

Auditing Multiple Public Clients, Partner-Client Tenure and Audit Quality

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Abstract: Using a sample of public firms listed in the Chinese market for the years 2000-2009, we find that audit partners with more public clients are associated with lower audit quality, consistent with the “busyness” effect that auditing multiple clients dissipates audit partner effort and thus reduces audit quality. However, the negative association is more pronounced for auditors with short audit partner-client tenure, supporting the idea that the lack of client specific knowledge exacerbates the busyness effect. Collectively, these results not only support the auditor “busyness” hypothesis but also suggest that both cross-sectional and time-series information provided by audit partner signatures in public financial reports is useful for assessing audit quality.

Keywords: multiple audit clients, audit partner signature, client specific knowledge, and audit quality.

JEL Code: M42

1. INTRODUCTION

In this study, we use data from China to provide partner level evidence on the association between auditing multiple public clients and audit quality. We measure audit quality by the likelihood of an auditor issuing a going concern opinion for a financially-distressed client, the probability of a client meeting or beating an earnings benchmark, and in terms of aggressive earnings manipulation identified by the Chinese regulator. Extant theories on the size effect, dating at least as far back as DeAngelo (1981),¹ view the number of public clients audited by an auditor as an indicator of high audit quality,² because auditors with more clients have greater expected losses of a potential audit failure. However, a competing view drawn from the management literature on busy directors suggest that partners with responsibility for a large number of clients are likely to be associated with lower audit quality because of the “busyness” effect. The busyness effect in management suggests that directors holding multiple board seats are less effective in their monitoring functions, because they are “too busy to mind the business” (Beasley 1996; Core et al. 1999; Ferris et al. 2003; Fich and Shivdasani 2007). The busyness effect may also apply to auditors because their time and effort are finite. Consequently, auditors who take on more public clients may be over-committed and become “too busy” to implement the audit engagements based on Auditing standards and detect the circumstances where problems might exist (e.g., Caramanis and Lennox 2008), thus adversely affecting audit quality. Therefore, whether auditing more public clients by a partner positively or negatively affects audit quality is an empirical question that we seek to unravel.

¹ For example, in her abstract (page 183), DeAngelo (1981) states: ‘when incumbent auditors earn client-specific quasi-rents, auditors with a greater number of clients have ‘more to lose’ by failing to report a discovered breach in a particular client’s records. This collateral aspect increases the audit quality’ Of course, DeAngelo’s (1981) theory relies on several assumptions which does not necessarily be true.

² Prior firm-level and office-level analyses (e.g., Francis and Yu 2009; Choi et al. 2010) also provide empirical evidence that audit quality is higher for larger auditors with more public clients.

Besides, we also examine whether the relationship between the number of public clients per partner and audit quality depends on the length of tenure between a partner and the client. Recent studies (Myers et al. 2003; Gul et al. 2009) show that auditors with longer tenure are associated with higher audit quality because long-tenured auditors acquire client-specific knowledge that helps in conducting a more effective audit. The busyness effect relies on the premise that multiple public clients affect an auditor through reducing his/ her efficiency to execute an audit. If so, client-specific knowledge accumulated in prior years is likely to mitigate the inefficiency caused by auditing multiple public clients.

Our partner level analysis is motivated by at least three important factors. First, it is important to understand the indicators/determinants of audit quality. Recent studies (e.g. Reynolds and Francis 2000; DeFond and Francis 2005; Chen et al. 2009) call for more research at audit partner level. They argue that analyses at an individual partner level are better than at a firm level in improving the power of the tests of auditor behavior (Chen et al. 2010). Audit partners spend significant time and effort in assessing client risk, reviewing critical assessments and communicating with clients (e.g., O’Keefe et al. 1994; Hackenbrack and Knechel 1997). Compared with audit firms and offices, audit partners have more limited capacity and flexibility. Audit firms can improve their capacity quickly by recruiting new staff, whereas an audit partner cannot increase capacity in this way to cope with more clients.³ Consequently as the number of public clients increases, an audit partner’s resources and time are more likely to be stretched, leading to lower audit quality at the partner level. In other words, the potential busyness effect on audit quality is expected to be more salient at the partner level than at the firm/office level. Thus, our partner-level analysis on the effect of

³ According to previous studies, (e.g., O’Keefe et al. 1994; Hackenbrack and Knechel 1997), staff and seniors are mainly responsible for gathering substantive evidence, and partners do play important roles in assessing a client’s overall risk of bankruptcy and fraud, monitoring the audit process and other important tasks. These tasks are also highly effort demanding.

auditing multiple public clients on audit quality can provide some understanding of auditor effort and auditor behavior at the partner level.

Second, regulatory authorities worldwide have introduced accounting and auditing reforms to improve audit quality especially in terms of disclosing the identity of audit partners who are responsible for the audit. For example, the Public Company Accounting Oversight (PCAOB 2009) in the U.S. is considering such a requirement,^{4,5} and a survey by International Accounting and Auditing Standards Board (IAASB) shows more than 100 associations from both developed and emerging markets (i.e., Malaysia) are debating over the possible requirement of audit partner signature.⁶ Proponents suggest two major benefits of mandatory partner signature. First, it can increase the audit partner's sense of accountability to financial statement users. Second, the disclosure of the name of the partner could be useful information for investors and other financial information users (see ACAP Report, October, 2008, at VII: 19). However, practitioners have expressed their objections to mandatory partner signatures (e.g., Deloitte 2008; Ernst & Young 2009; KPMG 2009; Pricewaterhouse Coopers 2009). Therefore, an analysis of auditor partner quality facilitated through the disclosure of partner signatures may have implications for regulators around the world. Using these partner signatures we examine whether the number of public clients audited by a partner is informative of audit quality and, in this way, provide audit scholars with an opportunity for "novel analysis and insights" (King et al. 2012, p. 554).

Third, by examining whether tenure moderates the link between the number of public clients and audit quality, we also shed light on an unsettled issue in the literature regarding the role of auditor tenure. While Myers et al. (2003) and Gul et al. (2009) show that long

⁴ See http://pcaobus.org/News/Events/documnets/10132010_SAGMeeting/OCA_standards-setting_agenda.pdf.

⁵ The amended European Union's (EU's) 8th directive also requires the disclosure of engagement partner's identity.

⁶ Details are available at http://www.ifac.org/sites/default/files/meetings/files/20130415-IAASB-Supplement_to_Agenda_Item_2-Question_12_Responses-Disclosure_of_Engagement_Partner_Name-v1.pdf

tenure leads to higher quality audits, Carey and Simnett (2006) show that short tenure leads to higher audit quality. The view that long tenure may impair auditor quality is also supported by regulators who argue that long tenure may impair independence (see Metcalf Committee Report, U.S. Senate 1976; Geiger and Rahunandan, 2002). In a similar vein, Bedard and Johnstone (2010) find that planned engagement effort increases following partner rotation. In other words, new partners invest effort to gain client knowledge in the first year on the engagement. The partner-level test on whether tenure moderates the relationship between partner client numbers and audit quality adds to this debate and can shed some light on this somewhat unsettled issue.

In China, audit reports are signed by audit partners with their names disclosed in the reports. Also, importantly, the Chinese environment provides a useful and unique setting for three main reasons. First, due to the rapid expansion of China's stock exchanges and a relatively young audit profession (e.g., Chen et al. 2007), certain partners audit as many as 17 public clients per year. This natural 'laboratory' provides sufficient variations for our study. Second, there is a concentrated busy season for auditors since all the public audits for annual reports are required to be carried out during January 1 and April 31. In our sample period, about 70 percent of the observations issue audit reports and annual financial reports between March 1st and April 15th. This relatively fixed time window increases the possibility that the busyness effect will be observed. Third, only a limited number of partners are certified to sign reports for publicly traded companies in China, and other activities including private audits are assigned to other auditors (see Section 5.7 for more details).⁷ In order to ensure that our sample of partners is restricted to partners who provide public audits and not private audits or other services, we also conduct an additional test reported in section 5.7.

⁷ In other words, though private audits account for a large part of the audit market, these private audits are conducted by auditors other than those who are qualified to audit public firms.

Using a sample of Chinese public firms for the period 2000-2009, we find a significant *negative* association between audit quality and the number of public clients audited by the audit partner in-charge of the audit, consistent with the busyness effect. More specifically, we find that audit partners with multiple clients are more likely to be associated with earnings manipulation identified by the Chinese regulators and meeting or beating an earnings benchmark. Besides, these partners are less likely to issue a going concern opinion for a financially-distressed client. The type of opinion rendered by the auditor is subject to a considerable amount of professional judgments. The rendering of a going concern opinion is particularly sensitive for distressed clients and requires more careful consideration than other types of opinions (Geiger and Raghunandan 2002b). Consistent with our expectation, we also find that the negative association between the number of public clients audited by an audit partner and audit quality is significant only for auditors with short tenure. Noting this moderating effect not only makes the underlying mechanism more transparent but also makes it less likely that there is a reverse causality problem (see Rajan and Zingales 1998; Lang and Maffett 2010). Overall, our results suggest that both cross-sectional and time-series information provided by audit partner signatures in public financial reports is useful to assess audit quality, lending support to call for mandatory audit partner signature (PCAOB 2009; 2011).

To check for the robustness of our results, we conduct several other tests. First, our findings are robust to matched sample tests. These tests alleviate possible concerns related to differences in client characteristics. Second, based on clients' characteristics, we construct a client complexity score as an independent variable alternative to the number of clients audited by an audit partner. Third, we find the busyness effects generally more pronounced in the transition years (2006-2007) after China adopted the international accounting standards. Fourth, as partner-client relationships may have been established before partners become

signing partners, we deleted observations with auditors promoted as partners in the first year. We rerun the regressions and the results are still significant. Fifth, we delete firms with low bankruptcy risk for the going concern opinion test and find significant results. Sixth, we take steps to mitigate concerns about the potential effect of other activities of the partners such as private audits. Finally, our results for auditors with short tenure remain valid when we controlled for the effect of partner's general experience.

The current study contributes to the extant literature and audit practice in several ways. First, our study contributes to the growing literature in auditing by providing evidence that audit quality is not uniform across audit partners. Our findings suggest that audit quality is likely to decrease as the number of public clients audited by an audit partner increases. These findings provide some insights for audit firms when they consider office level audit partner assignments. In addition, these findings have important implications for regulators who are considering placing a cap on the number of client assignments for an auditor.

Second, our study provides support for the auditor client-specific knowledge/expertise for auditors with long tenure argument, thus adding to the auditor tenure literature (e.g., Chen et al. 2008; Gul et al. 2009). We also contribute to the auditor rotation debate by showing that, at least in China, auditor rotation should be viewed with caution by the audit firms, especially when the rotation results in too many public clients being assigned to an audit partner.

