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Public Disclosure of Audit Fees and Bargaining Power between the Client and Auditor: Evidence from China☆

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ABSTRACT

Before the public disclosure of audit fees was mandated, it was unlikely for an audit client to have accurate information about how much other companies were charged by their auditors. Public fee disclosure decreases the cost of auditees' access to audit fee information for the auditor's portfolio of clients and is thus likely to increase the relative bargaining power of auditees over auditors when they negotiate audit fees. Using both proprietary and public audit fee data before and after public fee disclosure was mandated in China, we provide evidence consistent with the preceding conjecture. We find that public fee disclosure reinforces the magnitude of audit fee decreases for overcharged clients and weakens auditors' ability to raise audit fees for undercharged clients. These findings suggest the existence of unintended consequences of public fee disclosure regulation, the original rationale of which was a concern about audit pricing practices that could undermine auditor independence.

1. Introduction

This study examines how the public disclosure of audit fees affects the bargaining power between the client and auditor. Numerous studies have examined the economics of audit pricing since Simunic (1980) (see Hay, Knechel, and Wong (2006) for a review). Some prior studies use surveyed proprietary audit fee data to conduct empirical analysis in an audit market without a public fee disclosure requirement, and others use publicly available audit fee data in a public disclosure regime. However, little has been done to compare the economics of audit pricing between the non-public and public disclosure regimes, possibly due to the lack of both proprietary and public audit fee data in a single audit market.[1]

In comparing non-public and public fee disclosure regimes, one important research question to consider is how public fee disclosure affects the bargaining power between the client and auditor. The question is important because it speaks directly to Healy and Palepu's (2001) call for a better understanding of the effect of disclosure regulation on capital market development. The literature

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[1] Due to this limitation, prior studies use an indirect approach to infer possible differences in audit pricing between the public fee disclosure and non-disclosure regimes. For example, Craswell and Francis (1999) examine initial engagement pricing in Australia (i.e., a public fee disclosure regime) during a time when comparable U.S. studies report fee discounts for initial engagements.

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documents that fee issues dominate negotiations between client management and auditors (Beattie, Brandt and Fearnley, 2000). As fee disclosure regulation reveals the contractual (particularly fee) relationship between clients and auditors (DeAngelo, 1981a), it is likely to affect such a relationship, as the extent of audit pricing information asymmetry is lower. For example, Francis and Wang (2005) find that audit fee precision increased and fee dispersion decreased following the initial regulation of public fee disclosure in the U.S. audit market, transcending its original rationale.[2]

As an auditee usually has a limited understanding of auditors' effort level (and thus limited audit fee information) in a private fee disclosure regime, public fee disclosure considerably expands the set of audit pricing information faced by clients, who now have significantly more information about how much comparable companies are charged in the market. Therefore, an auditee is more capable of identifying herself as being overcharged or undercharged. Given that a prior-period overcharged client asks to pay lower audit fees in the next period (i.e., a negative association between the lagged audit fee residual and current-period audit fee change), we predict that such a negative association is stronger in the public fee disclosure regime than in the non-public regime.

However, an auditor often has access to a large portfolio of clients to make audit pricing decisions, even in the pre-disclosure regime. Although public fee disclosure expands the auditor's fee information set to some extent, competition between auditors becomes more transparent, as clients can see many low-fee alternatives. Therefore, we predict that auditors' ability to raise audit fees for undercharged clients is compromised in the public fee disclosure regime relative to the non-public regime.

We test and find evidence consistent with the preceding predictions using both proprietary and public audit fee data in China. China's public fee disclosure regulation was released in December 2001,[3] making audit fee data for Chinese listed companies available for 2001 and after. Moreover, before the public fee disclosure requirement, the China Securities Regulatory Commission (CSRC), the counterpart of the U.S. Securities Exchange Commission (SEC), conducted a survey among CSRC-licensed audit firms about audit fees charged to their listed clients during 1997–1999.[4] Therefore, we are able to use the audit fee data both before and after public disclosure to test our predictions.

This study contributes to the literature in two ways. First, our evidence suggests that public fee disclosure increases the bargaining power of clients relative to auditors when negotiating audit fees. As the original rationale of public fee disclosure regulation in China was to deter questionable audit pricing practices that were likely to compromise auditor independence, our findings indicate an apparently unintended consequence of disclosure regulation in an emerging capital market. Given that gaining bargaining power in fee negotiation is important to both auditors and their clients in all markets, this unintended consequence may have implications for regulators and other stakeholders in jurisdictions beyond China. Second, although Francis and Wang (2005) find that audit fees are adjusted downward (upward) for overcharged (undercharged) clients in a public fee disclosure regime, Mayhew (2005) argues that such findings can be explained by a mean-reversion process and are thus not necessarily attributable to the effect of public fee disclosure. Using both non-public and public fee data, our evidence is more capable of discerning the effect of public fee disclosure regulation from a mean-reversion process of audit pricing.

We proceed with this study as follows. Section 2 develops research hypotheses. Section 3 introduces our research design. Section 4 presents empirical results. Section 5 concludes the study.

2. Hypotheses development

2.1. Information environment before the public disclosure of audit fees

Auditing can be characterized as an experience good of which consumers can determine the price but not the quality before purchase (Craswell and Francis, 1999), as audit quality is costly and difficult to assess ex ante (DeAngelo, 1981b). Moreover, Causholli and Knechel (2012) characterize auditing as a credence good by arguing that the benefit of information asymmetry between the auditee and auditor accrues to the auditor "because, ultimately, only the auditor can say how much effort is actually required to satisfy professional standards given the attributes of the auditee." The difficulty in observing and assessing both audit quality and effort is likely to give the auditor incentives to under-audit, over-audit, or overcharge (Causholli and Knechel, 2012).

To complicate this, an auditee usually has limited access to auditors in a regime where audit fees are not publicly available and thus access to audit pricing information is limited. Once a contract for an audit service is settled, an auditee is bonded with an audit firm within the effective contract period. Moreover, incumbent auditors possess cost advantages over potential competitors in future audits of a given client, which implies the absence of perfect substitute auditors in future periods (DeAngelo, 1981b).

One approach to gaining access to alternative auditors in the non-public disclosure regime is through invited or uninvited solicitations (Chaney, Jeter and Shaw, 1997; Jeter and Shaw, 1995). However, the flow of information between clients and alternative auditors is still limited and the transaction cost can be high. In regimes where uninvited solicitation is banned, the exchange of information between non-incumbent auditors and prospective clients occurs only when clients are dissatisfied with their auditors (Jeter and Shaw, 1995). Even in regimes where uninvited solicitation is allowed, solicitation and searching costs still arise. For example, the client is usually faced with a limited scope when identifying an acceptable new auditor due to geographical distance and

[2] The original disclosure requirement in the U.S. market was made on the grounds of enhancing auditor independence, with a particular emphasis on disclosing non-audit fees as a percentage of total fees (Francis and Wang, 2005).

[3] The requirement is titled *Q&As on the Regulation of Disclosure by Issuers of Public Securities No. 6: Paying Service Fees to Public Accounting Firms and Related Disclosure*. Similar to the rationale of fee disclosure regulation in the U.S., Chinese regulators express concerns about audit pricing practices that could compromise auditor independence and audit quality, such as the contingent fees in providing assurance services, the commissions paid to referrers, and the stocks and other benefits beyond engagement fees received from clients.

[4] The pre-disclosure audit fee data were provided to us with an understanding that they would be used for academic research only.

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future potential start-up costs. To sum up, it would be costly for clients to determine audit fees charged to other clients or solicit bids from other auditors without public fee disclosure (Mayhew, 2005).

