

The Scale and Scope of the Client Portfolio and Audit Pricing at the Individual Auditor Level: Evidence from China

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Abstract: This study examines the relation between the scale and scope of an individual auditor's client portfolio and audit pricing to better understand how auditors of heterogeneous characteristics are differentiated in the audit market. Using a sample from the Chinese market for the period 2001-2010, where the personal identities of signing auditors are publicly disclosed, we find that audit price charged by an individual auditor is positively related to the scale of his/her client portfolio, measured in terms of either total audit fees or the number of clients. However, the industry scope (diversity) of the client portfolio attenuates this positive relation between portfolio scale and pricing. Further analyses indicate that auditors of higher ability and reputation tend to have larger client scales and wider client scopes, and that scale is not related to audit delays whereas industry scope is positively related to delays. Taken together, our results suggest that at the individual auditor level, the scale of the client portfolio conveys the auditor's ability (type), and given the scale, the industry scope of clients signals the auditor's workload. Finally, our findings are mostly confined to auditors from non-Big N audit firms.

Key words: audit pricing, individual auditor, client portfolio, scale, industry scope

I. INTRODUCTION

Recent research shows that individual auditors display substantial heterogeneity in a range of personal attributes and characteristics including partner tenure, industry expertise, and social ties with the client firm, which are likely to affect an auditor's ability and incentive to supply audit services (e.g., Chi and Huang 2005; Carey and Simnnet 2006; Karjalainen 2011; Gul, Wu, and Yang 2013). These heterogeneous characteristics naturally result in differences in the scale and scope of client portfolios they serve, on the one hand, and the prices of audit services they charge, on the other. However, little is known as to how audit price and the client portfolio are related to each other across individual auditors in a given market. In this study, we undertake an empirical examination of this question in the Chinese setting where the identities and personal profiles of individual auditors are publicly disclosed.

To explore how audit pricing is related to an auditor's client portfolio, we first focus on the effect of client portfolio scale (i.e., the quantity of audit services provided). We envisage that the cross-sectional relation between the quantity (scale) and the price of audit services can be driven by either auditor type (ability) or auditor attention (effort). An auditor's ability determines how efficiently he/she can perform a given audit job. More able auditors should command higher prices (because they can provide higher quality audits), serve more clients and better (because they work more efficiently with less disruption), and therefore collect higher total fees. This induces a positive relation between the scale of the client portfolio, in terms of either total clients or total

fees, and audit price. On the other hand, audit partners with a large client portfolio may have their effort stretched too thin and thus are unable to give enough attention to each client. Indeed, the Public Company Accounting Oversight Board (PCAOB) has proposed partner or staff workload to be a potential cause for low audit quality (PCAOB 2015a). If so, a large client portfolio might be associated with low service quality, thereby inducing a negative relation between audit price and client portfolio scale in terms of total clients and possibly total fees as well. Thus, how audit price is related to the client portfolio scale is an open empirical question, depending on which factor—auditor ability or auditor attention—dominates in inducing cross-sectional variations.

Based on a sample of 11,601 client firm-years covering the period 2001-2010, we find that audit pricing is positively related to the scale of an individual auditor's client portfolio, both in terms of total clients and total fees. This suggests that in driving the cross-sectional relation between client portfolio scale and audit pricing, the effect of auditor ability dominates that of auditor attention. That is, auditors with larger portfolios (either in total fees or in total clients) tend to be more capable, and it does not seem to be that in general auditors with larger portfolios are more stretched on effort to the point of being unable to give adequate attention to each client.

Next, we investigate how the scope of client industries covered by an auditor influence pricing. Auditors may diversify their engagements across different industries either (i) because they face pressure to develop more clients when opportunities are lacking or (ii) because they need to reduce operational risk (e.g., Palepu 1985; Carrera,

Gutierrez, and Carmona 2003; Asthana 2016). We expect that in the former scenario, scope should have the effect of reducing audit price whereas in the latter scenario a negative effect of scope should not be present. We measure the industry scope of clients by the number of unique industries served by an auditor in a given year. Our result is consistent with the effect predicted in the former scenario. Specifically, we find that industry scope has a negative effect on audit price, and the effect is manifested through attenuating the positive relation between scale and price. That is, given the scale of the client portfolio, auditors engaging with clients from many different industries command lower audit prices than do those with clients concentrated in just one or a few industries. Thus, client industry scope seems to convey a negative signal about audit quality.

Separating auditors from Big-N and non-Big N audit firms, we find that the aforementioned results are displayed mainly for auditors from non-Big N audit firms (which constitute over 90% of the Chinese auditing industry). For auditors from Big N audit firms, client portfolio scale has a positive effect on audit pricing when scale is measured by an auditor's total audit fees, and has no effect when it is measured by the number of clients. Furthermore, the industry scope of a Big N firm's auditor's client portfolio has no pricing effect.¹ The lack of strong pricing effects of client scale and scope among auditors from Big N firms might be due to Big N firms' adopting more

¹ Relatedly, Asthana (2016) finds that in the U.S. setting, office-level industry diversification generally has an adverse effect on audit quality but the effect is less pronounced for Big-N firms.

stringent and standardized quality control procedures and pricing policies, which lead to little cross-sectional variation along these dimensions.

We conduct two supplementary analyses to help uncover the underlying forces driving the above results. First, we examine how the scale and scope of the client portfolio are associated with audit delays. Our analysis indicates that on the whole, client portfolio scale is not related to audit delays, whereas client portfolio scope is positively related to audit delays. Again, the effect of client scope on audit delays is present only for auditors from non-Big N audit firms, not for auditors from Big N firms. Second, we relate client portfolio scale and scope to an auditor's personal characteristics. We find that auditors with larger client portfolios tend to have better education backgrounds and longer periods of work experiences. Similarly, auditors with diverse portfolios also have these characteristics.

Combining the findings from these supplementary analyses, we infer that auditors with larger client portfolio scales tend to be more capable and in general they are able to manage many of their clients without having to lower audit quality; that is, their relatively heavy workload does not appear to pose a threat to audit quality. On the other hand, when auditors deal with clients from diverse industries, audit quality could be impaired, due to these auditors undertaking a heavy workload and having to spread their efforts over clients conducting diverse business activities, rather than these auditors being intrinsically less capable auditors.

Our study contributes to auditing research and policy debate in the following ways. First, this study is among the first to examine how the observable characteristics of an individual auditor's engagements are related to audit pricing. Prior research examining audit fees has been conducted at the level of the audit firm, and an implicit assumption is that, within a given firm, individual auditors produce similar audit quality and charge similar prices. This line of research lags behind other parts of the auditing literature that have demonstrated that auditors' personal characteristics such as partner tenure and industry expertise can affect audit quality (e.g., Chi and Huang 2005; Carey and Simnnet 2006; Karjalainen 2011; Gul, Wu, and Yang 2013). Our paper specifically extends the work of Taylor (2011), who demonstrates a partner fixed effect on audit fees, and Zerni (2012), who examines the impact of partner industry specialization on fees. Our study shows that substantial differences exist in the scale and scope of clients across individual auditors, and those differences are systematically related to the pricing of audit services. In general, the scale of an auditor's client portfolio conveys a positive signal about audit quality (as reflected by audit price), driven primarily by the auditor's ability, whereas the scope conveys a negative signal about audit quality, driven primarily by the auditor's workload.

Second, the study yields new insights into the determinants of auditor workload/busyness. Existing studies have employed the number of clients served by audit partners as a proxy for workload, but have found mixed evidence concerning its effect. Gul, Ma, and Lai (2012) and Sundgren and Svanstrom (2014) show that

workload—as proxied by the number of clients served by the auditor—is negatively related to audit quality. On the other hand, Goodwin and Wu (2014) find no association between partner busyness and audit quality. As Goodwin and Wu explain, partners optimally choose their workload, which leads to equilibrium outcomes, and it is important to understand the determinants of auditors’ choices in order to draw meaningful inferences. Our study demonstrates that it is not so much the number of clients served by an individual auditor per se, but rather the industry scope of the clients, that seems to impair audit quality. In fact, in our context, the measure of workload adopted in the literature (i.e., the number of clients) may actually convey a positive signal about auditor ability as auditors with more clients tend to be more experienced and have better reputations, on the one hand, and charge higher audit prices, on the other. At the same time, they do not display more audit delays. Our finding is in line with prior studies showing that auditors with larger client portfolios receive higher compensation and are less likely to leave the audit profession (e.g., Knechel, Niemi, and Zerni 2013; Knechel et al. 2017).

Third, our study is of interest to regulators as well. The PCAOB recently mandated disclosure of the identity of the engagement partner in the U.S., effective for auditors’ reports issued on or after January 31, 2017 (PCAOB 2015b). Our results suggest that audit quality (as reflected by audit price) varies substantially across individual auditors due to differences in personal characteristics, in addition to the effects of audit-firm-level and client-level characteristics. Two points are worth noting.

Firstly, the PCAOB is concerned that partner workload—measured by the number of clients—may adversely affect audit quality due to inadequate time to supervise staff and review audit procedures, and it uses this measure as one of the 28 potential indicators of audit quality (PCAOB 2015a). We find that individual auditors with more clients actually command higher audit prices and at the same time they do not display longer audit delays. Thus, contrary to the PCAOB’s view, in the cross section, having more clients is associated with higher audit quality due to these auditors being more experienced and more capable. On the other hand, we do find that client industry scope seems to be related to audit quality and thus deserves closer attention. Secondly, regulators and investors are likely interested in factors causing delays in financial statement filings. This study shows that client portfolio scope (diversification) has an effect on audit delays. However, our evidence also suggests that auditors having diverse clients from different industries deliver low quality audits not necessarily because they have lower ability but rather they seem to be overworked.

