the results in Table 5.

Overall, using two alternative audit measures, the results reveal the importance of the availability of higher-ranked personnel in easing partners' workload. Although the results for the importance of accumulated client-specific information are relatively weak, our additional analyses still support the notion that the availability of internal resources attenuates the negative impact of partners' busyness on audit quality.

### **6.3 Moderating effect of internal resources for Big 4 and non-Big 4 clients**

Our results indicate that Japanese audit firms do not have sufficiently effective quality controls to provide high-quality audits for all engagements.<sup>23</sup> However, as the effectiveness of quality controls can differ among audit firms, the significant impact of internal resource unavailability

---

<sup>22</sup> For the analysis of audit quality, examining the tendency of going concern issuance to financially distressed firms is common. Following that method, we additionally estimate the regression model by utilizing financially distressed firms (reporting negative earnings for 2 consecutive years) regardless of their future bankruptcy. The result with this new sample reveals that none of the busyness variables are significant. We believe that this insignificant result is attributable to the specificity of auditor's response to financially distressed firms. If a firm is financially distressed, its auditor is likely to identify the firm's material misstatement risk of the financial statements as high. To respond to the high risk, audit team members increase their level of professional skepticism and implement overall responses (ISA 330). Under such specific circumstances, identifying the impact of the auditor's workload might be difficult. This factor could somewhat weaken the result in Table 6. Future research may examine the impact directly.

<sup>23</sup> Because internal resource allocation is inherently an issue at the audit firm level, the results in Table 2 may not hold when we control for audit firm effects. Thus, we use a specification that includes audit firm dummies in the model and find that the coefficients of the busyness variables for *BUSY*, *LVice*, *STenure*, and *LVice\_STenure* are positive but statistically insignificant. These results indicate that busyness is basically an audit firm phenomenon. We acknowledge this insight from the anonymous reviewer.

on partner busyness may be identified only for firms with deficient quality controls. For instance, by examining inspection reports issued by the PCAOB, Hermanson et al. (2007) show that smaller audit firms are more likely to have quality control deficiencies than larger audit firms. Habib et al. (2019) also demonstrate that the negative impact of partner busyness on the client firm's cost of equity is observed only among non-Big 4 clients.

Hence, the significance of our analysis could be more pronounced for non-Big 4 clients owing to potential deficiencies in their auditors' quality controls. To verify this assumption, we examine whether our findings are consistent between Big 4 and non-Big 4 clients to explore the moderating effect of internal resources on partner busyness. To this end, we re-estimate the regression models to test H1, H2, and H3 separately for Big 4 and non-Big 4 client firms in the subsamples, and we report the results in Table 7.

Table 7 presents the regression results for Big 4 and non-Big 4 clients separately for subsamples of non-negative and negative abnormal accruals in Panels A and B, respectively. For the Big 4 subsamples, *FDep* is dropped as all observations in the subsample have the value of 0. Table 7 indicates that *BUSY*, *LVice*, *STenure*, and *LVice\_STenure* are significantly positive for non-Big 4 firms in Panel A (i.e., for the non-negative abnormal accruals subsample). However, for Big 4 client firms, only *Others* is significantly negative in Panel A. On the other hand, none of the busyness variables are significant for either Big 4 or non-Big 4 clients in Panel B.

Collectively, Table 7 indicates that our three hypotheses are supported only for non-Big 4 clients. Keeping with the premise that smaller audit firms are inclined to have quality

control deficiencies, Table 7 indicates that the availability of internal resources is more critical to attenuating partner busyness for non-Big 4 audit firms because their quality controls at the firm level cannot address the problem of internal resource allocations in an audit team.

## **7 Conclusions**

The heavy workloads of partners can compromise audit quality because, as the partners become physically and mentally exhausted due to the excessive workloads, their attention to detail may slacken, which adversely affects the level of professional skepticism in their judgment. The CAQ and PCAOB have emphasized this phenomenon as an aggravating factor in audit quality. Against this backdrop, investigating the potential moderating factors for a partner's workload has important implications for policymakers and practitioners. We investigate whether two internal resources, namely, (1) the availability of higher-ranked personnel and (2) client-specific information accumulated through longer relationships, attenuate partner workloads.

We use the data from Japanese listed companies and find that partners do not compromise audit quality for firm  $i$  even when workloads increase for their clients other than firm  $i$ , for which either of the internal resources is sufficiently available. Conversely, audit quality for firm  $i$  decreases as the partner's workloads increase from their clients other than firm  $i$ , for which only limited internal resources are available. These results are pronounced only for firms with positive abnormal accruals (i.e., those engaging in questionable earnings management). Furthermore, the results are generally maintained for alternative specifications, namely, 1) when we address measurement issues of abnormal accruals, 2) when we use an

alternative partner busyness measure, and 3) when alternative audit quality measures are used. Although the statistical significance level becomes weak for some specifications, it does not alter the implications of our results: internal resource availability alleviates the negative impact of partner busyness on audit quality.

Further analysis elaborates on the effect of internal resource availability on alleviating the partner busyness of Big 4 and non-Big 4 audit firms. Our results indicate that the availability of internal resources is more critical for non-Big 4 audit firms to maintain audit quality. The literature has shown that smaller audit firms are more likely to have deficiencies in their quality control systems. Consistent with the literature, our result implies that the negative impact of internal resource shortage is more evident for non-Big 4 clients owing to quality control deficiencies.

Although this study clarifies the importance of internal resources to maintain audit quality, it is subject to some limitations as in other empirical studies. First, while we highlight two factors that lessen partner workloads, there could be other factors with significant moderating effects. Second, better ways to measure the moderating factors more precisely may exist. Managers and partners may be highlighted as higher-level personnel as they make important decisions (e.g., audit planning). Moreover, although partners could simultaneously have private firm clients, we do not include private firms as partner's clients. Our measurement method may have systematically biased our results. As these limitations are primarily because of the lack of availability of relevant data, future research should identify a better research site where such data are available and elaborate on the issues surrounding audit partner busyness.

Finally, whether our results can be generalized to other markets is an open issue as we only focus on the Japanese setting.