However, auditors already possess a great deal of private information about audit pricing in a regime where audit fees are not publicly available (Mayhew, 2005). Each audit firm has a relatively large portfolio of clients that provides an auditor with a rich set of audit pricing information, both cross-sectionally and longitudinally. Therefore, auditors can always use this information to negotiate with individual clients and have relative bargaining power over clients when negotiating audit fees in a non-disclosure regime.

2.2. Audit fee adjustments before the public disclosure of audit fees

Beattie et al. (2000) find that fee issues dominate client-auditor negotiations. Francis and Wang (2005) find that the more clients were overcharged (undercharged) in a prior period, the more audit fees decrease (increase) in the subsequent period, showing an outcome of audit fee negotiations between clients and auditors. Given that the findings of Francis and Wang (2005) are based on post-disclosure audit fee data in the U.S., Mayhew (2005) argues that such a pattern may simply suggest a mean-reversion process and could well exist before the public disclosure period.

Although our discussion in Section 2.1 suggests that it would be relatively difficult for clients to identify themselves as being overcharged or undercharged, clients may have chances to do so in practice, particularly given their incentives to avoid being overcharged. This may occur through clients' efforts at invited solicitation or non-incumbent auditors' unsolicited bids, and the literature finds that solicitation corresponds with a general decrease in audit fees (Hay and Knechel, 2010).

Furthermore, at least two features of our institutional setting are likely to intensify clients' focus on negotiating lower audit fees rather than on quality-based services. First, Big 4 international audit firms have only a very small market share in terms of the number of listed companies,[5] whereas local audit firms without an established brand name are dominant players in the Chinese audit market (Simunic and Wu, 2009). This makes it difficult for clients to distinguish reputable auditors in the market and weakens clients' incentive to seek brand-name auditors. Second, State ownership is dominant among Chinese listed companies in our sample period, thus weakening the demand of Stated-owned companies for high-quality audits (Wang, Wong and Xia, 2008).

Once clients deem themselves as being overcharged to an unacceptable extent, they may initiate a negotiation with their incumbent auditors. To maintain their overcharged clients, auditors may adjust audit fees downward in the following period.

As to undercharged clients, auditors have a stronger incentive to raise audit fees in subsequent periods than clients do and can even threaten to terminate the engagement relationship with the undercharged client. More importantly, auditors possess the advantage of having access to audit fee information in a non-disclosure regime and are thus capable of taking the initiative to adjust audit fees upward for undercharged clients.

Overall, audit fee adjustments, whether downward or upward, may well occur in a regime where audit fees are not publicly available. Furthermore, auditors have the advantage of having access to audit pricing information in such a regime.

2.3. Effect of public fee disclosure on the client-auditor economic relationship

Public fee disclosure is expected to decrease information asymmetry related to audit pricing between auditors and their clients. Once the audit fee is publicly disclosed, clients are able to obtain much more audit pricing information and at a much lower cost than before, and auditors are also better informed about the fee level charged by other audit firms. From the clients' viewpoint, the new information set includes fees charged to other clients by their incumbent auditors and fees charged to companies by non-incumbent auditors. Such new information is useful for clients to renegotiate audit fees with their incumbent auditors. Knowing that the client is more aware of audit prices now, the auditor similarly becomes more likely to offer more competitive prices.

Compared with the pre-disclosure regime, an overcharged client can more easily determine the extent of the overcharge from public fee information[6] and then credibly threaten to change auditors to pay a lower fee. Therefore, we expect that the negative association between positive audit fee residuals and a subsequent-period audit fee change is stronger after the audit fees are made publicly available. Our first hypothesis is stated as follows.

H1. The negative association between positive audit fee residuals and a subsequent-period audit fee change is significantly stronger in the post-disclosure period than in the pre-disclosure period.

As discussed previously, auditors can threaten undercharged clients with termination of the engagement relationship. However, their threats are credible only when other auditors in the market do not appear to offer low fees (Mayhew, 2005). As both clients and auditors have an expanded set of audit pricing information about the fee levels charged by other auditors in the market after public fee disclosure, undercharged clients may well have greater chances to see low audit fees offered to other companies by either their incumbent auditors or non-incumbent auditors. When the auditor of an undercharged client continues to threaten to terminate the engagement after public fee disclosure, it is easier for the undercharged client to find another auditor who offers a similarly low audit fee, especially in emerging markets like China, where the reputation of quality auditors is less appreciated. Therefore, auditors' proposals of fee increases for undercharged clients are more likely to be unsuccessful in the public fee disclosure regime than in a non-

[5] For example, only 1.7% (9.2%) of our pre-disclosure (post-disclosure) sample companies have Big 4 firms as their auditors.

[6] Even if a client is not quite clear whether she is overcharged after considering such factors as client size, operating complexity, and business risk, public fee disclosure helps her to infer her status based on the level of raw audit fees, given the usually high and positive correlation between raw and abnormal audit fees. For example, the Pearson correlation coefficient between raw and abnormal audit fees is as high as 0.68 in our sample.

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disclosure regime, as long as the auditors are able to earn a profit from the undercharged clients. Thus, we expect that the negative association between negative audit fee residuals and subsequent-period audit fee change is weaker after audit fees become publicly available. We present our second hypothesis as follows.

H2. The negative association between negative audit fee residuals and a subsequent-period audit fee change is significantly weaker in the post-disclosure period than in the pre-disclosure period.

3. Research design

3.1. Baseline model in prior literature and our extension

To examine the audit pricing changes due to unexpected audit fees, we build our empirical design on the following models used by Francis and Wang (2005):

$$P_T - P_{T-1} = \alpha + \beta\left(f - \overline{f}\right) + \gamma X + \varepsilon \tag{1}$$

$$P_T - P_{T-1} = \alpha + \beta_1\left(f - \overline{f}\right) * POS + \beta_2\left(f - \overline{f}\right) * NEG + \gamma X + \varepsilon \tag{2}$$

where P_T and P_{T-1} are the audit prices at periods T and $T-1$, respectively. The term f is the audit fee information obtained at period T for period $T-1$, and $\overline{f}$ is the expected audit fee for period $T-1$. *POS* is an indicator variable equal to 1 if there is a positive fee surprise (i.e., $f - \overline{f} > 0$) and 0 otherwise. *NEG* is an indicator variable equal to 1 if there is a negative fee surprise (i.e., $f - \overline{f} < 0$) and 0 otherwise.

Using publicly disclosed fees in the U.S., Francis and Wang (2005) document that both β in Eq. (1) and β_1 and β_2 in Eq. (2) are significantly negative, suggesting that audit fees are adjusted lower (higher) to unexpectedly high (low) fees for the prior period.

We are able to extend Francis and Wang's (2005) test because we include pre-disclosure audit fee data in our analysis. Mayhew (2005) questions whether the process of audit fee adjustment may well exist before the public fee disclosure. If this is the case, the findings of Francis and Wang (2005) could be caused not by the public disclosure but by a mean-reverting process.

To address this concern, we estimate audit fee change model (2) using the pre- and post-disclosure audit fee data, respectively. We can then compare whether there are significant changes in β_1 and β_2 between the two periods to draw inferences about the effects of public fee disclosure.[7] If there is a mean-reverting process as argued by Mayhew (2005), we should observe a negative association between $(f - \overline{f}) * POS$ (or $(f - \overline{f}) * NEG$) and $(P_T - P_{T-1})$ even for years before the public disclosure. As we predict that public fee disclosure is likely to reinforce the negative association between audit fee changes and positive fee surprise, we expect that β_1 is significantly more negative in the post-disclosure period. On the contrary, as we predict that public fee disclosure is likely to weaken the auditors' ability to raise audit fees for undercharged clients, we expect that β_2 is significantly less negative in the post-disclosure regime.