Finally, although our study is conducted in the Chinese setting, it is also relevant to the U.S. and other markets. In the past several years, the average number of industries served by an audit office has grown by 20% in the U.S., while the number of client industries in which an audit office is specialized has fallen by 40% (Asthana 2016), suggesting that audit firms now engage with clients that are more diverse. Thus, it is important to learn how this trend of auditing practices affects the quality of the services provided. Our results suggests that serving many industries has a negative effect on

audit price (and possibly quality) because auditors become more strained on manpower and other resources, especially in non-Big N audit firms. The results based on the Chinese setting are particularly useful for understanding audit pricing by non-Big N audit firms. While non-Big N audit firms play an especially important role in the Chinese market (making up more than 90% of the market), they also audit 45% of publicly traded companies in the U.S.,² and their market share has significantly grown since the collapse of Arthur Anderson in 2002 (Francis and Michas 2012).

The remainder of the paper is organized as follows. Section II discusses prior literature. Section III develops our hypotheses. Section IV describes our research models, variables, and sample selection. Section V presents the main regression results. Section VI shows the additional tests, and Section VII concludes.

II. PRIOR LITERATURE

Our paper builds on the literature studying partner/auditor characteristics, audit workload, and industry diversification. In this section, we first review these streams of research and then develop our hypotheses.

Partner-Level Literature

A growing number of archival auditing studies have moved from examining firm-level and office-level factors to individual auditor-level factors. It is engagement partners that directly work with clients and thus play a more important role in

² This is calculated based on the audit opinion dataset in Audit Analytics for the fiscal year of 2015.

determining audit quality. Existing studies have investigated the impact of several partner-related factors on audit quality, including partner tenure (Chi and Huang 2005; Carey and Simnnet 2006; Chen, Lin, and Lin 2008; Chi, Huang, and Liao 2009), partner industry expertise (Karjalainen 2011), and personal characteristics (Gul, et al. 2013). Other studies have probed the effects of individual auditor workload (e.g., Gul, Ma, and Lai 2012; Goodwin and Wu 2014), reporting decisions across auditors and over time (e.g., Knechel, Niemi, and Zerni 2015; Li, Qi, Tian, and Zhang 2017), and school ties between individual auditors and clients' top executives (Guan et al. 2016; He, Pittman, Rui, and Wu 2017).

Knechel, Niemi, and Zerni (2013) examine the compensation of Big N audit partners in Sweden and find that their salaries are associated with several characteristics of individual partners, including the number of public companies audited.³ Abodia, Lin and Petacchi (2015) find a positive association between the partner's quality and the client firm's earnings response coefficient. Li at al. (2017) demonstrate the phenomenon of low-quality audit contagion at the individual auditor level, namely, an auditor who experiences an audit failure tends to display lower quality in auditing his/her other clients both concurrent with and subsequent to the failed audit.

Our paper is tied most directly to the studies by Taylor (2011) and Zerni (2012), which also investigate audit fees at the audit partner level. Taylor (2011) finds that in

³ In some models/subsamples, they find a positive association between the number of engagements and compensation, while in other models/subsamples they find a negative association. They conclude that it is the client type rather than the number of clients that influences compensation.

Australia, audit partners earn audit fee premiums or discounts that are not explained by the audit firms that they work for. Using a Swedish sample, Zerni (2012) finds that an audit partner's specialization in auditing public (versus private) firms has a positive effect on audit fees. Both studies recognize that individual auditors possess heterogeneous characteristics that can affect audit pricing. As Taylor points out: "..., some auditors will provide a more efficient and less disruptive audit, will provide more informative management letters, or provide advice on matters such as financing options." So far, however, no study has systematically examined how audit price is linked to the scale and scope of an auditor's client portfolio.⁴

Workload Literature

Our paper also builds on prior literature on auditor workload. Studies using experiments or surveys have shown that high workload compression and time constraints during busy seasons may cause job burnout of public accountants (e.g., Sweeney and Summers 2002). A number of archival studies investigate the impact of workload on audit quality at the office level, auditor switches, and client portfolio changes (Johnson, Davies, and Freeman 2002; Lopez and Gary 2011; Lopez and Gary 2012; Lopez and Pitman 2014; Ragothaman 2012; Bills, Swanquist and Whited 2015).

⁴ Zerni (2012) includes a partner's client portfolio size as a control variable (in models to test for the effect of partner specialization), measured either by the natural logarithm of audited total assets or the number of engagements, and finds its coefficient to be insignificant. A key difference is that Zerni's Swedish sample comprises individual auditors from Big N audit firms, whereas our Chinese sample is predominantly made up of auditors from non-Big N firms. As shown in our study, our results are primarily driven by non-Big N audit firms.

Their evidence indicates that high workload (related to large client portfolios during busy seasons) results in lower audit quality and more frequent auditor changes. However, there have also been studies showing that time pressure does not affect audit effort; that is, auditors do not reduce effort under time pressure (Blokdijs et al. 2006).

Several studies have explored the relation between the workload of audit partners and audit quality and found mixed results.⁵ On the one hand, using a sample of Chinese public companies from 2000 to 2009, Gul, Ma, and Lai (2012) find that audit partners with more public clients are associated with lower audit quality (using a range of different proxies such as aggressive earnings manipulation as identified by Chinese regulators, the probability of a client meeting or beating an earnings benchmark, and the auditor's propensity to issue a going-concern opinion for financially distressed client), and this negative relation is more pronounced for auditors with a short audit partner-client tenure. Similarly, from a sample of private companies in Sweden, Sundgren and Svanstrom (2014) find a negative association between the number of audit assignments (for private clients) and the likelihood of a going-concern opinion.

On the other hand, using a sample of Australian public companies from 1999 to 2010, Goodwin and Wu (2014) show that audit partner busyness is not related to audit quality (measured by discretionary accruals, beating zero profit by a small amount, the

⁵ In related fields, studies investigating the director busyness similarly reach inconsistent conclusions. One stream supports the reputation hypotheses, arguing that busyness is viewed as a good signal, while the other stream supports the overworked hypotheses, where busyness is viewed as a bad one (e.g., Ferris, Jagannathan, and Pritchard 2003; Fich and Shivdasani 2006).

propensity to issue going-concern opinions (GCOs), and GCO accuracy). They argue that the busyness level is optimally chosen by the partner and, in equilibrium, there should be no causal relation between the audit partner busyness and audit quality.

One limitation in the existing literature is that in using the number of clients to proxy for workload, it does not differentiate the nature of the audit work performed.⁶ Auditors can engage with multiple clients whose business activities can be either similar or diverse, and the degree of business diversity across clients can significantly affect an auditor's actual workload. For example, if the clients are concentrated in just one industry, the partner would be able to apply the same industry-specific resources and knowledge to different clients and thereby achieve economies of scale (Cairney and Stewart 2015; Bills, Jeter, and Stein 2015). However, such advantages would not be available to another auditor whose clients conduct businesses that are dissimilar from one another. In our study, we recognize the effect of client industry scope, as well as scale, on audit pricing.

Industry Scope (Diversification) Literature

Prior research has considered both the costs and benefits of client industry diversification. Carrera, Gutierrez, and Carmona (2003) find that Spanish audit firms earn higher revenues per partner through industry and geographical diversification. On

⁶ Knechel, Niemi, and Zerni (2013) similarly recognize that it is the type rather than the number of clients per se that influences compensation.

the other hand, Asthana (2016) finds that for U.S audit firms, client industry diversification at the office level actually hurts audit quality.

The effect of business diversification in general has been studied in other fields, and the results are mix. One stream of research in finance argues that corporate diversification hurts firms because of increased agency costs that can arise from inefficient internal capital allocation (Custodio 2014) and cross-subsidization between divisions (Berger and Ofek 1995). Diversified firms have also shown to earn lower profits and incur higher costs (Berger, Hasan, and Zhou 2010) and have lower values (Tobin's q) relative to industry-matched portfolios of focused firms (Custodio 2014). In addition, Goetz, Laeven, and Levine (2013) find that geographic diversification of bank holding companies lowers market valuation, increases insider lending, and reduces loan quality.

In contrast, co-insurance theory posits that diversification with different business segments helps to reduce the variability of a firm's aggregated earnings and thus its total risk (Lewellen 1971). Hann, Ogneva, and Ozbas (2013) find that diversified firms have lower cost of capital, while Franco, Urcan, and Vasvari (2010) find that firm diversification lowers bond yields, especially when firms diversify across unrelated sectors. Other studies also show that diversification increases firm market value (e.g., Qiu 2014).

III. HYPOTHESIS DEVELOPMENT

We now develop hypotheses concerning how audit pricing is related to the scale and scope of an individual auditor's client portfolio.

The Relation between Client Portfolio Scale and Audit Pricing

Individual auditors differ along dimensions such as education, experience, skill, and expertise, which affect their ability to perform audit work. Auditors face diverse circumstances and opportunities that determine the propensity to engage with many clients. We envisage that audit pricing and the scale of an auditor's client portfolio are both affected by two generic factors: auditor type (ability) and auditor attention (effort). However, the cross-sectional relation induced by the two factors between pricing and portfolio is distinctly different.

On the one hand, when individual auditors differ in ability to perform audit work, we expect to observe a positive association between the scale of client portfolios and audit pricing. More capable auditors tend to be more reputable and provide better-quality service. As Zerni (2012) states, "Even if we assume that the pricing is entirely a firm-level decision it would not necessarily produce uniform pricing. Specifically, given that there are individual auditors with differing reputations and levels of expertise, these characteristics could be implicitly reflected in the budgeted audit hours, billing rates, and consequent fees, as prepared by the bidding department." Theoretical studies view a large number of public clients audited by an auditor as an indicator of high audit quality because these auditors would have more to lose if they do not uphold audit

quality (DeAngelo 1981).⁷ Knechel, Niemi, and Zerni (2013) find that audit partners serving more clients are rewarded by their employers through higher compensation, suggesting that such auditors are more valuable to their firms. We expect that capable auditors are in high demand in the audit market and, in providing higher-quality services, they should command higher prices, thereby inducing a positive relation between the scale of client portfolios and audit pricing.