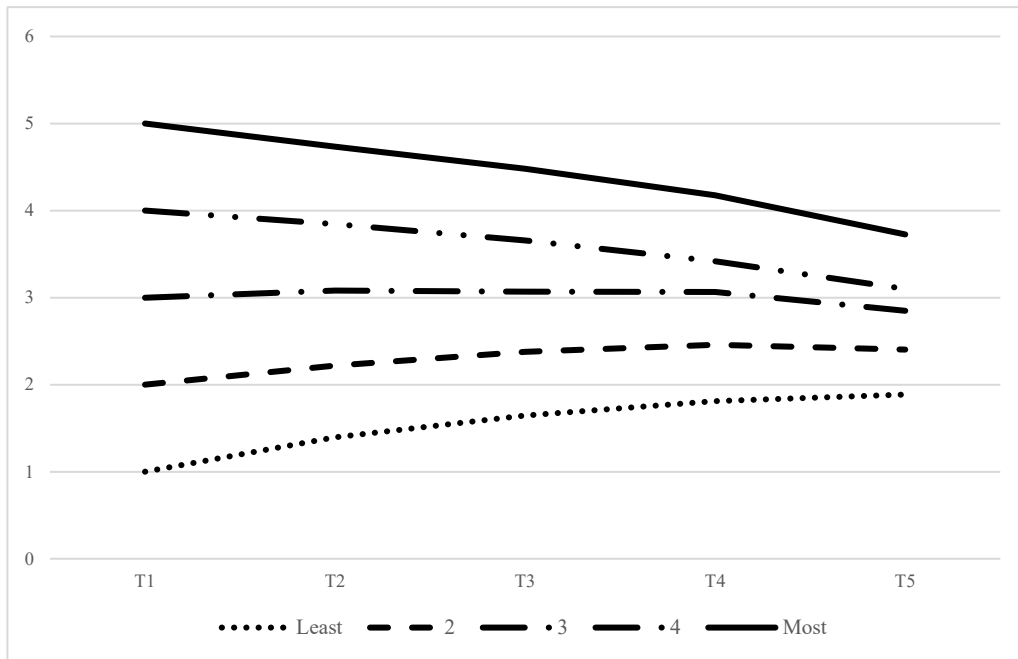
## Appendix A. Variable definitions

| Variables                          | Definition                                                                                                                                                                                                                                                                    | Outlier |
|------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| <i>Abacc</i>                       | Abnormal accruals (multiplied by 100) estimated using the modified Jones model with cash flow from operations (CFO)                                                                                                                                                           | Yes     |
| <i>BIG</i>                         | 1 if the audit firm is a Japanese affiliate of the international Big 4 audit firms, and 0 otherwise; specifically for Aarata (ChuoAoyama [Misuzu] until 2007), Azusa, ShinNihon, and Tohmatsu                                                                                 | No      |
| <i>BUSY<sub>ijt</sub></i>          | Sum of logged audit fees (in million JPY) received by firm <i>i</i> 's lead partner <i>j</i> from their clients (other than firm <i>i</i> ) for year <i>t</i>                                                                                                                 | No      |
| <i>BUSY_Sales<sub>ijt</sub></i>    | Sum of logged sales (in million JPY) of the clients of firm <i>i</i> 's lead partner <i>j</i> (other than firm <i>i</i> ) for year <i>t</i>                                                                                                                                   | No      |
| <i>Career</i>                      | 1 if the lead partner has three years or more of experience as a lead partner signing audit reports for listed Japanese companies, and 0 otherwise                                                                                                                            | No      |
| <i>FDep</i>                        | 1 if the audit fees of the firm account for 75% or more of the total audit fees the audit firm receives for the year                                                                                                                                                          | No      |
| <i>Fee</i>                         | Logged audit fees (in million JPY) paid to firm <i>i</i> 's audit firm                                                                                                                                                                                                        | No      |
| <i>Fem</i>                         | 1 if the lead partner is female, and 0 otherwise. Gender of the partner is identified according to their first name                                                                                                                                                           | No      |
| <i>Ften</i>                        | 1 if the audit firm's tenure is three years or more, and 0 otherwise                                                                                                                                                                                                          | No      |
| <i>GC</i>                          | 1 if the firm receives a going concern opinion, and 0 otherwise                                                                                                                                                                                                               | No      |
| <i>Grow</i>                        | $= (\text{sales}_t - \text{sales}_{t-1}) / \text{sales}_{t-1}$                                                                                                                                                                                                                | Yes     |
| <i>HVice<sub>ijt</sub></i>         | Sum of logged audit fees (in million JPY) received by firm <i>i</i> 's lead partner <i>j</i> from their clients (other than firm <i>i</i> ) that have two or more vice-partners signing on the audit report for year <i>t</i>                                                 | No      |
| <i>HVice_Sales<sub>ijt</sub></i>   | Sum of logged sales (in million JPY) of the clients of firm <i>i</i> 's lead partner <i>j</i> (other than firm <i>i</i> ) that have two or more vice-partners signing on audit reports for year <i>t</i>                                                                      | No      |
| <i>Invrec</i>                      | $= (\text{accounts receivables} + \text{inventories}) / \text{total assets}$                                                                                                                                                                                                  | Yes     |
| <i>Lev</i>                         | $= \text{total liabilities} / \text{total assets}$                                                                                                                                                                                                                            | Yes     |
| <i>Loss</i>                        | 1 if the firm reports negative net income, and 0 otherwise                                                                                                                                                                                                                    | No      |
| <i>LTenure<sub>ijt</sub></i>       | Sum of logged audit fees (in million JPY) received by firm <i>i</i> 's lead partner <i>j</i> from their clients (other than firm <i>i</i> ) that have a three-year or longer audit firm tenure for year <i>t</i>                                                              | No      |
| <i>LTenure_Sales<sub>ijt</sub></i> | Sum of logged sales (in million JPY) of the clients of firm <i>i</i> 's lead partner <i>j</i> (other than firm <i>i</i> ) that have a three-year or longer audit firm tenure for year <i>t</i>                                                                                | No      |
| <i>LVice<sub>ijt</sub></i>         | Sum of logged audit fees (in million JPY) received by firm <i>i</i> 's lead partner <i>j</i> from their clients (other than firm <i>i</i> ) that have one or no vice-partners signing on the audit report for year <i>t</i>                                                   | No      |
| <i>LVice_Sales<sub>ijt</sub></i>   | Sum of logged sales (in million JPY) of the clients of firm <i>i</i> 's lead partner <i>j</i> (other than firm <i>i</i> ) that have one or no vice-partners signing on audit reports for year <i>t</i>                                                                        | No      |
| <i>LVice_STenure<sub>ijt</sub></i> | Sum of logged audit fees (in million JPY) received by firm <i>i</i> 's lead partner <i>j</i> from their clients (other than firm <i>i</i> ) that have one or no vice-partners signing on the audit report and with a less than three-year audit firm tenure for year <i>t</i> | No      |

|                               |                                                                                                                                                                                                                                 |     |
|-------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| $LVice\_STenure\_Sales_{ijt}$ | Sum of logged sales (in million JPY) of the clients of firm $i$ 's lead partner $j$ (other than firm $i$ ) that have one or no vice-partners signing on audit reports and less than a three-year audit firm tenure for year $t$ | No  |
| $Others_{ijt}$                | $= BUSY - LVice\_STenure$                                                                                                                                                                                                       | No  |
| $Others\_Sales_{ijt}$         | $= BUSY\_Sales - LVice\_STenure\_Sales$                                                                                                                                                                                         | No  |
| $Pten$                        | 1 if the lead partner's tenure as a lead partner is three years or longer, and 0 otherwise                                                                                                                                      | No  |
| $RES$                         | 1 if the firm's financial statements of period $t$ are restated after the initial disclosure, and 0 otherwise                                                                                                                   | No  |
| $ROA$                         | $= \text{net income} / \text{total assets}$                                                                                                                                                                                     | Yes |
| $Size$                        | $= \ln((\text{market value of equity} + \text{book value of total liabilities}) / 1,000,000)$                                                                                                                                   | No  |
| $STenure_{ijt}$               | Sum of logged audit fees (in million JPY) received by firm $i$ 's lead partner $j$ from their clients (other than firm $i$ ) that have less than three-year audit firm tenure for year $t$                                      | No  |
| $STenure\_Sales_{ijt}$        | Sum of logged sales of the clients of firm $i$ 's lead partner $j$ (other than firm $i$ ) that have less than three-year audit firm tenure for year $t$                                                                         | No  |
| $TACC$                        | Total accruals for year $t-1$ , deflated by total assets in year $t-1$                                                                                                                                                          | Yes |
| $Vice\_D$                     | 1 if the number of vice-partners of firm $i$ is two or more, and 0 otherwise                                                                                                                                                    | No  |

The far-right column shows whether the outlier is treated. For outlier treatment, we winsorize the values at the 1st (99th percentile).

## Appendix B. Transition of the number of clients assigned to partners



This graph displays the transition in the number of clients assigned to lead engagement partners from Time 1 to Time 5 ( $t$  to  $t + 4$ ). The transition period covers 2004–2021. We calculate the transition on a rolling basis, such as 2004–2008, 2005–2009, and 2006–2010. Partners are divided into quintiles based on the number of clients from Time 1 to Time 5, and the quintile numbers are followed from Time 2 to Time 5 for partners categorized into a certain quintile at Time 1. Then, the average values of these quintile numbers are plotted from Time 2 to Time 5.

This figure indicates that the sorted quintile numbers are consistent over the time series. Specifically, partners sorted into the first (fifth) quintile in year  $t$  (T1) are sorted, on average, into the second (fourth) quintile in year  $t + 4$  (T5). That is, partner busyness represents a moderate reversal in the time series, but the speed of reversal is sluggish.

## Data availability

Data supporting the findings of this study are available from the sources identified in this study.

## References

- Adams, R. B., Hermalin, B. E., & Weisbach, M. S. (2010). The role of boards of directors in corporate governance: A conceptual framework and survey. *Journal of Economic Literature*, 48, 58-107. doi=10.1257/jel.48.1.58
- Ahmed, A. S., Li, Y., & Xu, N. (2020). Tick size and financial reporting quality in small-cap firms: Evidence from a natural experiment. *Journal of Accounting Research*, 58, 869-914. doi: 10.1111/1475-679X.12331
- AICPA (1992). *Statement of position regarding mandatory rotation of audit firms of publicly held companies*. New York: AICPA.
- Aobdia, D., Choudhary, P., & Newberger, N. (2022). The economics of audit production: What matters for audit quality? An empirical analysis of the role of mid-level managers within the audit firm. *Working Paper*. The Pennsylvania State University, University of Arizona, and Caribou. doi.org/10.2139/ssrn.3300277
- Aobdia, D., Lin, C.-J., & Petacchi, R. (2015). Capital market consequences of audit partner quality. *The Accounting Review*, 90, 2143-2176. doi: 10.2308/accr-51054
- Balsam, S., Krishnan, J., & Yang, J. S. (2003). Auditor industry specialization and earnings quality. *Auditing: A Journal of Practice & Theory*, 22, 71-97. doi.org/10.2308/aud.2003.22.2.71
- Becker, C. L., DeFond, M. L., Jambalvo, J., & Subramanyam, K. R. (1998). The effect of audit quality on earnings management. *Contemporary Accounting Research*, 15, 1-24. doi:10.1111/j.1911-3846.1998.tb00547.x
- Bronson, S. T., Ghosh, A., & Hogan, C. E. (2017). Audit fee differential, audit effort, and litigation risk: An examination of ADR firms. *Contemporary Accounting Research*, 34, 83-117. oi.org/10.1111/1911-3846.12238
- CAQ (2014). *CAQ approach to audit quality indicators*. Washington, DC: Center for Audit Quality.
- Carey, P. & Simnett, R. (2006). Audit partner tenure and audit quality. *The Accounting Review*, 81, 653-676. https://doi.org/10.2308/accr.2006.81.3.653
- Carcello, J. V., & Nagy, A. L. (2004). Audit firm tenure and fraudulent financial reporting. *Auditing: A Journal of Practice & Theory*, 23, 55-69. doi:10.2308/aud.2004.23.2.55
- Casterella, J. R., & Johnston, D. (2013). Can the academic literature contribute to the debate over mandatory audit firm rotation? *Research in Accounting Regulation*, 25, 108-116. doi:10.1016/j.racreg.2012.11.004
- Chang, H., Hsu, C., & Ma, Z. (2022). Does product similarity of audit clients influence audit efficiency and pricing decision? *Journal of Business Finance & Accounting*, 49, 807-840. doi.org/10.1111/jbfa.12578