3.2. Empirical model design

To implement the test of Eq. (2), we estimate the audit fee residuals (i.e., unexpected audit fees) based on an audit pricing model. We estimate the following audit fee model adapted from prior studies (Francis, Reichelt and Wang, 2005; Francis and Wang, 2005; Hay et al., 2006; Simunic, 1980):

$$\begin{aligned} LAF = {} & \lambda_0 + \lambda_1 LTA + \lambda_2 SQSUBS + \lambda_3 CATA + \lambda_4 QUICK + \lambda_5 LEV + \lambda_6 ROA \\ & + \lambda_7 LAGOP + \lambda_8 LOSS + \lambda_9 SOE + \lambda_{10} SPECIALIST + \lambda_{11} BIG4 \\ & + \lambda_{12} BIGLOCAL + \lambda_{13} SWITCH + YRDUM + INDDUM + \varepsilon \end{aligned} \tag{3}$$

where:

LAF	natural log of audit fees in RMB10,000.
LTA	natural log of total assets in RMB10,000.
SQSUBS	square root of consolidated subsidiaries.
CATA	current assets to total assets.
QUICK	ratio of current assets (less inventory) to current liabilities.
LEV	total liabilities to total assets.
ROA	net income to total assets.

[7] We also use an alternative design by pooling the pre- and post-disclosure periods and by setting a dummy variable *PUBLIC* (coded as 1 for a post-disclosure observation and 0 otherwise) and its interactions with prior-year abnormal fees to examine our hypotheses. Our main inferences remain qualitatively similar. However, this alternative design forces control variables to share the same coefficient across two periods, among which four variables actually differ significantly, as Chow tests suggest in the last column of Table 5.

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LAGOP 1 for a prior-year modified audit opinion and 0 otherwise.
LOSS 1 if the net income is negative and 0 otherwise.
SOE 1 if the largest shareholder of the company is the government or a state-owned enterprise and 0 otherwise.
SPECIALIST 1 for the first- or second-ranked audit firm as an industry leader and 0 otherwise.
BIG4 1 if the auditor is a Big 4 audit firm and 0 otherwise.
BIGLOCAL 1 if the auditor is a local top-10 audit firm based on the sum of total assets audited by an audit firm for each year and 0 otherwise.
SWITCH 1 for an initial audit engagement and 0 otherwise.
YRDUM fiscal year dummy variables.
INDDUM dummy variables based on the CSRC industry classification scheme.

We make a number of modifications to prior audit pricing models as used by Francis et al. (2005) and Francis and Wang (2005). First, as information about client business segments or sales from foreign operations is not mandated to be disclosed during our sample period, we do not include these variables. Instead, we include *SQSUBS* (the square root of the number of consolidated subsidiaries) to proxy for the complexity of a client's organizational structure and operations (Craswell and Francis, 1999; Hay et al., 2006; Simunic, 1980). Second, the fiscal year end for all Chinese listed companies is December 31. Therefore, we do not include a year-end dummy variable. Third, we do not include the ratio of accounts receivable and inventory to total assets, as the ratio is highly correlated with *CATA* in our sample (correlation coefficient = 0.65).[8] Fourth, based on our institutional knowledge of audit pricing practices, audit fees are mostly negotiated well before the audit reporting date. This suggests that auditors have information about the prior-year audit opinion when negotiating audit fees with clients. Therefore, we control for the lagged audit opinion (*LAGOP*) instead of the current-year opinion in the audit pricing model.[9] Fifth, we do not include total accruals because net cash flows from operating activities, as one component used to compute total accruals, are not available across our entire sample period. Sixth, a dominant proportion of Chinese listed companies are owned by the State, and State ownership is likely to be associated with a weaker demand for high-quality audits (Wang et al., 2008). Therefore, we control for State ownership status (*SOE*) in the audit fee model. Finally, as Mayhew (2005) suggests that non-Big N audits should be included in main analysis because public disclosure theory as tested by Francis and Wang (2005) should also apply to non-Big N firms, we do so and include two variables (*BIG4* and *BIGLOCAL*) to control for the effect of audit firm attributes. We also have initial audit engagements in our main analysis and include an indicator variable (*SWITCH*).

After estimating the residuals of Eq. (3), denoted as *RES* (i.e., $f-\overline{f}$), we differentiate them into *POSRES* (i.e., $(f-\overline{f}) * POS$ in Eq. (2)) and *NEGRES* (i.e., $(f-\overline{f}) * NEG$ in Eq. (2)). *POSRES* is equal to *RES* if $RES > 0$; otherwise, it is equal to 0. *NEGRES* is equal to *RES* if $RES < 0$; otherwise, it is equal to 0. We then estimate the following audit fee change model originating from Eq. (2):

$$D\_LAF = \alpha + \beta_1 L\_POSRES + \beta_2 L\_NEGRES + \sum_{k=1}^{13} \lambda_k D\_X_k + \varepsilon \quad (4)$$

In Eq. (4), *D_LAF* denotes the yearly change for the dependent variable ($= LAF_t - LAF_{t-1}$) and *D_X* denotes the yearly change for each of the 13 independent variables in Eq. (3). *L_POSRES* (*L_NEGRES*) denotes the prior-year value of *POSRES* (*NEGRES*). As discussed previously, we estimate Eq. (4) using the pre- and post-disclosure audit fee data, respectively. We expect that β_1 (β_2) in Eq. (4) is more (less) negative in the post-disclosure period than in the pre-disclosure period.[10]

3.3. Data and sample

In 2000, before China's public fee disclosure requirement was released in December 2001, the Chief Accountant's Office (CAO) of the CSRC conducted a survey of audit firms who had the license to audit listed companies about audit fees charged to their listed clients during 1997–1999. As the CSRC is a direct regulator of the CSRC-licensed audit firms in Chinese stock markets and audit fee information is usually not difficult to identify in an audit firm's work papers, it appears that there is little incentive and opportunity for audit firms to report audit fees dishonestly. Of the 92 CSRC-licensed audit firms at the time of the survey, 64 (70%) responded. Our statistics show that Big 4 audit firms (*BIG4*) are less likely to respond ($p < 0.001$) and large local audit firms (*BIGLOCAL*) are more likely to respond ($p < 0.001$). Moreover, industry specialist auditors (*SPECIALIST*) have a marginally lower response rate than non-specialists ($p < 0.10$). Audit fees are available for a total of 1623 firm-year observations, accounting for 63.6% of the total number of firm-years during the survey period. The non-response rates are 39.1%, 37.5%, and 33.3% for 1997, 1998, and 1999, respectively.[11]

Moreover, in annual reports for the initial public disclosure year (i.e., 2001), 566 companies also disclosed their audit fees for the preceding year (i.e., 2000). This practice provides us with one more year of audit fee data in the pre-disclosure period. From the 2189 pre-disclosure firm-year observations (= 1623 + 566), we exclude 31 financial institution observations and 349 additional

[8] Untabulated results are qualitatively the same if we control for the ratio of accounts receivable and inventory to total assets.
[9] Untabulated results are qualitatively the same if we control for the current-period audit opinion.
[10] We do not control for industry-fixed effects in the audit fee change model, as the industry status of a company is time-invariant and all industry dummy variables become 0 after taking the difference between year t and year t − 1 (Francis & Wang, 2005). Our results remain qualitatively the same when we control for industry-fixed effects in Eq. (4).
[11] Compared with companies with surveyed audit fees, companies without responded audit fees are larger (*LTA*), less complex (*SQSUBS*), less liquid (*CATA*, *QUICK*), more leveraged (*LEV*), less profitable (*ROA*), marginally more likely to suffer a loss (*LOSS*), and more likely to experience an audit firm switch (*SWITCH*). There is no significant difference in response rate in terms of whether the auditor's prior-year opinion was modified (*LAGOP*).