On the other hand, differences in audit pricing and client scale can also be caused by an auditor's willingness (due to, for example, financial pressure) to engage with many clients, which affects the level of attention that the auditor can give to each audit engagement. Audit partners with many clients might have their effort stretched too thin and therefore might not be able to devote sufficient time and effort to each client, especially in busy seasons. This would lead to slow responses to clients' requests, long delays in completing the auditor's report, and/or low quality audits. As a result, clients may not be willing to pay high fees, which would suggest a negative relation between client portfolio scope and audit pricing.⁸

⁷ This argument is in line with Fama (1980) and Fama and Jensen (1983) who similarly argue that the labor market for outside directorships is an important source of incentives for outside directors, especially those serving on multiple boards, to develop reputations.

⁸ This is similar to the busyness hypothesis concerning company directors (e.g., Fich and Shivdasani 2006; Jiraporn et al. 2009). Fich and Shivdasani (2006) find that firms with busy boards—that is, those that have many outside directors holding more than three board seats—have weaker corporate governance. Jiraporn et al. (2009) find that directors with multiple board seats are more often absent from board meetings.

Thus, given that a large scale of client portfolios could indicate either higher auditor type (ability) or limited auditor attention (effort), the observed relation between audit pricing and client portfolio scale can be either positive or negative, depending on which force dominates in the empirical setting. The above discussion yields the following alternative hypotheses.

H1a. To the extent that cross-sectional variations in audit pricing and client portfolio scale are driven by auditor type, we expect a positive relation between audit price and client portfolio scale.

H1b. To the extent that cross-sectional variations in audit pricing and client portfolio scale are driven by auditor attention, we expect a negative relation between audit price and client portfolio scale.

The Effect of Client Portfolio Scope and Audit Pricing

Distinct from the scale of the client portfolio of an individual auditor is the attribute of industry scope (or diversification), which refers to the number of industries an auditor serves, and hence the structure (dispersion) of the audit work that he/she performs. An audit partner with a large portfolio may have clients concentrated in a few industries or scattered across many industries, and the industry scope of the client portfolio determines the extent to which the auditor is able to develop economies of scale as well as to diversify business risk, which can have consequences for audit pricing.

On the one hand, there can be forces driving a negative relation between the scope of an auditor's client portfolio and audit pricing. Similar to the above argument based on auditor attention, by covering clients operating in diverse industries, an individual auditor must spend time and effort to develop multiple types of industry-specific knowledge and expertise. This may cause the auditor to spread his/her effort too thin, which leads to inadequate attention to clients, lower service quality and consequently lower audit prices that clients are willing to pay. Individual auditors may be under pressure to accept clients from different industries in order to generate more revenues and earn more compensation. According to Knechel et al. (2013), auditors' compensation is tied to the number of clients they serve.⁹ Thus, to the extent that auditors cover clients in many industries due to financial pressure or out of motives to earn high compensation, we expect a negative relation between client portfolio scope and audit prices.

On the other hand, we also see reasons for observing a non-negative association between client portfolio scope and audit pricing. As Arrunada (1999) argues, by spreading quasi-rents across clients operating in many different industries, an auditor with a diversified client base is likely to exercise more independence. Thus, a large industry scope makes the auditor less dependent on a particular type of clients, which reduces the chance of being lenient toward clients. This helps to improve audit quality

⁹ Based on informal conversations with auditors of a large Chinese audit firm, partners at the firm receive 2% of the fees from each contract they secure, and engagement auditors who actually perform the audit receive about 8%.

and enables the auditor to command higher fees, thus resulting in a positive association between client industry scope and audit pricing.

Also, an auditor may intentionally diversify risk by engaging with clients from different industries. Studies on public companies' diversification have demonstrated positive effects through reducing risk (e.g., Hann, Ogneva, and Ozbas 2013). In our context, an auditor covering multiple industries, rather than just one single industry, would be less susceptible to clients' operational risk and financial distress that can be driven by industry-level factors. In this case, there may not be an obvious relation between industry scope and audit pricing.¹⁰

Due to the opposing forces that might be at work, we have the following alternative hypotheses concerning the effect of industry scope (diversification) of audit partners' engagements on audit pricing.

H2a: If auditors extend audit service into different industries due to financial pressure, we expect that audit price should be negatively related to client portfolio scope.

¹⁰ Carrera, Gutierrez, and Carmona (2003) posit that audit firms diversify their client bases due to (1) concern about litigation risk, (2) saturation of existing markets and the search for new clients, (3) the unwillingness of clients to share auditors with competitors, and (4) a reduction in the cost of entering new client industries because of the resource sharing within international accounting networks.

H2b: If auditors choose to diversify for purposes of reducing dependence on a single type of client or lowering risk, we expect that audit price should not be negatively related to client portfolio scope.

IV. RESEARCH DESIGN AND SAMPLE SELECTION

Empirical Models

To investigate whether audit fees are associated with the scale and scope of client portfolios at the individual auditor level, we estimate the following OLS regression models using a pooled sample of (client) firm-years, clustered by firm and year.

$$LNAUDITFEE = \beta_0 + \beta_1 CPA_PORTFOLIO + \beta_2 LNCPA_INDNUM + Controls + Region, Industry, and Year Fixed effects + \varepsilon; \quad (1)$$

$$LNAUDITFEE = \beta_0 + \beta_1 CPA_PORTFOLIO + \beta_2 LNCPA_INDNUM + \beta_3 CPA_PORTFOLIO * LNCPA_INDNUM + Controls + Region, Industry, and Year Fixed effects + \varepsilon. \quad (2)$$

We follow the existing audit fee literature to build our models (e.g., Wang, Wong, and Xia 2008; Zerni 2012). Our dependent variable is *LNAUDITFEE*, the natural log of the audit fees that a client firm pays to the audit firm in a year. Our main explanatory variables in Model (1) are *CPA_PORTFOLIO* and *LNCPA_INDNUM*.

CPA_PORTFOLIO is a binary variable indicating the scale of an individual auditor's client portfolio, measured either by total audit fees collected from all public clients by each of the client's signing auditors, averaged over the client's two signing auditors (*CPA_PORTFOLIO_AF*), or by the average number of public clients served

in a year by the two signing auditors (*CPA_PORTFOLIO_CNUM*); it is set to 1 if the measure concerned is above the sample mean and to 0 otherwise. *LNCPA_INDNUM* measures the scope of an auditor's client portfolio, equal to the natural log of the average number of unique industries served by the client's two signing auditors in a year.

In Model (2), we further include the interaction *CPA_PORTFOLIO***LNCPA_INDNUM*. This term tests whether the scope (industry diversification) of the client portfolio at the individual auditor level alters the association between the client portfolio scale and audit pricing.

We include control variables at three levels: individual auditor (i.e., partner), audit-firm, and client-firm. Our individual auditor-level variables include *CPA_IND_SPE* (measuring the industry expertise of signing auditors), *CPA_SHORTTENURE* (whether at least one of the signing auditors is in the first or second audit engagement with the client), and *CPA_CLIENTIMPORTANCE* (the averaged importance of the client to its two signing auditors based on client assets).

Audit-firm level controls include *AUD_SIZE* (the natural log of total annual audited assets by the audit firm), *AUD_IND_SPE* (industry expertise at the audit-firm level), *AUD_SHORTTENURE* (whether it is a first or second audit engagement with the client for the audit firm), *AUD_CLIENTIMPORTANCE* (the ratio of client assets to total audited assets by the audit firm), and *LNAUD_INDNUM* (the natural log of the number of unique industries served by the audit firm). We also include *BIGN* (whether

the audit firm is one of the Big N audit firms) and *STANDARDOPINION* (whether the audit firm issues a standard audit opinion).

Client-level variables include several proxies for size and financial performance including total assets (*LNTA*), the ratio of current assets to total assets (*INVREC_TA*), leverage (*LEVERAGE*), loss indicator (*LOSS*), current ratio (*CURRENT_RATIO*), and return on assets (*ROA*).

We also include other factors likely affecting audit fees: state owned enterprise (*SOE*), foreign enterprise (*FE*), listed on the Shanghai Stock Exchange (*SE_SH*), cross-listed on a foreign exchange (*CROSSLISTING*), and firm age (*LNFIRMAGE*). In addition, we include indicator variables for regions, years, and industries. See Appendix A for variable definitions.

Sample Selection

Financial data of public companies are retrieved from China Stock Market & Accounting Research (CSMAR). We use a database provided by China Center for Economic Research (CCER) to determine whether or not a firm is state owned. Individual auditor characteristics are extracted from the website of the Chinese Institute of Certified Public Accountants (CICPA) and manually checked for errors. These steps yield 20,011 firm-year observations for the period 1990-2010. We follow prior studies to exclude financial institutions and B-share firms (e.g., Chen, sun, and Wu 2010;

Asthana, Sami, and Ye 2009),¹¹ and then remove observations prior to 2001 (the earliest year for which audit fee data became available) and those with missing data for our analysis. The final sample for the audit fee tests consists of 11,601 firm-years from 2001 to 2010. The sample for the audit delay analyses is further reduced due to additional data requirements. Table 1 describes our sample selection in detail.

[TABLE 1 ABOUT HERE]

V. EMPIRICAL RESULTS

Descriptive Statistics

Table 2 presents the descriptive statistics of the variables in the audit fee model. All continuous variables are winsorized at the top and the bottom 1% of the distributions. The mean values of *CPA_PORTFOLIO_AF* and *CPA_PORTFOLIO_CNUM* (both of which are dummy variables) are 0.512 and 0.572, respectively. The average number of industries served by a signing auditor is about 2.

Big N audit firms only serve 5.1% of the clients in the sample (*BIGN*), similar to the Chinese samples used in prior studies (e.g., Wang, Wong, and Xia 2008). The average number of unique industries served by an audit firm is 8, representing about 30% of all industries in China.

[TABLE 2 ABOUT HERE]

Regression Results

¹¹ A-shares were issued to domestic Chinese investors, which are subject to Chinese accounting standards. B-shares were initially issued to foreign investors but later opened to both domestic and foreign investors; they are subject to International Accounting Standards (Asthana, Sami, and Ye, 2009).