- Chen, X., Dai, Y., Kong, D., & Tan, W. (2017). Effect of international working experience of individual auditors on audit quality: Evidence from China. *Journal of Business Finance & Accounting*, 44, 1073–1108. doi.org/10.1111/jbfa.12257
- Chen, W., Hribar, P., & Melessa, S. (2018). Incorrect inferences when using residuals as dependent variables. *Journal of Accounting Research*, 56, 751–796. doi.org/10.1111/1475-679X.12195
- Choi, J.-H., Kim, J.-B., & Zang, Y. (2010). Do abnormally high audit fees impair audit quality? *Auditing: A Journal of Practice & Theory*, 29, 115–140. doi.org/10.2308/aud.2010.29.2.115
- Chou, T.-K., Pittman, J. A., & Zhuang, Z. (2021). The importance of partner narcissism to audit quality: Evidence from Taiwan. *The Accounting Review*, 96, 103–127. doi.org/10.2308/TAR-2018-0420
- Christensen, B. E., Newton, N. J., & Wilkins, M. S. (2021). How do team workloads and team staffing affect the audit? Archival evidence from U.S. audits. *Accounting, Organizations and Society*, 92, 101225. doi.org/10.1016/j.aos.2021.101225
- Chung, H., Sonu, C. H., Zang, Y., & Choi, J.-H. (2019). Opinion shopping to avoid a going concern audit opinion and subsequent audit quality. *Auditing: A Journal of Practice & Theory*, 38, 101–123. doi.org/10.2308/ajpt-52154
- Church, B. K., Dai, N. T., Kuang, X., & Liu, X. (2020). The role of auditor narcissism in auditor-client negotiations: Evidence from China. *Contemporary Accounting Research*, 37, 1756–1787. doi.org/10.1111/1911-3846.12565
- Clark, M. A., Lelchook, A. M., & Taylor, M. L. (2010). Beyond the big five: How narcissism, perfectionism, and dispositional affect relate to workaholism. *Personality and Individual Differences*, 48, 786–791. doi.org/10.1016/j.paid.2010.01.013
- Craswell, A., Stokes, D. J., & Laughton, J. (2002). Auditor independence and fee dependence. *Journal of Accounting and Economics*, 33, 253–275. doi.org/10.1016/S0165-4101(02)00044-7
- Davis, L. R., Soo, B. S., & Trompeter, G. M. (2009). Auditor tenure and the ability to meet or beat earnings forecasts. *Contemporary Accounting Research*, 26, 517–548. doi.org/10.1506/car.26.2.8
- DeAngelo, L. E. (1981). Auditor independence, ‘low balling’, and disclosure regulation. *Journal of Accounting and Economics*, 3, 113–127. doi.org/10.1016/0165-4101(81)90009-4
- Dechow, P. M., Sloan, R. G., & Sweeney, A. P. (1995). Detecting earnings management. *The Accounting Review*, 70, 193–225.
- DeFond, M., & Park, C. W. (2001). The reversal of abnormal accruals and the market valuation of earnings surprises. *The Accounting Review* 76, 375–404. doi.org/10.2308/accr.2001.76.3.375
- DeFond, M., & Zhang, J. (2014). A review of archival auditing research. *Journal of Accounting and Economics*, 58, 275–326. doi.org/10.1016/j.jacceco.2014.09.002
- Dekeyser, S., Gaeremynck, A., Knechel, W. R., & Willekens M. (2021). The impact of partners’ economic incentives on audit quality in Big 4 partnerships. *The Accounting Review*, 96, 129–152. doi.org/10.2308/TAR-2018-0109
- Fich, E. M., & Shivdasani, A. (2006). Are busy board effective monitors? *The Journal of Finance*, 61, 689–724. doi.org/10.1111/j.1540-6261.2006.00852.x

- Frankel, R. M., Johnson, M. F., & Nelson, K. K. (2002). The relation between auditors' fees for nonaudit services and earnings management. *The Accounting Review*, 77, 71–105. doi.org/10.2308/accr.2002.77.s-1.71
- FEE. (2016). *Overview of audit quality indicators initiatives*. Belgium: Federation of European Accountants.
- Fukukawa, H., Mock, T. J., & Wright, A. (2011). Client risk factors and audit resource allocation decisions. *Abacus*, 47, 85–108. doi.org/10.1111/j.1467-6281.2011.00332.x
- GAO. (2003). *Public accounting firms: Mandated study on consolidation and competition, GAO-03-864*. Washington, DC: U.S. General Accounting Office.
- Goodwin, J., & Wu, D. (2016). What is the relationship between audit partner busyness and audit quality? *Contemporary Accounting Research*, 33, 341–377. doi.org/10.1111/1911-3846.12129
- Gul, F. A., Ma, S., & Lai, K. (2017). Busy auditors, partner-client tenure, and audit quality: Evidence from an emerging market. *Journal of International Accounting Research*, 16, 83–105. doi.org/10.2308/jiar-51706
- Gul, F., Wu, D., & Yang, Z. (2013). Do individual auditor affect audit quality? Evidence from archival data. *The Accounting Review*, 88 (6), 1993–2023. doi.org/10.2308/accr-50536
- Habib, A., Bhuiyan, M. B. U., & Sun, X. (2019). Audit partner busyness and cost of equity capital. *International Journal of Auditing* 23, 57–72. doi.org/10.1111/ijau.12144
- Hackenbrack, K., & Knechel, W. R. (1997). Resource allocation decisions in audit engagements. *Contemporary Accounting Research*, 14, 481–499. doi.org/10.1111/j.1911-3846.1997.tb00537.x
- He, W., Sidhu, B., & Taylor, S. (2019). Audit quality and properties of analysts' information environment. *Journal of Business Finance & Accounting*, 46, 400–419. doi.org/10.1111/jbfa.12358
- Hermanson, D. R., Houston, R. W., & Rice, J. C. (2007). PCAOB inspections of smaller CPA firms: Initial evidence from inspection reports. *Accounting Horizons*, 21, 137–152. doi.org/10.2308/acch.2007.21.2.137
- Hogan, C. E., & Wilkins, M. S. (2008). Evidence on the audit risk model: Do auditors increase audit fees in the presence of internal control deficiencies? *Contemporary Accounting Research*, 25, 219–242. doi.org/10.1506/car.25.1.9
- Hossain, S., Yazawa, K., & Monroe, G. (2017). The relationship between audit team composition, audit fees, and quality. *Auditing: A Journal of Practice & Theory*, 36, 115–135. doi.org/10.2308/ajpt-51682
- Ittonen, K., & Trønnes, P. C. (2015). Benefits and costs of appointing joint audit engagement partners. *Auditing: A Journal of Practice & Theory*, 34, 23–4. doi.org/10.2308/ajpt-50934
- Ittonen, K., Vähämaa, E., & Vähämaa, S. (2013). Female auditors and accruals quality. *Accounting Horizons*, 27, 205–228. doi.org/10.2308/acch-50400
- JICPA. (2016). *Report on audit implementation status of 2014*. Tokyo: The Japanese Institute of Certified Public Accountants (in Japanese).
- Johnson, E., Khurana, I. K., & Reynolds, J. K. (2002). Audit-firm tenure and the quality of financial reports. *Contemporary Accounting Research*, 19, 637–660. doi.org/10.1506/LLTH-JXQV-8CEW-8MXD

- Knechel, W. R. (2015). Audit research in the wake of SOX. *Managerial Auditing Journal*, 30, 706–726. doi.org/10.1108/MAJ-08-2015-1233
- Kothari, S. P., Leone, A. J., & Wasley, C. E. (2005). Performance matched discretionary accrual measures. *Journal of Accounting and Economics*, 39, 163–197. doi.org/10.1016/j.jacceco.2004.11.002
- Lai, K. M. Y., Sasmita, A., Gul, F. A., Foo, Y. B., & Hutchinson, M. (2018). Busy auditors, ethical behavior, and discretionary accruals quality in Malaysia. *Journal of Business Ethics*, 150, 1187–1198. doi.org/10.1007/s10551-016-3152-4
- Larcker, D. F., & Rusticus, T. O. (2010). On the use of instrumental variables in accounting research. *Journal of Accounting and Economics*, 49, 186–205. doi.org/10.1016/j.jacceco.2009.11.004
- Lennox, C. S., & Wu, X. (2018). A review of the archival literature on audit partners. *Accounting Horizons*, 32, 1–35. doi.org/10.2308/acch-51942
- Lopez, D. M., & Peter, G. F. (2012). The effect of workload compression on audit quality. *Auditing: A Journal of Practice & Theory*, 31, 139–165. doi.org/10.2308/ajpt-10305
- McNichols, M. F. (2002). Discussion of the quality of accruals and earnings: The role of accrual estimation errors. *The Accounting Review*, 77, 61–69. doi.org/10.2308/accr.2002.77.s-1.61
- Myers, J. N., Myers, L. A., & Omer, T. C. (2003). Exploring the term of the auditor-client relationship and the quality of earnings: A case for mandatory auditor rotation? *The Accounting Review*, 78, 779–799. doi.org/10.2308/accr.2003.78.3.779M
- Ng, T. W. H., Sorensen, K. L., & Feldman, D. C. (2007). Dimensions, antecedents, and consequences of workaholism: A conceptual integration and extension. *Journal of Organizational Behavior*, 28, 111–136. doi.org/10.1002/job.424
- O'Keefe, T. B., Simunic, D. A., & Stein, M. T. (1994). The production of audit services: Evidence from a major public accounting firm. *Journal of Accounting Research*, 32, 241–261. doi.org/10.2307/2491284
- PCAOB. (2015). *Concept release on audit quality indicators (release no. 2015-005, July 1, 2015)*. Washington, DC: Public Company Accounting Oversight Board.
- Persellin, J. S., Schmidt, J. J., Vandervelde, S. D., & Wikins, M. S. (2019). Auditor perceptions of audit workloads, audit quality, and job satisfaction. *Accounting Horizons*, 33, 95–117. doi.org/10.2308/acch-52488
- Read, W. J., & Yezegel, A. (2016). Auditor tenure and going concern opinions for bankrupt clients: Additional evidence. *Auditing: A Journal of Practice & Theory*, 35, 163–179. doi.org/10.2308/ajpt-51217
- Skinner, D. J., & Srinivasan, S. (2012). Audit quality and auditor reputation: Evidence from Japan. *The Accounting Review*, 87, 1737–1765. doi.org/10.2308/accr-50198
- Stein, M. T., Simunic, D. A., & O'Keefe, T. B. (1994). Industry differences in the production of audit services. *Auditing: A Journal of Practice & Theory*, 13, 128–142.
- Sundgren, S., & Svanström, T. (2014). Auditor-in-charge characteristics and going-concern reporting. *Contemporary Accounting Research*, 31, 531–550. doi.org/10.1111/1911-3846.12035
- Sweeney, J. T., & Summers, S. L. (2002). The effect of the busy season workload on public accountants' job burnout. *Behavioral Research in Accounting*, 14, 223–245. doi.org/10.2308/bria.2002.14.1.223

- Tanyi, P., & Litt, B. (2017). The unintended consequences of the frequency of PCAOB inspection. *Journal of Business Finance & Accounting*, 44, 116–153. doi.org/10.1111/jbfa.12230
- Zaman, M., Hudaib, M., & Haniffa, R. (2011). Corporate governance quality, audit fees and non-audit service fees. *Journal of Business Finance & Accounting*, 38, 165–197. doi.org/10.1111/j.1468-5957.2010.02224.x