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observations with missing model variable values. The final pre-disclosure sample size is 1809 firm-year observations. We use four years of audit fee data (i.e., 1997–2000) to estimate the audit fee residuals and have three years of data (1998–2000) for our audit fee change analysis.

To maintain a balanced post-disclosure period, we then obtain audit fee data for 2001–2003 from the China Stock Market Accounting Research (CSMAR) database. Of the 4136 post-disclosure firm-years, audit fees are available for 3178 (76.8%) observations.[12] We further exclude 41 financial institutions and 188 observations with missing model variable values. The final post-disclosure sample size for estimating audit fee residuals is 2949 firm-year observations.

Panel A of Table 1 lists the sample selection process. Panels B and C of Table 1 present the sample distribution by year and industry, respectively. Panel C shows that about half of the observations come from the manufacturing sector, which is unsurprising given the structure of China's economy. Moreover, the sample distribution by industry remains relatively stable between the pre- and post-disclosure periods.

3.4. Descriptive statistics

Table 2 reports descriptive statistics for the main variables of the audit fee model (i.e., Eq. (3)) for the pre- and post-disclosure samples, respectively. To mitigate the effects of extreme outliers, we winsorize all of the continuous variables at the 1st and 99th percentiles. Table 2 shows that in the pre-disclosure period Chinese listed companies paid an average of RMB299,463 in audit fees annually; the amount of annual audit fees increases considerably in the post-disclosure period (i.e., RMB545,562). The change in audit fee level between the pre- and post-disclosure periods is big, and untabulated analysis shows that it is most prominent around the initial disclosure year.[13] One possible reason for such a significant increase in fees is that, after reviewing the reported audit fees, regulators such as the CSRC made efforts to question why some clients were seemingly undercharged and whether the independence of related CPA firms was impaired. Public pressure on low-fee firms after initial public disclosure is another possible reason for this increase.

In the pre-disclosure (post-disclosure) period, the mean ROA was 4.5% (1.7%) and the mean financial leverage was 43.3% (47.2%); 9.0% (14.0%) of listed companies suffered a net loss; 77.8% (72.7%) were controlled by the State; and 15.0% (12.2%) received a prior-year modified audit opinion. Only 13.7% (10.4%) of audits were conducted by industry-specialist audit firms, which is consistent with the developing nature of the public accounting profession in China. Furthermore, only 1.7% (9.2%) of audits were conducted by Big N audit firms, suggesting local auditor dominance in China's audit market, as noted by Simunic and Wu (2009). Finally, audit firm switching took place in 7.4% (11.8%) of listed companies.

4. Main empirical results

4.1. Audit fee models

As previous descriptive statistics show, there is a significant difference in audit fee levels between the pre- and post-disclosure periods. To control for this difference, we estimate audit fee regression models separately for the pre- and post-disclosure periods to generate audit fee residuals for subsequent analyses. As shown in Table 3, the adjusted R-squares are 40.9% for the pre-disclosure period and 41.0% for the post-disclosure period. Although the adjusted R-squares are lower than those reported in U.S.-based studies (Francis and Wang, 2005; Francis et al., 2005), they are comparable with those reported in prior China-based studies. For example, using Chinese audit fee data from 2001 to 2003, Wang et al. (2008) report an adjusted R-square of 37.7% when estimating their audit fee model. Moreover, the adjusted R-square for the pre-disclosure sample is very similar to that for the post-disclosure sample, which provides comfort about the reliability of the pre-disclosure audit fee data.

The signs of the explanatory variables in the audit fee model are generally consistent with those in prior studies. For example, major determinants of audit fees such as client size (*LTA*) and client complexity (*SQSUBS*) are significantly positive ($p < 0.01$). Auditor characteristics also have explanatory power, with *BIG4* and *BIGLOCAL* being significant in both periods and *SPECIALIST* being significant in the post-disclosure period. Moreover, an initial audit engagement (*SWITCH*) is associated with a significantly lower audit fee, which is consistent with prior U.S.-based studies (e.g., Huang, Raghunandan and Rama, 2009; Simon and Francis, 1988).

4.2. Dispersion of audit fees surrounding the public fee disclosure

We also conduct a test of the variance in audit fees (Francis and Wang, 2005) surrounding the public fee disclosure requirement in China. We compare the variances in residual audit fees between each of two adjacent years from 1997 to 2003. Table 4 shows that in the pre-disclosure period the variance was significantly higher in the first data-collection year (i.e., 1997) than in 1998. There is no

[12] The fee disclosure rates are 71.6%, 79.8%, and 78.8% for the initial, second, and third disclosure years, respectively. Compared with companies disclosing audit fees, non-disclosing companies are smaller (*LTA*), more leveraged (*LEV*), less liquid (*QUICK*), more profitable (*ROA*), and less likely to suffer a loss (*LOSS*). Companies whose auditors are Big 4 auditors (*BIG4*) or industry specialists (*SPECIALIST*) have a higher non-disclosure rate.

[13] In the initial year with public fee disclosure (i.e., 2001), there are two groups of companies: (1) those with audit fee information for 2000 and (2) those without comparable audit fee information for 2000. For the first group of companies, we observe a significant increase in audit fees from a mean of RMB414,600 in 2000 to RMB635,900 in 2001 ($p < 0.01$). However, for companies with audit fee information in both 1999 and 2000, the mean audit fee increases from RMB304,700 to RMB376,400. Therefore, the increase rate for 2001 (i.e., 53.4%) is much higher than that for 2000 (i.e., 23.5%), which is probably attributable to the public fee disclosure requirement. However, the mean audit fees are RMB521,700 for the second group of companies, which are significantly smaller (*LTA*), less complex (*SQSUBS*), and less likely to be engaged with an industry specialist auditor (*SPECIALIST*) and a large local auditor (*BIGLOCAL*) than the first group of companies.

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Table 1
Sample selection and composition.

Panel A: Sample selection

	Pre-disclosure period (1997–2000)			Post-disclosure period (2001 − 2003)
	1997–1999	2000	Subtotal	
All firm-year obs. in the CSMAR database	2551	1093	3644	4136
Less: missing audit fee data	928	527	1455	958
Less: financial institutions	20	11	31	41
Less: missing values of control variables	263	86	349	188
Sample for audit fee model estimation	1340	469	1809	2949

Panel B: Distribution by year

Year	# of obs.	Percent
Pre-disclosure period		
1997	313	17.30%
1998	470	25.98%
1999	557	30.79%
2000	469	25.93%
Total	1809	
Post-disclosure period		
2001	893	30.28%
2002	998	33.84%
2003	1058	35.88%
Total	2949	

Panel C: Distribution by industry

	Pre-disclosure period (1997–2000)		Post-disclosure period (2001–2003)	
Industry	# of obs.	Percent	# of obs.	Percent
Agriculture	30	1.66%	51	1.73%
Mining	39	2.16%	67	2.27%
Manufacturing	834	46.10%	1543	52.32%
Electricity, gas, and water	76	4.20%	143	4.85%
Construction	14	0.77%	41	1.39%
Transport, storage, and post	64	3.54%	121	4.10%
IT and computer services	92	5.09%	132	4.48%
Wholesale and retail trade	191	10.56%	258	8.75%
Real estate	237	13.1%	305	10.34%
Public utilities	71	3.92%	109	3.70%
Culture, sport and entertainment	35	1.93%	43	1.46%
Conglomerates	126	6.97%	136	4.61%
Total	1809		2949	

significant difference in variance between 1998 and 1999 or between 1999 and 2000. The variance increased steeply in the initial disclosure year (i.e., 2001) and then decreased significantly in the second and third post-disclosure years ($p < 0.001$).

These results show a pattern where public fee disclosure initially increases the dispersion of audit fees (possibly due to the change from a relatively closed audit pricing process to a relatively open one) and subsequently decreases the dispersion of audit fees (possibly due to the audit pricing process becoming increasingly informed and more stable). The latter finding is consistent with that documented by Francis and Wang (2005).