The main results of testing our hypotheses are presented in Table 3. Panel A shows the results of estimating Model (1), which explains audit price by the scale of an auditor's client portfolio, measured either by total audit fees collected by the individual auditor (*CPA_PORTFOLIO_AF*) or the number of clients served by the auditor (*CPA_PORTFOLIO_CNUM*). The coefficients on both measures of client portfolio scale are positive, indicating that auditors having larger client portfolios also charge higher prices for audit services. This result supports H1a rather than H1b, suggesting that it is the auditor type (ability), rather than the auditor attention (effort), that is the dominant force in driving the cross-sectional variations in client portfolios and audit prices.

On the other hand, the coefficient on *LNCPA_INDNUM* is significantly negative, indicating that the industry scope of an auditor's client portfolio is negatively associated with audit prices. This result supports H2b rather than H2a, suggesting that the industry diversity of an auditor's clients conveys a negative signal about audit quality.¹² This finding is in line with the result of Asthana (2016), that audit quality is negatively associated with industry diversification of audit offices in the U.S. We also

¹² Our measure of industry scope of an auditor's client portfolio (*LNCPA_INDNUM*) does not merely capture the (opposite) effect of auditor industry specialization. First, we have already controlled for individual auditors' industry specialization (*CPA_IND_SPE*) in the regression. Second, these two variables actually have a *positive* correlation ($r=0.080$) in our sample. A positive correlation is not unexpected because capable auditors tend to have more clients in multiple industries and are more likely to be industry specialists in certain industries at the same time. This is similar to the audit firm-level observation that Big N firms are more likely to be industry specialists and they also serve more industries.

check the multicollinearity in these (and the subsequent) regressions, and find that none of the VIFs exceeds 5.

Panel B reports the regression results of estimating Model (2) which includes the interaction term $CPA_PORTFOLIO*LNCPA_INDNUM$. The coefficient on this interaction term is negative. This indicates that the positive association found in Model (1) between client portfolio scale and audit fees is weakened when an auditor serves clients from different industries. Interestingly, after adding the interaction term, the coefficient on $LNCPA_INDNUM$ turns insignificant, suggesting that the scope of the client portfolio (diversification) does not significantly reduce audit fees when an auditor has a small scale of client portfolios. However, the scope significantly reduces audit fees when an auditor has a large scale of client portfolios as indicated by the significant coefficient associated with the sum of $LNCPA_INDNUM+CPA_PORTFOLIO*LNCPA_INDNUM$. These results, together with the positive coefficients on $CPA_PORTFOLIO$, also suggests that client portfolio scope essentially attenuates the positive effect of portfolio scale on audit pricing.

When portfolio scale is measured by audit fees, the sum of the coefficients on $CPA_PORTFOLIO$ and $CPA_PORTFOLIO*LNCPA_INDNUM$ (evaluated at the mean value of $LNCPA_INDNUM$ of 0.610) is equal to 0.205, significant at the 0.01 level, indicating that those auditors who earn high total fees still command higher audit prices even when they serve many industries. On the other hand, when portfolio scale is measured by the number of clients, the above sum of the coefficients becomes

insignificant (coeff=-0.006, p value=0.679), indicating that auditors serving a large number of clients command no fee premiums (although no discounts either) when they cover clients from many different industries.

In Panels C and D, we repeat the above analyses by separating the sample into clients of Big N and non-Big N auditors. Previous studies have generally documented significant differences in audit pricing between Big N and non-Big N audit firms (e.g., Hay and Knechel 2017). Thus, it would be of interest to explore whether the pricing effects of the scale and scope of client portfolios also differ between the two groups of audit firms.

Our results show that individual auditors of non-Big N firms charge premiums if they have a large scale of client portfolios in terms of either total audit fees collected or the number of clients served. On the other hand, Big N auditors also charge premiums when they have large client portfolios measured by total fee revenues but not by the total number of clients. However, the negative effect of industry scope (diversification) on audit fees and its interaction effect with client portfolio scale hold only for non-Big N auditors (Panel C and Panel D). That is, diversification at the individual auditor level decreases audit fees only if the auditor is a non-Big N auditor and already has a large client portfolio. The reason might be that non-Big N audit firms have limited resources supporting their individual auditors' work and/or because non-Big N auditors are not

as capable as Big N auditors are.¹³ Our analyses in the subsequent sections (Table 5) will shed further light on these alternative scenarios.

In summary, our results demonstrate that individual auditors serving a large client portfolio command higher audit fees, but this positive relation between portfolio scale and audit fees is attenuated for auditors covering clients from many industries. The effects of scale and scope of the client portfolio are mainly displayed among individual auditors from non-Big N audit firms, while these effects are more muted among auditors from Big N firms.

[TABLE 3 ABOUT HERE]

VI. ADDITIONAL ANALYSIS

Having shown that client portfolio scale and scope are systematically related to audit pricing, we now explore how client portfolio scale and scope are linked to audit delays and the auditor's personal characteristics. Our purpose is to shed light on why client portfolio scale and scope may indeed matter in influencing audit prices.

Client Portfolio Scale and Scope and Audit Delays

If clients systematically differentiate signing auditors based on the scale and scope of the client portfolio in determining the audit fees they pay, we expect that client

¹³ Untabulated results further show that this negative effect of industry diversification of individual auditors on audit fees mainly exists for non-industry specialist auditors. That is, clients do not demand discounts from auditors serving many industries if the auditor is a specialist for the client's industry.

portfolio scale and scope are related to the quality of audit services provided by the auditor.

Audit delays are a manifestation of an auditor providing low quality service. As Whitworth and Lambert (2014) point out: “An excessive audit delay is viewed negatively, as it impairs the relevance of information contained in the annual financial statements.” Both audit and financial reporting timeliness remain primary concerns of regulators, public companies and their auditors, investors, and others (Krishnan and Yang 2009; Abbott, Parker, and Peters 2012; Bronson et al. 2011; Lambert, Jones, and Brazel 2013; Whitworth and Lambert 2014). For auditors who keep workload at a manageable level, we should *not* observe significant audit delays. However, when auditors have to struggle with time and resources because, say, they have taken on too much work, which could arise from having to deal with many clients and/or clients with diverse business activities, audit delays may be inevitable. We thus investigate whether the client portfolio scale and scope are associated with audit delays.

We adopt the following models to test the relation between audit delays and client portfolio scale and scope, which follow Ettredge, Li, and Sun (2006) and Munsif, Raghunandan, and Rama (2012):

$$LNAUDITDELAY = \beta_0 + \beta_1 CPA_PORTFOLIO + \beta_2 LNCPA_INDNUM + Controls + Industry\ and\ Year\ Fixed\ effects + \varepsilon; \quad (3)$$

$$LNAUDITDELAY = \beta_0 + \beta_1 CPA_PORTFOLIO + \beta_2 LNCPA_INDNUM + \beta_3 CPA_PORTFOLIO * LNCPA_INDNUM + Controls + Industry\ and\ Year\ Fixed\ effects + \varepsilon. \quad (4)$$

The dependent variable is *LNAUDITDELAY*, the natural log of the number of days between fiscal year end and audit report date. The explanatory variables of interest are *CPA_PORTFOLIO* and *LNCPA_INDNUM* in Model (3), which are defined above. If individual auditors with larger client portfolios or broader scopes are more constrained on time and/or other resources, we would see a positive coefficient on the corresponding variable. According to prior research, it is not necessarily the case that audit delays are spuriously related to the scale of the client portfolio. In fact, Payne and Jensen (2002) even report that audit firms that perform several municipal audit engagements provide audits more promptly (i.e., shorter audit delays) and argue that larger audit-firm offices appear able to allocate resources to expedite the audit.

The variable of interest in Model (4) is the interaction term *CPA_PORTFOLIO*LNCPA_INDNUM*. If auditors with a large client portfolio are more competent auditors and can handle multiple clients better, we would expect a mitigating effect of *LNCPA_INDNUM* on audit delays for such auditors and thus a negative coefficient on the interaction term.

Panel A of Table 4 presents the descriptive statistics of variables in Model (3). On average, the delays between audit reports and fiscal year-ends are 85 days. Panel B presents the main effects on audit delays. We find that the coefficient on *CPA_PORTFOLIO* is not significant, where it is defined in terms of total audit fees (*_AF*) or the number of clients (*_CNUM*). Thus, audit delays are not associated with

large client portfolios at the individual level, suggesting that individual auditors can manage their workloads in accordance with their ability and available resources and thus no relation is observed in equilibrium (as suggested by Goodwin and Wu 2014).

On the other hand, controlling for workload at the individual-auditor level (scale of the client portfolio) and other factors, the coefficient on *LNCPA_INDNUM* is significantly positive. This means that on average, industry scope is associated with audit delays. This corroborates the above finding that industry scope is negatively related to audit price.

We then rerun the analyses by splitting our sample into Big N clients and non-Big N clients. As shown in Panel B, client portfolio scale has no effect on audit delays for either Big N or non-Big N firms. Industry scope (diversification) is associated with audit delays only for individual auditors from non-Big N audit firms, not for those from Big N firms. Thus, the evidence from audit delay tests supports the conclusion that industry scope of the client portfolio conveys a negative signal about audit quality, but the effect is limited to non-Big N firms. On the other hand, scale is not associated with audit delays.

[TABLE 4 ABOUT HERE]

Linking Client Portfolio Scale and Scope to the Auditor's Personal Characteristics

We now explore whether the scale and scope of the client portfolio are associated with auditors' personal characteristics that are potentially associated with their ability and reputation. We extract personal data on individual auditors from the

website of the CICPA, including birth date, gender, current position, educational background, CPA ID number, time of CPA initial registration, and current audit firm (office). Unlike the above tests, the analysis here employs auditor-year observations (rather than client firm-years). The number of signing auditors in the sample is 7,946 for the period 2001-2010, involving 483 individual auditors from Big N audit firms and 7,463 from non-Big N firms.