Finally, audit quality is particularly important for the development of stock markets in emerging economies such as China. Therefore, providing evidence regarding audit quality in this market could have important policy implications for both practitioners and regulators in the country and other emerging markets (see also Chen et al. 2010)⁸.

The rest of this paper is organized as follows. Section 2 summarizes related studies

⁸ Recently, the professional media (Bramwell 2013) in the US reported on the implications for auditor signatures as a result of the findings of recent paper by Gul et al 2013 who provide some evidence of audit quality at the partner level for Chinese companies.

and develops hypotheses. Section 3 describes the research design and sample selection. Section 4 discusses the empirical results. Section 5 presents additional tests. Section 6 discusses limitations of our study, and Section 7 provides the conclusion of the study.

2. BACKGROUND AND RESEARCH QUESTION

2.1 Development of Audit Market in China

Since the economic reform in 1979, the demand for independent audits has increased following the decentralization of state-owned enterprises, the entry of foreign investments and the establishment of the stock exchanges (DeFond et al. 2000; Chan and Wu 2011). Thus, the Chinese government had to restore the auditing function after the suspension of 30 years and established the CICPA to administer the affairs of Chinese certified public accountants (CPAs). Most Chinese auditing firms were initially sponsored by government agencies, thus firm operations were under the influence of these governing bodies and were restricted to specific jurisdictions. The lack of operational independence was criticized by various stakeholders (DeFond et al. 2000; Lin et al. 2009). In response to the criticism, a reform began in 1997 to enhance the independence of Chinese audits by disaffiliating audit firms from their sponsoring government bodies. In addition, the market regulator, Chinese Securities Regulatory Commission (CSRC) has set up rigorous market-entrance standards for Chinese CPAs who provide auditing services to listed firms to ensure proper disclosure and higher audit quality (Lin et al. 2009). Though institutions in the Chinese market are different from other markets, such as US or UK in the early years of market reform, the Chinese Auditing Standards Board (CASB) in more recent years has made much effort to update the Chinese independent auditing standards (CIAS) in order to converge with International Standards on Auditing (ISAs) (Simunic and Wu 2009). Moreover, following China's entrance into WTO in the early 2000s and the unprecedented growth of the Chinese economy,

the Big N audit firms have entered the Chinese market through joint ventures with local audit firms (Lin et al. 2009). In practice, these joint ventures follow the practice of Big N audit firms⁹. Besides, a large number of the auditors in China especially those employed by the Big 4 have educational backgrounds and practical experiences in US, UK or other developed countries.¹⁰ It is worth noting that prior auditing studies in the Chinese market have found results that are similar to audit studies in the US market (e.g., Chen et al. 2010). Overall, the convergence of audit standards, the participation of international companies in the Chinese market and the training afforded to auditors through the Big 4 and mid-sized audit firm (e.g. Grant Thornton) operations in China have helped narrow the gap between auditing practice in western countries and China. Thus, it is safe to say that empirical evidence obtained in the Chinese audit market is likely to have some implications for audit practices in other more developed jurisdictions.

2.2 Literature Review on Audit Partner and Audit Quality

By providing assurance over clients' financial reports, independent auditors lend credibility to financial statements and mitigate the agency conflicts between managers and outside shareholders (Dopuch and Simunic 1982). There is a large body of literature on the positive role played by high quality auditors in financial reporting (e.g., Becker et al. 1998; Balsam et al. 2003). However, most of these studies focus on audit firm level investigation, and partner-level studies on audit quality are relatively limited.

One of the reasons why partner-level audit quality research is limited is that the data on audit partners are unavailable in many countries. A few recent partner-level studies use

⁹ For example, Chen et al. (2010) document that the merger of a Big 4 auditor with a local Chinese audit firm involves introducing the Big 4's audit approaches and quality controls, rearranging managerial affairs e.g., repositioning personnel at various levels and resetting compensation schemes.

¹⁰ Unfortunately, we do not have official statistics about the number of auditors who have foreign experience. However, there are many items of news reports related to Chinese auditors having foreign education and overseas working experience.

data from the China, Taiwan, Sweden and Australia markets where the audit report must be signed by audit partners with their names disclosed in the report. As noted in some recent studies (e.g. Reynolds and Francis 2000), a micro level (i.e., the partner level) investigation is a more powerful test for auditor behavior, as audit partners are ultimately responsible for audit engagements. Gul et al. (2013) suggest that individual audit partners are likely to have a bearing on audit quality. Zerni (2012) uses audit partner signature data from Sweden and finds that the highest audit fees are earned by engagement partners who are both industry and public firms specialists. To some extent, this study supports the view that client firms infer audit quality from the characteristics of the individual audit partner in charge.

Several other studies focus on the effects of audit partner tenure.¹¹ Chen et al. (2008) find that audit partner-client tenure is negatively related to unsigned abnormal accruals, and the effect of auditor tenure is more significant at partner level than firm level in the Taiwanese market. These findings suggest that audit partner-client tenure increases the partner's specific knowledge about the client, leading to higher audit quality. However, other studies suggest that longer audit tenure is associated with lower audit quality. For example, Bedard and Johnstone (2010), using proprietary data from a large US audit firm find that planned engagement effort increases in the first year of partner client tenure. Similarly, using Australian data, Carey and Simnett (2006) show that the probability of issuing a going concern opinion decreases as audit partner tenure increases. However, this relation is not observed in a reduced sample of financially distressed firms, for which auditors are most likely to issue a going concern opinion. Moreover, Carey and Simnett (2006) fail to find any link between long audit tenure and abnormal accruals. In summary, the evidence linking long audit tenure with audit quality is somewhat mixed.

¹¹ A related study Chen et al. (2009) employ data from China to study the effect of economic bonding on audit quality. When an audit partner switches from one audit firm to another, clients can develop a "bonding" by following the partner. Chen et al. (2009) find that audit quality is lower for those "follower" clients than other clients. Based on this finding, they argue that increased economic bonding impairs audit quality.

In a related study, Blay et al. (2012) investigate whether audit quality changes after the implementation of mandatory audit partner signature by comparing audit quality in the United Kingdom and the Netherlands. They do not find a substantial change in audit quality after the implementation of the new requirement. As discussed above, proponents for mandatory signature suggest two possible benefits of mandatory partner signature: it can increase the audit partner's accountability, and the disclosure could be useful information for financial information users (see ACAP Report, October, 2008, at VII: 19). Given that Blay et al. (2012) fail to provide support for the idea that the disclosure would increase audit quality in the U.K. and the Netherlands, the issue of whether audit partner signature is useful is still an open empirical question especially in a developing country like China.

Overall, several studies (e.g. Reynolds and Francis 2000) emphasize the unique contributions of partner-level research to improve the understanding of auditor quality. Our study focuses on an issue which is more suitable to be examined at partner level and may potentially contribute to a better understanding of auditor behavior.

2.3 Auditor Size and Costs of Audit Failure

Klein and Leffler (1981) provide the first related economic analysis on the importance of reputation for high quality. They point out that firms with greater perceived commitment to high quality earn more price premiums, which are referred to as “quasi-rents”. Consequently, the “quasi-rents” prevent firms from ‘cheating’ in quality. DeAngelo (1981) extends Klein and Leffler (1981) by studying the importance of audit quality for auditors. DeAngelo (1981) argues that the auditors make more “quasi-rents” by providing higher quality audits. Larger auditors (i.e., the auditors with more public clients) will lose more quasi-rents if they are perceived as low-quality auditors. In other words, larger auditors have more disincentives to cheat. Following this logic, DeAngelo (1981) concludes that larger

auditors are associated with higher audit quality¹².

Litigation is another major factor that motivates auditors to provide high quality audits. There are two related major theories on the litigation effect. Simunic (1980) provides the first analysis on the relation between audit quality and auditor legal liability. In his model, audit fee is a linear positive function of expected losses from litigation. Dye (1993) further develops the litigation rationale by arguing that larger auditors have ‘deeper pockets’ (i.e. more at-risk wealth) when they provide low quality audits, and the at-risk wealth discourages the auditor from cheating. Therefore, Dye (1993) predicts that larger auditors have greater incentives to provide high quality audits.

Prior empirical analyses (e.g., Francis and Yu 2009; Choi et al. 2010) provide firm-level and office-level evidence that audit quality is higher for larger auditors. For example, Choi et al. (2010) find that larger audit offices are associated with lower unsigned abnormal accruals. These studies usually use the number of public clients and the ‘audit fee size’ as *alternative* measures of auditor size. However, these two alternative measures are highly correlated. Therefore, it is not known whether auditing more public clients will have a separate incremental positive effect on audit quality when ‘audit fee size’ is controlled for. In other words, it is not clear whether auditing more clients will increase or decrease audit quality for auditors with the same audit fee size.

2.4 Effort, Busyness and Performance

Some prior studies in financial economics suggest some potential negative effects of

¹² DeAngelo’s (1981) theory would apply to the partner level if each client provides additional remuneration for the partner. Unfortunately, we do not have access to data on audit partner income in China. However, we do have some evidence that partners of Big N are more likely to be paid higher remuneration than partners of non-Big N firms based on Knechel et al. (2013). Using the sample from Sweden they find that Big N audit partners’ salary is positively associated with the number of publicly-traded clients. As Big N audit firms have established joint ventures with Chinese CPA firms, Knechel et al. (2013) findings may be generalized to the partner salaries in China. In addition, informal discussions with some auditors and auditing academics in China suggest that this is indeed the case.

multiple public clients on performance, which is referred to as the busyness effect. These studies have focused on busy directors with seats on multiple boards. There are two competing hypotheses regarding the effectiveness of busy directors with multiple public clients: the reputation hypothesis and the busyness hypothesis. To date, empirical evidence on the effects of busy directors is mixed. Similar to DeAngelo (1981), Fama (1980) and Fama and Jensen (1983) develop a reputation hypothesis for directors. They argue that “vigilant directors establish reputation as good monitors and are rewarded with additional board seats” (Fich and Shivdasani 2007: 309), suggesting that busy directors are more effective monitoring agents. On the other hand, several other studies support the busyness hypothesis that those directors with multiple board seats are too busy to mind the business (Ferris et al. 2003). In other words, busy directors are less effective monitors.

A number of other studies support the reputation hypothesis and find that outside directors hold fewer board seats after they work for companies with poor financial performance such as companies facing the threat of liquidation (Gilson 1990; Harford 2003; Yermack 2004) and companies accused of financial fraud (Fich and Shivdasani 2007). Besides, Brickley et al. (1999) find that former CEOs from companies with better performance hold more board seats after they retired.

The busyness hypothesis is also supported by a number of other empirical papers. Beasley (1996) finds a negative relation between the average numbers of board seats held by a firm’s directors and accounting quality, measured as the probability of committing accounting fraud. Core et al. (1999) and Fich and Shivdasani (2007) also find that firm financial performance is negatively correlated with the average number of board seats held by the firm’s directors. Fich and Shivdasani (2007) argue that the poor performance is caused by the poor managerial incentive system designed by these busy directors. In summary, consistent with the busyness hypothesis, these prior studies show that directors with multiple

public clients are “too busy to mind the business” (Ferris et al. 2003).