4.3. Audit fee change models

The test results of Eq. (4) are reported in Table 5. Our audit fee change model has a similar but slightly higher explanatory power than that in prior literature, with adjusted R-squares of 28.3% and 31.4% compared with 21.0% as reported by Francis and Wang (2005, Table 5).

For the pre-disclosure period, the results in Column (1) show that both the prior-year positive fee residuals (*L_POSRES*) and prior-year negative fee residuals (*L_NEGRES*) are significantly and negatively associated with audit fee changes (*D_LAF*) ($p < 0.01$), suggesting that even before audit fee information is publicly disclosed, audit fees are adjusted downward (upward) in period *T* if an auditor overcharged (undercharged) a client in period $T - 1$. This finding is consistent with Mayhew's (2005) conjecture that there may be a mean-reversion process in audit pricing adjustments well before the public disclosure period.

Column (2) presents the regression results for the post-disclosure period. The coefficients on *L_POSRES* and *L_NEGRES* are still significantly negative ($p < 0.01$), suggesting that in the post-disclosure period audit pricing adjustments still occur for overcharged and undercharged clients. More importantly, the coefficient on *L_POSRES* is −0.486, which is more negative than that for the pre-disclosure period (i.e., −0.308). A Chow test shows that the difference between these two coefficients is significant ($p < 0.01$).

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Table 2
Descriptive statistics.

	Pre-disclosure period (1997–2000) (N = 1809)		Post-disclosure period (2001–2003) (N = 2949)	
Variables	Mean	Median	Mean	Median
AF	29.946	25.000	54.556	40.500
LAF	3.240	3.219	3.808	3.701
LTA	11.486	11.424	11.838	11.781
SQSUBS	1.824	1.732	2.169	2.000
CATA	0.548	0.563	0.530	0.539
QUICK	1.375	1.058	1.204	0.948
LEV	0.433	0.425	0.472	0.467
ROA	0.045	0.053	0.017	0.028
LAGOP	0.150	0	0.122	0
LOSS	0.090	0	0.140	0
SOE	0.778	1	0.727	1
SPECIALIST	0.137	0	0.104	0
BIG4	0.017	0	0.092	0
BIGLOCAL	0.364	0	0.256	0
SWITCH	0.074	0	0.118	0

Variable definitions: *AF*: audit fees in RMB10,000.
LAF: natural log of audit fees in RMB10,000.
LTA: natural log of total assets in RMB10,000.
SQSUBS: square root of consolidated subsidiaries.
CATA: current assets to total assets.
QUICK: ratio of current assets (less inventory) to current liabilities.
LEV: total liabilities to total assets.
ROA: net income to total assets.
LAGOP: 1 for a prior-year modified audit opinion and 0 otherwise.
LOSS: 1 if the net income is negative and 0 otherwise.
SOE: 1 if the largest shareholder of the company is the government or a State-owned enterprise and 0 otherwise.
SPECIALIST: 1 for the first- or second-ranked audit firm as an industry leader and 0 otherwise.
BIG4: 1 if the auditor is a Big 4 audit firm and 0 otherwise.
BIGLOCAL: 1 if the auditor is a local top-10 audit firm based on the sum of total assets audited by an audit firm for each year and 0 otherwise.
SWITCH: 1 for an initial audit engagement and 0 otherwise.

This result indicates that public fee disclosure reinforces the downward adjustment of audit fees for overcharged clients, thus supporting H1.

Furthermore, the coefficient on *L_NEGRES* for the post-disclosure period is −0.221, which is significantly less negative than that for the pre-disclosure period (i.e., −0.382). Again, a Chow test shows that the difference is significant ($p < 0.01$), suggesting that public fee disclosure significantly compromises auditors' ability to raise audit fees for undercharged clients. This finding lends support to H2.

When comparing the coefficients on *L_POSRES* and *L_NEGRES* in the pre-disclosure regime, we find that the magnitude of the latter is slightly larger than that of the former (although not statistically significant), suggesting that the bargaining power between clients and auditors is relatively balanced when audit fees are not publicly disclosed. However, in the post-disclosure regime, the coefficient on *L_POSRES* (i.e., −0.486) is significantly more negative than that on *L_NEGRES* (i.e., −0.221) ($p < 0.0001$), suggesting that clients have a greater bargaining power over auditors in negotiating audit fees when the audit pricing information is publicly disclosed.

Looking at the control variable results, Table 5 shows that although the overall level of audit fees significantly increases during the public disclosure period relative to the pre-disclosure period (as the constant increases from 0.129 to 0.402, $p < 0.01$), audit fee changes are much less sensitive to the change in client size (as the coefficient on *D_LTA* drops from 0.346 to 0.132, $p < 0.01$). The advantage of large audit firms in charging an audit fee premium is also compromised considerably, as the coefficient on *D_BIG4* drops from 0.279 to 0.146 ($p < 0.10$) and that on *D_BIGLOCAL* drops from 0.180 to 0.043 ($p < 0.01$).

Overall, our findings in Table 5 support that public fee disclosure increases the bargaining power of clients relative to the auditor in the audit fee adjustment process.

4.4. Trend of audit fee adjustments: yearly analysis

We further estimate Eq. (4) on a yearly basis.[14] Panel A of Table 6 presents the main results for *L_POSRES* and *L_NEGRES*, and Panel B depicts the trend in audit fee adjustments to overcharged and undercharged clients based on the coefficients reported in Panel A.

According to Table 6, overcharged clients' ability to negotiate a lower audit fee gradually weakened until 2000 (i.e., the year immediately before public fee disclosure), as the magnitude of the association between *L_POSRES* and *D_LAF* dropped from |−0.421| in 1998, to |−0.231| in 1999, and then to |−0.217| in 2000. On the contrary, the auditors' ability to raise audit fees to undercharged

[14] As the effect of extreme outliers could be more prominent in yearly analysis, we winsorize the continuous variables at the 2nd and 98th percentiles for our analysis. However, winsorizing at the 1st and 99th percentiles generates qualitatively unchanged results.

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Table 3
Regression results of audit fee models.

	Pre-disclosure period (1997–2000)		Post-disclosure period (2001–2003)	
Dep. Var.: *LAF*	Coefficient	t-statistic	Coefficient	t-statistic
LTA	0.299	14.23***	0.311	18.78***
SQSUBS	0.059	4.88***	0.078	7.59***
CATA	0.185	1.91*	−0.073	−0.96
QUICK	−0.020	−1.06	0.004	0.23
LEV	0.048	0.39	0.204	2.32**
ROA	0.866	3.09***	0.254	1.18
LAGOP	0.020	0.62	0.097	2.93***
LOSS	0.114	1.86*	0.022	0.59
SOE	−0.023	−0.70	−0.060	−2.30**
SPECIALIST	0.011	0.25	0.121	2.93***
BIG4	0.395	2.98***	0.386	7.49***
BIGLOCAL	0.052	1.65*	0.061	2.24**
SWITCH	−0.147	−3.69***	−0.058	−2.05**
Constant	−0.086	−0.32	−0.103	−0.53
Year-fixed effects	Yes		Yes	
Industry-fixed effects	Yes		Yes	
N	1809		2949	
Adj. R^2	0.409		0.410	

Robust t-statistics are reported based on standard errors clustered by company.
Variable definitions: *LAF*: natural log of audit fees in RMB10,000.
LTA: natural log of total assets in RMB10,000.
SQSUBS: square root of consolidated subsidiaries.
CATA: current assets to total assets.
QUICK: ratio of current assets (less inventory) to current liabilities.
LEV: total liabilities to total assets.
ROA: net income to total assets.
LAGOP: 1 for a prior-year modified audit opinion and 0 otherwise.
LOSS: 1 if the net income is negative and 0 otherwise.
SOE: 1 if the largest shareholder of the company is the government or a State-owned enterprise and 0 otherwise.
SPECIALIST: 1 for the first- or second-ranked audit firm as an industry leader and 0 otherwise.
BIG4: 1 if the auditor is a Big 4 audit firm and 0 otherwise.
BIGLOCAL: 1 if the auditor is a local top-10 audit firm based on the sum of total assets audited by an audit firm for each year and 0 otherwise.
SWITCH: 1 for an initial audit engagement and 0 otherwise.
*** Represents significance at the 0.01 level (two-tailed).
** Represents significance at the 0.05 level (two-tailed).
* Represents significance at the 0.10 level (two-tailed).

clients gradually increased, as the magnitude of the association between *L_NEGRES* and *D_LAF* increased from |−0.197| in 1998, to |−0.312| in 1999, and then to |−0.599| in 2000.