Panel A of Table 5 provides the descriptive statistics of the variables. We observe systematic differences between Big N and non-Big N audit firms. On average, auditors from Big N audit firms collect a larger amount of total audit fees (*LNCPA_TOTALAF*) than non-Big N auditors (the mean value is 14.506 versus 13.552), but serve fewer clients in a year (*LNCPA_TOTALCNUM*: 0.410 versus 0.555). That is, Big N auditors tend to serve a few large clients, rather than many small clients. They also cover fewer industries than do their peers in non-Big N firms (*LNCPA_INDNUM2*: 0.221 versus 0.319), even though at the audit firm level, Big N firms cover more industries than do non-Big N firms (*LNAUD_INDNUM*: 2.142 versus 1.947). Differences also exist in terms of auditor personal characteristics. For example, Big N auditors are more likely to be industry specialists (*INDSPEC*) than non-Big N auditors; have a lower proportion of male auditors (*GENDER*); have a slightly higher proportion in the age group below 30 while a smaller proportion in the age group above 50; receive more education (*EDU_DEGREE*); and are less likely to be accounting majors

(*EDU_MAJOR*);¹⁴ but also have a higher proportion that graduate from one of the top-25 accounting programs in China (*EDU_UNIVERSITY*).

The five variables under “additional variables” in Panel A are annual rankings of accounting firms by the CICPA conducted since 2002.¹⁵ One striking difference is that Big N firms have a much higher staff-to-CPA ratio (*STAFF_CPA*: 6.998 vs. 1.932) than non-Big N firms, indicating that Big N firms have more resources than do non-Big N firms.

Panel B of Table 5 reports the results of regressing client portfolio scale on the characteristics of individual auditors. Based on the full sample, auditors having a large client scale—measured either by total fees collected or the number of clients—tend to have the following characteristics: they work in bigger audit firms (higher total fees at the audit firm level); are specialists in at least one industry (*INDSPEC*); are male auditors (*GENDER*), have higher degrees (*EDU_DEGREE*), have earned an accounting major (*EDU_MAJOR*), have been a qualified CPA for a longer time (*LNCPAYEAR*), and are aged above 50.

Most of the above associations between client portfolio scale and auditor personal characteristics hold both for Big N auditors and non-Big N auditors. Nonetheless, there are several differences between the two groups: (a) while gender is

¹⁴ In China, one may get a CPA license without a degree in accounting as long as he/she passes the CPA examination and has some industry experience.

¹⁵ Information about the rankings of Chinese accounting firms is on the website http://cmispub.cicpa.org.cn/cicpa2_web/public/queryofficezhpj.shtml

important in non-Big N firms, it is not important in determining client portfolio scale in Big N firms; (b) having an advanced degree makes a difference in non-Big N firms, but not in Big N firms; (c) while having an accounting major is positively associated with total audit fees for non-Big N auditors, it actually is negatively related to total fees among Big N auditors; (d) holding a higher position in the audit firm is positively associated with total fees among Big N auditors, but the relation turns negatively among non-Big N auditors.

On the whole, our findings show that auditors with larger client portfolios, whether measured by total fees collected by an auditor or by the number of clients, are generally associated with personal characteristics that indicate higher capability and reputation.

We next investigate which auditors are more likely to have diverse client portfolios (scope). As reported in Panel C of Table 5, auditors with more diverse clients tend to be industry specialists, male auditors (but only in non-Big N audit firms), have higher degrees, have attended a more prestigious university, and have become a qualified CPA earlier. These links are somewhat stronger for non-Big N auditors than for Big N auditors. Thus, there are also indications that individual auditors who serve more diverse clients tend to have higher capability. In other words, these auditors are not intrinsically inferior. However, as these auditors also display more audit delays (as shown above), we conjecture that the lower audit prices they charge are mainly due to them having heavier workload, not lower ability intrinsically.

Taken the results together, we conclude that it is client scope, rather than scale, that conveys a negative signal about audit quality. In fact, client portfolio scale—a conventional measure of workload used in the literature and by regulators—tends to convey a positive signal about audit quality in equilibrium. Furthermore, the negative effect of client scope on quality is likely attributed to heavy workload rather than auditors' being less capable per se.

[TABLE 5 ABOUT HERE]

Sensitivity Analyses

We conduct several sensitivity analyses to assess the robustness of our results. First, we re-run our main tests by controlling for auditor personal characteristics and their interactions with the client portfolios scale and scope in Models (1) and (2) (the additional data requirement reduces our sample size by about 50%). Second, we classify client portfolios into the small and large groups within each year, instead of within the entire sample period. Third, we classify client portfolio into quintiles and use two dummy variables to indicate the lowest and the highest quintile of portfolio scale, which replace either *CPA_PORTFOLIO_AF* or *CPA_PORTFOLIO_CNUM*). Our main conclusions regarding the scale and scope effects on audit pricing do not change in these modified tests.

VII. CONCLUSIONS

This study examines the relation between the scale and scope of the client portfolio and audit pricing at the individual auditor level. Our purpose is to better

understand how individual auditors with heterogeneous characteristics are differentiated in the audit market in terms of both pricing and the extent of audit services they offer, and how the price and quantity of audit services are related to each other across different auditors. We examine these issues using a large sample of Chinese public companies from 2001–2010. Our results show that clients pay higher audit fees to individual auditors with larger client portfolios but this positive relation between scale and price is attenuated when individual auditors serve clients from many different industries. This suggests that the scale of an auditor's engagements with clients is a positive signal about audit quality whereas the scope of the client portfolio is a negative signal. These findings, however, hold primarily for auditors in non-Big N audit firms, with auditors from Big N firms exhibiting little scale and scope effect on pricing.

We further show that auditors with large portfolios do not necessarily have longer audit delays, but auditors with more diverse clients do experience longer audit delays. We also find that both client scale and scope are related to personal characteristics that suggest high reputation and ability. Together, our results suggest that auditors with a larger client portfolio tend to have higher ability and in conducting their business they do not take on too many assignments so as to compromise on audit quality. On the other hand, auditors engaging with clients in different industries seem to provide lower audit quality, mainly because of heavy workload rather than low intrinsic ability in these auditors.

How the suppliers of audit services make decisions is of great interest to investors and regulators. While prior research has extensively examined the effects of audit firm- and office-level characteristics on audit price, there has been virtually no research that examines the role of individual auditor-level characteristics. Our study shows that systematic relations indeed exist between the observable characteristics of an auditor's business practices (the scale and scope of the client portfolio) and audit pricing. These differences in auditing practices are reflections of an auditor's intrinsic ability and/or the (financial and other) circumstances they face, and it is the combination of these different forces that determine audit service quantity and price. There has been growing awareness among regulators and academic researchers of the role that individual auditors plays in determining audit quality and price. This study contributes to the understanding of such roles. While our study is conducted in the Chinese market (which is important in its own right) and our results are primarily driven by non-Big N audit firms, it is also of relevance to other economies such as the U.S. where auditors are becoming more and more diversified on their engagements across multiple industries and non-Big N audit firms are becoming a more significant force in the total supply of audit services.

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Appendix A Variable Definitions

Variables	Definitions
<i><u>Dependent Variables</u></i>	
LNAUDITFEE	Natural log of audit fees paid by the client to its audit firm.
<i><u>Test Variables</u></i>	
CPA_PORTFOLIO_AF	=1 if the average audit fees of the client's signing auditors from all public clients in a year are above the mean, 0 otherwise.
CPA_PORTFOLIO_CNUM	=1 if the average of total public client number of the client's signing auditors in a year is above the mean, 0 otherwise.
LNCPA_INDNUM	Natural log of the average number of industries served by the client's signing auditors in a year.
<i><u>Individual Auditor Level Control Variables</u></i>	
CPA_INDSPE	=1 if at least one auditor either has the largest market share or more than 5% market share in the client's industry based on total audited fees.
CPA_SHORTTENURE	=1 if it is a first or second-year audit by the signing auditor with shorter auditor-client tenure, 0 otherwise.
CPA_CLIENTIMPORTANCE	The average of the client's importance to its signing auditors. Client importance is measured as (the client assets divided by total yearly audited assets of each signing auditor).
<i><u>Audit Firm Level Control Variables</u></i>	
AUD_SIZE	Natural log of total annual audited assets by the audit firm.
AUD_INDSPE	=1 if the audit firm has the largest market share in its client's industry based on total audit fees.
AUD_SHORTTENURE	=1 if the audit engagement is a first or second-year audit by the audit firm, 0 otherwise.
AUD_CLIENTIMPORTANCE	Total assets of the client divided by total yearly audited assets of the audit firm.
BIG N	=1 if the audit firm is one of the Big 5 audit firm ¹⁶ , 0 otherwise.
LNAUD_INDNUM	Natural log of total number of industries served by the audit firm.
STANDARDOPINION	=1 if the client receives a standard unqualified audit opinion from the audit firm, 0 otherwise.
<i><u>Client Level Control Variables</u></i>	
CROSSLISTING	=1 if the firm is cross-listed in a foreign exchange, 0 otherwise.
CURRENT_RATIO	Ratio of current assets to current liabilities of the client.
FE	=1 if the client is controlled by a foreign enterprise, 0 otherwise.
LEVERAGE	Total liabilities divided by total assets of the client.
LNFIRMAGE	Natural log of the number of years for which total assets have been reported in CSMAR since 1990.
LNTA	Natural log of total assets of the client.
INVREC_TA	Total amounts of inventory and account receivable divided by total assets of the client.
LOSS	=1 if the client has reported a loss, 0 otherwise.
ROA	Ratio of net income after tax to total assets of the client.

¹⁶ After 2001, only Big 4 exist since Arthur Anderson was merged into PwC in China.

SOE	=1 if the company is state-owned, 0 otherwise.
SE_SH	=1 if the client is listed on Shanghai Stock Exchange, 0 otherwise.
<i>Region1</i>	=1 if the client is located in Shanghai, Beijing, Tianjin, Zhejiang, and Guangdong, 0 otherwise.
<i>Region2</i>	=1 when the client is located in Jiangsu, Fujian, Shandong, and Liaoning, 0 otherwise.
<i>Region3</i>	=1 if the client is located in Heilongjiang, Xinjiang, Jilin, Hainan, Hubei, and Hebei and 0 otherwise.
<i>Region4</i>	=1 if the client is located in Henan, Shanxi, Anhui, and Ningxia, 0 otherwise.
<u><i>Additional Variables in Audit Delay model</i></u>	
LNAUDITDELAY	Natural log of the number of days between fiscal year end and audit report date
AUDITOR_CHANGE	= 1 if the client has an auditor change during that year, 0 otherwise.
LNAFEE_AT	Natural log of audit fees divided by total asset.
LNMV	Natural log of market capitalization of the client.
MAO	=1 if the client receives a modified audit opinion, 0 otherwise.