Similar to outside directors, independent auditors work as agents of shareholders by lending credibility to financial statements, and the effectiveness of audits is likely to vary between auditors. Caramanis and Lennox (2008) suggest that greater audit effort improves audit quality by increasing the possibility that an auditor can detect existing problems. Specifically, when auditor effort is lower, positive abnormal accruals are greater, and clients are more likely to manage earnings upwards in order to meet or beat the earnings benchmark. Previous studies (e.g., O’Keefe et al. 1994; Hackenbrack and Knechel 1997) find that audit partners exert much effort when assessing a client’s fraud and bankruptcy risk, reviewing substantive tests and other important tasks. As the number of public clients audited by an audit partner increases, the audit partner may suffer from capacity stress, leading to a decrease in audit quality. In other words, audit partners with too many public clients may be “too busy to mind business”.

2.5 Research Questions

As discussed above, prior studies suggest that there are both positive and negative effects of multiple public clients on auditor performance. The auditor size theory (e.g., DeAngelo 1981; Dye 1993; Schwartz 1997) suggests that auditors with more public clients are likely to have more litigation and reputation concerns. Therefore, if auditors’ reputation and/or litigation concerns drive audit quality then it is likely that there is a positive association between the number of public clients audited by an auditor and audit quality. In other words, audit quality is likely to improve as the number of public clients audited by an auditor increases. On the other hand, the busyness argument suggests that audit partners with multiple public clients may be too busy to produce high quality audits. Thus, audit quality might be adversely affected, as the number of public clients audited by an auditor increases.

Therefore, whether there will be a positive or negative association between audit quality and the number of public clients audited by an auditor is an empirical question.

As mentioned earlier, the majority of the prior literature (e.g., Chen et al. 2008; Gul et al. 2009) suggests that long auditor-client tenure can help auditors to accumulate client-specific knowledge. If auditors with multiple public clients are too busy to collect and process information in producing high quality judgments, the client-specific knowledge accumulated from previous years is likely to mitigate this busyness effect. Therefore, we further examine whether the link between audit quality and the number of public clients audited by an audit partner depends on audit partner-client tenure.

3. MEASURES AND SAMPLE SELECTION

3.1 The Number of Public Clients Audited by an Auditor

Chinese auditing standards require that two or three audit partners sign an audit report.¹³ In our sample, most firms' audit reports are signed by two auditors and only 22 firms are signed by three auditors. We exclude firms with three signing audit partners.¹⁴ Thus, each client firm in our sample has two signing partners (e.g., partner A and partner B¹⁵). We count the number of public clients for every partner in each year (e.g., two clients audited by partner A in year t , and ten clients audited by partner B in year t). Thus, for every observation, we obtain the number of public clients audited by each of its two audit partners. In this way, we could either measure the number of public clients for both A and B ($N=12$) or take the average and assign scores to each partner (i.e. six clients each). While we conduct sensitivity tests with these measures, in our reported main tests we only select the client numbers for partner (A) with the smaller number of clients and ignore the second partner (B) with the

¹³ These firms are required to have three signing partners (e.g. one engagement audit partner and two review audit partners) only when firms' audit risk is extremely high.

¹⁴ The results do not change when we include firms with three signing audit partners.

¹⁵ A client firm is just one of the clients audited by partners A and B, and partners A and B can have many other clients.

larger number of clients.¹⁶ In this way we provide a more conservative test of the hypothesis. We denote the number of public clients audited by the client firm's auditor as $NClient_{it}$.

Another significant reason for our choice of partners with *fewer* clients is related to a rule in Chinese auditing standards that require most chief partners of audit offices to be one of the two signing partners in an audit engagement.¹⁷ Specifically, an audit report should be signed by an audit partner who is in charge of the audit engagement and the chief partner of the audit office (Ministry of Finance 2001). While the chief partner signs almost every audit reports of his/her audit office to conform to this requirement, in practice, he/she has little or no role in the actual audit process. In other words, though the chief partner has a relatively large number of clients, he/she does not have a significant impact on audit quality. Instead, the partner with relatively less clients is responsible for the detailed audit work and has more influence on audit quality. To further support our argument, we manually collected information from ten companies and identified the ten chief partners.¹⁸ It turns out that these chief partners, in every case, have relatively more public clients than the other signing partners in all of their audit engagements. This evidence is consistent with the argument that the number of public clients audited by the partner with relatively less clients is a better proxy for the underlying construct.¹⁹

¹⁶ We also use the average number of clients audited by a client firm's audit partners as an alternative measure for $NClient$. The unreported results show that our inferences still hold. For example, $NClient$ still has a positive effect on the probability of meeting or beating the earnings benchmark.

¹⁷ Of course, there are certain exceptions. For example, in certain cases where the chief partner cannot fulfill his responsibility, a chief partner can authorize a deputy chief partner to sign the audit reports.

¹⁸ We visited websites of several audit firms and identified ten chief partners. Not every partner in our sample have information on their websites.

¹⁹ Consistent with this argument, untabulated results shows that audit quality is significantly related to the number of clients audited by the partner with relatively less clients (partner A) but not that audited by the partner with relatively more public clients (partner B). This finding supports our use of the number of clients audited by the partner with relatively less clients as our construct.

3.2 Audit Quality Measures

We use three measures of audit quality: 1) the incidence of earnings manipulation identified by the China Securities Regulatory Commission²⁰, 2) the probability of a client meeting an earnings benchmark, and 3) the probability of issuing a going concern opinion for a financial distressed client.²¹

3.2.1. Earnings Manipulation Test

Prior studies (e.g., Caramanis and Lennox 2008) suggest that higher quality audits decrease the extent to which managers are able to report earnings aggressively. Therefore, our first audit quality measure is based on whether the client is involved in earnings manipulation behavior. Instead of using the extant discretionary accrual models which is not well specified for the Chinese market (e.g., Chen 2010), we use the incidence of earnings management (*EM*) identified by the Chinese capital market regulator as an *inverse* proxy for audit quality.²² To test the association between earnings manipulation and the number of public clients audited by an audit partner, we adopt the following logit model (1).

$$\text{Logit}[EM]_{it} = f(\text{Intercept}, NClient_{it}, \text{Control Variables}_{it}) \quad (1)$$

In Model (1), the dependent variable *EM* is a dichotomous variable that takes the value of 1 if a client has been convicted of being involved in earnings manipulation by the Chinese regulator and 0 otherwise. As discussed above, we view earnings manipulation as a signal of lower audit quality. Therefore, if the relation between *NClient* and *EM* is positive (negative), it suggests a negative (positive) effect of *NClient* on audit quality. The busyness

²⁰ For the fiscal years from 2000 to 2009, we manually found 181 cases of financial fraud and earnings manipulation identified by China Securities Regulatory Commission as of the date of our manual search.

²¹ We manually identify 756 observations with going concern opinions during 2000 to 2009 (Year ending December 31st).

²² All of these observations identified as aggressive earnings manipulations by the Chinese regulators end up as convictions. These earnings manipulation cases are similar to the AAERs in US. The legal penalties for fraud firms and their management are in the form of public reprimands, warnings, and limited fines. .

effect predicts a positive correlation between *NClient* and *EM*, because busier audit partners are less likely to identify existing client financial reporting problems. However, the auditor size or reputation effect predicts a negative correlation between *NClient* and *EM*. To test the moderating role of audit partner-client tenure, we split the sample based on the median of audit partner-client tenure (*APCTenure*).²³

We include a number of variables to control for auditor-specific or engagement-specific characteristics. First, we control for the audit fee size of the audit partner (*PartnerFee*). Also, we control for audit partner-client tenure (*APCTenure*) and audit firm-client tenure (*AFCTenure*). To be consistent with the definition of *NClient*, we measure *APCTenure* and *PartnerFee* based on the partner in charge of the relatively smaller number of clients. Large auditors have more “at risk quasi-rents” if there is a questionable audit (DeAngelo 1981). They are also likely to suffer more reputation loss due to their larger investment in reputation capital. Thus, large auditors may be less likely to compromise their independence. So, we control for *BigN*, which is an indicator of large audit firms.²⁴ We also control for the client’s economic importance (*CImportance*) since Chen et al. (2010) provide evidence that there is significant relationship between the propensity to issue modified audit opinions and the audit quality of economically important clients.

We further include a number of variables to control for client-specific characteristics. We control for company size, measured by natural logarithm of total assets (*Size*). We control for *Bankruptcy* with the probability of bankruptcy. *Bankruptcy* is calculated based on a negative measure of bankruptcy risk specified by Wang and Campbell (2010), who modify the Ohlson’s (1980) bankruptcy risk model for the Chinese market. Lower values indicate a

²³ Prior studies suggest coefficients on interaction variables in logit regressions are difficult to interpret (Evans et al. 2010). Therefore, we use split samples rather than interaction variables to test the moderating effects. Also see Gul et al. (2009) for a discussion of the merits of using a split sample to test moderating effects.

²⁴ We use *BigN* to control for differences in the total number of clients audited by an audit firm. All the results are robust to directly using the number of clients audited by an audit firm instead of *BigN*.

higher probability of bankruptcy. We further use *ROA*, *LEV*, *Growth*, *LagLoss* and *BM* to measure the extent of financial distress. We use net income divided by total assets (*ROA*), net operating cash flows divided by total assets (*CFO*) and total liabilities divided by total assets (*LEV*) to control for clients' financial conditions. *LagLoss* is included to control for firms with negative net incomes in the prior year (Reynolds and Francis 2000). We also control for *Growth*, which is defined as the growth in sales scaled by prior year's sales. In addition, we include *SOE* and *Block* to control for ownership effects and *AGE* for firm life cycle effect.