However, the preceding pattern apparently reversed after the 2001 public fee disclosure mandate. The magnitude of the association between *L_POSRES* and *D_LAF* increased from |−0.217| in 2000 to |−0.410| in 2001 and arrived at its peak of |−0.515| in 2002. However, the magnitude of the association between *L_NEGRES* and *D_LAF* dropped from |−0.599| in 2000 to |−0.280| in 2001 and then dove to its lowest amount of |−0.165| in 2002.

Table 4
Variance tests.

	Std. dev. of residual audit fee		Testing equality of variance	
	Year t	Year t + 1	F-ratio	p-value
Pre-disclosure				
1997 vs. 1998	0.564	0.450	1.57	0.0001
1998 vs. 1999	0.464	0.456	1.04	0.7126
1999 vs. 2000	0.446	0.441	1.02	0.8420
Years immediately surrounding initial disclosure				
2000 vs. 2001	0.482	0.712	0.46	<0.0001
Post-disclosure				
2001 vs. 2002	0.630	0.557	1.28	0.0004
2002 vs. 2003	0.560	0.501	1.25	0.0006

The residual audit fee is calculated as the antilog of the value of the regression residuals in Table 3.
Year t ranges from 1997 to 2002.
As the number of observations for each pair of two adjacent years varies, the standard deviation of the residual audit fee for the same year (but in two pairs) could be different.

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Table 5
Regression results of audit fee change models.

	Pre-disclosure period (1998–2000)		Post-disclosure period (2001–2003)		Testing equality of coefficient
Dep. Var.: *D_LAF*	Coefficient	t-statistic	Coefficient	t-statistic	Chi-square
L_POSRES	−0.308	−6.47***	−0.486	−13.70***	9.77***
L_NEGRES	−0.382	−7.27***	−0.221	−5.89***	6.49**
D_LTA	0.346	8.03***	0.132	3.18***	13.52***
D_SQSUBS	0.016	1.19	0.035	2.89***	1.03
D_CATA	−0.245	−2.06**	−0.047	−0.48	1.73
D_QUICK	−0.001	−0.10	−0.007	−0.55	0.13
D_LEV	0.041	0.35	−0.081	−0.75	0.61
D_ROA	0.300	1.69*	0.256	1.83*	0.04
D_LAGOP	0.014	0.60	0.016	0.70	0.00
D_LOSS	0.039	1.12	−0.002	−0.10	1.08
D_SOE	0.035	1.29	−0.049	−1.70*	4.64**
D_SPECIALIST	0.084	2.35**	0.026	0.89	1.73
D_BIG4	0.279	5.59***	0.146	2.83***	3.53*
D_BIGLOCAL	0.180	4.63***	0.043	1.71*	8.90***
SWITCH	−0.120	−2.50**	−0.050	−1.83*	1.61
Constant	0.129	5.96***	0.402	15.96***	67.39***
Year-fixed effects	Yes		Yes		
N	1039		2188		
Adj. R^2	0.283		0.314		

Testing the equality of coefficients between *L_POSRES* and *L_NEGRES*

	Pre-disclosure period (1998–2000)	Post-disclosure period (2001–2003)
F-statistic (p-value)	0.81 (0.367)	18.41 (<0.0001)

Robust t-statistics are reported based on standard errors clustered by company.
Variable definitions: *D_X*: yearly change in variable X.
LAF: natural log of audit fees in RMB10,000.
L_POSRES: the prior-year *RES* (i.e., audit fee residual) if the prior-year *RES* > 0 and 0 otherwise.
L_NEGRES: the prior-year *RES* (i.e., audit fee residual) if the prior-year *RES* < 0 and 0 otherwise.
LTA: natural log of total assets in RMB10,000.
SQSUBS: square root of consolidated subsidiaries.
CATA: current assets to total assets.
QUICK: ratio of current assets (less inventory) to current liabilities.
LEV: total liabilities to total assets.
ROA: net income to total assets.
LAGOP: 1 for a prior-year modified audit opinion and 0 otherwise.
LOSS: 1 if the net income is negative and 0 otherwise.
SOE: 1 if the largest shareholder of the company is the government or a State-owned enterprise and 0 otherwise.
SPECIALIST: 1 for the first- or second-ranked audit firm as an industry leader and 0 otherwise.
BIG4: 1 if the auditor is a Big 4 audit firm and 0 otherwise.
BIGLOCAL: 1 if the auditor is a local top-10 audit firm based on the sum of total assets audited by an audit firm for each year and 0 otherwise.
SWITCH: 1 for an initial audit engagement and 0 otherwise.
*** Represents significance at the 0.01 level (two-tailed).
** Represents significance at the 0.05 level (two-tailed).
* Represents significance at the 0.10 level (two-tailed).

Comparing the magnitude of coefficients between *L_POSRES* and *L_NEGRES* also reveals a similar pattern. For example, in the year immediately before the public fee disclosure mandate, the coefficient on *L_NEGRES* is significantly more negative than that on *L_POSRES*, suggesting that auditors had a greater bargaining power over clients in negotiating audit fees when the audit pricing information was not publicly available. However, the auditors' advantage disappeared in the initial disclosure year (i.e., 2001), as evidenced by the statistical insignificance of the coefficients on *L_NEGRES* and *L_POSRES*. Furthermore, clients gained greater bargaining power over auditors after the second disclosure year, as evidenced by the coefficients on *L_POSRES* being significantly more negative than those on *L_NEGRES* in 2002 and 2003.

Overall, as shown in Table 6, the pre-disclosure trend of audit fee adjustments is just opposite to the post-disclosure trend, which suggests that public fee disclosure weakens auditors' advantage in audit pricing information and reinforces the bargaining power of clients relative to auditors when negotiating audit fees.

4.5. Alternative audit fee change model

In addition to using the fiscal year change in audit fees as the dependent variable, we follow Hackenbrack, Jenkins, and Pevzner (2014), who use the fiscal year percentage change in audit fees, and estimate the following model:

$$\%\Delta AF\_Ind = \alpha + \beta_1 L\_POSRES + \beta_2 L\_NEGRES + Controls + \varepsilon \quad (5)$$

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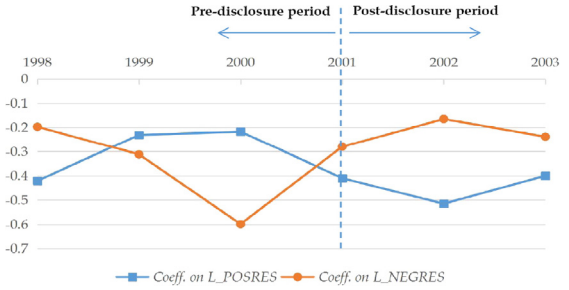
Table 6
Audit fee adjustments to prior-year abnormal fees: the trend surrounding public fee disclosure.