Table 1 Sample Selection

Total observations 1990 to 2010	20,011
Minus: B share, Financial institutions, and others	<u>(830)</u>
Total A-share observations	19,181
Minus: missing auditor information	<u>(1)</u>
Minus: observations before 2001	<u>(4,843)</u>
Observations 2001-2010 (2001 is the first year when the audit fees are available)	14,337
Minus: missing values in the Model 1	(2,736)
Observation in the fee model	11,601

Table 2 Descriptive Statistics (N=11,601)

Variable	Mean	Std	Q1	Q3
<i>LNAUDITFEE</i>	13.058	0.547	12.676	13.334
<i>CPA_PORTFOLIO_AF</i>	0.512	0.500	0.000	1.000
<i>CPA_PORTFOLIO_CNUM</i>	0.572	0.495	0.000	1.000
<i>LNCPA_INDNUM</i>	0.610	0.436	0.405	0.916
<i>CPA_INDSPE</i>	0.074	0.261	0.000	1.000
<i>CPA_SHORTTENURE</i>	0.884	0.321	1.000	1.000
<i>CPA_CLIENTIMPORTANCE</i>	0.489	0.281	0.241	0.671
<i>AUD_SIZE</i>	25.424	1.423	24.442	26.198
<i>AUD_INDSPE</i>	0.074	0.262	0.000	0.000
<i>AUD_SHORTTENURE</i>	0.273	0.445	0.000	1.000
<i>AUD_CLIENTIMPORTANCE</i>	0.041	0.066	0.006	0.046
<i>LNAUD_INDNUM</i>	1.958	0.498	1.792	2.303
<i>BIG N</i>	0.051	0.220	0.000	0.000
<i>STANDARDOPINION</i>	0.913	0.282	1.000	1.000
Variable	Mean	Std	Q1	Q3
<i>LNTA</i>	21.296	1.094	20.578	21.927
<i>INVREC_TA</i>	0.278	0.173	0.148	0.384
<i>LEVERAGE</i>	0.521	0.316	0.349	0.632
<i>SOE</i>	0.654	0.476	0.000	1.000
<i>FE</i>	0.006	0.080	0.000	0.000
<i>LOSS</i>	0.123	0.328	0.000	0.000
<i>CURRENT_RATIO</i>	1.672	1.522	0.887	1.870
<i>ROA</i>	0.024	0.088	0.011	0.058
<i>SE_SH</i>	0.552	0.497	0.000	1.000
<i>LNFIRMAGE</i>	1.915	0.712	1.609	2.398
<i>CROSSLISTING</i>	0.014	0.119	0.000	0.000

Table 3 Audit Fee Regression Results

Panel A: Auditor Client Portfolio Scale and Scope and Audit Fees

Dependent variable is <i>LNAUDITFEE</i>				
Variables	CPA_PORTFOLIO_AF		CPA_PORTFOLIO_CNUM	
	Coeff.	P value	Coeff.	P value
<i>Intercept</i>	7.019***	<.0001	5.928***	<.0001
<i>CPA_PORTFOLIO</i>	0.265***	<.0001	0.019*	0.056
<i>LNCPA_INDNUM</i>	-0.100***	<.0001	-0.022*	0.094
<i>CPA_INDSPE</i>	0.363***	<.0001	0.397***	<.0001
<i>CPA_SHORTTENURE</i>	-0.012	0.242	-0.012	0.264
<i>CPA_CLIENTIMPORTANCE</i>	0.187***	<.0001	0.030	0.134
<i>AUD_SIZE</i>	0.037***	<.0001	0.059***	<.0001
<i>AUD_INDSPE</i>	0.112***	<.0001	0.140***	<.0001
<i>AUD_SHORTTENURE</i>	-0.030***	0.001	-0.036***	<.0001
<i>AUD_CLIENTIMPORTANCE</i>	0.313***	<.0001	0.339***	<.0001
<i>LNAUD_INDNUM</i>	0.000	0.965	-0.018*	0.097
<i>BIGN</i>	0.237***	<.0001	0.231***	<.0001
<i>MEMBER</i>	0.028***	0.000	0.026***	0.001
<i>STANDARDOPINION</i>	-0.082***	<.0001	-0.075***	<.0001
<i>LNTA</i>	0.231***	<.0001	0.265***	<.0001
<i>INVREC_TA</i>	-0.015	0.507	-0.041*	0.083
<i>LEVERAGE</i>	0.108***	<.0001	0.114***	<.0001
<i>SOE</i>	-0.053***	<.0001	-0.063***	<.0001
<i>FE</i>	0.168***	0.000	0.170***	0.001
<i>LOSS</i>	0.035**	0.012	0.030**	0.037
<i>CURRENT_RATIO</i>	-0.011***	0.000	-0.012***	<.0001
<i>ROA</i>	0.214***	0.000	0.193***	0.002
<i>SE_SH</i>	0.033***	<.0001	0.039***	<.0001
<i>LNFIRMAGE</i>	-0.014**	0.027	-0.016**	0.015
<i>CROSSLISTING</i>	0.040	0.254	0.047	0.213
<i>Region Dummies</i>	Included		Included	
<i>Year Dummies</i>	Included		Included	
<i>Industry Dummies</i>	Included		Included	
<i>N</i>	11,601		11,601	
<i>R-Square</i>	0.573		0.543	

Panel B: Auditor Client Portfolio Scale and Scope Interaction and Audit Fees

Dependent variable is <i>LNAUDITFEE</i>				
Variables	CPA_PORTFOLIO_AF		CPA_PORTFOLIO_CNUM	
	Coeff.	P value	Coeff.	P value
<i>Intercept</i>	7.070***	<.0001	5.925***	<.0001
<i>CPA_PORTFOLIO</i>	0.359***	<.0001	0.045***	0.003
<i>LNCPA_INDNUM</i>	-0.003	0.826	0.016	0.432
<i>CPA_PORTFOLIO*LNCPA_INDNUM</i>	-0.154***	<.0001	-0.051**	0.018
<i>CPA_INDSPE</i>	0.364***	<.0001	0.399***	<.0001
<i>CPA_SHORTTENURE</i>	-0.013	0.190	-0.013	0.233
<i>CPA_CLIENTIMPORTANCE</i>	0.215***	<.0001	0.040*	0.051
<i>AUD_SIZE</i>	0.036***	<.0001	0.060***	<.0001
<i>AUD_INDSPE</i>	0.113***	<.0001	0.140***	<.0001
<i>AUD_SHORTTENURE</i>	-0.028***	0.001	-0.035***	0.000
<i>AUD_CLIENTIMPORTANCE</i>	0.320***	<.0001	0.340***	<.0001
<i>LNAUD_INDNUM</i>	0.000	0.986	-0.019*	0.092
<i>BIGN</i>	0.226***	<.0001	0.233***	<.0001
<i>MEMBER</i>	0.032***	<.0001	0.027***	0.001
<i>STANDARDOPINION</i>	-0.083***	<.0001	-0.076***	<.0001
<i>LNTA</i>	0.226***	<.0001	0.264***	<.0001
<i>INVREC_TA</i>	-0.014	0.540	-0.042*	0.079
<i>LEVERAGE</i>	0.106***	<.0001	0.114***	<.0001
<i>SOE</i>	-0.051***	<.0001	-0.063***	<.0001
<i>FE</i>	0.169***	0.000	0.172***	0.001
<i>LOSS</i>	0.032***	0.020	0.030**	0.039
<i>CURRENT_RATIO</i>	-0.011**	0.000	-0.012***	<.0001
<i>ROA</i>	0.207***	0.001	0.192***	0.002
<i>SE_SH</i>	0.032***	<.0001	0.039***	<.0001
<i>LNFIRMAGE</i>	-0.013***	0.034	-0.016**	0.016
<i>CROSSLISTING</i>	0.031	0.379	0.049	0.195
<i>Region Dummies</i>	Included		Included	
<i>Year Dummies</i>	Included		Included	
<i>Industry Dummies</i>	Included		Included	
<i>LNCPA_INDNUM</i> +<i>CPA_PORTFOLIO</i> <i>*LNCPA_INDNUM</i>	-0.157***	<.0001	-0.035**	0.013
<i>N</i>	11,601		11,601	
<i>R-Square</i>	0.579		0.543	

Panel C: Big N and Non-Big N Auditor Client Portfolio Scale and Scope and Audit Fees