## Tables

**Table 1. Basic statistics**

**Panel A: Descriptive statistics**

|                               | Mean  | Std. dev. | P10   | P25   | Median | P75   | P90   | N      |
|-------------------------------|-------|-----------|-------|-------|--------|-------|-------|--------|
| <u>Busyness variables</u>     |       |           |       |       |        |       |       |        |
| <i>BUSY</i>                   | 14.68 | 12.29     | 0.00  | 5.58  | 12.26  | 21.15 | 30.81 | 57,513 |
| <i>LVice</i>                  | 11.39 | 10.81     | 0.00  | 3.22  | 8.82   | 16.66 | 26.13 | 57,513 |
| <i>HVice</i>                  | 3.28  | 5.60      | 0.00  | 0.00  | 0.00   | 4.62  | 10.03 | 57,513 |
| <i>STenure</i>                | 7.42  | 7.41      | 0.00  | 1.79  | 5.89   | 11.10 | 17.35 | 57,513 |
| <i>LTenure</i>                | 7.26  | 8.45      | 0.00  | 0.00  | 4.44   | 10.96 | 18.35 | 57,513 |
| <i>LVice_STenure</i>          | 5.83  | 6.60      | 0.00  | 0.00  | 3.64   | 8.90  | 14.63 | 57,513 |
| <i>Others</i>                 | 8.85  | 9.35      | 0.00  | 0.00  | 6.58   | 13.31 | 21.01 | 57,513 |
| <u>Audit quality measures</u> |       |           |       |       |        |       |       |        |
| <i> Abacc </i>                | 2.77  | 2.84      | 0.33  | 0.84  | 1.87   | 3.63  | 6.31  | 57,513 |
| <i>RES</i>                    | 0.17  | 0.37      | 0.00  | 0.00  | 0.00   | 0.00  | 1.00  | 21,547 |
| <i>GC</i>                     | 0.26  | 0.44      | 0.00  | 0.00  | 0.00   | 1.00  | 1.00  | 187    |
| <u>Control variables</u>      |       |           |       |       |        |       |       |        |
| <i>Fem</i>                    | 0.02  | 0.15      | 0.00  | 0.00  | 0.00   | 0.00  | 0.00  | 57,513 |
| <i>Career</i>                 | 0.80  | 0.40      | 0.00  | 1.00  | 1.00   | 1.00  | 1.00  | 57,513 |
| <i>Pten</i>                   | 0.30  | 0.46      | 0.00  | 0.00  | 0.00   | 1.00  | 1.00  | 57,513 |
| <i>BIG</i>                    | 0.74  | 0.44      | 0.00  | 0.00  | 1.00   | 1.00  | 1.00  | 57,513 |
| <i>Ften</i>                   | 0.85  | 0.36      | 0.00  | 1.00  | 1.00   | 1.00  | 1.00  | 57,513 |
| <i>Vice_D</i>                 | 0.20  | 0.40      | 0.00  | 0.00  | 0.00   | 0.00  | 1.00  | 57,513 |
| <i>FDep</i>                   | 0.02  | 0.12      | 0.00  | 0.00  | 0.00   | 0.00  | 0.00  | 57,513 |
| <i>Size</i>                   | 10.45 | 1.69      | 8.46  | 9.31  | 10.29  | 11.42 | 12.68 | 57,513 |
| <i>Fee</i>                    | 3.42  | 0.76      | 2.64  | 2.94  | 3.30   | 3.74  | 4.32  | 57,513 |
| <i>Grow</i>                   | 0.04  | 0.18      | -0.12 | -0.04 | 0.02   | 0.09  | 0.19  | 57,513 |
| <i>Lev</i>                    | 0.19  | 0.18      | 0.00  | 0.03  | 0.15   | 0.31  | 0.46  | 57,513 |
| <i>ROA</i>                    | 0.05  | 0.07      | 0.00  | 0.02  | 0.05   | 0.08  | 0.12  | 57,513 |
| <i>Loss</i>                   | 0.11  | 0.31      | 0.00  | 0.00  | 0.00   | 0.00  | 1.00  | 57,513 |
| <i>Invrec</i>                 | 0.32  | 0.17      | 0.09  | 0.20  | 0.32   | 0.43  | 0.55  | 57,513 |
| <i>TACC</i>                   | -0.03 | 0.06      | -0.09 | -0.05 | -0.03  | 0.00  | 0.04  | 57,513 |

**Panel B: Sample distributions for busyness variables**

|                      | Total sample | ≠ 0    | 0      |
|----------------------|--------------|--------|--------|
| <i>BUSY</i>          | 57,513       | 51,010 | 6,503  |
| <i>LVice</i>         | 57,513       | 47,617 | 9,896  |
| <i>HVice</i>         | 57,513       | 23,499 | 34,014 |
| <i>STenure</i>       | 57,513       | 43,201 | 14,312 |
| <i>LTenure</i>       | 57,513       | 39,394 | 18,119 |
| <i>LVice_STenure</i> | 57,513       | 38,765 | 18,748 |
| <i>Others</i>        | 57,513       | 42,820 | 14,693 |

Note: This table shows the descriptive statistics. Panel A presents the descriptive statistics of the variables used in this analysis. The descriptive statistics are mean values, standard deviations, 10<sup>th</sup> percentile values, 25<sup>th</sup> percentile values, medians, 75<sup>th</sup> percentile values, and 90<sup>th</sup> percentile values. Appendix A provides the definitions of the variables. Panel B provides the number of samples with nonzero and zero values for the busyness variables.

**Table 2. Results of using the absolute value of abnormal accruals as the audit quality measure**

|                      | Model 1               | Model 2               | Model 3               | Model 4               |
|----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| <i>BUSY</i>          | 0.002**<br>(2.22)     |                       |                       |                       |
| <i>LVice</i>         |                       | 0.003***<br>(2.82)    |                       |                       |
| <i>HVice</i>         |                       | -0.001<br>(-0.74)     |                       |                       |
| <i>STenure</i>       |                       |                       | 0.005***<br>(3.13)    |                       |
| <i>LTenure</i>       |                       |                       | -0.000<br>(-0.11)     |                       |
| <i>LVice_STenure</i> |                       |                       |                       | 0.006***<br>(3.43)    |
| <i>Others</i>        |                       |                       |                       | -0.000<br>(-0.11)     |
| <i>Fem</i>           | 0.025<br>(0.37)       | 0.027<br>(0.40)       | 0.025<br>(0.37)       | 0.025<br>(0.38)       |
| <i>Career</i>        | -0.056*<br>(-1.80)    | -0.055*<br>(-1.79)    | -0.047<br>(-1.49)     | -0.045<br>(-1.45)     |
| <i>Pten</i>          | 0.004<br>(0.18)       | 0.007<br>(0.28)       | 0.014<br>(0.56)       | 0.015<br>(0.59)       |
| <i>BIG</i>           | -0.147***<br>(-5.03)  | -0.146***<br>(-5.00)  | -0.149***<br>(-5.11)  | -0.148***<br>(-5.05)  |
| <i>Ften</i>          | -0.310***<br>(-8.46)  | -0.312***<br>(-8.50)  | -0.311***<br>(-8.47)  | -0.312***<br>(-8.49)  |
| <i>Vice_D</i>        | 0.038<br>(1.30)       | 0.055*<br>(1.84)      | 0.039<br>(1.35)       | 0.050*<br>(1.71)      |
| <i>FDep</i>          | -0.057<br>(-0.52)     | -0.055<br>(-0.50)     | -0.055<br>(-0.50)     | -0.053<br>(-0.48)     |
| <i>Fee</i>           | 0.479***<br>(15.52)   | 0.480***<br>(15.52)   | 0.479***<br>(15.51)   | 0.479***<br>(15.52)   |
| <i>Size</i>          | -0.410***<br>(-28.53) | -0.409***<br>(-28.46) | -0.409***<br>(-28.49) | -0.409***<br>(-28.44) |
| <i>Grow</i>          | 0.747***<br>(7.81)    | 0.746***<br>(7.80)    | 0.746***<br>(7.81)    | 0.745***<br>(7.79)    |
| <i>Lev</i>           | 0.642***<br>(8.08)    | 0.643***<br>(8.09)    | 0.640***<br>(8.06)    | 0.641***<br>(8.08)    |
| <i>ROA</i>           | -3.892***<br>(-12.27) | -3.891***<br>(-12.27) | -3.889***<br>(-12.26) | -3.888***<br>(-12.26) |
| <i>Loss</i>          | 1.242***<br>(22.49)   | 1.242***<br>(22.49)   | 1.242***<br>(22.50)   | 1.242***<br>(22.50)   |
| <i>Invrec</i>        | 2.024***<br>(21.96)   | 2.026***<br>(21.97)   | 2.024***<br>(21.96)   | 2.025***<br>(21.97)   |
| <i>TACC</i>          | -1.415***<br>(-4.28)  | -1.417***<br>(-4.29)  | -1.417***<br>(-4.29)  | -1.416***<br>(-4.28)  |
| Month dummies        | Yes                   | Yes                   | Yes                   | Yes                   |
| Indus. dummies       | Yes                   | Yes                   | Yes                   | Yes                   |
| Year dummies         | Yes                   | Yes                   | Yes                   | Yes                   |
| Constant             | 4.987***<br>(30.47)   | 4.980***<br>(30.42)   | 4.978***<br>(30.41)   | 4.970***<br>(30.33)   |
| Observations         | 57,513                | 57,513                | 57,513                | 57,513                |

|                         |       |       |       |       |
|-------------------------|-------|-------|-------|-------|
| Adjusted R <sup>2</sup> | 0.192 | 0.192 | 0.192 | 0.192 |
|-------------------------|-------|-------|-------|-------|

Note: This table reports regression results using absolute abnormal accruals as a proxy for audit quality. The regression model is as follows:

$$|Abnacc_{it}| = \beta_0 + \beta_1 BUSY_{ijt} + \beta_2 Fem_{ijt} + \beta_3 Career_{ijt} + \beta_4 Pten_{ijt} + \beta_5 BIG_{it} + \beta_6 Ften_{it} + \beta_7 Vice_{D_{it}} + \beta_8 FDep_{it} + \beta_9 Fee_{it} + \beta_{10} Size_{it} + \beta_{11} Grow_{it} + \beta_{12} Lev_{it} + \beta_{13} ROA_{it} + \beta_{14} Loss_{it} + \beta_{15} Invrec_{it} + \beta_{16} TACC_{it} + \sum \gamma_n MONTH_{D_{it}} + \sum \delta_j IND_{D_{it}} + \sum \theta_k YEAR_{D_{it}} + \varepsilon_{it}.$$