Panel A: Regression results

Dep. Var.: *D_LAF*	Pre-disclosure period (1998-2000)			Post-disclosure period (2001-2003)		
	1998 Coeff. (t-stat.)	1999 Coeff. (t-stat.)	2000 Coeff. (t-stat.)	2001 Coeff. (t-stat.)	2002 Coeff. (t-stat.)	2003 Coeff. (t-stat.)
L_POSRES	−0.421 (−6.43)***	−0.231 (−3.37)***	−0.217 (−2.37)**	−0.410 (−4.38)***	−0.515 (−11.32)***	−0.400 (−9.63)***
L_NEGRES	−0.197 (−2.11)**	−0.312 (−5.14)***	−0.599 (−7.72)***	−0.280 (−2.49)**	−0.165 (−3.87)***	−0.238 (−4.82)***
Control variables	Yes	Yes	Yes	Yes	Yes	Yes
N	299	458	282	401	834	953
Adj. R^2	0.330	0.186	0.352	0.120	0.263	0.242
Testing the equality of coefficients between *L_POSRES* and *L_NEGRES*						
F-statistic	2.68	0.55	7.07	0.54	21.79	4.39
(p-value)	0.102	0.457	0.008	0.465	<0.0001	0.037

Panel B: Trend of audit fee adjustments to prior-year abnormal fees



Robust t-statistics are reported based on standard errors adjusted for heteroskedasticity.
The same set of control variables used in Table 5 (except for year-fixed effects) is included but untabulated for the sake of brevity.
Variable definitions: *D_X*: yearly change in variable X.
LAF: natural log of audit fees in RMB10,000.
L_POSRES: the prior-year *RES* (i.e., audit fee residual) if the prior-year *RES* > 0 and 0 otherwise.
L_NEGRES: the prior-year *RES* (i.e., audit fee residual) if the prior-year *RES* < 0 and 0 otherwise.
*** Represents significance at the 0.01 level (two-tailed).
** Represents significance at the 0.05 level (two-tailed).

Consistent with Hackenbrack et al. (2014), Eq. (5) uses the fiscal year percentage change in audit fees, adjusted by the industry median (i.e., company i's fiscal year percentage change in audit fees minus the industry median of fiscal year percentage change in audit fees). We also replace the continuous control variables in Eq. (4) with the fiscal year percentage changes in client characteristics, such as *%ΔTA*, *%ΔSUBS*, *%ΔCATA*, *%ΔQUICK*, *%ΔLEV*, and *%ΔROA*. To be consistent with Hackenbrack et al. (2014), we use the dichotomous control variables (e.g., *BIG4*) in Eq. (5) instead of the annual change of them (e.g., *D_BIG4*), as we use in Eq. (4).

Table 7 reports the regression results of Eq. (5). The coefficients on *L_POSRES* and *L_NEGRES* are still significantly negative ($p < 0.01$) in both the pre- and post-disclosure periods. More importantly, the coefficient on *L_POSRES* is significantly more negative in the post-disclosure period than in the pre-disclosure period ($p < 0.01$), and the coefficient on *L_NEGRES* is significantly less negative in the post-disclosure period than in the pre-disclosure period ($p < 0.05$). All of these results are qualitatively similar to those reported in Table 5, which suggests that our main findings are not sensitive to how we measure the dependent variable for audit fee changes.

4.6. Moderating effect of client riskiness

There are other factors that are likely to affect client-auditor bargaining power, such as the riskiness of a client. Although public fee disclosure reinforces the magnitude of an audit fee decrease for overcharged clients, we expect that riskier clients enjoy fewer such benefits given their lower desirability (and thus relatively lower bargaining power). We re-estimate Eq. (4) by including an indicator variable, *HRISK* (coded as 1 if the company suffers a net loss or receives a modified audit opinion in the current period and 0 otherwise), and its interaction items with *L_POSRES* and *L_NEGRES* using pre- and post-disclosure period samples, respectively. As riskier clients may lose some benefits of decreased information asymmetry on audit fees due to the public fee disclosure, we expect the coefficient on *L_POSRES* * *HRISK* to be significantly more positive in the post-disclosure period than in the pre-disclosure period.

As Table 8 shows, the coefficient on *L_POSRES* * *HRISK* is significantly positive in the post-disclosure period ($p < 0.05$). Moreover, the across-period difference in the coefficient on *L_POSRES* * *HRISK* is also significant ($p < 0.05$), indicating that riskier clients enjoy fewer benefits of an audit fee decrease for overcharged clients due to public fee disclosure. Therefore, Table 8 provides corroborating evidence that public fee disclosure alters the relative bargaining power of clients and auditors.

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Table 7
Regression results of alternative audit fee change models.

Dep. Var.: %ΔAF_Ind	Pre-disclosure period (1998–2000)		Post-disclosure period (2001–2003)		Testing equality of coefficient
	Coefficient	t-statistic	Coefficient	t-statistic	Chi-square
L_POSRES	−0.229	−4.23***	−0.414	−10.45***	7.68***
L_NEGRES	−0.700	−6.04***	−0.379	−5.48***	5.79**
%Δ*TA*	0.393	6.38***	0.144	2.64***	9.16***
%Δ*SUBS*	0.025	1.53	0.034	2.47**	0.19
%Δ*CATA*	−0.138	−1.72*	−0.045	−0.64	0.78
%Δ*QUICK*	0.017	0.58	0.020	0.59	0.00
%Δ*LEV*	0.060	1.09	0.017	0.35	0.35
%Δ*ROA*	−0.002	−0.88	−0.000	−0.14	0.22
OP	0.040	1.04	0.048	1.22	0.02
LOSS	−0.045	−0.97	−0.082	−2.57**	0.46
SOE	0.005	0.16	−0.025	−1.13	0.56
SPECIALIST	0.051	1.06	0.019	0.47	0.24
BIG4	−0.368	−2.76***	0.029	0.63	8.12***
BIGLOCAL	0.025	0.82	0.013	0.47	0.10
SWITCH	−0.136	−2.02**	−0.040	−0.85	1.39
Constant	−0.047	−0.96	0.375	7.45***	36.34***
Year-fixed effects	Yes		Yes		
N	1039		2188		
Adj. R^2	0.251		0.161		

Robust t-statistics are reported based on standard errors clustered by company.
Variable definitions: %Δ*AF*: fiscal year percentage change in raw audit fees (*AF*) (i.e., $(AF_t - AF_{t-1}) / AF_{t-1}$).
%Δ*AF_Ind*: industry median adjusted %Δ*AF* based on the CSRC industry classification (two-digit code for manufacturing industries and one-digit code for other industries).
L_POSRES: the prior-year *RES* (i.e., audit fee residual) if the prior-year *RES* > 0 and 0 otherwise.
L_NEGRES: the prior-year *RES* (i.e., audit fee residual) if the prior-year *RES* < 0 and 0 otherwise.
%Δ*TA*: fiscal year percentage change in total assets.
%Δ*SUBS*: fiscal year percentage change in the number of consolidated subsidiaries (*SUBS*) (i.e., $(SUBS_t - SUBS_{t-1} + 1) / (SUBS_{t-1} + 1)$).
%Δ*CATA*: fiscal year percentage change in *CATA* (current assets to total assets).
%Δ*QUICK*: fiscal year percentage change in *QUICK* (ratio of current assets [less inventory] to current liabilities).
%Δ*LEV*: fiscal year percentage change in *LEV* (total liabilities to total assets).
%Δ*ROA*: fiscal year percentage change in *ROA* (net income to total assets).
OP: 1 for a modified audit opinion and 0 otherwise.
LOSS: 1 if the net income is negative and 0 otherwise.
SOE: 1 if the largest shareholder of the company is the government or a State-owned enterprise and 0 otherwise.
SPECIALIST: 1 for the first- or second-ranked audit firm as an industry leader and 0 otherwise.
BIG4: 1 if the auditor is a Big 4 audit firm and 0 otherwise.
BIGLOCAL: 1 if the auditor is a local top-10 audit firm based on the sum of total assets audited by an audit firm for each year and 0 otherwise.
SWITCH: 1 for an initial audit engagement and 0 otherwise.
*** Represents significance at the 0.01 level (two-tailed).
** Represents significance at the 0.05 level (two-tailed).
* Represents significance at the 0.10 level (two-tailed).