3.2.2 Earnings Benchmark Test

We use the probability of a client meeting or beating an earnings benchmark as another inverse measure of audit quality. We develop an earnings benchmark based on a Chinese stock market regulation. In the Chinese stock market, a company is labeled an 'ST stock' (special treatment stock), when the company reports losses for two consecutive years.²⁵ Previous studies (e.g., Jiang and Wang 2008; Chu et al. 2011) have also shown robust evidence that Chinese firms use earnings management to avoid "special treatment stock" designation. In other words, public companies with losses reported in the prior year would be motivated to avoid reporting losses again in the current year. Therefore, using a sample of public companies with losses reported in the prior year (*Lag_Loss=1*), we test the probability of these firms reporting small earnings. We use the following logit model (2).

$$\text{Logit}[SmEarn]_{it} = f(\text{Intercept}, NClient_{it}, \text{Control Variables}_{it}) \quad (2)$$

²⁵ Jiang and Wang (2008) make the following point regarding restrictions on ST stocks: "There are various trading and financial restrictions on special treatment stock. Its daily stock price movement is restricted to be no more than five percent in either direction, and the company's semi-annual report must be audited, unlike other companies. Furthermore, a special treatment firm cannot raise additional capital from stock market. If the special treatment firm reports one more loss, it is suspended from trading on the stock exchanges." (Jiang and Wang 2008, p 401)

In Model (2), the dependent variable *SmEarn* is a dichotomous variable that takes the value of 1 if a client's current *ROA* is between 0 and 2%; 0 otherwise. If the relation between *NClient* and *SmEarn* is positive (negative), it suggests a negative (positive) linear effect of *NClient* on audit quality. The busyness effect predicts a positive correlation between *NClient* and *SmEarn*, because busier audit partners are less likely to identify existing client financial reporting problems. However, the auditor size or reputation effect predicts a negative correlation between *NClient* and *SmEarn*. To test the moderating role of audit partner-client tenure, we split the sample based on the median of audit partner-client tenure (*APCTenure*).²⁶ Model (2) includes all control variables in Model (1), except for *LagLoss* and *ROA*.

3.2.3 Going Concern Opinion Test

O'Keefe et al. (1994) suggest that audit partners exert significant effort on "consideration of the appropriateness of the going-concern assumption" (p.259). Therefore, following prior studies (e.g., Reynolds and Francis 2000; DeFond et al. 2002; Francis and Yu 2009), we use the likelihood of an auditor issuing a going concern opinions as a measure of audit quality. A going concern opinion is a special and important type of audit opinion. The rendering of a going concern opinion requires more careful consideration for distressed clients than other types of opinions (Geiger and Raghunandan 2002b). To issue a going concern opinion, an auditor needs to collect and identify a large amount of related firm-specific or market-wide information. Higher quality auditors are likely to be more effective in identifying the circumstances that warrant a going concern report. Therefore, we view higher propensity to issue a going concern report as a signal of higher audit quality. The following

²⁶ See Gul et al. (2009) for a discussion of the merits of using a split sample to test moderating effects.

logit model (3) is used to test whether an audit partner's propensity to issue going concern reports is affected by the number of public clients audited by the audit partner²⁷.

$$\text{Logit}[GC]_{it} = f(\text{Intercept}, NClient_{it}, \text{Control Variables}_{it}) \quad (3)$$

The dependent variable in Model (3) is *GC*, which is a dichotomous variable that takes the value of 1 if a client received a going concern opinion and 0 otherwise. The busyness effect predicts a negative correlation between *NClient* and *GC*, and the auditor size effect predicts a positive correlation between *NClient* and *GC*. Similar to the first two tests, we split the sample based on the median of audit partner-client tenure (*APCTenure*) in order to examine the moderating role of audit partner-client tenure. Model (3) includes all control variables in Model (1).

3.3 Sample Selection

Table 1 Panel A summarizes the sample selection process. Our initial sample contains all firms in the China Stock Market and Accounting Research (*CSMAR*) database from 2000 to 2009 ($n=13,509$).^{28, 29} We exclude observations with missing data needed to conduct the earnings manipulation test ($n=2,633$). We further winsorize the sample at the 1% and 99 % levels for all the continuous variables in Model (1). The final sample for the earnings manipulation test consists of 10,876 firm-year observations. For the going concern opinion test, we obtain a sample of 1,893 financially-distressed observations with negative operating income. Further, for the earnings benchmark test, we obtain a sample of 1,316 observations

²⁷ In later tests we restrict the sample to firms facing financial distress.

²⁸ Chen et al. (2010) find that the institutional improvements in 2001 prompted auditors in China to improve audit quality. Therefore, auditors may be more concerned about litigation and reputation since 2001. We test whether the busyness effect is affected by the institutional improvement in 2001. Untabulated results show negative effects of auditor busyness in both pre-2001 and post-2001 periods.

²⁹ Our primary dataset is *CSMAR*. To obtain the sample for our empirical analyses, we complement *CSMAR* database with manually collected data related to audit (including auditor, audit opinion, audit fee), fraud, and ownership information. For example, *CSMAR* does not provide ownership information before 2003. We manually collected state ownership information (SOE) and the ownership of the controlling shareholder (*Block*).

with losses reported in the last year.

Table 1 Panels B and C show the distribution of the samples across different years and industries. We find the number of observations increases from 2000 to 2009, consistent with the expansion of the Chinese stock market in recent years. The three largest industries are Machinery, Gas and Chemistry and Metal.

[Insert Table 1]

3.4 Descriptive Statistics

Table 2 provides descriptive statistics of the sample. Panel A shows the number of public clients audited by a partner across years. The average number of clients audited per partner decreases from 2000 to 2009, possibly due to the development of audit profession in China. For the full sample, the maximum *NClient* is 19, and the average *NClient* is 1.949, suggesting that, on average, an auditor audits about 2 clients each year.

Panel B shows the descriptive statistics for the sample of earnings manipulation test. The average *EM* is 0.015, suggesting that 1.5 percent of the observations receive earnings manipulation conviction. To provide further assurance regarding the reliability of our data, we compare our data with that of other concurrent studies, e.g., Chen et al. (2010) who use data from 1995 to 2004. Their sample period is four years earlier than ours. Since the Chinese economy has grown further during the last decades, we expect our sample observations to be slightly larger than those in Chen et al. (2010). Consistent with this expectation, the mean of *Size* in our sample is 21.283, which is larger than the Chen et al. (2010) mean *Size* of 20.89. Besides this, we also expect our sample observations to be associated with higher profits. Consistent with this expectation, the mean of *ROA* in our sample is 0.028, which is close to the mean of 0.029 in Chen et al. (2010). The mean of *LEV* in our sample is 0.517 (0.492 in Chen et al. 2010).

Panel C presents descriptive statistics for the sample of earnings benchmark test. We

find the average *SmEarn* is 0.310, suggesting that 31 percent of the observations report small earnings between 0 and 2%. This is consistent with the expectation that firms with observations with losses in the prior year are strongly motivated to avoid reporting losses. In Panel D, we provide descriptive statistics for financial distressed observations which have negative operating income. The average *GC* is 0.239, indicating that 23.9 percent of the financial distressed observations receive going concern opinions. As expected, the financially distressed observations have higher leverage, are smaller in size, have lower profitability and face greater bankruptcy risk.

[Insert Table 2]

Table 3 provides the results of bivariate tests. We calculate the mean values of going concern opinions, earnings manipulation and firms with small earning for partners with different levels of clients. Panel A shows that compared to partners with one client, partners with more than 4 public clients are associated with lower *GC* and higher *EM* and *SmEarn*, consistent with the busyness effect. Further, Panels B and C split the sample based on the median of audit partner-client tenure (*APCTenure*). We find that the difference in audit quality measures between partners with one client and those with more than 5 clients are greater and more significant for the short tenure observations. This is consistent with our conjecture about the moderating role of *APCTenure*.

[Insert Table 3]

Table 4 reports the Pearson correlations for the variables. We do not find any extremely high correlations. As expected *NClient* and *PartnerFee* are highly correlated (0.624). Among other firm characteristics, *ROA* and *Bankruptcy* have the highest correlation

(−0.432), but it is not large enough to suggest significant problems with multicollinearity.³⁰

[Insert Table 4]

4. EMPIRICAL RESULTS

4.1 Earnings Manipulation Tests

We report the regression results of model (1) in Table 5. Table 5 uses earnings manipulation (*EM*) as an inverse measure of audit quality³¹. As shown in the first column, there is a marginally significant positive association between *NClient* and the probability of client being convicted of earnings manipulation (0.128; Chi-Square = 3.679). This indicates that as *NClient* increases, audit quality decreases. This is consistent with the busyness effect. The coefficients on other control variables are also generally consistent with our expectations and prior studies. For example, we find negative coefficients on audit partner tenure (*APCTenure*), supporting the view that auditor tenure increases audit quality (Myers et al. 2003). Also, we find that important clients are more likely to be engaged in earnings manipulation, suggesting that auditors compromise quality for economically important clients (e.g. Chen et al. 2010). Also, ownership concentration (*Block*) decreases the likelihood of earnings manipulation, supporting the monitoring role of large shareholder. In the second and third columns of Table 5, we split the sample based on the median of audit partner-client tenure (*APCTenure*) in order to test the moderating role of auditor tenure. Results for the long tenure subsample show that there is an insignificant linear relation between *NClient* and earnings manipulation (−0.043; Chi-Square= 0.056). However, for the short tenure subsample, there is a significant positive association between *NClient* and earnings manipulation (0.207; Chi-Square= 7.474). Based on standard Z-test (Chen et al. 2010), we find the difference in mean values on *NClient* between the short and long tenure subsamples

³⁰ No variable in the multiple regressions has VIF greater than 5.

³¹ We include predicted signs for each of the coefficients based on previous studies (e.g., Myers et al. 2003, Gul et al. 2009).

(0.250) is significant at the 1% level. These findings suggest that longer auditor-client tenure mitigates (moderates) the negative effect of auditor busyness, which are consistent with our expectations.

[Insert Table 5]

4.2 Earnings Benchmark Tests

We report the regression results of model (2) in Table 6 which uses the probability of reporting small earnings by firms with lagged losses (*SmEarn*) as an inverse measure of audit quality. In the Chinese stock market, a company will be labeled as a 'ST stock' (special treatment stock), when the company reports losses for two consecutive years. Thus, public companies with losses reported in the prior year would be motivated to avoid reporting losses again in the current year. We expect that higher audit quality would mitigate managers' ability to avoid reporting losses, thus leading to a lower probability of reporting *SmEarn*.

As shown in first column, there is a significant positive association between *NClient* and *SmEarn* (0.164; Chi-Square = 5.116). This indicates that as *NClient* increases, audit quality decreases, consistent with the busyness effect. For control variables, we find a greater probability of *SmEarn* for firms with large size, high book to market ratio and low leverage and low bankruptcy risk.³² In the second and third columns of Table 6, we split the sample based on the median of audit partner-client tenure (*APCTenure*) to test the moderating role of auditor tenure. Results for the long tenure subsample show that there is an insignificant linear relation between *NClient* and earnings manipulation (0.112; Chi-Square= 0.553). However, for the short tenure subsample, there is a significant positive association between *NClient* and earnings manipulation (0.172; Chi-Square= 4.422). Based on standard Z-test (Chen et al. 2010), we find the difference in mean values on *NClient* between the short and long tenure

³² Unfortunately, no prior study uses the same earnings benchmark as in our study, so we are not able to compare these results with prior studies.

subsamples (0.060) is significant at the 10% level. Consistent with our expectations based on Gul et al. (2009), these findings suggest that longer auditor-client tenure mitigates (moderates) the negative effect of auditor busyness.