The dependent variable is the absolute abnormal accruals of firm  $i$  in year  $t$  ( $|Abnacc_{it}|$ ).  $BUSY_{it}$  is the sum of the logged audit fees received by firm  $i$ 's lead partner  $j$  from their clients (other than firm  $i$ ) in year  $t$ . The other independent variables are defined in Appendix A.  $t$  values based on heteroskedasticity-robust standard errors are enclosed in parentheses. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

**Table 3. Results for subsamples using abnormal accruals**

|                      | Panel A: Abacc $\geq$ 0 |                      |                      |                      | Panel B: Abacc<0     |                      |                      |                      |
|----------------------|-------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
|                      | Model 1                 | Model 2              | Model 3              | Model 4              | Model 5              | Model 6              | Model 7              | Model 8              |
| <i>BUSY</i>          | 0.002*<br>(1.91)        |                      |                      |                      | 0.001<br>(1.01)      |                      |                      |                      |
| <i>LVice</i>         |                         | 0.003**<br>(2.26)    |                      |                      |                      | 0.002<br>(0.99)      |                      |                      |
| <i>HVice</i>         |                         | -0.001<br>(-0.26)    |                      |                      |                      | 0.001<br>(0.29)      |                      |                      |
| <i>STenure</i>       |                         |                      | 0.005***<br>(2.70)   |                      |                      |                      | 0.002<br>(0.87)      |                      |
| <i>LTenure</i>       |                         |                      | -0.000<br>(-0.14)    |                      |                      |                      | 0.001<br>(0.49)      |                      |
| <i>LVice_STenure</i> |                         |                      |                      | 0.007***<br>(3.31)   |                      |                      |                      | 0.001<br>(0.57)      |
| <i>Others</i>        |                         |                      |                      | -0.001<br>(-0.39)    |                      |                      |                      | 0.001<br>(0.77)      |
| <i>Fem</i>           | -0.114<br>(-1.26)       | -0.112<br>(-1.24)    | -0.114<br>(-1.26)    | -0.113<br>(-1.25)    | 0.078<br>(0.86)      | 0.078<br>(0.87)      | 0.077<br>(0.86)      | 0.078<br>(0.86)      |
| <i>Career</i>        | -0.075*<br>(-1.93)      | -0.074*<br>(-1.92)   | -0.064<br>(-1.63)    | -0.061<br>(-1.55)    | -0.010<br>(-0.23)    | -0.010<br>(-0.23)    | -0.008<br>(-0.19)    | -0.010<br>(-0.23)    |
| <i>Pten</i>          | 0.003<br>(0.08)         | 0.005<br>(0.16)      | 0.013<br>(0.42)      | 0.016<br>(0.51)      | -0.015<br>(-0.41)    | -0.014<br>(-0.40)    | -0.013<br>(-0.36)    | -0.015<br>(-0.41)    |
| <i>BIG</i>           | -0.204***<br>(-5.54)    | -0.203***<br>(-5.51) | -0.207***<br>(-5.60) | -0.205***<br>(-5.56) | -0.066<br>(-1.59)    | -0.066<br>(-1.58)    | -0.066<br>(-1.60)    | -0.066<br>(-1.59)    |
| <i>Ften</i>          | -0.395***<br>(-8.29)    | -0.396***<br>(-8.32) | -0.395***<br>(-8.31) | -0.397***<br>(-8.33) | -0.156***<br>(-3.05) | -0.156***<br>(-3.05) | -0.156***<br>(-3.05) | -0.156***<br>(-3.05) |
| <i>Vice_D</i>        | 0.018<br>(0.50)         | 0.033<br>(0.87)      | 0.019<br>(0.54)      | 0.033<br>(0.90)      | 0.069*<br>(1.69)     | 0.072*<br>(1.69)     | 0.070*<br>(1.70)     | 0.069*<br>(1.67)     |
| <i>FDep</i>          | 0.056<br>(0.42)         | 0.058<br>(0.43)      | 0.058<br>(0.43)      | 0.061<br>(0.45)      | -0.130<br>(-0.84)    | -0.129<br>(-0.84)    | -0.129<br>(-0.84)    | -0.130<br>(-0.84)    |
| <i>Fee</i>           | 0.274***<br>(6.75)      | 0.274***<br>(6.76)   | 0.273***<br>(6.74)   | 0.274***<br>(6.75)   | 0.583***<br>(13.52)  | 0.583***<br>(13.52)  | 0.583***<br>(13.52)  | 0.583***<br>(13.52)  |

|                         |                       |                       |                       |                       |                        |                        |                        |                        |
|-------------------------|-----------------------|-----------------------|-----------------------|-----------------------|------------------------|------------------------|------------------------|------------------------|
| <i>Size</i>             | -0.329***<br>(-17.68) | -0.328***<br>(-17.63) | -0.328***<br>(-17.64) | -0.327***<br>(-17.58) | -0.418***<br>(-20.68)  | -0.418***<br>(-20.68)  | -0.418***<br>(-20.68)  | -0.418***<br>(-20.68)  |
| <i>Grow</i>             | 0.768***<br>(6.10)    | 0.767***<br>(6.10)    | 0.767***<br>(6.10)    | 0.765***<br>(6.08)    | 0.666***<br>(4.75)     | 0.666***<br>(4.74)     | 0.666***<br>(4.74)     | 0.666***<br>(4.74)     |
| <i>Lev</i>              | 1.457***<br>(14.69)   | 1.457***<br>(14.69)   | 1.454***<br>(14.67)   | 1.455***<br>(14.67)   | -0.450***<br>(-3.98)   | -0.450***<br>(-3.98)   | -0.450***<br>(-3.99)   | -0.450***<br>(-3.98)   |
| <i>ROA</i>              | 1.240***<br>(3.28)    | 1.239***<br>(3.27)    | 1.243***<br>(3.29)    | 1.242***<br>(3.28)    | -9.291***<br>(-20.45)  | -9.291***<br>(-20.44)  | -9.291***<br>(-20.44)  | -9.291***<br>(-20.44)  |
| <i>Loss</i>             | 0.831***<br>(10.95)   | 0.831***<br>(10.95)   | 0.832***<br>(10.97)   | 0.833***<br>(10.98)   | 1.239***<br>(16.79)    | 1.239***<br>(16.79)    | 1.239***<br>(16.79)    | 1.239***<br>(16.79)    |
| <i>Invrec</i>           | 2.284***<br>(20.12)   | 2.285***<br>(20.13)   | 2.285***<br>(20.13)   | 2.287***<br>(20.15)   | 0.792***<br>(5.89)     | 0.793***<br>(5.89)     | 0.792***<br>(5.89)     | 0.792***<br>(5.89)     |
| <i>TACC</i>             | 12.295***<br>(28.50)  | 12.291***<br>(28.48)  | 12.288***<br>(28.48)  | 12.285***<br>(28.48)  | -15.883***<br>(-33.17) | -15.882***<br>(-33.16) | -15.882***<br>(-33.16) | -15.883***<br>(-33.17) |
| Month dummies           | Yes                   | Yes                   | Yes                   | Yes                   | Yes                    | Yes                    | Yes                    | Yes                    |
| Indus. dummies          | Yes                   | Yes                   | Yes                   | Yes                   | Yes                    | Yes                    | Yes                    | Yes                    |
| Year dummies            | Yes                   | Yes                   | Yes                   | Yes                   | Yes                    | Yes                    | Yes                    | Yes                    |
| Constant                | 4.616***<br>(22.38)   | 4.610***<br>(22.34)   | 4.607***<br>(22.33)   | 4.594***<br>(22.25)   | 4.584***<br>(19.31)    | 4.583***<br>(19.31)    | 4.583***<br>(19.29)    | 4.584***<br>(19.28)    |
| Observations            | 29,711                | 29,711                | 29,711                | 29,711                | 27,802                 | 27,802                 | 27,802                 | 27,802                 |
| Adjusted R <sup>2</sup> | 0.241                 | 0.241                 | 0.242                 | 0.242                 | 0.319                  | 0.319                  | 0.319                  | 0.319                  |

Note: This table reports the regression results using absolute abnormal accruals for subsamples based on the signs of abnormal accruals. Panels A and B present the results for subsamples with zero or positive abnormal accruals and negative abnormal accruals, respectively. The dependent variable is the absolute abnormal accruals of firm  $i$  in year  $t$ .  $BUSY_{it}$  is the sum of logged audit fees received by firm  $i$ 's lead partner  $j$  from their clients (other than firm  $i$ ) for the year  $t$ . The other independent variables are defined in Appendix A.  $t$  values based on heteroskedasticity-robust standard errors are enclosed in parentheses. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