5. Conclusion

Using both private and public audit fee data in China, we provide further evidence that public fee disclosure directly affects audit fees. Specifically, we find that public fee disclosure reinforces downward fee adjustments for overcharged clients and weakens upward fee adjustments for undercharged clients. This is consistent with clients gaining more relative bargaining power than auditors after public fee disclosure. Our evidence suggests an unintended consequence of fee disclosure regulation and should be helpful in resolving the debate that arises when only public audit fee data are used to test the effect of public fee disclosure on audit fees (Francis and Wang, 2005; Mayhew, 2005).

Our extension of prior studies is based on audit fee data in China. As the Chinese public accounting profession was in its development stage during our sample period, potentially making it quite different from its counterparts in developed audit markets such as the U.S. (e.g., Chen, Chen, Lobo and Wang, 2011; DeFond, Wong and Li, 2000; Gul, Sami and Zhou, 2009), readers should exercise caution when generalizing our conclusion to settings beyond China.

Moreover, we acknowledge that an ideal test of the effect of public fee disclosure would involve difference-in-differences analysis, whereby pre- and post-disclosure changes in fees in China would be compared with a control sample (preferably one with an institutional background similar to that of China) that did not undergo similar regulatory change. Such a control sample is unfortunately not readily available.

Finally, as public fee disclosure weakens the ability of auditors to adjust audit fees upward for undercharged clients, further study may explore whether audit quality is compromised for such clients as an unintended consequence of public fee disclosure.

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Table 8
Regression results of audit fee change models: the moderating effect of client riskiness.

	Pre-disclosure period (1998–2000)		Post-disclosure period (2001–2003)		Testing equality of coefficient
Dep. Var.: *D_LAF*	Coefficient	t-statistic	Coefficient	t-statistic	Chi-square
L_POSRES	−0.272	−5.19***	−0.517	−13.18***	15.71***
L_POSRES * *HRISK*	−0.123	−1.12	0.182	2.02**	4.66**
L_NEGRES	−0.347	−6.90***	−0.198	−4.84***	5.43**
L_NEGRES * *HRISK*	−0.183	−1.38	−0.128	−1.35	0.11
HRISK	0.008	0.23	−0.045	−1.52	1.27
Control variables	Yes		Yes		
N	1039		2188		
Adj. R^2	0.288		0.315		

Robust t-statistics are reported based on standard errors clustered by company.
The same set of control variables used in Table 5 (except for *D_LAGOP* and *D_LOSS*, as they are largely captured by *HRISK*) is included but untabulated for the sake of brevity.
Variable definitions: *D_X*: yearly change in variable X.
LAF: natural log of audit fees in RMB10,000.
L_POSRES: the prior-year *RES* (i.e., audit fee residual) if the prior-year *RES* > 0 and 0 otherwise.
L_NEGRES: the prior-year *RES* (i.e., audit fee residual) if the prior-year *RES* < 0 and 0 otherwise.
HRISK: 1 if the company suffers a net loss or receives a modified audit opinion in the current period and 0 otherwise.
*** Represents significance at the 0.01 level (two-tailed).
** Represents significance at the 0.05 level (two-tailed).

References

Beattie, V., Brandt, R., & Fearnley, S. (2000). Behind the audit report: A descriptive study of discussions and negotiations between auditors and directors. *International Journal of Auditing*, *4*(2), 177–202.
Causholli, M., & Knechel, W. R. (2012). An examination of the credence attributes of an audit. *Accounting Horizons*, *26*(4), 631–656.
Chaney, P. K., Jeter, D. C., & Shaw, P. E. (1997). Client-auditor realignment and restrictions on auditor solicitation. *The Accounting Review*, *72*(3), 433–453.
Chen, H., Chen, J. Z., Lobo, G. J., & Wang, Y. (2011). Effects of audit quality on earnings management and cost of equity capital: Evidence from China. *Contemporary Accounting Research*, *28*(3), 892–925.
Craswell, A. T., & Francis, J. R. (1999). Pricing initial audit engagements: A test of competing theories. *The Accounting Review*, *74*(2), 201–216.
DeAngelo, L. E. (1981a). Auditor independence, 'low balling', and disclosure regulation. *Journal of Accounting and Economics*, *3*(2), 113–127.
DeAngelo, L. E. (1981b). Auditor size and audit quality. *Journal of Accounting and Economics*, *3*(3), 183–199.
DeFond, M. L., Wong, T. J., & Li, S. (2000). The impact of improved auditor independence on audit market concentration in China. *Journal of Accounting and Economics*, *28*(3), 269–305.
Francis, J. R., & Wang, D. (2005). Impact of the SEC's public fee disclosure requirement on subsequent period fees and implications for market efficiency. *Auditing: A Journal of Practice & Theory*, *24 (Supplement)*, 145–160.
Francis, J. R., Reichelt, K., & Wang, D. (2005). The pricing of national and city-specific reputations for industry expertise in the U.S. audit market. *The Accounting Review*, *80*(1), 113–136.
Gul, F. A., Sami, H., & Zhou, H. (2009). Auditor disaffiliation program in China and auditor independence. *Auditing: A Journal of Practice & Theory*, *28*(1), 29–51.
Hackenbrack, K. E., Jenkins, N. T., & Pevzner, M. (2014). Relevant but delayed information in negotiated audit fees. *Auditing: A Journal of Practice & Theory*, *33*(4), 95–117.
Hay, D., & Knechel, W. R. (2010). The effects of advertising and solicitation on audit fees. *Journal of Accounting and Public Policy*, *29*(1), 60–81.
Hay, D., Knechel, W. R., & Wong, N. (2006). Audit fees: A meta-analysis of the effect of supply and demand attributes. *Contemporary Accounting Research*, *23*(1), 141–191.
Healy, P. M., & Palepu, K. G. (2001). Information asymmetry, corporate disclosure, and the capital markets: A review of the empirical disclosure literature. *Journal of Accounting and Economics*, *31*(1–3), 405–440.
Huang, H. W., Raghunandan, K., & Rama, D. (2009). Audit fees for initial audit engagements before and after SOX. *Auditing: A Journal of Practice & Theory*, *28*(1), 171–190.
Jeter, D. C., & Shaw, P. E. (1995). Solicitation and auditor reporting decisions. *The Accounting Review*, *70*(2), 293–315.
Mayhew, B. W. (2005). Discussion of impact of the SEC's public fee disclosure requirement on subsequent period fees and implications for market efficiency. *Auditing: A Journal of Practice & Theory*, *24 (Supplement)*, 161–169.
Simon, D. T., & Francis, J. R. (1988). The effects of auditor change on audit fees: Tests of price cutting and price recovery. *The Accounting Review*, *63*(2), 255–269.
Simunic, D. A. (1980). The pricing of audit services: Theory and evidence. *Journal of Accounting Research*, *18*(1), 161–190.
Simunic, D. A., & Wu, X. (2009). China-related research in auditing: A review and directions for future research. *China Journal of Accounting Research*, *2*(2), 1–25.
Wang, Q., Wong, T. J., & Xia, L. (2008). State ownership, the institutional environment, and auditor choice: Evidence from China. *Journal of Accounting and Economics*, *46*(1), 112–134.

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