[Insert Table 6]

4.3 Going Concern Opinion Tests

Table 7 reports the regression results of model (3) which uses the probability of issuing a going concern opinion (*GC*) as a positive measure of audit quality. The auditor size effect predicts a positive correlation between *NClient* and *GC*, while the busyness effect predicts a negative correlation between *NClient* and *GC*. As shown in the first column, there is an insignificant negative association between *NClient* and the probability of issuing *GC* (–0.025; Chi-Square = 0.101). Coefficients on the other control variables are also generally consistent with our expectation. For example, *GC* is positively correlated with *LagLoss* and *LEV*, and the coefficients of *ROA*, *Size*, *BM*, *Growth* and *Bankruptcy* are negative. These results suggest the probability of a going concern opinion is higher for firms with small size, high leverage, low profitability, loss in the previous year, and high bankruptcy risk. This is consistent with prior studies (e.g., Francis and Yu 2009).

In the second and third columns of Table 7, we test whether the length of the auditor-client tenure moderates the negative effect of auditing multiple clients on audit quality. Prior studies suggest that longer auditor-client tenure can help auditors accumulate client-specific knowledge (Gul et al. 2009). Therefore, we expect that long auditor-client tenure is likely to mitigate the negative effects of auditor busyness identified in our earlier test. Following Gul et al. (2009), we split the sample based on the median of audit partner-client tenure (*APCTenure*). We find an insignificant positive linear relation between *NClient* and the probability of issuing *GC* (0.217; Chi-Square= 1.945) for the long tenure subsample. However, for the short tenure subsample, *NClient* is significantly correlated with lower

probability of issuing *GC* (−0.202; Chi-Square= 3.906). Based on standard Z-test (Chen et al. 2010), we find the difference in mean values on *NClient* between the short and long tenure subsamples is significant at the 1% level. These findings are consistent with the expectation that longer auditor-client tenure mitigates (moderates) the negative effect of auditor busyness. More importantly, in the context of the auditor rotation debate, our results suggest that there are benefits to be derived from longer auditor tenure, at least in China.

[Insert Table 7]

We also perform our multivariate analyses controlling for clustered standard errors for clients audited by the same audit partner in the same year. Untabulated results show that our results are robust.

5. ADDITIONAL TESTS

5.1 Matched Sample Test

In our analysis, the endogeneity problem that we face is selection bias because audit partners with multiple clients could be systematically different from partners that have fewer clients. To the extent that the characteristics of audit partners that have fewer clients might lead to higher audit quality, there is a self-selection of partners with fewer clients that are more likely to demand higher audit quality. Thus, propensity score matching models are used to mitigate this concern (e.g., Li and Prabhala, 2005). As the matching models can create samples in which the auditor of multiple clients and fewer clients are similar, differences in audit quality between them could be attributed to the busyness of auditors. Following prior studies (e.g., Lawrence et al. 2011), we adopt the standard two-stage propensity score matching approach. In the first stage,³³ we regress a dummy variable *HighNClient* (for a busy

³³ In the first stage, we regress a dummy variable for the “treatment” and predict the probability that an observation will receive the treatment based on the observation’s characteristics.

auditor with high $NClient \geq 4$) on all the other independent variables in the primary regression (i.e., Model 1 in the paper), which include *PartnerFee*, *BigN*, *AFCTenure*, *APCTenure*, *CoExp*, *CImportance*, *Size*, *LEV*, *ROA*, *Growth*, *BM*, *LagLoss*, *Bankruptcy*, *SOE*, *Block* and *AGE*.

From the first stage regression, we predict the probability that a client will choose a busy auditor based on the firm and auditor characteristics ($Pred_NClient$). For example, if $Pred_NClient$ equals to 1 for client firm i , it means that given the firm's and auditor's other characteristics, there is a high likelihood that this firm i will have a busy auditor.

Then, we form match pairs identifying a firm in which the signing auditor with many clients ($HighNClient=1$) has close propensity score with the one with a few clients ($HighNClient=0$).³⁴ We match approximately 19 percent, 17 percent and 18 percent of $HighNClient=0$ subsample to $HighNClient=1$ for earnings manipulation, small earnings benchmark and going concern samples. Finally, we regress all the audit quality proxies on $HighNClient$ and all the other corresponding control variables. Results for the second stage are reported in Table 8. We still find significant and negative audit quality effects of multiple public audits for the subsamples of short audit partner-client tenure. The results are still consistent with the busyness effect that overcommitted partners are associated with lower audit quality.

[Insert Table 8]

5.2 Client Complexity Score Test

In our primary tests, we inherently treat all clients of differing sizes as being equal in calculating our primary independent variable $NClient$. However, more complex clients would

³⁴ We match each high $NClient$ observation j with two low $NClient$ observations k . Given the firms' (j , k and h) characteristics, these firms are expected to have the same probability to choose an auditor with high $NClient$.

demand different levels of auditor effort. Therefore, as an alternative independent variable, we construct a client complexity score that reflects differences in the complexity of clients audited by different audit partners.

Based on prior studies (e.g. Gul et al. 2003; Gul and Goodwin 2010), we identify four client characteristics that reflect client complexity and affect auditor effort: client size, client growth, client financial performance and client bankruptcy risk. For each firm-year observation, we set up four indicator variables to measure differences in the four client characteristics:

C1 =1 if a firm is a large client (size of total assets in the upper quartile in year t), 0 otherwise;

C2 =1 if a firm is a high growth firm (growth in revenue in the upper quartile in year t), 0 otherwise;

C3 =1 if a firm has high bankruptcy risk (bankruptcy risk in the upper quartile in year t), 0 otherwise;

C4 =1 if a firm has low or negative profit (ROA is lower than - 10% in year t), 0 otherwise.

The complexity score (proxy) is then calculated as follows:

$$\text{ComplexityScore} = 1 + C1 + C2 + C3 + C4.$$

A firm can obtain a score of 1 to 5 reflecting levels of complexity. A higher complexity score (e.g.5) indicates that the client firm is more complex and demands more auditor effort. For a low or non-complex client with small size, low growth, low bankruptcy risk and high profit, the ComplexityScore equals 1. Finally, for each audit partner, we calculate the total ComplexityScore of all the clients audited by the audit partner in year t (denoted as $\sum \text{ComplexityScore}$).

We use this $\sum \text{ComplexityScore}$ variable as an alternative to our primary measure *NClient*. The regression results are reported in Table 9. Consistent with our expectation, all the results suggest that higher $\sum \text{ComplexityScore}$ is associated with lower audit quality for the subsamples of short audit partner-client tenure, thus supporting our hypothesis.

[Insert Table 9]

5.3 Alternative Going Concern Measure

We also set up an additional audit quality measure (GC_{alt}) based on going concern opinions for clients with high bankruptcy risks.

“ GC_{alt} ”=1, if the client-firm receives a going concern opinion

“ GC_{alt} ”=0, if the client-firm does not receive a going concern opinion but the company’s probability of bankruptcy is above sample median (based on Olson’s bankruptcy risk measure).

By using this alternative measure, we exclude observations with low bankruptcy risk and clean audit opinions. Untabulated results are robust to using this alternative measure. We find that the *NClient* coefficient is -0.246 ($p < 0.05$), thus suggesting that the busyness effect in the short tenure subsample.

5.4 First Year Signing Partner

The negative relationship between *NClient* and audit quality may be driven by short tenured audit partners who are non-partner members or non-signing partners on engagements before becoming the signing partners. To address this concern, we identify the first year an auditor becomes a partner (based on the first year they sign an opinion) and exclude these observations. We still find a negative busyness effect of auditing multiple clients for the short partner-client tenure subsample but not for the long partner-client tenure subsample, supporting the moderating effect of partner tenure.

5.5 Time constraints - New International Accounting Standard (IAS) in 2006

As part of the convergence to the international accounting standard (IAS), the Ministry of Finance of the People's Republic of China issued a new set of accounting

standards on 15 February, 2006. In the following two transition years of 2006 and 2007, auditors need to familiarize themselves with the new standards in performing their audits³⁵. Consequently, we expect the auditors, on average, to be more time constrained in the transition period as compared to other years. The IAS adoption provides a unique setting to examine whether the busyness effect is more pronounced in the transition years (i.e., 2006 and 2007). We run a regression for the years 2006 and 2007 separately and compare the coefficients for the busyness effect with the same coefficient for the full sample. Untabulated results show that the coefficient (*NClient*) for the period 2006 - 2007 is more pronounced and significant than the same coefficient in the full regression. These results provide some support for the notion that when auditors face time constraint, they are more likely to be affected by busyness effect.

5.6 Control for Auditor Experience

To disentangle between the partner tenure³⁶ effects from the partner-client tenure effects, we separate our sample into three groups as shown below (SS, SL and LL).

	Auditor Experience	
Partner-Client Tenure	Short (S)	Long (L)
Short (S)	<i>SS</i>	<i>SL</i>
Long (L)		<i>LL</i>

To control for the effect of auditor's general experience, we compare the two groups, SL and LL. Since both groups have observations with long audit partner experience,

³⁵ Some studies (e.g. De George et al. 2013) document that the average level of audit fees increases in the year of IFRS adoption because of increase in audit effort and increase in audit risk around the time of mandated shifts in regulation.

³⁶ We identify the first year an auditor becomes a partner (based on the first year they sign an opinion). We thank a reviewer for this suggestion.

comparing these two groups can shed light on the moderating effect of audit partner-client tenure. Consistent with our previous findings, untabulated regressions find the busyness effect is mitigated in the sample of LL which has long audit partner-client tenure. In other words, the moderating effects of audit partner-client tenure still hold after controlling for the effect of auditor experience.

5.7 Control for the Potential Effect of Other Auditor Activities

An analysis on whether audit quality is related to other auditor activities, such as non-audit service and private audits is beyond the scope of our study. However, we take two steps to mitigate related concerns. First, using 30 public firms from our sample, we manually collect non-audit service reports (e.g., asset valuation report).³⁷ We do not find any partners who sign public audit and non-audit service report concurrently. Second, we randomly select partners from our sample and try to identify whether the partners provide private audits. To do this, we depend on the website of the China Securities Regulatory Commission ([http: / /assdata.csrc.gov.cn/](http://assdata.csrc.gov.cn/)) which provides some data on the number of public and private audits and other activities conducted by audit partners.^{38,39} For a random sample of 30 audit partners, we do not find any partners with multiple public clients having private clients or consulting clients during the period between January 1 and April 31 in the same year. Although we are unable to completely rule out the possibility, we believe our conclusions will not be significantly affected by controlling for the number of private audits or other activities. Furthermore, based on the information from the website, only a limited number of highly specialized auditors in China are authorized to sign audit reports for public clients.

³⁷ These reports are collected by using searching engines (e.g., Baidu.com).