Variables	Dependent variable is <i>LNAUDITFEE</i>							
	CPA_PORTFOLIO_AF				CPA_PORTFOLIO_CNUM			
	Big N		Non-Big N		Big N		Non-Big N	
	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value
<i>Intercept</i>	8.944***	<.0001	7.258	<.0001	8.477***	<.0001	6.170***	<.0001
<i>CPA_PORTFOLIO</i>	0.313***	<.0001	0.261***	<.0001	-0.049	0.392	0.027***	0.009
<i>LNPCA_INDNUM</i>	-0.024	0.750	-0.101***	<.0001	0.029	0.717	-0.026**	0.042
<i>CPA_INDSPE</i>	0.400***	<.0001	0.261***	<.0001	0.432***	<.0001	0.280***	<.0001
<i>CPA_SHORTTENURE</i>	0.067	0.214	-0.013***	0.210	0.079	0.160	-0.013	0.228
<i>CPA_CLIENTIMPORTANCE</i>	0.098	0.348	0.173***	<.0001	-0.081	0.435	0.019	0.352
<i>AUD_SIZE</i>	-0.041	0.151	0.026***	<.0001	-0.044	0.148	0.048***	<.0001
<i>AUD_INDSPE</i>	0.055	0.281	0.125***	<.0001	0.073	0.151	0.155***	<.0001
<i>AUD_SHORTTENURE</i>	-0.044	0.322	-0.030***	0.001	-0.073	0.108	-0.033***	0.000
<i>AUD_CLIENTIMPORTANCE</i>	0.230	0.513	0.318***	<.0001	0.210	0.551	0.358***	<.0001
<i>LNAUD_INDNUM</i>	-0.008	0.922	0.019*	0.084	-0.002	0.981	0.001	0.953
<i>MEMBER</i>			0.030***	<.0001			0.028***	0.000
<i>STANDARDOPINION</i>	-0.343**	0.021	-0.082***	<.0001	-0.368**	0.019	-0.073***	<.0001
<i>LNTA</i>	0.265***	<.0001	0.230***	<.0001	0.305***	<.0001	0.264***	<.0001
<i>INVREC_TA</i>	-0.169	0.262	-0.008	0.714	-0.153	0.312	-0.035	0.149
<i>LEVERAGE</i>	0.069	0.713	0.107***	<.0001	0.001	0.994	0.115***	<.0001
<i>SOE</i>	0.013	0.816	-0.054***	<.0001	-0.010	0.859	-0.066***	<.0001
<i>FE</i>	0.342***	<.0001	0.055	0.325	0.342***	<.0001	0.055	0.352
<i>LOSS</i>	0.243	0.007	0.030**	0.034	0.239***	0.009	0.025*	0.088
<i>CURRENT_RATIO</i>	-0.057**	0.025	-0.008***	0.004	-0.061**	0.017	-0.009***	0.003
<i>ROA</i>	1.252***	0.002	0.181***	0.003	1.248***	0.002	0.156**	0.014
<i>SE_SH</i>	0.062	0.161	0.036***	<.0001	0.078*	0.092	0.041***	<.0001
<i>LNfirmage</i>	-0.074**	0.026	-0.013**	0.043	-0.069**	0.046	-0.014**	0.033
<i>CROSSLISTING</i>	0.022	0.715	0.070	0.124	0.006	0.918	0.087*	0.079
<i>Region Dummies</i>	Included		Included		Included		Included	
<i>Year Dummies</i>	Included		Included		Included		Included	
<i>Industry Dummies</i>	Included		Included		Included		Included	
<i>N</i>	592		11,009		592		11,009	
<i>R-Square</i>	0.743		0.496		0.730		0.457	

Panel D: Big N and Non-Big N Auditor Client Portfolio Scale and Scope Interaction and Audit Fees

Dependent variable is <i>LNAUDITFEE</i>								
Variables	CPA_PORTFOLIO_AF				CPA_PORTFOLIO_CNUM			
	Big N		Non-Big N		Big N		Non-Big N	
	Coeff.	P value	Coeff.	P value	Coeff.	P value	Coeff.	P value
<i>Intercept</i>	9.023***	<.0001	7.278***	<.0001	8.399***	<.0001	6.168***	<.0001
<i>CPA_PORTFOLIO</i>	0.402***	<.0001	0.341***	<.0001	0.037	0.637	0.054***	0.000
<i>LNCPA_INDNUM</i>	0.225	0.193	-0.024	0.124	0.122	0.256	0.014	0.495
<i>CPA_PORTFOLIO*LNCPA_INDNUM</i>	-0.268*	0.092	-0.128***	<.0001	-0.165	0.169	-0.054**	0.014
<i>CPA_INDSPE</i>	0.396***	<.0001	0.262***	<.0001	0.430***	<.0001	0.281***	<.0001
<i>CPA_SHORTTENURE</i>	0.067	0.208	-0.014	0.164	0.081	0.149	-0.014	0.200
<i>CPA_CLIENTIMPORTANCE</i>	0.131	0.216	0.199***	<.0001	-0.052	0.620	0.029	0.157
<i>AUD_SIZE</i>	-0.044	0.122	0.027***	<.0001	-0.041	0.171	0.049***	<.0001
<i>AUD_INDSPE</i>	0.055	0.284	0.125***	<.0001	0.072	0.153	0.155***	<.0001
<i>AUD_SHORTTENURE</i>	-0.049	0.266	-0.029***	0.001	-0.072	0.115	-0.032***	0.001
<i>AUD_CLIENTIMPORTANCE</i>	0.244	0.488	0.323***	<.0001	0.178	0.614	0.360***	<.0001
<i>LNAUD_INDNUM</i>	-0.006	0.941	0.018*	0.098	0.004	0.966	0.000	0.974
<i>BIGN</i>								
<i>MEMBER</i>			0.033***	<.0001			0.029***	0.000
<i>STANDARDOPINION</i>	-0.358**	0.016	-0.083***	<.0001	-0.371**	0.018	-0.074***	<.0001
<i>LNTA</i>	0.260***	<.0001	0.227***	<.0001	0.305***	<.0001	0.263***	<.0001
<i>INVREC_TA</i>	-0.175	0.245	-0.007	0.764	-0.169	0.267	-0.035	0.144
<i>LEVERAGE</i>	0.091	0.631	0.106***	<.0001	-0.010	0.958	0.114***	<.0001
<i>SOE</i>	0.015	0.780	-0.053***	<.0001	-0.007	0.890	-0.065***	<.0001
<i>FE</i>	0.344***	<.0001	0.057	0.295	0.341***	<.0001	0.058	0.328
<i>LOSS</i>	0.235***	0.009	0.028**	0.046	0.235**	0.012	0.024*	0.091
<i>CURRENT_RATIO</i>	-0.054**	0.033	-0.008***	0.004	-0.061**	0.016	-0.009***	0.003
<i>ROA</i>	1.268***	0.001	0.176***	0.004	1.202***	0.003	0.155**	0.014
<i>SE_SH</i>	0.059	0.182	0.035***	<.0001	0.082*	0.075	0.041***	<.0001

<i>LNFIRMAGE</i>	-0.073**	0.028	-0.013**	0.046	-0.070**	0.042	-0.014**	0.035
<i>CROSSLISTING</i>	0.024	0.695	0.062	0.166	0.009	0.890	0.087*	0.075
<i>Region Dummies</i>	Included		Included		Included		Included	
<i>Year Dummies</i>	Included		Included		Included		Included	
<i>Industry Dummies</i>	Included		Included		Included		Included	
<i>LNCPA_INDNUM+ CPA_PORTFOLIO *LNCPA_INDNUM</i>	-0.042	0.556	-0.152***	<.0001	-0.043	0.651	-0.040***	0.005
<i>N</i>	592		11,009		592		11,009	
<i>R-Square</i>	0.745		0.498		0.731		0.457	

Note: All Big N in China are members of International Big N, resulting in no variation in *MEMBER* in analyses using Big N subsamples.

Table 4 Additional Analyses: Audit Delays**Panel A: Descriptive Statistics of Audit Delay Model Variables (N=11,248)**

Variable	Mean	SE	Q1	Q3
<i>AUDITDELAY</i>	85	24	71	106
<i>LNAUDITDELAY</i>	4.381	0.372	4.263	4.663
<i>CPA_PORTFOLIO_AF</i>	0.512	0.500	0.000	1.000
<i>CPA_PORTFOLIO_CNUM</i>	0.568	0.495	0.000	1.000
<i>LNCPA_INDCNUM</i>	0.606	0.435	0.405	0.916
<i>CPA_INDSPE</i>	0.056	0.218	0.000	0.000
<i>CPA_SHORTTENURE</i>	0.886	0.318	1.000	1.000
<i>CPA_CLIENTIMPORTANCE</i>	0.492	0.282	0.243	0.675
<i>AUD_SIZE</i>	25.501	1.459	24.506	26.383
<i>AUD_INDSPE</i>	0.076	0.265	0.000	0.000
<i>AUD_SHORTTENURE</i>	0.288	0.453	0.000	1.000
<i>AUD_CLIENTIMPORTANCE</i>	0.040	0.065	0.006	0.044
<i>LNAUD_INDCNUM</i>	1.974	0.488	1.792	2.303
<i>LNTA</i>	21.325	1.140	20.575	21.962
<i>LNMV</i>	21.689	1.034	20.965	22.278
<i>ROA</i>	0.023	0.091	0.010	0.058
<i>LEVERAGE</i>	0.526	0.324	0.351	0.638
<i>LOSS</i>	0.128	0.334	0.000	0.000
<i>MAO</i>	0.093	0.290	0.000	0.000
<i>LNAFEE_AT</i>	-8.228	0.844	-8.746	-7.687
<i>AUDITOR_CHANGE</i>	0.094	0.292	0.000	0.000

Panel B: Auditor Client Portfolio Scale and Scope and Audit Delays

Dependent variable is <i>LNAUDITDELAY</i>						
Variables	CPA_PORTFOLIO_AF			CPA_PORTFOLIO_CNUM		
	Full Sample	Big N	Non-Big N	Full Sample	Big N	Non-Big N
	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.
<i>Intercept</i>	4.084***	4.653***	4.225***	4.046***	4.609***	4.188***
<i>CPA_PORTFOLIO</i>	0.009	0.023	0.011	0.013	-0.002	0.015
<i>LNCPA_INDNUM</i>	0.040***	0.033	0.036***	0.037***	0.037	0.033***
<i>CPA_INDSPE</i>	0.031	0.016	0.028	0.032	0.018	0.029
<i>CPA_SHORTTENURE</i>	-0.012	0.077	-0.015	-0.012	0.077	-0.015
<i>CPA_CLIENTIMPORTANCE</i>	0.065***	0.117	0.064***	0.070***	0.106	0.069***
<i>SIZE_AUD</i>	0.021***	0.009	0.018***	0.022***	0.009	0.018***
<i>AUD_INDSPE</i>	0.008	-0.034	0.012	0.009	-0.033	0.013
<i>AUD_SHORTTENURE</i>	0.008	0.047	0.004	0.008	0.044*	0.004
<i>AUD_CLIENTIMPORTANCE</i>	0.157**	-0.551*	0.188**	0.163**	-0.550*	0.196***
<i>LNAUD_INDNUM</i>	-0.025**	-0.123***	-0.018	-0.025**	-0.123***	-0.018
<i>LMNV</i>	-0.021***	-0.027	-0.024***	-0.021***	-0.024	-0.023***
<i>ROA</i>	-0.533***	-0.584*	-0.530***	-0.534***	-0.591*	-0.531***
<i>LEVERAGE</i>	-0.073***	-0.048	-0.074***	-0.073***	-0.046	-0.074***
<i>LOSS</i>	0.088***	0.074	0.087***	0.088***	0.072	0.086***
<i>MAO</i>	0.139***	0.06	0.142***	0.139***	0.059	0.142***
<i>LNAFEE_AT</i>	-0.008	-0.024	-0.008	-0.007	-0.023	-0.007
<i>AUDITOR_CHANGE</i>	0.034**	0.049	0.033**	0.034**	0.05	0.032***
<i>Year Dummies</i>	Included	Included	Included	Included	Included	Included
<i>Industry Dummies</i>	Included	Included	Included	Included	Included	Included
<i>N</i>	11,248	584	10,664	11,248	584	10,664
<i>R-Square</i>	0.102	0.171	0.104	0.103	0.171	0.104