**Table 4. Results of using alternative busyness variables**

|                            | Panel A: Abacc>=0    |                      |                      |                      | Panel B: Abacc<0     |                      |                      |                      |
|----------------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
|                            | Model 1              | Model 2              | Model 3              | Model 4              | Model 5              | Model 6              | Model 7              | Model 8              |
| <i>BUSY_Sales</i>          | 0.001**<br>(2.16)    |                      |                      |                      | 0.000<br>(1.13)      |                      |                      |                      |
| <i>LVice_Sales</i>         |                      | 0.001**<br>(2.33)    |                      |                      |                      | 0.000<br>(0.90)      |                      |                      |
| <i>HVice_Sales</i>         |                      | 0.000<br>(0.12)      |                      |                      |                      | 0.001<br>(0.74)      |                      |                      |
| <i>STenure_Sales</i>       |                      |                      | 0.002***<br>(2.85)   |                      |                      |                      | 0.001<br>(0.93)      |                      |
| <i>LTenure_Sales</i>       |                      |                      | 0.000<br>(0.04)      |                      |                      |                      | 0.000<br>(0.56)      |                      |
| <i>LVice_STenure_Sales</i> |                      |                      |                      | 0.002***<br>(3.24)   |                      |                      |                      | 0.000<br>(0.43)      |
| <i>Others_Sales</i>        |                      |                      |                      | -0.000<br>(-0.06)    |                      |                      |                      | 0.001<br>(1.01)      |
| <i>Fem</i>                 | -0.113<br>(-1.25)    | -0.112<br>(-1.24)    | -0.113<br>(-1.25)    | -0.112<br>(-1.24)    | 0.078<br>(0.86)      | 0.077<br>(0.86)      | 0.078<br>(0.86)      | 0.078<br>(0.86)      |
| <i>Career</i>              | -0.077**<br>(-1.98)  | -0.077**<br>(-1.98)  | -0.066*<br>(-1.69)   | -0.064*<br>(-1.65)   | -0.011<br>(-0.25)    | -0.011<br>(-0.25)    | -0.009<br>(-0.22)    | -0.012<br>(-0.28)    |
| <i>Pten</i>                | 0.003<br>(0.08)      | 0.004<br>(0.14)      | 0.013<br>(0.42)      | 0.015<br>(0.47)      | -0.014<br>(-0.41)    | -0.015<br>(-0.42)    | -0.012<br>(-0.35)    | -0.016<br>(-0.44)    |
| <i>BIG</i>                 | -0.204***<br>(-5.58) | -0.204***<br>(-5.57) | -0.207***<br>(-5.66) | -0.206***<br>(-5.62) | -0.066<br>(-1.59)    | -0.066<br>(-1.59)    | -0.066<br>(-1.61)    | -0.066<br>(-1.59)    |
| <i>Ften</i>                | -0.395***<br>(-8.30) | -0.396***<br>(-8.32) | -0.396***<br>(-8.32) | -0.397***<br>(-8.34) | -0.156***<br>(-3.05) | -0.156***<br>(-3.05) | -0.156***<br>(-3.06) | -0.156***<br>(-3.05) |
| <i>Vice_D</i>              | 0.018<br>(0.50)      | 0.029<br>(0.77)      | 0.020<br>(0.54)      | 0.032<br>(0.87)      | 0.069*<br>(1.69)     | 0.067<br>(1.56)      | 0.069*<br>(1.69)     | 0.067<br>(1.63)      |
| <i>FDep</i>                | 0.059<br>(0.44)      | 0.060<br>(0.45)      | 0.062<br>(0.46)      | 0.064<br>(0.48)      | -0.128<br>(-0.83)    | -0.128<br>(-0.83)    | -0.127<br>(-0.83)    | -0.128<br>(-0.83)    |
| <i>Fee</i>                 | 0.275***<br>(6.78)   | 0.275***<br>(6.77)   | 0.275***<br>(6.77)   | 0.275***<br>(6.78)   | 0.584***<br>(13.53)  | 0.584***<br>(13.53)  | 0.584***<br>(13.53)  | 0.584***<br>(13.53)  |

|                         |                       |                       |                       |                       |                        |                        |                        |                        |
|-------------------------|-----------------------|-----------------------|-----------------------|-----------------------|------------------------|------------------------|------------------------|------------------------|
| <i>Size</i>             | -0.329***<br>(-17.69) | -0.328***<br>(-17.65) | -0.328***<br>(-17.65) | -0.327***<br>(-17.61) | -0.418***<br>(-20.69)  | -0.418***<br>(-20.70)  | -0.418***<br>(-20.68)  | -0.418***<br>(-20.69)  |
| <i>Grow</i>             | 0.767***<br>(6.10)    | 0.767***<br>(6.09)    | 0.767***<br>(6.09)    | 0.765***<br>(6.08)    | 0.666***<br>(4.74)     | 0.666***<br>(4.74)     | 0.666***<br>(4.74)     | 0.666***<br>(4.74)     |
| <i>Lev</i>              | 1.456***<br>(14.68)   | 1.456***<br>(14.68)   | 1.454***<br>(14.67)   | 1.455***<br>(14.67)   | -0.450***<br>(-3.99)   | -0.451***<br>(-3.99)   | -0.451***<br>(-3.99)   | -0.451***<br>(-3.99)   |
| <i>ROA</i>              | 1.237***<br>(3.27)    | 1.237***<br>(3.27)    | 1.240***<br>(3.28)    | 1.240***<br>(3.28)    | -9.292***<br>(-20.45)  | -9.292***<br>(-20.45)  | -9.291***<br>(-20.44)  | -9.293***<br>(-20.45)  |
| <i>Loss</i>             | 0.831***<br>(10.95)   | 0.831***<br>(10.95)   | 0.832***<br>(10.97)   | 0.832***<br>(10.97)   | 1.239***<br>(16.79)    | 1.239***<br>(16.79)    | 1.239***<br>(16.79)    | 1.239***<br>(16.79)    |
| <i>Invrec</i>           | 2.283***<br>(20.11)   | 2.284***<br>(20.12)   | 2.284***<br>(20.13)   | 2.286***<br>(20.14)   | 0.793***<br>(5.89)     | 0.793***<br>(5.89)     | 0.793***<br>(5.89)     | 0.793***<br>(5.89)     |
| <i>TACC</i>             | 12.294***<br>(28.49)  | 12.290***<br>(28.48)  | 12.288***<br>(28.48)  | 12.286***<br>(28.48)  | -15.883***<br>(-33.17) | -15.883***<br>(-33.17) | -15.883***<br>(-33.17) | -15.884***<br>(-33.17) |
| Month dummies           | Yes                   | Yes                   | Yes                   | Yes                   | Yes                    | Yes                    | Yes                    | Yes                    |
| Indus. dummies          | Yes                   | Yes                   | Yes                   | Yes                   | Yes                    | Yes                    | Yes                    | Yes                    |
| Year dummies            | Yes                   | Yes                   | Yes                   | Yes                   | Yes                    | Yes                    | Yes                    | Yes                    |
| Constant                | 4.600***<br>(22.27)   | 4.599***<br>(22.26)   | 4.592***<br>(22.23)   | 4.584***<br>(22.18)   | 4.575***<br>(19.24)    | 4.575***<br>(19.24)    | 4.574***<br>(19.22)    | 4.576***<br>(19.23)    |
| Observations            | 29,711                | 29,711                | 29,711                | 29,711                | 27,802                 | 27,802                 | 27,802                 | 27,802                 |
| Adjusted R <sup>2</sup> | 0.241                 | 0.241                 | 0.242                 | 0.242                 | 0.319                  | 0.319                  | 0.319                  | 0.319                  |

Note: This table reports the regression results of the subsamples using absolute abnormal accruals and alternative measures weighted by sales for the busyness variables. Panels A and B present the results for subsamples with zero or positive abnormal accruals and negative abnormal accruals, respectively. The dependent variable is the absolute abnormal accruals of firm  $i$  in year  $t$ .  $BUSY\_Sales_{it}$  is the sum of the logged sales of clients of firm  $i$ 's lead partner  $j$  (other than firm  $i$ ) for year  $t$ . The other independent variables are defined in Appendix A.  $t$  values based on heteroskedasticity-robust standard errors are enclosed in parentheses. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

**Table 5. Results of using restatement as an audit quality measure**

|                       | Model 1               | Model 2               | Model 3               | Model 4               |
|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| <i>BUSY</i>           | 0.001<br>(1.05)       |                       |                       |                       |
| <i>LVice</i>          |                       | 0.002**<br>(2.18)     |                       |                       |
| <i>HVice</i>          |                       | -0.004*<br>(-1.78)    |                       |                       |
| <i>STenure</i>        |                       |                       | 0.000<br>(0.23)       |                       |
| <i>LTenure</i>        |                       |                       | 0.002<br>(1.11)       |                       |
| <i>LVice_STenure</i>  |                       |                       |                       | 0.003*<br>(1.88)      |
| <i>Others</i>         |                       |                       |                       | -0.000<br>(-0.26)     |
| <i>Fem</i>            | 0.057<br>(0.71)       | 0.058<br>(0.74)       | 0.057<br>(0.71)       | 0.057<br>(0.72)       |
| <i>Career</i>         | -0.028<br>(-0.93)     | -0.026<br>(-0.86)     | -0.031<br>(-1.00)     | -0.021<br>(-0.69)     |
| <i>Pten</i>           | 0.002<br>(0.07)       | 0.005<br>(0.18)       | -0.000<br>(-0.01)     | 0.007<br>(0.28)       |
| <i>BIG</i>            | -0.046<br>(-1.62)     | -0.045<br>(-1.56)     | -0.046<br>(-1.60)     | -0.046<br>(-1.61)     |
| <i>Ften</i>           | -0.095***<br>(-3.02)  | -0.096***<br>(-3.06)  | -0.095***<br>(-3.02)  | -0.094***<br>(-3.00)  |
| <i>Vice_D</i>         | -0.098***<br>(-3.27)  | -0.076**<br>(-2.44)   | -0.098***<br>(-3.28)  | -0.091***<br>(-3.02)  |
| <i>FDep</i>           | -0.014<br>(-0.15)     | -0.009<br>(-0.10)     | -0.014<br>(-0.15)     | -0.010<br>(-0.11)     |
| <i>Fee</i>            | 0.392***<br>(12.58)   | 0.395***<br>(12.66)   | 0.392***<br>(12.58)   | 0.393***<br>(12.59)   |
| <i>Size</i>           | -0.237***<br>(-17.25) | -0.236***<br>(-17.21) | -0.237***<br>(-17.25) | -0.236***<br>(-17.22) |
| <i>Grow</i>           | 0.150**<br>(2.24)     | 0.148**<br>(2.21)     | 0.150**<br>(2.25)     | 0.149**<br>(2.22)     |
| <i>Lev</i>            | 0.411***<br>(6.05)    | 0.413***<br>(6.07)    | 0.412***<br>(6.06)    | 0.411***<br>(6.05)    |
| <i>ROA</i>            | 0.721***<br>(3.12)    | 0.722***<br>(3.13)    | 0.719***<br>(3.11)    | 0.725***<br>(3.14)    |
| <i>Loss</i>           | 0.227***<br>(5.30)    | 0.227***<br>(5.30)    | 0.227***<br>(5.30)    | 0.227***<br>(5.30)    |
| <i>Invrec</i>         | -0.043<br>(-0.55)     | -0.044<br>(-0.56)     | -0.043<br>(-0.55)     | -0.044<br>(-0.56)     |
| Month dummies         | Yes                   | Yes                   | Yes                   | Yes                   |
| Indus. dummies        | Yes                   | Yes                   | Yes                   | Yes                   |
| Year dummies          | Yes                   | Yes                   | Yes                   | Yes                   |
| Constant              | 1.138***<br>(8.35)    | 1.126***<br>(8.26)    | 1.142***<br>(8.35)    | 1.128***<br>(8.26)    |
| Observations          | 21,577                | 21,577                | 21,577                | 21,577                |
| Pseudo R <sup>2</sup> | 0.135                 | 0.135                 | 0.135                 | 0.135                 |