³⁸ A limitation of this approach is that only the partners who are still active in 2011 have information disclosed. Information on the website is not machine readable.

³⁹ Unfortunately, the website stopped disclosing such information from 2013.

Besides, we also find that auditors without the authorities to audit public clients provide more of the “other” business services.

5.8 Relative Importance of *NClient* as an Audit Quality Determinant

To compare the relative importance of the independent variables in explaining audit quality, we re-estimate equations (1), (2), (3) and (5) and obtain the standardized coefficients. The untabulated results find that the most important determinants of audit quality are firm characteristics, which include *LEV*, *ROA*, *Size*, *Growth* and *LagLoss*. Among auditor characteristics, *NClient* has one of the highest standardized coefficients for earnings manipulation and small earnings but third highest for the going concern test. These results further highlight the importance of *NClient* in affecting audit quality.

5.9 Alternative Variable Specifications

First, we set up an indicator variable for partners with *NClient* in the upper quartile (5 to 19 clients). We find that these partners have significantly lower audit quality for the earnings manipulation and earnings benchmark tests. This is consistent with our primary findings. To mitigate the concern that the results may be driven by possible “outliers” with large *NClient*, we exclude observations with large *NClient* >10, and we also use the log of *NClient* as an alternative measure. Our main findings are still generally robust. Second, our primary definition of *SmEarn* is an indicator for ROA between 0 and 2%. We also test the models using alternative measures, which include ROA between 0 and 1% and ROA between 0 and 3%. We still find a positive association between *NClient* and *SmEarn*. Third, in the primary tests, we test the moderating role of auditor partner tenure by splitting the sample by the median of *APCTenure* (3 years). In untabulated tests, we find most results are generally

similar after using alternative definitions of long/ short auditor tenure, such as splitting the sample based on the upper quartile of *APCTenure* (4 years).

6. LIMITATIONS

Although our study shares some common limitations with the previous empirical studies similar to ours, some specific limitations are worth emphasizing. Some of these limitations provide fruitful avenues for future research.

First, the validity of our conclusions depends on our measure of audit quality. In the main tests, we employ several alternative measures of audit quality⁴⁰, which are also employed by several prior studies. Importantly, these measures produce consistent results and enhance the reliability of our study. We do not use partner signature to assess audit quality as it is an empirical question as to whether financial statement users would attend more closely to the audit report when it includes a partner's signature. However, we believe it is an interesting research question and provides fruitful avenue for future research.

Second, audit partners are always assigned by audit offices. To minimize the offices' expected litigation and reputations costs, audit offices are expected to assign more public clients to higher quality auditors. Therefore, our argument that auditors with more public clients have *lower* audit quality is not likely to be caused by office-level auditor assignments. Importantly, our tests on audit partner tenure also alleviate related concerns, because it is difficult to envision a reverse-causal argument which explains not only the association between multiple public clients and audit quality but also the moderating role of auditor tenure (also see Rajan and Zingales 1998; Lang and Maffett 2010).

⁴⁰ A limitation of the earnings quality measures is the low base occurrence of earnings manipulation. However, we note that prior studies (e.g. Lennox and Pittman 2010) also show low base occurrence of earnings manipulation (US Securities and Exchange Commission convictions).

Finally, we use the data from the Chinese market. Extrapolation of our results to other markets should be viewed with caution. For example, the relatively fixed time window for public auditing (January 1 and April 31) increases the possibility that the busyness effect will be observed. However, we believe auditing practice in China is similar to that of other large international markets. For example, the Big N audit firms entered the Chinese market from the inception of the Chinese stock exchanges, and most Chinese domestic audit firms follow the practice of Big N and mid-size audit firms.⁴¹ Also, prior auditing studies in the Chinese market have found similar results as in the US market (e.g., Chen et al. 2010). In addition, a survey by IAASB suggests disagreements regarding the benefits of mandatory partner signature among more than 100 associations from not only large developed market but also emerging developing market. We believe our findings of the Chinese market could also have important implications for developing markets. Audit quality is a fundamental factor for the development of stock markets in emerging economies (e.g., Michas 2011). Therefore, providing evidence regarding audit behavior in emerging market could have both high economic significance and important policy implications for regulators in developing countries (see also Chen et al. 2010).

7. CONCLUSION

Using partner level data from the Chinese market, this study examines the effects of auditing multiple public clients on audit quality. We find a significant and robust negative association between the number of public clients audited by an audit partner and alternative measures of audit quality, consistent with the busyness effect. However, these associations are only significant for auditors with short partner-client tenure, suggesting that auditor

⁴¹ A large number of the auditors in China actually have educational background and practical experience in US, UK or other developed countries. Also, China has adopted IFRS, and a large number of foreign investors actually invest in China.

client-specific knowledge mitigates the busyness effect. Overall, these results suggest that both cross-sectional and time-series information provided by audit partner signatures in public financial reports is useful to assess audit quality. Our study improves the understanding of the Chinese audit market and has policy implications as it suggests a case for capping the number of clients an auditor can audit especially for those Chinese auditors with short tenure.

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Appendix: Variable Definition

EM_{it}	= earnings manipulation, a dichotomous variable that takes the value of 1 if the regulator identifies that a client has aggressive earnings manipulation; 0 otherwise.
$SmEarn_{it}$	= small earnings, a dichotomous variable that takes the value of 1 if a client's current ROA is between 0 and 2% (including 0 and 2%); 0 otherwise.
GC_{it}	= going concern opinion, a dichotomous variable that takes the value of 1 if a client receives a going concern audit opinion; 0 otherwise.
$NCleint_{it}$	= the number of public clients audited by the audit partner in charge of client i in year t .
$HighNCleint_{it}$	= a dummy variable for observations with $NCleint_{it} \geq 4$.
$PartnerFee_{it}$	= the natural log of total audit fees made by the audit partner in charge of client i in year t .
$APCTenure_{it}$	= audit partner-client tenure, measured as the number of years in which an audit partner has signed off on the audit opinion for the client i from 1990 to year t .
$AFCTenure_{it}$	= audit firm-client tenure, measured as the number of years in which an audit firm signed off on the audit opinion for the client i from 1990 to year t ,
$CoExp_{it}$	= auditor-reviewer cooperation experience, calculated as number of years of cooperation divided by 100. Years of cooperation equals to the current year plus the number of years in which an engagement partner and a quality reviewer have continuously cooperated from 1990 to year $t-1$.
$BigN_{it}$	= 1 if firm i is audited by an international <i>Big4</i> auditor or one of the 10 biggest local audit firms in year t ; =0 otherwise. To identify the ten biggest local audit firms, we rely on the number of clients audited by the local audit firms during our sample period. <i>Big4</i> auditors refer to the biggest 5 largest international audit firms before 2002 and the largest four international firms from 2002.
$CImportance_{it}$	= client importance, the ratio of firm i 's assets divided by the total assets audited by firm i 's auditor in year t .
$Bankruptcy_{it}$	= Olson's bankruptcy risk measure, which equals the sum of $0.2086 * \text{equity divided by liability}$, $4.3465 * \text{assets turnover}$, and $4.8601 * \text{assets growth}$. (Wang and Campbell 2010)
$Size_{it}$	= log of client total assets for firm i in year t ,
ROA_{it}	= net income divided by total assets at the end of the year,
LEV_{it}	= total liabilities divided by total assets at the end of the year,
$LagLoss_{it}$	= dummy variable, = 1 if firm i reports negative income before extraordinary items in year $t-1$,
$Growth_{it}$	= sales growth rate, defined as the sales in year t minus sales in $t-1$ and scaled by sales in year $t-1$,
BM_{it}	= the ratio of book equity value to market value for firm i in year t ,
SOE_{it}	= 1 if firm i is a state-owned enterprise in year t ; =0 otherwise,
$Block_{it}$	= the ratio of shares owned by the controlling shareholder
AGE_{it}	= firm age, the natural log of the number of years since the firm gets listed in the stock market,
$\Sigma ComplexityScore$	= a measure of the complexity of clients audited by a partner. Details are described in the paper.

Table1 Sample Description

Panel A Sample Selection	# of Observations		
Initial Observations available from 2000 to 2009	13,509		
less: observations with missing industry information	(47)		
less : observations in or prior to the IPO year	(831)		
less : observations with missing auditor information or three signing audit partners	(1,043)		
less : observations with missing data to calculate <i>PartnerFee</i>	(701)		
less : observations with missing sales growth data	(8)		
less : observations with missing market capitalization data	(2)		
less : observations with no liability	(1)		
Sample for the Earnings Manipulation test ^a	10,876		
<i>Including</i>			
Sample for the going-concern opinion test (distressed observations with operating income<0) ^b	1,893		
Sample for the earnings benchmark test (observations with LAGLOSS=1)	1,316		
Panel B Distribution of Sample Observations by Year			
Earnings Manipulation test	Earnings benchmark test	Going-concern opinion test	
Year	# of obs.	# of obs.	
2000	609	45	68
2001	927	85	154
2002	1,152	128	178
2003	1,183	153	173
2004	1,148	133	191
2005	1,109	137	250
2006	1,107	212	180
2007	1,095	120	154
2008	1,218	92	295
2009	1,328	211	250
Total	10,876	1,316	1,893
Panel C Distribution of Sample Observations by Industry			
Earnings Manipulation test	Earnings benchmark test	Going-concern opinion test	
Industry	# of obs.	# of obs.	# of obs.
Agriculture	267	41	65
Mining	154	4	4
Food	471	59	92
Apparel	452	70	95

Printing	208	29	40
Chemistry	1,245	169	251
Electronic	362	52	77
Metal	1,044	118	185
Machinery	1,664	213	310
Pharmaceutical	674	68	93
Energy Supply	149	15	30
Construction	479	37	48
Transportation	209	17	21
IT	480	34	53
Entertainment	644	96	132
Real Estate	794	97	136
Retail&Wholesale	490	42	53
Other Service	310	31	41
OtherManufacture	92	13	18
Other	688	111	149
Total	10,876	1,316	1,893

Note:

This table shows the sample selection process (panel A) sample distribution across year (Panel B) and sample distribution across industries (Panel C).

^a All the continuous variables are winsorized at the 1% and 99% levels.

^b If an observation has negative operating income, then it is viewed as a financial distressed observation.

Table 2
Descriptive Statistics

Panel A: Number of Public Clients Audited by a Partner By Year

Year	MIN.	Mean	MAX.
2000	1.000	2.366	11.000
2001	1.000	2.157	19.000
2002	1.000	1.983	13.000
2003	1.000	2.070	12.000
2004	1.000	1.774	12.000
2005	1.000	1.761	14.000
2006	1.000	1.684	10.000
2007	1.000	1.740	13.000
2008	1.000	1.674	12.000
2009	1.000	1.636	11.000

Panel B: Earnings Manipulation sample

Variable	Mean	Std. Dev.	MIN.	MAX.
<i>EM</i>	0.015	0.071	0.000	1.000
<i>NClient</i>	1.949	1.588	1.000	19.000
<i>PartnerFee</i>	13.405	0.800	9.903	19.025
<i>BigN</i>	0.063	0.243	0.000	1.000
<i>AFCTenure</i>	5.479	3.597	1.000	20.000
<i>APCTenure</i>	2.606	1.458	1.000	11.000
<i>CoExp</i>	1.901	1.300	1.000	11.000
<i>CImportance</i>	0.046	0.066	0.000	0.398
<i>Size</i>	21.283	1.062	18.837	24.648
<i>LEV</i>	0.517	0.261	0.079	1.951
<i>ROA</i>	0.028	0.088	-0.458	0.219
<i>Growth</i>	0.229	0.601	-0.785	3.788
<i>BM</i>	0.398	0.294	-0.553	1.303
<i>LagLoss</i>	0.122	0.327	0.000	1.000
<i>Bankruptcy</i>	4.578	2.729	-0.565	13.266
<i>SOE</i>	0.702	0.458	0.000	1.000
<i>Block</i>	0.399	0.167	0.100	0.763
<i>AGE</i>	2.174	0.499	0.693	3.045

Panel C: Earnings Benchmark test sample

Variable	Mean	Std. Dev.	MIN.	MAX.
<i>SmEarn</i>	0.310	0.463	0.000	1.000
<i>NClient</i>	2.011	1.466	1.000	13.000
<i>PartnerFee</i>	13.371	0.744	11.290	15.776
<i>BigN</i>	0.030	0.170	0.000	1.000
<i>AFCTenure</i>	5.111	3.604	1.000	19.000
<i>APCTenure</i>	2.446	1.487	1.000	9.000
<i>CoExp</i>	1.838	1.233	1.000	9.000
<i>CImportance</i>	0.031	0.054	0.000	0.398
<i>Size</i>	20.672	1.059	18.837	24.648
<i>LEV</i>	0.759	0.436	0.079	1.951
<i>ROA</i>	-0.066	0.141	-0.458	0.219
<i>Growth</i>	0.191	0.892	-0.785	3.788

<i>BM</i>	0.236	0.366	−0.553	1.303
<i>LagLoss</i>	1.000	0.000	1.000	1.000
<i>Bankruptcy</i>	3.008	2.732	−0.565	13.266
<i>SOE</i>	0.625	0.484	0.000	1.000
<i>Block</i>	0.343	0.153	0.100	0.763
<i>AGE</i>	2.373	0.373	0.693	3.045

Panel D: Going concern opinion test sample

Variable	Mean	Std. Dev.	MIN.	MAX.
<i>GC</i>	0.239	0.426	0.000	1.000
<i>NClient</i>	2.006	1.445	1.000	11.000
<i>PartnerFee</i>	13.337	0.809	9.903	19.025
<i>BigN</i>	0.030	0.172	0.000	1.000
<i>AFCTenure</i>	5.441	3.691	1.000	18.000
<i>APCTenure</i>	2.520	1.465	1.000	9.000
<i>CoExp</i>	0.019	0.013	0.010	0.100
<i>CImportance</i>	0.032	0.053	0.000	0.398
<i>Size</i>	20.773	1.059	18.837	24.648
<i>LEV</i>	0.726	0.410	0.079	1.951
<i>ROA</i>	−0.106	0.120	−0.458	−0.000
<i>Growth</i>	−0.038	0.547	−0.785	3.788
<i>BM</i>	0.303	0.389	−0.553	1.303
<i>LagLoss</i>	0.383	0.486	0.000	1.000
<i>Bankruptcy</i>	2.654	2.268	−0.565	13.266
<i>SOE</i>	0.647	0.478	0.000	1.000
<i>Block</i>	0.345	0.151	0.100	0.763
<i>AGE</i>	2.349	0.405	0.693	3.045

Note to Table 2:

Panel A shows descriptive statistics about *NClient* across years. Panels B, C and D shows the descriptive statistics for the earnings manipulation sample, earnings benchmark sample and going concern opinion, respectively. Variable definitions are available in the Appendix.

Table 3 Bivariate Tests

Panel A: Full sample							
Variable		(1) <i>NClient</i> =1	(2) <i>NClient</i> =2	(3) <i>NClient</i> =3	(4) <i>NClient</i> =4	(5) <i>NClient</i> ≥5	(5)–(1) <i>t</i> -statistics
<i>EM</i>	Mean	0.01	0.01	0.01	0.02	0.02	2.51**
<i>SmEarn</i>	Mean	0.22	0.23	0.30	0.29	0.37	2.92***
<i>GC</i>	Mean	0.25	0.24	0.21	0.24	0.19	–1.31*
Panel B: Short Partner-Client Tenure (<i>APCTenure</i> <4) Subsample							
Variable		(1) <i>NClient</i> =1	(2) <i>NClient</i> =2	(3) <i>NClient</i> =3	(4) <i>NClient</i> =4	(5) <i>NClient</i> ≥5	(5)–(1) <i>t</i> -statistics
<i>EM</i>	Mean	0.01	0.01	0.01	0.02	0.03	2.74***
<i>SmEarn</i>	Mean	0.22	0.22	0.30	0.28	0.40	2.81***
<i>GC</i>	Mean	0.25	0.22	0.25	0.24	0.20	–0.96
Panel C: Long Partner-Client Tenure (<i>APCTenure</i> ≥4) Subsample							
Variable		(1) <i>NClient</i> =1	(2) <i>NClient</i> =2	(3) <i>NClient</i> =3	(4) <i>NClient</i> =4	(5) <i>NClient</i> ≥5	(5)–(1) <i>t</i> -statistics
<i>EM</i>	Mean	0.01	0.01	0.01	0.02	0.01	0.06
<i>SmEarn</i>	Mean	0.24	0.23	0.33	0.32	0.32	1.05
<i>GC</i>	Mean	0.24	0.28	0.10	0.24	0.19	–0.91

Note: This table shows how the audit quality proxies change across different levels of *NClient*. ***, ** and * separately refer to significance at the 1% level, 5% level and 10% level, one tail.

Table 4 Pearson Correlation Matrix

	1	2	3	4	5	6	7	8	9
<i>1.NClient</i>	1.000								
<i>2.PartnerFee</i>	0.624***	1.000							
<i>3.BigN</i>	-0.007	0.218***	1.000						
<i>4.AFCTenure</i>	-0.050***	0.050***	0.008	1.000					
<i>5.APCTenure</i>	0.048***	0.040***	-0.028**	0.327***	1.000				
<i>6.CoExp</i>	0.283***	0.188***	-0.038***	0.078***	0.350***	1.000			
<i>7.CImportance</i>	-0.080***	-0.024*	-0.099***	-0.035***	-0.003	-0.016*	1.000		
<i>8.Size</i>	-0.052***	0.305***	0.281***	0.131***	0.022**	-0.012	0.403***	1.000	
<i>9.LEV</i>	-0.028***	-0.003	-0.055***	0.031***	-0.020*	-0.018	0.011	-0.033***	1.000
<i>10.ROA</i>	0.005	0.055***	0.082***	0.010	0.026**	0.016	0.102***	0.284***	-0.552***
<i>11.Growth</i>	0.001	-0.010	-0.002	-0.032***	-0.008	0.016	0.054***	0.072***	-0.006
<i>12.BM</i>	-0.065***	0.074***	0.069***	0.078***	0.034***	0.011	0.189***	0.391***	-0.341***
<i>13.LagLoss</i>	-0.019**	-0.057***	-0.049***	-0.035***	-0.038***	-0.017	-0.079***	-0.223***	0.349***
<i>14.Bankruptcy</i>	-0.022	0.031***	0.052***	0.009	-0.013	0.004	0.039***	0.112***	-0.264***
<i>15.SOE</i>	0.011	0.025**	0.060***	0.021**	-0.008	-0.036***	0.123***	0.215***	-0.095***
<i>16.Block</i>	0.024***	0.057***	0.088***	-0.137***	-0.044***	-0.007	0.135***	0.214***	-0.154***
<i>17.AGE</i>	-0.130***	-0.015***	-0.007	0.389***	0.110***	0.010	-0.084***	0.044***	0.243***
	10	11	12	13	14	15	16	17	
<i>11.Growth</i>	0.239***	1.000							
<i>12.BM</i>	0.184***	-0.013	1.000						
<i>13.LagLoss</i>	-0.400***	-0.035***	-0.214***	1.000					
<i>14.Bankruptcy</i>	0.432***	0.299***	-0.107***	-0.217***	1.000				
<i>15.SOE</i>	0.067***	-0.012	0.123***	-0.068***	0.035***	1.000			
<i>16.Block</i>	0.180***	0.061***	0.084***	-0.124***	0.127***	0.304***	1.000		
<i>17.AGE</i>	-0.149***	-0.029***	-0.006	0.143***	-0.076***	-0.129***	-0.427***	1.000	

Note: ***, ** and * separately refer to significance at the 1% level, 5% level and 10% level, two tails. Variable definitions are available in the Appendix.

Table 5 Earnings Manipulation Tests

Dependent Variable : Earnings Manipulation(<i>EM</i>)							
Predictors	Predictions	Full Sample		Short Tenure		Long Tenure	
		Coefficient	Chi-Square	Coefficient	Chi-Square	Coefficient	Chi-Square
<i>Intercept</i>	?	3.559	1.166	5.884	2.515	7.544	0.941
<i>NClient</i>	+	0.128*	3.679	0.207***	7.474	−0.043	0.056
<i>PartnerFee</i>	?	−0.055	0.106	−0.219	1.128	0.214	0.233
<i>BigN</i>	−	0.734*	2.928	0.341	0.382	1.469	2.390
<i>AFCTenure</i>	?	0.007	0.007	−0.132***	10.873	−0.379***	7.789
<i>APCTenure</i>	−	−0.172***	17.812				
<i>CoExp</i>	?	−0.105	1.674	−12.595	1.565	−16.214	0.976
<i>CImportance</i>	+	3.898***	11.384	4.312***	10.297	4.617*	3.127
<i>Size</i>	−	−0.139	1.003	−0.279*	3.035	0.318	0.692
<i>LEV</i>	?	−0.721	2.158	−0.623	1.347	−0.343	0.050
<i>ROA</i>	−	−1.236	1.136	−1.136	0.779	−1.483	0.208
<i>Growth</i>	+	0.182	1.442	0.209	1.624	−0.171	0.098
<i>BM</i>	?	−0.391	0.497	−0.095	0.023	−1.079	0.578
<i>LagLoss</i>	?	−0.210	0.604	−0.132	0.200	−0.560	0.495
<i>Bankruptcy</i>	−	−0.220***	15.793	−0.203***	11.079	−0.179	1.477
<i>SOE</i>	?	−0.343**	3.181	−0.188	0.747	−1.167**	4.761
<i>Block</i>	−	−3.266***	22.199	−3.012***	14.738	−3.482**	3.941
<i>AGE</i>	?	0.015	0.005	0.199	0.659	−1.107*	3.070
<i>Industry&Year Effects</i>		Yes		Yes		Yes	
ROC Curve		0.857		0.843		0.917	
Pseudo Cox and Snell R-Square		0.026		0.025		0.031	
N		10,876		8,199		2,677	

Difference in the coefficient on *NClient* between the short and long tenure subsamples: 0.250***

The first column uses the full sample to estimate the earnings manipulation model. The second and third columns split the sample based on the median of audit partner–client tenure. All the regressions include industry and year fixed effects and an intercept. ***, ** and * separately refer to significance at the 1% level, 5% level and 10% level, two tails. Variable definitions are available in the Appendix 1.

Table 6 Earnings Benchmark TestsDependent Variable : Small Earnings (*SmEarn*)

Predictors	Prediction	Full Sample		Short Tenure		Long Tenure	
		Coefficient	Chi-Square	Coefficient	Chi-Square	Coefficient	Chi-Square
<i>Intercept</i>	?	−5.716**	5.798	−8.258***	9.035	−3.894	0.359
<i>NClient</i>	+	0.164**	5.116	0.172**	4.422	0.112	0.553
<i>PartnerFee</i>	?	−0.098	0.469	0.016	0.008	−0.464	1.858
<i>BigN</i>	−	−0.806	2.822	−0.947**	3.220	0.243	0.027
<i>AFCTenure</i>	?	0.063	1.453	0.000	0.000	0.040	0.382
<i>APCTenure</i>	−	−0.003	0.024				
<i>CoExp</i>	?	0.955	0.025	10.910	1.996	−2.647	0.057
<i>CImportance</i>	?	−1.090	0.609	−1.091	0.482	−2.245	0.233
<i>Size</i>	?	0.287**	7.421	0.321***	6.724	0.342	1.474
<i>LEV</i>	?	−1.072**	10.043	−0.932**	5.804	−2.558***	7.332
<i>Growth</i>	?	−0.048	0.282	−0.102	0.874	0.291	1.791
<i>BM</i>	?	1.263***	12.166	1.189***	7.830	1.200	1.676
<i>Bankruptcy</i>	+	0.087**	7.335	0.071**	3.484	0.102	1.470
<i>SOE</i>	?	−0.003	0.001	0.177	0.853	−0.412	1.135
<i>Block</i>	−	−0.386	0.542	−0.133	0.044	−0.804	0.463
<i>AGE</i>	−	−0.225	1.046	−0.468*	3.230	0.346	0.398
<i>Industry & Year Effects</i>		Yes		Yes		Yes	
ROC Curve		0.750		0.732		0.814	
Pseudo Cox and Snell R-Square		0.140		0.149		0.234	
N		1,316		1,012		304	

Test for Difference in the coefficient on *NClient* between the short and long tenure subsamples: 0.060*

The first column uses the full sample to estimate the earnings benchmark model. The second and third columns split the sample based on the median of audit partner–client tenure. All the regressions include industry and year fixed effects and an intercept. ***, ** and * separately refer to significance at the 1% level, 5% level and 10% level, two tails. Variable definitions are available in the Appendix 1.

Table 7 Going–Concern Audit Opinion Tests

Dependent Variable : Going Concern Opinion (GC)

Predictors	Prediction	Full Sample		Short Tenure Subsample		Long Tenure Subsample	
		Coefficient	Chi–Square	Coefficient	Chi–Square	Coefficient	Chi–Square
<i>Intercept</i>	?	4.167	2.497	4.281	1.865	2.167	0.129
<i>NClient</i>	–	–0.025	0.101	–0.202**	3.906	0.217	1.945
<i>PartnerFee</i>	?	–0.277*	3.012	–0.000	0.000	–0.786**	4.572
<i>BigN</i>	+	1.107**	3.935	1.087*	2.986	1.172	0.596
<i>AFCTenure</i>	?	0.036	0.368	–0.024	0.811	–0.057	0.921
<i>APCTenure</i>	?	–0.025	1.064				
<i>CoExp</i>	+	0.109	2.825	22.180***	6.408	–5.124	0.242
<i>CImportance</i>	–	–0.552	0.102	–0.766	0.153	1.924	0.227
<i>Size</i>	–	–0.211*	3.501	–0.366***	7.470	0.249	0.910
<i>LEV</i>	+	2.567***	43.773	2.289***	27.226	2.326**	5.882
<i>ROA</i>	–	–4.745***	38.061	–4.639***	27.791	–6.832***	11.412
<i>Growth</i>	–	–0.503**	8.504	–0.490**	5.953	–0.605	1.764
<i>BM</i>	?	–0.845*	3.235	–1.037*	3.317	–1.274	1.551
<i>LagLoss</i>	+	0.672***	17.011	0.701***	12.878	0.791**	5.032
<i>Bankruptcy</i>	–	–0.134***	8.644	–0.145***	7.917	–0.141	1.457
<i>SOE</i>	–	–0.167	0.954	–0.154	0.570	–0.223	0.345
<i>Block</i>	–	–0.580	0.800	0.003	0.000	–2.607*	3.514
<i>AGE</i>	?	0.413*	2.737	0.238	0.674	0.835	2.156
<i>Industry&YearEffects</i>		Yes		Yes		Yes	
ROC Curve		0.916		0.901		0.875	
Pseudo Cox and Snell R–Square		0.383		0.393		0.365	
N		1,893		1,424		469	

Difference in the coefficient on *NClient* between the short and long tenure subsamples: –0.419***

This table estimates the going concern opinion model. The first column uses the full sample. The last two columns split the full sample based on the median of audit partner–client tenure. All the regressions include industry and year fixed effects and an intercept (which is not reported). ***, ** and * separately refer to significance at the 1% level, 5% level and 10% level, two tails. Variable definitions are available in the Appendix 1.

Table 8 Propensity-Score Matched Sample Tests

Dependent Variable=	<i>EM</i>		<i>SmEarn</i>		<i>GC</i>	
Predictors	Coefficient	Chi-Square	Coefficient	Chi-Square	Coefficient	Chi-Square
<i>Intercept</i>	19.011***	6.492	-7.966	0.002	31.701***	8.851
<i>HighNClient</i>	0.705*	3.600	0.781*	3.164	-1.086*	3.699
<i>PartnerFee</i>	-0.279	1.075	0.230	0.349	-1.124**	3.958
<i>BigN</i>	-0.104	0.009	-1.062	1.359	0.950	0.199
<i>AFCTenure</i>	-0.144*	3.473	-0.011	0.028	-0.709**	4.239
<i>APCTenure</i>	0.037	0.024	0.400	2.455	-0.022	0.087
<i>CoExp</i>	-14.406	1.217	5.364	0.144	29.719*	3.209
<i>CImportance</i>	3.652	1.654	19.237**	4.920	-3.995	0.092
<i>Size</i>	-0.060	0.059	0.163	0.392	-0.641*	3.234
<i>LEV</i>	-2.210**	4.956	-0.796	0.999	1.370	1.460
<i>ROA</i>	1.868	0.783	N.A.	N.A.	-1.791	0.629
<i>Growth</i>	0.196	0.614	-0.323	1.988	0.189	0.202
<i>BM</i>	-3.147**	6.231	1.490	2.325	-4.339**	6.377
<i>LagLoss</i>	-1.191**	3.881	N.A.	N.A.	1.452**	6.862
<i>Bankruptcy</i>	-0.571***	21.559	0.102	1.357	-0.280**	4.669
<i>SOE</i>	-0.560	2.419	0.682	2.419	0.217	0.144
<i>Block</i>	-3.279***	7.157	3.065*	3.260	-1.021	0.227
<i>AGE</i>	0.588	2.063	0.501	0.708	0.854	1.031
<i>Industry&YearEffects</i>	Yes		Yes		Yes	
ROC curve	0.895		0.861		0.962	
Pseudo Cox and Snell R-Square	0.032		0.321		0.494	
N	2,582		242		344	

This table estimates the models using a propensity score matched sample. The sample is the observations with short auditor tenure. All the regressions include industry and year fixed effects and an intercept. ***, ** and * separately refer to significance at the 1% level, 5% level and 10% level, two tails. Variable definitions are available in the Appendix 1.

Table 9 Complexity Score Test

Dependent Variable=	<i>EM</i>		<i>SmEarn</i>		<i>GC</i>	
Variable	Coefficient	Chi-Square	Coefficient	Chi-Square	Coefficient	Chi-Square
<i>Intercept</i>	0.705*	3.600	0.781*	3.164	-1.086*	3.699
$\sum ComplexityScore$	0.064**	4.863	0.071**	5.727	-0.079**	4.235
<i>PartnerFee</i>	-0.136	0.440	-0.056	0.109	-0.001	0.000
<i>BigN</i>	0.301	0.298	-1.162	5.006	1.122*	3.206
<i>AFCTenure</i>	-0.131***	9.791	0.020	0.805	-0.022	0.653
<i>APCTenure</i>	-0.030	0.045	-0.013	0.015	-0.052	0.171
<i>CoExp</i>	-10.556	1.028	7.199	0.922	23.054***	6.426
<i>CImportance</i>	4.225***	9.956	-0.916	0.386	-0.701	0.128
<i>Size</i>	-0.308*	3.743	0.202*	3.202	-0.354***	7.065
<i>LEV</i>	-0.646	1.455	-1.083***	9.219	2.283***	26.987
<i>ROA</i>	-1.042	0.653	N.A.	.	-4.605***	27.229
<i>Growth</i>	0.181	1.197	0.010	0.010	-0.460**	5.204
<i>BM</i>	-0.110	0.031	1.084***	7.210	-1.055*	3.408
<i>LagLoss</i>	-0.139	0.219	N.A.	.	0.699***	12.785
<i>Bankruptcy</i>	-0.211***	12.024	0.082**	5.515	-0.138**	7.195
<i>SOE</i>	-0.190	0.764	0.256	2.042	-0.142	0.479
<i>Block</i>	-3.031***	14.908	-0.256	0.181	-0.020	0.001
<i>AGE</i>	0.192	0.615	-0.358	2.145	0.241	0.692
<i>Industry&YearEffects</i>	Yes		Yes		Yes	
ROC	0.863		0.754		0.925	
Pseudo Cox and Snell R-Square	0.034		0.169		0.396	
N	7,835		976		1,394	

This table tests the effect of a client complexity score ($\sum ComplexityScore$) on audit quality for the short tenure subsample. The client complexity score is used as an alternative independent variable to *NClient*. All the regressions include industry and year fixed effects and an intercept. ***, ** and * separately refer to significance at the 1% level, 5% level and 10% level, two tails. Variable definitions are available in the Appendix 1.