**Table 5 Additional Analyses: Determinants of Individual Auditor Client
Portfolio Scale and Scope 2001-2010**

Panel A: Descriptive Statistics

Variable	Full Sample (7,946)		Big N (483)		Non-Big N (7,463)		Big N vs. Non-Big N Mean
	Mean	Std	Mean	Std	Mean	Std	
<i>Dependent Variables</i>							
<i>LNCPA_TOTALAF</i>	13.610	0.813	14.506	0.832	13.552	0.777	***
<i>CPA_TOTALCNUM</i>	2.166	1.713	1.834	1.421	2.188	1.728	
<i>LNCPA_TOTALCNUM</i>	0.546	0.631	0.410	0.574	0.555	0.634	***
<i>CPA_INDNUM2</i>	1.536	0.861	1.375	0.739	1.547	0.867	***
<i>LNCPA_INDNUM2</i>	0.313	0.450	0.221	0.402	0.319	0.452	***
<i>Independent Variables</i>							
<i>INDSPEC</i>	0.023	0.151	0.172	0.378	0.014	0.116	***
<i>LNAUDITSIZE</i>	25.555	1.580	28.878	1.759	25.340	1.303	***
<i>AUD_INDNUM</i>	7.970	3.337	8.901	2.432	7.909	3.378	***
<i>LNAUD_INDNUM</i>	1.959	0.538	2.142	0.314	1.947	0.547	***
<i>POSITION</i>	0.681	0.466	0.660	0.474	0.682	0.466	
<i>GENDER</i>	0.660	0.474	0.613	0.488	0.663	0.473	**
<i>AGE30</i>	0.086	0.280	0.087	0.282	0.085	0.280	
<i>AGE3050</i>	0.859	0.348	0.894	0.308	0.857	0.350	**
<i>AGE50</i>	0.055	0.229	0.019	0.135	0.058	0.233	***
<i>EDU_DEGREE</i>	0.692	0.462	0.890	0.313	0.679	0.467	***
<i>EDU_MAJOR</i>	0.672	0.470	0.447	0.498	0.687	0.464	***
<i>EDU_UNIVERSITY</i>	0.365	0.481	0.586	0.493	0.351	0.477	***
<i>CPAEXAM</i>	0.932	0.252	0.934	0.249	0.932	0.253	***
<i>CPAYEAR</i>	8.255	3.852	8.077	3.978	8.267	3.844	
<i>LNCPAYEAR</i>	2.242	0.445	2.220	0.453	2.244	0.444	
<i>Additional Variables</i>							
<i>CPANUM</i>	321	282	565	230	305	278	***
<i>LNCPANUM</i>	5.423	0.825	6.227	0.514	5.368	0.814	***
<i>TOTALSTAFF</i>	831	964	4027	415	603	449	***
<i>STAFF_CPA</i>	2.269	1.444	6.998	1.715	1.932	0.563	***
<i>LNREV_CPA</i>	13.239	0.606	14.981	0.288	13.119	0.403	***

Panel B: Determinants of Individual Auditor Client Portfolio Scale

Variable	Dependent variable is <i>LNCPA_TOTALAF</i>						Dependent variable is <i>LNCPA_TOTALCNUM</i>					
	Full Sample		Big N		Non-Big N		Full Sample		Big N		Non-Big N	
	Coeff.	P	Coeff.	P	Coeff.	P	Coeff.	P	Coeff.	P	Coeff.	P
<i>Intercept</i>	7.941***	<.0001	13.191***	<.0001	8.087***	<.0001	-2.069***	<.0001	-1.842**	0.029	-2.322***	<.0001
<i>BIGN</i>	0.196***	<.0001					-0.423***	<.0001				
<i>LNAUDITSIZE</i>	0.188***	<.0001	0.018	0.708	0.179***	<.0001	0.067***	<.0001	0.079**	0.013	0.075***	<.0001
<i>INDSPEC</i>	0.717***	<.0001	0.550***	<.0001	0.933***	<.0001	0.458***	<.0001	0.226***	0.003	0.531***	<.0001
<i>POSITION</i>	-0.016	0.368	0.215***	0.008	-0.045**	0.014	-0.020	0.156	-0.015	0.763	-0.012	0.408
<i>GENDER</i>	0.108***	<.0001	0.027	0.690	0.109***	<.0001	0.116***	<.0001	0.006	0.891	0.124***	<.0001
<i>AGE50</i>	0.129***	0.003	0.706***	<.0001	0.121***	0.006	0.141***	<.0001	0.364*	0.066	0.144***	<.0001
<i>AGE30</i>	-0.096***	0.001	-0.491***	<.0001	-0.054*	0.068	-0.028	0.189	-0.200***	0.003	-0.030	0.186
<i>EDU_DEGREE</i>	0.151***	<.0001	0.139	0.158	0.154***	<.0001	0.124***	<.0001	0.106*	0.096	0.126***	<.0001
<i>EDU_MAJOR</i>	0.055***	0.001	-0.165**	0.028	0.052***	0.004	0.048***	0.001	-0.047	0.282	0.058***	<.0001
<i>EDU_UNIVERSITY</i>	0.012	0.491	-0.062	0.352	0.015	0.401	0.005	0.737	0.036	0.403	0.003	0.837
<i>CPAEXAM</i>	0.068*	0.093	0.098	0.491	0.080*	0.053	0.077**	0.018	0.145*	0.094	0.086**	0.012
<i>LNCPAYEAR</i>	0.419***	<.0001	0.083	0.292	0.454***	<.0001	0.466***	<.0001	0.297***	<.0001	0.472***	<.0001
Year Dummies	Included		Included		Included		Included		Included		Included	
N	7,946		483		7,463		7,946		483		7,463	
R-Square	0.236		0.316		0.174		0.167		0.383		0.162	

Panel C: Determinants of Individual Auditor Client Portfolio Scope

Variable	Dependent variable is <i>LNCPA_INDNUM2</i>					
	Full Sample		Big N		Non-Big N	
	Coeff.	P value	Coeff.	P value	Coeff.	P value
<i>Intercept</i>	-1.200***	<.0001	-0.041	0.944	-1.447***	<.0001
<i>BIGN</i>	-0.294***	<.0001				.
<i>LNAUDITSIZE</i>	0.041***	<.0001	0.019	0.388	0.049***	<.0001
<i>INDSPEC</i>	0.419***	<.0001	0.240***	<.0001	0.483***	<.0001
<i>POSITION</i>	-0.035***	0.001	0.024	0.446	-0.034***	0.002
<i>GENDER</i>	0.041***	<.0001	-0.004	0.883	0.045***	<.0001
<i>AGE50</i>	0.083***	0.002	0.230	0.231	0.086***	0.002
<i>AGE30</i>	-0.019	0.222	-0.197***	<.0001	-0.016	0.322
<i>EDU_DEGREE</i>	0.067***	<.0001	0.087**	0.032	0.067***	<.0001
<i>EDU_MAJOR</i>	0.037***	0.000	-0.037	0.204	0.042***	<.0001
<i>EDU_UNIVERSITY</i>	0.021**	0.047	0.057**	0.045	0.019*	0.081
<i>CPAEXAM</i>	0.009	0.709	0.017	0.818	0.022	0.405
<i>LNCPAYEAR</i>	0.268***	<.0001	0.064**	0.050	0.279***	<.0001
<i>Year Dummies</i>	Included		Included		Included	
<i>N</i>	7,946		483		7,463	
<i>R-Square</i>	0.644		0.432		0.642	

Note: **Panel A:** it is based on auditor-year data. *CPANUM*, *LNCPANUM*, *TOTALSTAFF*, *STAFF_CPA*, and *LNREV_CPA* are only available for the years 2002-2010 since 2002 is the first year when these data are available. **Panel B and C:** the dependent variables in Panel B are *LNCPA_TOTALAF* (natural log of total audit fees collected by a signing auditor in a year), or *LNCPA_TOTALCNUM* (natural log of total number of public clients served by a signing auditor in a year); the dependent variable in Panel C is *LNCPA_INDNUM2* (the natural log of the number of unique industries served by a signing auditor in a year); *BIGN*: =1 if the auditor works for one of the Big 5 audit firms; *LNAUDITSIZE*: natural log of total annual audited assets for each audit firm; *INDSPEC*: =1 if the auditor is an industry specialist in at least one industry. Industry specialist is defined as an auditor who has the largest market share based on total

audited assets in that industry; *POSITION*: =1 if the individual auditor current position is a manager or higher, 0 otherwise; *GENDER*: =1 if the individual auditor who signs on the report is a male, 0 otherwise; *AGE50*: =1 if the auditor is older than 50, 0 otherwise; *AGE30*: =1 if the auditor is less than 30, 0 otherwise; *EDU_DEGREE*: =1 if the auditor has a bachelor's degree, master's degree or a PhD degree, 0 otherwise; *EDU_MAJOR*: =1 if the auditor has a degree related to accounting or auditing, 0 otherwise; *EDU_UNIVERSITY*: =1 if the auditor graduated from one of the top 25 accounting programs in China, 0 otherwise; *CPAEXAM*: =1 if the auditor passed CPA qualification through taking tests, 0 otherwise; *LNCPAYEAR*: natural log of the years since the auditor officially got his/her CPA license.