Note: This table reports the probit regression results using the dichotomous variable of restatement as the dependent variable. The dependent variable is  $RES_{it}$ , which equals one if the firm's financial statements in period  $t$  are restated after the initial disclosure and zero otherwise.  $BUSY_{it}$  is the sum of the logged audit fees received by firm  $i$ 's lead partner  $j$  from their clients (other than firm  $i$ ) in year  $t$ . The other independent variables are defined in Appendix A.  $z$  values based on heteroskedasticity-robust standard errors are enclosed in parentheses. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

**Table 6. Results of using going concern opinion as an audit quality measure**

|                       | Model 1              | Model 2              | Model 3              | Model 4              |
|-----------------------|----------------------|----------------------|----------------------|----------------------|
| <i>BUSY</i>           | -0.027*<br>(-1.94)   |                      |                      |                      |
| <i>LVice</i>          |                      | -0.047**<br>(-2.57)  |                      |                      |
| <i>HVice</i>          |                      | 0.025<br>(0.75)      |                      |                      |
| <i>STenure</i>        |                      |                      | -0.007<br>(-0.32)    |                      |
| <i>LTenure</i>        |                      |                      | -0.051<br>(-1.42)    |                      |
| <i>LVice_STenure</i>  |                      |                      |                      | -0.051**<br>(-2.14)  |
| <i>Others</i>         |                      |                      |                      | -0.013<br>(-0.52)    |
| <i>Fem</i>            | -                    | -                    | -                    | -                    |
| <i>Career</i>         | 0.400<br>(0.73)      | 0.484<br>(0.88)      | 0.458<br>(0.86)      | 0.345<br>(0.61)      |
| <i>Pten</i>           | -0.362<br>(-0.83)    | -0.291<br>(-0.65)    | -0.185<br>(-0.35)    | -0.416<br>(-0.90)    |
| <i>BIG</i>            | 0.287<br>(0.69)      | 0.350<br>(0.79)      | 0.290<br>(0.71)      | 0.322<br>(0.74)      |
| <i>Ften</i>           | 1.354***<br>(3.54)   | 1.434***<br>(3.45)   | 1.440***<br>(3.50)   | 1.318***<br>(3.38)   |
| <i>Vice_D</i>         | 0.017<br>(0.04)      | -0.248<br>(-0.49)    | 0.028<br>(0.07)      | -0.068<br>(-0.15)    |
| <i>FDep</i>           | -0.591<br>(-0.99)    | -0.589<br>(-0.94)    | -0.555<br>(-0.91)    | -0.639<br>(-1.03)    |
| <i>Fee</i>            | 1.798***<br>(2.77)   | 2.081***<br>(2.90)   | 1.843***<br>(2.81)   | 1.894***<br>(2.78)   |
| <i>Size</i>           | -1.096***<br>(-3.55) | -1.209***<br>(-3.68) | -1.095***<br>(-3.42) | -1.152***<br>(-3.56) |
| <i>Grow</i>           | -0.670<br>(-1.49)    | -0.883*<br>(-1.81)   | -0.636<br>(-1.40)    | -0.793*<br>(-1.73)   |
| <i>Lev</i>            | 0.783<br>(0.77)      | 0.968<br>(0.88)      | 0.888<br>(0.89)      | 0.736<br>(0.72)      |
| <i>ROA</i>            | -3.251<br>(-1.34)    | -2.620<br>(-1.09)    | -2.661<br>(-1.12)    | -3.401<br>(-1.34)    |
| <i>Loss</i>           | 1.012**<br>(2.14)    | 1.201**<br>(2.35)    | 1.127**<br>(2.17)    | 1.009**<br>(2.08)    |
| <i>Invrec</i>         | -2.326**<br>(-2.12)  | -2.890**<br>(-2.22)  | -2.532**<br>(-2.31)  | -2.306**<br>(-1.99)  |
| Month dummies         | Yes                  | Yes                  | Yes                  | Yes                  |
| Indus. dummies        | Yes                  | Yes                  | Yes                  | Yes                  |
| Year dummies          | Yes                  | Yes                  | Yes                  | Yes                  |
| Constant              | 4.652***<br>(2.80)   | 5.001***<br>(3.03)   | 4.482***<br>(2.62)   | 4.959***<br>(2.89)   |
| Observations          | 187                  | 187                  | 187                  | 187                  |
| Pseudo R <sup>2</sup> | 0.586                | 0.595                | 0.590                | 0.589                |

Note: This table reports the probit regression results using the going-concern modification prior to bankruptcy as an audit quality measure. The dependent variable is  $GC_{it}$ , which equals one if the firm receives a going-concern opinion and zero otherwise.  $BUSY_{it}$  is the sum of the logged audit fees received by firm  $i$ 's lead partner  $j$  from their clients (other than firm  $i$ ) in year  $t$ . The other independent variables are defined in Appendix A.  $z$  values based on heteroskedasticity-robust standard errors are enclosed in parentheses. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

**Table 7. Results of using Big 4 and Non-Big 4 clients for the subsamples**

|                      | Panel A: Abacc>=0    |                      |                      |                      |                      |                      |                      |                      |
|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
|                      | Big 4                |                      |                      |                      | Non-Big 4            |                      |                      |                      |
|                      | Model 1              | Model 2              | Model 3              | Model 4              | Model 5              | Model 6              | Model 7              | Model 8              |
| <i>BUSY</i>          | -0.001<br>(-0.85)    |                      |                      |                      | 0.006**<br>(2.26)    |                      |                      |                      |
| <i>LVice</i>         |                      | -0.000<br>(-0.29)    |                      |                      |                      | 0.007**<br>(2.06)    |                      |                      |
| <i>HVice</i>         |                      | -0.004<br>(-1.52)    |                      |                      |                      | 0.002<br>(0.24)      |                      |                      |
| <i>STenure</i>       |                      |                      | 0.000<br>(0.05)      |                      |                      |                      | 0.017***<br>(3.20)   |                      |
| <i>LTenure</i>       |                      |                      | -0.002<br>(-1.22)    |                      |                      |                      | -0.003<br>(-0.75)    |                      |
| <i>LVice_STenure</i> |                      |                      |                      | 0.003<br>(1.10)      |                      |                      |                      | 0.017***<br>(2.85)   |
| <i>Others</i>        |                      |                      |                      | -0.004**<br>(-2.03)  |                      |                      |                      | -0.001<br>(-0.16)    |
| <i>Fem</i>           | -0.063<br>(-0.63)    | -0.060<br>(-0.61)    | -0.063<br>(-0.64)    | -0.062<br>(-0.63)    | -0.336<br>(-1.60)    | -0.336<br>(-1.60)    | -0.329<br>(-1.57)    | -0.332<br>(-1.58)    |
| <i>Career</i>        | -0.042<br>(-0.96)    | -0.041<br>(-0.94)    | -0.036<br>(-0.82)    | -0.029<br>(-0.65)    | -0.065<br>(-0.80)    | -0.067<br>(-0.83)    | -0.047<br>(-0.58)    | -0.052<br>(-0.65)    |
| <i>Pten</i>          | 0.040<br>(1.18)      | 0.043<br>(1.24)      | 0.045<br>(1.32)      | 0.051<br>(1.49)      | -0.094<br>(-1.35)    | -0.091<br>(-1.30)    | -0.070<br>(-1.00)    | -0.073<br>(-1.03)    |
| <i>Ften</i>          | -0.260***<br>(-4.39) | -0.263***<br>(-4.43) | -0.260***<br>(-4.40) | -0.262***<br>(-4.42) | -0.390***<br>(-4.82) | -0.389***<br>(-4.82) | -0.388***<br>(-4.80) | -0.389***<br>(-4.81) |
| <i>Vice_D</i>        | 0.014<br>(0.34)      | 0.027<br>(0.66)      | 0.014<br>(0.34)      | 0.024<br>(0.59)      | 0.024<br>(0.31)      | 0.041<br>(0.50)      | 0.044<br>(0.56)      | 0.059<br>(0.75)      |
| <i>FDep</i>          |                      |                      |                      |                      | 0.024<br>(0.17)      | 0.027<br>(0.19)      | 0.034<br>(0.25)      | 0.037<br>(0.27)      |
| <i>Fee</i>           | 0.051<br>(1.13)      | 0.051<br>(1.15)      | 0.050<br>(1.12)      | 0.051<br>(1.14)      | 0.610***<br>(6.70)   | 0.608***<br>(6.68)   | 0.605***<br>(6.63)   | 0.602***<br>(6.60)   |
| <i>Size</i>          | -0.211***            | -0.210***            | -0.211***            | -0.209***            | -0.567***            | -0.566***            | -0.567***            | -0.565***            |

|                         |           |           |           |           |           |           |           |           |
|-------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
|                         | (-10.18)  | (-10.13)  | (-10.16)  | (-10.10)  | (-14.84)  | (-14.81)  | (-14.82)  | (-14.76)  |
| <i>Grow</i>             | 0.786***  | 0.785***  | 0.785***  | 0.782***  | 0.711***  | 0.711***  | 0.720***  | 0.715***  |
|                         | (5.16)    | (5.15)    | (5.15)    | (5.13)    | (3.21)    | (3.21)    | (3.25)    | (3.23)    |
| <i>Lev</i>              | 1.706***  | 1.706***  | 1.705***  | 1.703***  | 0.913***  | 0.911***  | 0.909***  | 0.910***  |
|                         | (14.89)   | (14.89)   | (14.89)   | (14.87)   | (4.62)    | (4.61)    | (4.60)    | (4.61)    |
| <i>ROA</i>              | 2.062***  | 2.060***  | 2.062***  | 2.061***  | 0.112     | 0.110     | 0.143     | 0.131     |
|                         | (5.05)    | (5.04)    | (5.05)    | (5.05)    | (0.14)    | (0.13)    | (0.17)    | (0.16)    |
| <i>Loss</i>             | 0.844***  | 0.845***  | 0.845***  | 0.846***  | 0.666***  | 0.665***  | 0.671***  | 0.668***  |
|                         | (9.37)    | (9.38)    | (9.38)    | (9.40)    | (4.75)    | (4.74)    | (4.78)    | (4.76)    |
| <i>Invrec</i>           | 2.297***  | 2.298***  | 2.298***  | 2.301***  | 2.312***  | 2.313***  | 2.313***  | 2.313***  |
|                         | (17.78)   | (17.79)   | (17.78)   | (17.81)   | (9.93)    | (9.93)    | (9.94)    | (9.94)    |
| <i>TACC</i>             | 12.409*** | 12.406*** | 12.407*** | 12.406*** | 12.371*** | 12.360*** | 12.324*** | 12.324*** |
|                         | (23.70)   | (23.69)   | (23.69)   | (23.70)   | (16.66)   | (16.63)   | (16.61)   | (16.60)   |
| Month dummies           | Yes       | Yes       | Yes       | Yes       | Yes       | Yes       | Yes       | Yes       |
| Indus. dummies          | Yes       | Yes       | Yes       | Yes       | Yes       | Yes       | Yes       | Yes       |
| Year dummies            | Yes       | Yes       | Yes       | Yes       | Yes       | Yes       | Yes       | Yes       |
| Constant                | 3.775***  | 3.770***  | 3.768***  | 3.752***  | 5.753***  | 5.752***  | 5.768***  | 5.753***  |
|                         | (16.31)   | (16.28)   | (16.27)   | (16.19)   | (12.80)   | (12.80)   | (12.84)   | (12.81)   |
| Observations            | 21,823    | 21,823    | 21,823    | 21,823    | 7,888     | 7,888     | 7,888     | 7,888     |
| Adjusted R <sup>2</sup> | 0.229     | 0.229     | 0.229     | 0.229     | 0.262     | 0.262     | 0.263     | 0.263     |

| Panel B: Abacc<0 |                   |                   |                   |         |                 |                 |                 |         |
|------------------|-------------------|-------------------|-------------------|---------|-----------------|-----------------|-----------------|---------|
|                  | Big 4             |                   |                   |         | Non-Big 4       |                 |                 |         |
|                  | Model 1           | Model 2           | Model 3           | Model 4 | Model 5         | Model 6         | Model 7         | Model 8 |
| <i>BUSY</i>      | -0.000<br>(-0.17) |                   |                   |         | 0.004<br>(1.43) |                 |                 |         |
| <i>LVice</i>     |                   | -0.000<br>(-0.05) |                   |         |                 | 0.004<br>(1.28) |                 |         |
| <i>HVice</i>     |                   | -0.001<br>(-0.31) |                   |         |                 | 0.002<br>(0.21) |                 |         |
| <i>STenure</i>   |                   |                   | 0.001<br>(0.35)   |         |                 |                 | 0.001<br>(0.10) |         |
| <i>LTenure</i>   |                   |                   | -0.001<br>(-0.56) |         |                 |                 | 0.006<br>(1.44) |         |

|                      |                        |                        |                        |                        |                        |                        |                        |                        |
|----------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|------------------------|
| <i>LVice_STenure</i> |                        |                        |                        | 0.000<br>(0.13)        |                        |                        |                        | 0.001<br>(0.17)        |
| <i>Others</i>        |                        |                        |                        | -0.001<br>(-0.32)      |                        |                        |                        | 0.005<br>(1.33)        |
| <i>Fem</i>           | 0.151<br>(1.50)        | 0.151<br>(1.50)        | 0.151<br>(1.49)        | 0.151<br>(1.50)        | -0.330<br>(-1.60)      | -0.331<br>(-1.61)      | -0.330<br>(-1.60)      | -0.330<br>(-1.60)      |
| <i>Career</i>        | -0.039<br>(-0.79)      | -0.039<br>(-0.78)      | -0.034<br>(-0.68)      | -0.037<br>(-0.74)      | 0.050<br>(0.53)        | 0.049<br>(0.52)        | 0.045<br>(0.48)        | 0.047<br>(0.50)        |
| <i>Pten</i>          | -0.014<br>(-0.36)      | -0.014<br>(-0.35)      | -0.010<br>(-0.25)      | -0.012<br>(-0.32)      | 0.004<br>(0.05)        | 0.005<br>(0.06)        | -0.005<br>(-0.07)      | -0.002<br>(-0.02)      |
| <i>Ften</i>          | -0.234***<br>(-3.66)   | -0.235***<br>(-3.67)   | -0.235***<br>(-3.67)   | -0.235***<br>(-3.67)   | 0.045<br>(0.52)        | 0.044<br>(0.51)        | 0.044<br>(0.51)        | 0.045<br>(0.52)        |
| <i>Vice_D</i>        | 0.034<br>(0.73)        | 0.037<br>(0.77)        | 0.035<br>(0.74)        | 0.036<br>(0.76)        | 0.117<br>(1.35)        | 0.127<br>(1.38)        | 0.112<br>(1.28)        | 0.109<br>(1.23)        |
| <i>FDep</i>          |                        |                        |                        |                        | -0.091<br>(-0.57)      | -0.090<br>(-0.56)      | -0.093<br>(-0.59)      | -0.094<br>(-0.59)      |
| <i>Fee</i>           | 0.546***<br>(11.38)    | 0.546***<br>(11.37)    | 0.546***<br>(11.38)    | 0.546***<br>(11.38)    | 0.573***<br>(5.67)     | 0.572***<br>(5.65)     | 0.575***<br>(5.69)     | 0.574***<br>(5.69)     |
| <i>Size</i>          | -0.378***<br>(-16.51)  | -0.378***<br>(-16.52)  | -0.378***<br>(-16.50)  | -0.378***<br>(-16.50)  | -0.506***<br>(-11.89)  | -0.506***<br>(-11.88)  | -0.507***<br>(-11.90)  | -0.507***<br>(-11.90)  |
| <i>Grow</i>          | 0.509***<br>(3.03)     | 0.509***<br>(3.03)     | 0.509***<br>(3.03)     | 0.509***<br>(3.03)     | 0.906***<br>(3.71)     | 0.905***<br>(3.71)     | 0.904***<br>(3.70)     | 0.905***<br>(3.71)     |
| <i>Lev</i>           | -0.457***<br>(-3.53)   | -0.457***<br>(-3.53)   | -0.457***<br>(-3.53)   | -0.457***<br>(-3.53)   | -0.500**<br>(-2.19)    | -0.499**<br>(-2.19)    | -0.497**<br>(-2.18)    | -0.499**<br>(-2.19)    |
| <i>ROA</i>           | -7.817***<br>(-14.35)  | -7.817***<br>(-14.35)  | -7.819***<br>(-14.36)  | -7.818***<br>(-14.35)  | -12.072***<br>(-14.64) | -12.067***<br>(-14.62) | -12.087***<br>(-14.65) | -12.085***<br>(-14.63) |
| <i>Loss</i>          | 1.394***<br>(16.25)    | 1.393***<br>(16.25)    | 1.393***<br>(16.25)    | 1.393***<br>(16.25)    | 0.852***<br>(6.03)     | 0.852***<br>(6.03)     | 0.849***<br>(6.01)     | 0.850***<br>(6.01)     |
| <i>Invrec</i>        | 0.814***<br>(5.43)     | 0.815***<br>(5.43)     | 0.813***<br>(5.43)     | 0.814***<br>(5.43)     | 0.919***<br>(3.24)     | 0.921***<br>(3.24)     | 0.917***<br>(3.23)     | 0.917***<br>(3.23)     |
| <i>TACC</i>          | -16.928***<br>(-29.65) | -16.927***<br>(-29.65) | -16.927***<br>(-29.65) | -16.927***<br>(-29.65) | -13.378***<br>(-15.73) | -13.380***<br>(-15.72) | -13.377***<br>(-15.73) | -13.375***<br>(-15.72) |
| Month dummies        | Yes                    | Yes                    | Yes                    | Yes                    | Yes                    | Yes                    | Yes                    | Yes                    |
| Indus. dummies       | Yes                    | Yes                    | Yes                    | Yes                    | Yes                    | Yes                    | Yes                    | Yes                    |
| Year dummies         | Yes                    | Yes                    | Yes                    | Yes                    | Yes                    | Yes                    | Yes                    | Yes                    |

|                         |                     |                     |                     |                     |                    |                    |                    |                    |
|-------------------------|---------------------|---------------------|---------------------|---------------------|--------------------|--------------------|--------------------|--------------------|
| Constant                | 4.291***<br>(15.84) | 4.290***<br>(15.84) | 4.286***<br>(15.80) | 4.288***<br>(15.80) | 5.014***<br>(9.70) | 5.018***<br>(9.70) | 5.011***<br>(9.70) | 5.012***<br>(9.70) |
| Observations            | 20,503              | 20,503              | 20,503              | 20,503              | 7,299              | 7,299              | 7,299              | 7,299              |
| Adjusted R <sup>2</sup> | 0.281               | 0.281               | 0.281               | 0.281               | 0.377              | 0.377              | 0.377              | 0.377              |

Note: This table reports the regression results of absolute abnormal accruals for the subsamples of the combinations of the Big 4/Non-Big 4 distinction and the signs of abnormal accruals. Panels A and B report the results for Big 4 and Non-Big 4 clients separately for samples with non-negative abnormal accruals and those with negative abnormal accruals, respectively. The dependent variable is the absolute abnormal accruals of firm  $i$  in year  $t$ .  $BUSY_{it}$  is the sum of logged audit fees received by firm  $i$ 's lead partner  $j$  from their clients (other than firm  $i$ ) for year  $t$ . The other independent variables are defined in Appendix A.  $t$  values based on heteroskedasticity-robust standard errors are enclosed in parentheses. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .