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Regulatory investigations of audit partners and audit quality improvement*

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ABSTRACT

Prior studies of the effect of regulatory monitoring on audit quality focus on regulatory sanctions but ignore regulatory investigations. We hand-collected data on the China Securities Regulatory Commission (CSRC) investigations announced during 2001–2015 to examine the impact of CSRC investigations on the audit quality of the targeted partners. We find that after the audit partners are investigated by the CSRC, their clients exhibit a lower absolute value of discretionary accruals and the partners are more likely to issue modified audit opinions. Our results suggest that CSRC investigations lead to improvement in the audit quality of the partners involved in the investigations. In contrast, CSRC sanctions have a relatively weak effect on the audit quality of the involved partners. Overall, our study provides evidence that CSRC monitoring helps to improve the audit quality of audit partners, and the effect manifests around CSRC investigations.

KEYWORDS

Audit partners; audit quality; CSRC investigations; regulatory monitoring

1. Introduction

Regulators play a critical role in monitoring auditors. Since 2000, the China Securities Regulatory Commission (CSRC) has enhanced its monitoring of auditors, and thus auditors are being investigated and sanctioned in increasing numbers (Fang, 2011). The existing literature on regulatory monitoring often focuses on regulatory sanctions but largely ignores regulatory investigations, so Wu and Zhang (2014) call for more research on regulatory investigations.¹ In particular, prior studies examine audit quality changes around CSRC sanctions and provide mixed evidence on the effect of regulatory monitoring of audit quality (e.g. Fang, 2011; Firth, Mo, & Wong, 2014; Liu, 2013; Wang, Li, Su, & Tang, 2011; Wu, 2008). It is worth noting that regulators often investigate auditors long before the sanctions are imposed, and the lag between a CSRC investigation and the sanction that follows is often more than two years. If auditors improve their audit quality immediately after the investigations, it is possible that the auditors will have already improved audit quality by the time

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¹One possible reason why prior studies seldom examine regulatory investigation is that before 2005, the investigation dates were rarely publicly disclosed. In recent years, more information on CSRC investigations has been publicly disclosed, which facilitates the identification of investigation dates and examination of the effects of CSRC investigations.

the CSRC sanctions are imposed. Consequently, audit quality may not significantly change after CSRC sanctions, which may explain why prior studies find a weak effect of CSRC sanctions on audit quality. In other words, the effect of the CSRC's monitoring of audit quality can be underestimated if the audit quality changes around CSRC investigations are overlooked. In addition, Lennox and Wu (2016) emphasise that the understanding of audit partner behaviour is limited and request more research on audit partners. In response to these calls for research from Wu and Zhang (2014) and Lennox and Wu (2016), our study examines whether audit partners provide assurance of better quality after they are investigated by the CSRC.

We predict that audit partners will improve their assurance quality after CSRC investigations. Wu and Zhang (2014) find that the stock market reacts more negatively to CSRC investigation announcements than to CSRC sanction announcements. Their finding suggests that, compared with sanction announcements, investigation announcements are more informative for investors and can attract more attention from capital market participants. Moreover, rational learning theory suggests that agents learn from experience and adjust their future behaviour (Andenaes, 1966; Lennox & Li, 2014; Muth, 1961; Townsend, 1978). Audit partners being investigated by the CSRC can rationally revise their assessment of the probability of being investigated upward, and thus are likely to improve their audit quality to avoid future investigations. In addition, a CSRC investigation can cause the involved partners² to realise that their audit quality is poor and that they need to take action to improve. Therefore, we posit that CSRC investigations can deter the involved audit partners from providing low-quality attestation.

Consistent with our prediction, we find that after the CSRC investigates audit partners, the partners improve their audit quality. Specifically, we find that after the investigations, clients of the involved partners report discretionary accruals with lower absolute value and the partners are more likely to issue modified audit opinions. Moreover, we find that CSRC investigations reduce the absolute value of positive discretionary accruals, while the investigations have little effect on the absolute value of negative discretionary accruals. This finding is consistent with the intuition that regulators are mainly concerned with upward earnings management, and thus auditors constrain upward earnings management more after the investigations. In contrast, there is no evidence that the audit quality of the involved partners significantly changes after CSRC sanctions. Overall, our results suggest that the monitoring through CSRC investigations can pressure the involved partners to improve audit quality.

This paper contributes to the literature on the impact of regulatory monitoring on audit quality. Prior studies conducted in this area focus on the effect of CSRC sanctions on audit quality. They provide mixed evidence on the effect of regulatory monitoring (e.g. Fang, 2011; Firth, Mo, & Wong, 2014; Liu, 2013; Wang et al., 2011; Wu, 2008). This study advances the literature by examining, instead, the effect of CSRC investigations. Because auditors can improve their audit quality after investigations and need not wait for sanctions to act, studying the effect of CSRC investigations can increase the testing power. By examining audit quality changes around CSRC investigations, we find strong evidence that CSRC investigations induce the involved audit partners to improve audit quality.

²In the remainder of this article, we use the terms 'involved partner' and 'targeted audit partner' interchangeably to refer to the person who has been investigated by the CSRC.

This study also adds to the literature on audit partners. Because auditing services are delivered by engagement partners in specific offices, audit partners play an important role in determining audit quality (DeFond & Francis, 2005; Francis, 2011; Lennox & Wu, 2016). Recent auditing research emphasises the role of audit partners in audit quality and shows that audit quality is not homogeneous within an audit firm (e.g. Cameran, Campa & Francis, 2017; Chen, Sun & Wu, 2010; Gul, Wu & Yang, 2013; Knechel, Vanstraelen & Zerni, 2015). In line with this stream of literature, our findings suggest that regulatory monitoring of audit partners can influence heterogeneity in audit quality within an audit firm.

The remainder of the article is organised as follows. Section 2 describes the research background and develops our research hypothesis. Section 3 introduces the research design and Section 4 reports the empirical results. We conclude with Section 5.

2. Research background and hypothesis development

2.1. Institutional background

The audit market in China has developed rapidly with the growth of the Chinese economy. According to data from the Chinese Institute of Certified Public Accountants (updated 30 June 2016), there are over 8,000 audit firms and more than 300,000 individual auditors in China. However, due to government regulations, only a few audit firms are qualified to provide assurance services to public companies. For example, approximately 40 audit firms were qualified to audit public companies in 2014.

The CSRC is the main governmental agency responsible for regulating the Chinese stock market, and it has the authority to regulate the auditing of public companies. Unlike US auditing standards, auditing standards in China require the individual auditors who lead the auditing work to sign the audit report. There are typically two signees on each audit report. One is typically the auditor who leads the fieldwork, and the other is the partner who primarily reviews the audit work. The institutional requirement facilitates identification of the audit partners who are responsible for an audit report.

When audit firms or audit partners engage in misconduct, the CSRC can investigate and sanction them. CSRC sanctions of auditors include warnings, pecuniary penalties, and suspension or termination of their licences. In the early 2000s, a number of CSRC sanctions punished audit partners but not audit firms (Wu, 2008), but in the recent decade sanctions have typically been imposed on both audit firms and audit partners.

2.2. Related literature

Accounting scandals attract public attention, and the academy has a growing interest in the economic consequences of audit failure. Several studies show that audit failure leads to reputation damage for auditors and that auditors lose clients after audit failures (Firth, 1990; Sami, Kim, Zhou, & Fang, 2012; Wilson & Grimlund, 1990; Zheng & Xu, 2011). Audit failure also results in sharp drops in stock prices and huge losses for investors (Chaney & Philipich, 2002; Krishnamurthy, Zhou & Zhou, 2006; Moreland, 1995; Zhu, He, Sun & Lu, 2008). Furthermore, a low-quality audit has a contagion effect, in the sense that an auditor who fails at auditing for one client typically provides low-quality attestation for other clients (Francis & Michas, 2013; Li, Qi, Tian, & Zhang, 2017; Su & Wu, 2016). Therefore, the public often pressures regulators to strengthen their monitoring of auditors after audit failures. In

the US, the Public Company Accounting Oversight Board (PCAOB) was established after the Enron scandal to enhance monitoring of the audit profession. In China, the CSRC has recently strengthened oversight of auditors, and consequently more auditors are investigated and sanctioned (Fang, 2011). Given the increased attention to monitoring the audit profession, research on the effectiveness of the monitoring practices should be of interest to regulators and the public.

The emerging literature examines the effectiveness of regulatory monitoring of the audit profession. One stream of literature examines the effect of PCAOB inspections on the audit quality of US audit firms. Using the PCAOB's first-time inspections of small and medium-sized audit firms, Gramling, Krishnan, and Zhang (2011) find that audit firms are more likely to issue going concern opinions after the inspections, and this result is more pronounced for auditors with audit deficiencies identified by the PCAOB. DeFond and Lennox (2017) show that PCAOB inspections induce audit firms to remediate deficiencies in internal control auditing, and thus to improve the quality of internal control auditing. These studies provide evidence that regulatory inspections of audit firms enhance audit quality. However, because PCAOB inspections target audit firms but not audit partners, and because it is difficult to identify engagement partners for client firms in the US setting, these studies do not examine whether regulatory inspections targeting audit partners can influence the audit quality of the involved partners.

Another stream of literature examines the effect of CSRC sanctions on audit quality, but provides mixed evidence. Wu (2008) finds no evidence that sanctions against individual auditors prompt the affiliated audit firms to enhance audit quality. Wang et al. (2011) do not find evidence that the audit quality of the involved audit firms, or that of the involved audit partners, is significantly improved after sanctions. On the other hand, several studies argue that CSRC sanctions enhance the audit quality of the involved audit firms. Fang (2011), Sami et al. (2012) and Liu (2013) document that after CSRC sanctions, clients of the involved audit firms report lower discretionary accruals. Liu (2013) shows that auditors charge higher audit fees after CSRC sanctions. Zhu and Wu (2009) and Firth et al. (2014) find that following CSRC sanctions, the involved audit firms are more likely to issue modified audit opinions. All of these studies focus on CSRC sanctions, and none of them examines the effect of CSRC investigations. In addition, most of the studies look into the audit quality of audit firms rather than of the involved audit partners.

2.3. CSRC investigations and audit quality

The rational learning theory explains that agents learn from their experience and adjust their future behaviour accordingly (Andenaes, 1966; Muth, 1961; Lennox & Li, 2014; Townsend, 1978). The experiences of the audit partners in CSRC investigations can prompt them to improve audit quality for three primary reasons. First, after CSRC investigations, the involved audit partners may realise that their audit quality is generally insufficient. Such an assessment is reasonable, based on findings by Li et al. (2017) that an audit partner who fails in the audit of one client provides low-quality assurance for other clients as well. Second, audit partners being investigated by the CSRC can rationally revise upward their assessment of the probability of being punished in the future if they do not improve their audit quality. If the audit partners have repeated convictions for low audit quality, the punishment can be severe – the partners can suffer long-term prohibition from participation in capital market services, or

their Certified Public Accountant (CPA) qualifications may be revoked.³ Furthermore, while the litigation risk for auditors is low in China, audit failure can damage the auditors' reputations and lead to the loss of clients (Wang, Xin & Yang, 2009; Fang, 2011). Therefore, the partners involved in CSRC investigations have incentives to adjust their audit quality immediately after the investigations.⁴ We posit that the involved audit partners improve their audit quality after they are investigated by the CSRC, without waiting for CSRC sanctions to act.

Based on the preceding discussion, our hypothesis is stated as follows.

H1: Audit partners improve their audit quality after they are investigated by the CSRC.

3. Research design

3.1. Audit quality measurements

Following the literature on audit quality, we measure audit quality with two constructs: the absolute value of discretionary accruals of the clients and audit opinions for the clients. The absolute value of discretionary accruals indicates the extent to which auditors constrain the earnings management of their clients, and thus is our first measure of audit quality. Discretionary accruals are estimated with the modified Jones model. Because firm performance can influence accruals (Dechow, Kothari & Watts, 1998; Dechow, Sloan & Sweeney, 1995; Kothari, Leone & Wasley, 2005), we control for firm performance with the variable of return on assets in the modified Jones model. Specifically, we estimate discretionary accruals as follows:

$$\frac{ACC}{TA_{-1}} = \beta_0 + \beta_1 \left(\frac{1}{TA_{-1}} \right) + \beta_2 \left(\frac{\Delta SALES}{TA_{-1}} \right) + \beta_3 \frac{PPE}{TA_{-1}} + \beta_4 ROA + \varepsilon \quad (1)$$

$$NDA = \hat{\beta}_0 + \hat{\beta}_1 \left(\frac{1}{TA_{-1}} \right) + \hat{\beta}_2 \frac{\Delta SALES - \Delta AR}{TA_{-1}} + \hat{\beta}_3 \left(\frac{PPE}{TA_{-1}} \right) + \hat{\beta}_4 ROA \quad (2)$$

$$DA = \frac{ACC}{TA_{-1}} - NDA \quad (3)$$

where *ACC* is the total accruals, which is calculated as net income minus net operating cash flows; *TA₋₁* is the total assets in the prior year; $\Delta SALES$ is sales growth, which is calculated as sales in the current year minus sales in the prior year; *PPE* is the gross value of property, plant and equipment; *ROA* is return on assets, which is calculated as net income divided by the average value of the beginning balance of total assets and the ending balance of total assets in the current year; and ΔAR is the change in account receivables from the prior year to the

³For example, in 2013, due to lack of diligence in the IPO project of *Tian Feng Jie Neng*, Jinghui Wen was prohibited from providing audit services for 10 years, and in 2015 the prohibition period was extended for an additional 5 years as a result of involvement in the accounting fraud of *Hua Rui Feng Dian* (SH.601558) (CSRC sanction announcement [2015] No. 10).

⁴The stock market reaction to audit failures tends to manifest around investigation announcement dates rather than sanction announcement dates. The abnormal returns of other clients of *Zhong Tian Qin* were significantly negative on the date the regulator announced the investigation of *Zhong Tian Qin*, the audit firm involved in the accounting fraud of *Yin Guang Xia* (SZ.000557) (Fang, Xu & Hong, 2006). Wu and Zhang (2014) find that the stock market reacts more negatively to CSRC investigation announcements than to CSRC sanction announcements.

current year. To estimate discretionary accruals (*DA*), we first run a cross-sectional regression using Equation (1) for each industry-year containing at least ten observations. We then calculate non-discretionary accruals (*NDA*) with Equation (2), using the regression coefficients estimated from Equation (1). Finally, using Equation (3), we calculate discretionary accruals as the difference between total accruals and non-discretionary accruals. To capture both upward ($DA > 0$) and downward ($DA < 0$) earnings manipulation, we calculate the absolute value of discretionary accruals (*ADA*). A higher value for *ADA* indicates a higher level of earnings management and thus lower audit quality.

Our second measure of audit quality is based on the issuance of audit opinions. Specifically, we construct an indicator variable for modified audit opinion (*MAO*). *MAO* equals 1 if the client firm receives a modified audit opinion, and 0 otherwise. The issuance of audit opinions is the main channel through which auditors communicate with outside users of audited financial statements, and is one of the main outputs of audit work (DeFond & Francis, 2005). Auditors who are more independent are more likely to issue modified audit opinions. Thus, a higher propensity to issue modified audit opinions suggests higher audit quality.

3.2. Empirical models

We estimate the following models to test our hypothesis:

$$ADA/MAO = \beta_0 + \beta_1 POST + Controls + \varepsilon \quad (4)$$

$$ADA/MAO = \beta_0 + \beta_1 POST + \beta_2 POST \times INVOLVED + \beta_3 INVOLVED + Controls + \varepsilon \quad (5)$$

In both models, the dependent variables are audit quality measures that are either *ADA* or *MAO*. The models are estimated by an OLS (Probit) regression in which the dependent variables are *ADA* (*MAO*). We use Equation (4) to examine audit quality differences for the involved audit partners between the pre- and post-CSRC investigation periods. The dummy variable *POST* equals 1 if the observation is in the post-CSRC investigation period, and 0 if it is in the pre-CSRC investigation period. We estimate Equation (4) with a sample of audit engagements during the pre- and post-CSRC investigation periods of the involved audit partners. The coefficient on *POST* captures the audit quality difference between the pre- and post-CSRC investigation periods. Our hypothesis predicts a significantly negative (positive) coefficient on *POST* when the dependent variable is *ADA* (*MAO*).

To further corroborate the analysis, we use the difference-in-differences design in Equation (5). The treatment sample consists of audit engagements of the involved partners, while the control sample uses the engagements of non-involved partners in the same audit firm. The dummy variable *INVOLVED* equals 1 if the audit partner is investigated by the CSRC, and 0 otherwise. The interaction term $POST \times INVOLVED$ captures the audit quality changes of the involved partners after CSRC investigations, compared with those of the non-involved partners. The hypothesis predicts a significantly negative (positive) coefficient on the interaction term ($POST \times INVOLVED$) when the dependent variable is *ADA* (*MAO*).

Following Wang et al. (2011), Chen et al. (2010), Gul et al. (2013) and Firth et al. (2014), we control for client characteristics and auditor characteristics in models (4) and (5). The characteristics of client firms include operating cash flow (*OPERATING_CASHFLOW*), rate of sales growth (*SALES_GROWTH*), firm size (*LNASSETS*), leverage ratio (*LEVERAGE*), threshold of earnings (*EARNINGS_THRESHOLD*) and firm age (*AGE*). The auditor characteristics, which are

measured at both the firm and partner levels, include industry expertise (*INDUSTRY_EXPERTISE_FIRM*, *INDUSTRY_EXPERTISE_PARTNER*), audit tenure (*TENURE_FIRM*, *TENURE_PARTNER*), auditor size (*SIZE_FIRM*, *SIZE_PARTNER*) and auditor's economic dependence on a specific client (*CLIENT_IMPORTANCE_FIRM*, *CLIENT_IMPORTANCE_PARTNER*). When the dependent variable is audit opinion (*MAO*), we control for audit opinion in the prior year (*MAO_PRIOR*) and for net losses of clients (*LOSS*). Finally, we control for industry and year fixed effects in both models. The variable definitions are summarised in Table 1.

Although our hypothesis and research design focus on investigation events, for completeness we also examine the effects of CSRC sanctions. We define *POST_SANCTION* based on whether the sample year occurs after CSRC sanctions. We then estimate a model similar to model (4) and examine whether the audit quality of the involved partners improves significantly after CSRC sanctions.

Table 1. Variable definitions.

Variable	Definition
<i>ADA</i>	= the absolute value of discretionary accruals (<i>DA</i>). <i>DA</i> is estimated from the modified Jones model controlling for firm performance
<i>MAO</i>	= 1 if the client firm receives a modified audit opinion in the current year; = 0 otherwise
<i>POST</i>	= 1 if the observation is in the post-CSRC investigation window; = 0 if it is in the pre-CSRC investigation window. The pre-CSRC investigation window is from the second year before an investigation to the year preceding the investigation, and the post-CSRC investigation window is from the investigation year to the subsequent year
<i>INVOLVED</i>	= 1 if an audit partner is investigated by CSRC; = 0 otherwise
<i>OPERATING_CASHFLOW</i>	= net operating cash flow of the client firm in the current year divided by total assets in the prior year
<i>SALES_GROWTH</i>	= the rate of sales growth from the prior year to the current year
<i>LNASSETS</i>	= the size of a client firm, calculated as natural log of total assets in the current year
<i>LEVERAGE</i>	= total liability in the current year divided by total assets in the current year
<i>EARNINGS_THRESHOLD</i>	= 1 if return on equity is between 0 and 1% or between 6% and 7%; = 0 otherwise
<i>AGE</i>	= firm age, which is calculated as the number of years after IPO
<i>INDUSTRY_EXPERTISE_FIRM</i>	= industry expertise of an audit firm, which is measured as the sum of the sizes of the client firms in the industry, divided by the sum of the sizes of all of the firms in the same industry
<i>INDUSTRY_EXPERTISE_PARTNER</i>	= the average industry expertise of the two partners auditing the client firm. Industry expertise of an audit partner is measured as the sum of the sizes of client firms in the industry audited by the partner, divided by the sum of the sizes of firms in the industry
<i>TENURE_FIRM</i>	= the number of years an audit firm has audited the client
<i>TENURE_PARTNER</i>	= the average value of the tenure of the partners who signed the audit report. The tenure of a partner is calculated as the number of years the partner has audited the client
<i>SIZE_FIRM</i>	= audit firm size, which is measured as the sum of the sizes of clients of the audit firm
<i>SIZE_PARTNER</i>	= the average value of the signing audit partner sizes. The size of an audit partner is measured as the sum of the sizes of clients audited by the partner
<i>CLIENT_IMPORTANCE_FIRM</i>	= the importance of a client for its audit firm, which is calculated as the size of the client (<i>LNASSETS</i>) divided by the audit firm size (<i>SIZE_FIRM</i>)
<i>CLIENT_IMPORTANCE_PARTNER</i>	= the average importance of a client to its signing audit partners. The importance of a client for the audit partner is calculated as the client size (<i>LNASSETS</i>) divided by the sum of the sizes of clients audited by the partner
<i>MAO_PRIOR</i>	= 1 if the client firm received a modified audit opinion in the prior year; = 0 otherwise
<i>LOSS</i>	= 1 if the net income of the client firm is negative; = 0 otherwise
<i>POST_SANCTION</i>	= 1 if the observation is in the post-sanction window; = 0 if it is in the pre-sanction window. The pre-sanction window is from the second year before a CSRC sanction to the year preceding the sanction, and the post-sanction window is from the sanction year to the subsequent year

3.3. Data and sample selection

To construct our sample, we first collect data on CSRC sanctions against audit partners from the CSRC website.⁵ We collect 44 sanction announcements for the period 2001–2015, and then identify the dates when the CSRC began its investigation of the partners who were sanctioned. Next, we determine the investigation dates by reading the stock exchange filings of the involved listed firms. If the investigation dates are not disclosed in the filings, we search the internet for information on the dates. Of the 44 sanction events, we obtain investigation dates for 35 events.⁶ We find that 82 audit partners are involved in the 35 sanction cases for which we have investigation dates.⁷ The average time between the date an investigation began and the sanction announcement date is 2.6 years. Furthermore, we use the combination of partner names and audit firm names to match the involved audit partners with those in the CSMAR audit report database. This matching process results in 1,596 firm-year observations during the period 2000–2015. The matching results reveal that 25 (30%) of the involved partners do not provide audit services to listed clients after the investigations, and the average number of listed clients for the remaining involved partners drops by 29% in the year following an investigation. These findings suggest that CSRC investigations lead to a loss of clients for the involved audit partners.

To investigate the effects of CSRC investigations on the audit quality of the involved audit partners, we examine the audit quality difference between the pre- and the post-CSRC investigation windows. The pre-CSRC investigation window is measured from the second year before an investigation to the year preceding the investigation, and the post-CSRC investigation window is from the investigation year to the subsequent year. Given the 2.6-year average time between investigation and sanction announcement, ending the post-investigation window at the year subsequent to the CSRC investigation year mitigates the concern that the post-investigation window might overlap with the post-sanction window.⁸ To address concerns regarding audit partner turnover around investigations and any related self-selection bias, it is important to restrict the sample to continuous audit engagements. Therefore, we examine whether the same audit partner provides a higher-quality assurance service to the same client after being involved in a CSRC investigation. These requirements leave us with 238 firm-year observations of continuous audits in the test window. We further exclude (1) client firms targeted in CSRC investigations and client firms in the financial industry and (2) observations with missing variables in the regression analysis. We do not require the number of observations in the pre- and post-investigation periods to be equal. Instead, we require only that for each sample firm there be at least one observation in both the pre- and post-event periods.⁹ In the end, we obtain 197 firm-year observations of clients of involved audit partners.

⁵<http://www.csrc.gov.cn/pub/zjhpublic/index.htm>.

⁶The nine sanctions for which investigation dates cannot be identified were typically announced before 2005.

⁷A sanction event can have more than two involved partners.

⁸If we define the post-investigation window as the period from the investigation year to the third year after the CSRC investigation, the post-investigation window is highly likely to overlap with the post-sanction window. In the robustness check, we extend or shorten the event window by one year, respectively, and further require that the post-investigation window be before the sanction announcement dates. Our results are robust to these alternative research designs.

⁹For example, supposing that client A of the audit partner was investigated by the CSRC in June 2009, the sample selection process for each client firm other than client A of this audit partner is as follows. First, we check whether audit reports for the client for fiscal years 2008 and 2009 are both signed by this audit partner. If that is the case, the 2-year observations are included in the sample; otherwise, we eliminate the client firm. We further check whether the audit reports for fiscal years 2007 and 2010 are signed by this audit partner. If it is the case for 2010 (2007), we include the observation for 2010 (2007) in our sample.

Table 2. Sample selection.

	CSRC events	Clients of the partner investigated by CSRC	Control sample
CSRC sanctions with audit partners involved (2001–2015)	44		
Exclude: sanctions for which investigation dates cannot be identified	(9)		
CSRC investigations with investigation date information	35		
Firm-year observations of continuous audit engagements		238	976
Exclude:			
(1) clients targeted in CSRC investigations		(35)	–
(2) observations with missing variables		(6)	(79)
Final sample size		197	897

Similar to the preceding process, we construct a control sample for the difference-in-differences test. The control sample consists of continuous audit engagements of the non-involved audit partners of the involved audit firms in the same test windows. There are 897 observations in the control sample. The sample selection procedures are presented in Table 2.

The audit reports and financial data used in this paper are extracted from the CSMAR database. To mitigate the influence of outliers, all continuous variables are winsorised at the first and 99th percentiles. In the regression analysis, we use robust standard errors clustered by firm to control for heteroscedasticity and serial correlation.

4. Empirical results

4.1. Descriptive statistics

Table 3 reports the summary statistics of the variables in the regression analysis. Although our sample size is relatively small, the values of several variables, such as audit tenure and client importance, are quite similar to those of Chen et al. (2010) and Gul et al. (2013). Meanwhile, we note that the mean value of the total assets of the client firms in our sample is smaller than the market average, which indicates that, due to limited financial resources, small firms may be less likely to hire high-quality auditors. In addition, the involved audit firms are typically small or medium-sized firms, which suggests that small and medium-sized audit firms have relatively low audit quality due to resource constraints (Gramling et al., 2011). As described in the sample selection procedures (Section 3.3), we do not require the sample size in the pre- and post-investigation periods to be strictly equal; thus, the experiment variable *POST* has a mean value of 47.2%, which is slightly different from 50%.

Table 4 presents the results of a univariate analysis. The mean values of our first (second) audit quality measure, *ADA (MAO)*, in subsamples of the pre- and post-investigation periods are 0.018 (0.125) and 0.011 (0.269), respectively. The t-test shows that compared with the pre-investigation period (*POST* = 0), *ADA (MAO)* is significantly lower (higher) in the post-investigation period (*POST* = 1). These results are consistent with our hypothesis that CSRC investigations have a positive effect on the audit quality of the involved audit partners.

Table 3. Summary statistics for the clients of the partners investigated by the CSRC.

Variables	N	Mean	Sd.	25%	Median	75%
ADA	197	0.014	0.030	0.002	0.005	0.013
MAO	197	0.193	0.396	0.000	0.000	0.000
POST	197	0.472	0.500	0.000	0.000	1.000
OPERATING_CASHFLOW	197	0.032	0.103	0.000	0.040	0.080
SALES_GROWTH	197	0.097	0.429	-0.129	0.085	0.306
LNASSETS	197	2.584	0.898	2.119	2.563	3.254
LEVERAGE	197	0.577	0.178	0.468	0.589	0.698
EARNINGS_THRESHOLD	197	0.096	0.296	0.000	0.000	0.000
AGE	197	9.301	4.271	6.250	9.000	12.250
INDUSTRY_EXPERTISE_FIRM	197	0.043	0.029	0.022	0.034	0.059
INDUSTRY_EXPERTISE_PARTNER	197	0.025	0.021	0.011	0.019	0.029
TENURE_FIRM	197	4.269	2.398	3.000	4.000	5.000
TENURE_PARTNER	197	2.622	0.923	2.000	2.500	3.000
SIZE_FIRM	197	89.306	49.582	40.599	98.093	124.301
SIZE_PARTNER	197	11.300	6.567	6.019	9.748	15.082
CLIENT_IMPORTANCE_FIRM	197	0.068	0.134	0.018	0.027	0.075
CLIENT_IMPORTANCE_PARTNER	197	0.330	0.249	0.161	0.250	0.438
MAO_PRIOR	197	0.132	0.339	0.000	0.000	0.000
LOSS	197	0.188	0.392	0.000	0.000	0.000

Note: The variables are defined in Table 1.

Table 4. Univariate analysis.

Audit quality		POST = 0		POST = 1		t-test	
Measurements	N	N	Mean	N	Mean	Difference	t-stat.
ADA	197	104	0.018	93	0.011	-0.007*	-1.75
MAO	197	104	0.125	93	0.269	0.144**	2.58

Notes: ADA is the absolute value of discretionary accruals. MAO is the dummy variable for audit opinion. MAO is equal to 1 if the client firm receives a modified audit opinion in the current year; otherwise MAO is equal to 0. POST is equal to 1 if the observation is in the post-CSRC investigation window, and is equal to 0 if the observation is in the pre-CSRC investigation window. ** and * represent 5% and 10% significance levels, respectively (two-tailed).

4.2. Regression analysis

In Table 5 we report the regression results for models (4) and (5), using the absolute value of discretionary accruals (ADA) as the dependent variable. Column (1) of Panel A shows that the coefficient on POST is significantly negative (coefficient = -0.015; t-stat. = -2.23). In addition, column (2) shows that the coefficient on POST × INVOLVED is significantly negative (coefficient = -0.008; t-stat. = -2.08). These results suggest that after CSRC investigations, the involved audit partners are more likely to constrain the earnings management of their clients. Thus, the results support our hypothesis that the involved partners improve their audit quality after CSRC investigations. Interestingly, the difference-in-differences test documents that the coefficient on POST is not statistically significant (coefficient = -0.003; t-stat. = -1.23), and this result suggests that the audit quality of non-involved partners in the same audit firms does not change significantly. Therefore, while CSRC investigations significantly influence the audit quality of the involved partners, they have a weak effect on the audit quality of the non-involved partners. These findings are consistent with the intuition that as audit quality of the involved audit partners is lower than that of the non-involved partners (Li et al., 2017), the deterrence effect of CSRC investigations is likely to be stronger for involved audit partners.

Table 5. Multivariable analysis: discretionary accruals.

Panel A: Full sample results				
	(1)		(2)	
	Clients of audit partners investigated by CSRC		DiD test	
Dep. Var. = <i>ADA</i>	Coeff.	t-stat.	Coeff.	t-stat.
<i>POST</i>	-0.015**	-2.23	-0.003	-1.23
<i>POST</i> × <i>INVOLVED</i>			-0.008**	-2.08
<i>INVOLVED</i>			0.003	0.92
<i>OPERATING_CASHFLOW</i>	-0.015	-0.66	0.005	0.46
<i>SALES_GROWTH</i>	-0.008*	-1.91	-0.005*	-1.93
<i>LNASSETS</i>	-0.007	-1.39	0.001	0.21
<i>LEVERAGE</i>	-0.031*	-1.70	-0.004	-0.11
<i>EARNINGS_THRESHOLD</i>	0.002	0.53	0.004***	2.77
<i>AGE</i>	-0.001	-1.09	0.000**	2.54
<i>INDUSTRY_EXPERTISE_FIRM</i>	0.355	0.95	0.020	0.67
<i>INDUSTRY_EXPERTISE_PARTNER</i>	-0.122	-0.85	-0.136**	-2.01
<i>TENURE_FIRM</i>	-0.003**	-2.35	-0.001***	-2.73
<i>TENURE_PARTNER</i>	0.001	0.21	0.001	0.46
<i>SIZE_FIRM</i>	-0.000	-1.15	-0.000***	-2.80
<i>SIZE_PARTNER</i>	0.001	0.74	0.000	0.30
<i>CLIENT_IMPORTANCE_FIRM</i>	-0.002	-0.10	0.003	0.08
<i>CLIENT_IMPORTANCE_PARTNER</i>	0.012	0.53	-0.002	-0.31
Intercept	0.008	0.45	0.008	1.49
Industry-fixed effects	Included		Included	
Year-fixed effects	Included		Included	
<i>N</i>	197		1,094	
Adjusted <i>R</i> ²	0.49		0.24	

Panel B: Samples partitioned on the signs of discretionary accruals				
	(1)		(2)	
	Clients of audit partners investigated by the CSRC		DiD test	
Dep. Var. = <i>ADA</i>	<i>DA</i> > 0	<i>DA</i> < 0	<i>DA</i> > 0	<i>DA</i> < 0
<i>POST</i>	-0.019* (-1.94)	-0.003 (-0.70)	-0.001 (-0.15)	-0.005 (-1.01)
<i>POST</i> × <i>INVOLVED</i>			-0.023*** (-2.78)	0.001 (0.33)
<i>INVOLVED</i>			0.007 (1.36)	-0.002 (-0.72)
Controls and intercept	Included	Included	Included	Included
Industry-fixed effects	Included	Included	Included	Included
Year-fixed effects	Included	Included	Included	Included
<i>N</i>	76	121	446	648
Adjusted <i>R</i> ²	0.75	0.67	0.27	0.25

Notes: The dependent variable (*ADA*) is the absolute value of discretionary accruals (*DA*). *DA* is estimated from the modified Jones model controlling for firm performance. *POST* is equal to 1 if the observation is in the post-CSRC investigation window and is equal to 0 if the observation is in the pre-CSRC investigation window. *INVOLVED* is equal to 1 if the audit partner is investigated by the CSRC; otherwise *INVOLVED* is equal to 0. Other variables are defined in Table 1. ***, ** and * represent 1%, 5% and 10% significance levels, respectively (two-tailed).

Furthermore, we partition the sample based on the sign of discretionary accruals and run the regressions using Equations (4) and (5). The results are reported in Panel B of Table 5. Column (1) of Panel B shows that the coefficient on *POST* is significantly negative for the subsample with positive discretionary accruals (*DA* > 0), while the coefficient is not significant for the subsample with negative discretionary accruals. Similarly, the difference-in-differences test in column (2) reveals that the coefficient on *POST* × *INVOLVED* is significantly negative for the subsample with positive discretionary accruals (*DA* > 0), but the coefficient

is not significantly different from zero for the subsample with negative discretionary accruals. These results indicate that audit partners mitigate upward earnings management more effectively after CSRC investigations, but do not pay more attention to downward earnings management after CSRC investigations. The findings are consistent with the intuition that regulators are mainly concerned about upward earnings management (Caramanis & Lennox, 2008; DeFond & Jiambalvo, 1993; Nelson, Elliott, & Tarpley, 2002), and thus auditors pay special attention to upward earnings management after CSRC investigations.

The results for the control variables are generally consistent with those of prior studies (Fang, 2011; Sami et al., 2012; Wang et al., 2011). For instance, sales growth and leverage are negatively associated with discretionary accruals, and auditors with higher levels of industry expertise and longer tenure provide higher-quality attestation.

Table 6 presents results for the analysis with modified audit opinion (*MAO*) used as the audit quality measure. In column (1), the coefficient on *POST* is significantly positive (coefficient = 1.358; z-stat. = 2.18). In column (2), the coefficient on the interaction term *POST* × *INVOLVED* is also significantly positive (coefficient = 0.501; z-stat. = 1.99), but the coefficient on *POST* is insignificant (coefficient = 0.117; z-stat. = 0.60). The results suggest that the involved audit partners are more likely to issue modified audit opinions after CSRC investigations, while CSRC investigations have a limited effect on the audit opinions of non-involved partners. Therefore, the analysis of the issuance of modified audit opinions also supports our hypothesis.

Table 6. Multivariable analysis: audit opinion.

Dep. Var.= <i>MAO</i>	(1)		(2)	
	Clients of audit partners investigated by CSRC		DiD test	
	Coeff.	z-stat.	Coeff.	z-stat.
<i>POST</i>	1.358**	2.18	0.117	0.60
<i>POST</i> × <i>INVOLVED</i>			0.501**	1.99
<i>INVOLVED</i>			0.056	0.25
<i>MAO_PRIOR</i>	3.475***	3.39	1.526***	7.26
<i>LOSS</i>	3.192***	3.03	1.178***	5.23
<i>OPERATING_CASHFLOW</i>	0.463	0.27	-0.463	-0.50
<i>SALES_GROWTH</i>	0.646	1.42	-0.175	-0.66
<i>LNASSETS</i>	-0.709**	-2.02	-0.345**	-2.46
<i>LEVERAGE</i>	-2.868	-1.58	1.826***	3.41
<i>EARNINGS_THRESHOLD</i>	1.212	1.37	0.379	1.39
<i>AGE</i>	-0.017	-0.20	0.012	0.60
<i>INDUSTRY_EXPERTISE_FIRM</i>	16.080 [†]	1.94	6.116 [†]	1.83
<i>INDUSTRY_EXPERTISE_PARTNER</i>	-7.233	-0.74	4.724	0.69
<i>TENURE_FIRM</i>	-0.052	-0.44	-0.032	-0.61
<i>TENURE_PARTNER</i>	-0.420	-1.14	0.052	0.49
<i>SIZE_FIRM</i>	-0.010 [†]	-1.67	-0.003	-2.22
<i>SIZE_PARTNER</i>	-0.048	-0.58	0.030	1.58
<i>CLIENT_IMPORTANCE_FIRM</i>	1.839	0.78	0.511	0.29
<i>CLIENT_IMPORTANCE_PARTNER</i>	-3.577	-1.09	0.871*	1.93
Intercept	2.228	0.87	-1.669***	-3.94
Industry-fixed effects	Included		Included	
Year-fixed effects	Included		Included	
<i>N</i>	173		964	
Pseudo <i>R</i> ²	0.64		0.53	

Notes: The dependent variable (*MAO*) is the dummy variable for audit opinion. *MAO* is equal to 1 if the client firm receives a modified audit opinion in the current year; otherwise *MAO* is equal to 0. *POST* is equal to 1 if the observation is in the post-CSRC investigation window and is equal to 0 if the observation is in the pre-CSRC investigation window. *INVOLVED* is equal to 1 if the audit partner is investigated by the CSRC; otherwise *INVOLVED* is equal to 0. Other variables are defined in Table 1. ***, ** and * represent 1%, 5% and 10% significance levels, respectively (two-tailed).

Table 7. Additional test: the effects of sanction events.

Dep. Var.=	(1)		(2)	
	ADA		MAO	
	Coeff.	t-stat.	Coeff.	t-stat.
<i>POST_SANCTION</i>	-0.010	-0.44	-0.036	-0.23
<i>MAO_PRIOR</i>			0.043	0.27
<i>LOSS</i>			0.249*	1.81
<i>OPERATING_CASHFLOW</i>	-0.012	-0.37	-0.024	-0.08
<i>SALES_GROWTH</i>	0.016	0.67	0.214	1.46
<i>LNASSETS</i>	-0.004	-0.46	-0.112	-1.20
<i>LEVERAGE</i>	0.032	1.21	0.700*	1.92
<i>EARNINGS_THRESHOLD</i>	0.003	0.23	0.101	0.77
<i>AGE</i>	0.002	0.62	0.019	0.79
<i>INDUSTRY_EXPERTISE_FIRM</i>	-0.162	-0.47	3.838	1.23
<i>INDUSTRY_EXPERTISE_PARTNER</i>	0.201	0.20	-5.406	-0.49
<i>TENURE_FIRM</i>	-0.005*	-1.84	0.012	0.32
<i>TENURE_PARTNER</i>	0.009	1.15	-0.006	-0.11
<i>SIZE_FIRM</i>	0.000	1.18	-0.000	-0.71
<i>SIZE_PARTNER</i>	-0.002	-0.37	0.008	0.33
<i>CLIENT_IMPORTANCE_FIRM</i>	0.232	1.50	1.704	1.01
<i>CLIENT_IMPORTANCE_PARTNER</i>	0.011	1.37	-0.040	-0.56
Intercept	-0.101	-1.00	-0.243	-0.33
Industry-fixed effects	Included		Included	
Year-fixed effects	Included		Included	
<i>N</i>	77		77	
Adjusted <i>R</i> ²	0.21		0.49	

Notes: *POST_SANCTION* is equal to 1 if the observation is in the post-sanction window, and is equal to 0 if the observation is in the pre-sanction window. *ADA* is the absolute value of discretionary accruals. *MAO* is the dummy variable for audit opinion. *MAO* is equal to 1 if the client firm receives a modified audit opinion in the current year; otherwise *MAO* is equal to 0. Other variables are defined in Table 1. ***, ** and * represent 1%, 5% and 10% significance levels, respectively (two-tailed).

4.3. Additional tests

For completeness, we check the effect of CSRC sanctions on the audit quality of the involved audit partners. To examine the change in audit quality after CSRC sanctions, we construct the indicator variable *POST_SANCTION*, which is equal to 1 if the observation is in the post-sanction window and 0 if the observation is in the pre-sanction window. The pre-sanction window is from the second year before a CSRC sanction to the year preceding the sanction, and the post-sanction window is from the sanction year to the subsequent year. Table 7 presents the results of the analysis. The coefficient on *POST_SANCTION* is not significant in either column (1) or column (2), and the results indicate that the audit quality of the involved partners does not significantly improve after CSRC sanctions.¹⁰ Our results are consistent with the findings in Wang et al. (2011). However, the results do not necessarily imply that CSRC monitoring has no effect on the audit quality of the targeted audit partners. Instead, the results in Tables 5, 6 and 7 suggest that CSRC monitoring does have a positive effect on the audit quality of the involved audit partners, but the effect appears immediately after the CSRC investigations rather than after the CSRC sanctions. In other words, the involved audit partners improve their audit quality right after the CSRC investigation and do not wait for CSRC sanctions to act. Therefore, ignoring investigation events can lead to

¹⁰Because the sample size is small ($N = 77$), regression results for audit opinions cannot be obtained with a non-linear model such as the Probit model or the Logit model. Therefore, the results for audit opinions reported in Table 7 column (2) are estimated by OLS.

underestimation of the CSRC monitoring effect. Our findings help to explain why prior studies measuring CSRC monitoring by examining CSRC sanctions provide weak evidence for the effect of CSRC monitoring of audit quality. Specifically, as the audit partners investigated by the CSRC improve their audit quality immediately after the investigations, they need not further improve their audit quality after CSRC sanctions.

An alternative explanation for the insignificant audit quality change after the CSRC sanctions in Table 7 is that the involved partners improve their audit quality immediately after the CSRC investigations, but they may revert to poor audit quality three years after CSRC investigations. In other words, the improvement in audit quality after the investigations might be temporary and the involved audit partners might revert to poor audit quality in the post-sanction period. To exclude this alternative explanation, we examine the audit quality of the involved audit partners in the period from the third year subsequent to the CSRC investigations to the second year after the CSRC sanctions. We compare the audit quality in this window with the audit quality in the window from the CSRC investigation year to the subsequent year. The untabulated results provide no evidence that the audit quality of the involved audit partners is diminished three years after the CSRC investigations.¹¹ Collectively, our results suggest that involved audit partners improve their audit quality immediately after being investigated by the CSRC and that the audit quality does not reverse after CSRC sanctions.

As another untabulated test, we examine whether the audit quality of the involved audit partners might reverse three years after CSRC sanctions. Specifically, we compare the audit quality of the involved partners in the period from the third year to the tenth year after CSRC sanctions with that in the period from the CSRC investigation year to the subsequent year. We do not find any statistically significant change in audit quality between the two periods. It suggests that CSRC investigations have relatively long-term impact and the audit quality of the involved audit partners does not reverse three years after CSRC sanctions. The results indicate that the investigated audit partners have a weak incentive to revert to low-quality attestation after the sanctions. The investigated audit partners typically provide abnormally low audit quality before CSRC investigations. If the audit partners reverted to low-quality attestation after the sanctions, they could be investigated by CSRC again in the new cases and suffer a more severe penalty. Consequently, the threat of investigations can prevent the involved partners from reverting to low quality attestation after the sanctions.

4.4. Robustness check

4.4.1. Alternative test windows

In this robustness check, we examine whether our findings are sensitive to the choice of test windows. In our research design, the pre-CSRC investigation window is from the second year before an investigation to the year preceding the investigation, and the post-CSRC investigation window is from the investigation year to the following year. Each of these windows covers two years.

In the first sensitivity test, we extend each window by one year. When the post-CSRC investigation window is extended, it is likely to overlap the post-CSRC sanction window. Therefore, we exclude firm-year observations in the post-CSRC investigation window that

¹¹All untabulated results are available from the authors upon request.

follow CSRC sanctions. In the second test, we shorten each window by one year. In the third test, for the post-CSRC investigation window we use the window between the CSRC investigation year and the year before the CSRC sanction year. We use the same pre-CSRC investigation window as that in the main test. The untabulated results show that in all of the sensitive tests, the audit quality of the involved audit partners is greater in the post-CSRC investigation window than in the pre-CSRC investigation window. Therefore, our findings are robust to alternative test windows.

4.4.2. Alternative models for estimating discretionary accruals

One of the key measures of audit quality is the absolute value of discretionary accruals of clients. In our research design, we use a modified Jones model that controls for client performance to estimate discretionary accruals. As a robustness check, we investigate whether our findings are sensitive to alternative models to estimate discretionary accruals. We use three alternative models to estimate discretionary accruals: (1) the modified Jones model without controlling for client performance; (2) the Jones model without controlling for client performance; and (3) the Jones model controlling for client performance. We find that our results are robust to these alternative models for estimating discretionary accruals.

4.4.3. Controlling for audit partner experience

In this robustness analysis, we control for audit partner experience. Following Cahan and Sun (2015), we measure audit partner experience as the number of years since obtaining a Certified Public Accountant licence. Specifically, the audit partner experience for a client is measured as the average audit partner experience of the two partners who sign the audit report for the client. Our results are qualitatively the same when using this additional control, and the findings continue to show that the audit quality of the involved partners improves after CSRC investigations.

4.4.4. Controlling for audit firms' organisational forms

In 2010, the Chinese government launched a programme requiring all audit firms qualified to audit listed companies to change their organisational forms from Limited Liability Corporations to Limited Liability Partnerships. All qualified audit firms finished the transformation in 2013 (He, Pan, & Tian, 2017; Liu, Guo, & Tang, 2015). Because the liability exposure under different organisational forms can affect auditors' behaviour differently (Firth et al., 2012; He et al., 2017; Lennox & Li, 2012; Liu et al., 2015), we control for auditors' organisational forms in this robustness check. Specifically, we create the dummy variable *LLP*, which equals 1 if the audit firm is a partnership and 0 if the audit firm is a corporation, and take this dummy as an additional control variable in models (4) and (5). In another robustness check, we restrict our regression analysis to the sample of clients attested by audit firms in corporation form, as most of our final sample is generated from the period before the institutional change. Both tests show similar results, and we continue to find that the involved partners significantly improve their audit quality after CSRC investigations.

4.4.5. Alternative explanation

An alternative explanation for our findings is that the observed audit quality improvement after CSRC investigations might be due to the general time trend in audit quality. Specifically, recent improvements in the internal governance of audit firms and in the effectiveness of

the Chinese legal system may have caused audit quality to improve. As a result, audit quality in the later window may be better than in the earlier window. To exclude the alternative explanation, we design a placebo test, choosing the year subsequent to or before the CSRC investigation year as the pseudo investigation year. If the audit quality change documented in this study is driven by a general upward trend in audit quality, we expect that the audit quality of the involved audit partners will be greater in the post-pseudo investigation window than in the pre-pseudo investigation window. However, we do not find significant audit quality changes after the pseudo investigation. This result suggests that the documented audit quality change is unlikely to be driven by the general time trend in audit quality.

5. Conclusion

Prior studies of the regulatory monitoring of auditors often focus on the effects of regulatory sanctions on the involved audit firms. We advance the literature by examining how regulatory investigations of audit partners affect their audit quality. Specifically, we hand-collect a sample of CSRC investigations of audit partners and explore changes in the involved partners' audit quality around the investigations. We find that the involved audit partners are more likely to issue modified audit opinions and that their clients report lower levels of absolute value of discretionary accruals after CSRC investigations, which suggests that audit partners improve their audit quality after being investigated. Our findings are robust when we conduct a difference-in-differences test using non-involved audit partners in the same audit firm as the control group. Interestingly, we find no evidence that involved audit partners improve their audit quality after CSRC sanctions. Collectively, our results indicate that CSRC monitoring has a positive effect on the audit quality of the targeted audit partners, and this effect manifests around CSRC investigations rather than CSRC sanctions.

When we examine the audit changes of the involved audit partners around CSRC investigations, we use a test window that is from the two years before the investigation to the year after the investigation. As the average time between a CSRC investigation and the sanction that follows is 2.6 years, the design of the test window mitigates the concern about the overlap between the post-investigation and post-sanction periods. To address the concern about the self-selection of auditors and clients around CSRC investigations, we exclude clients that change auditors in the test window. Although this filtering reduces the sample size and thus potentially weakens the testing power, we find significant audit quality improvement following CSRC investigations of audit partners. This paper provides evidence that regulatory monitoring of audit partners induces them to improve the audit quality. Our finding that audit partners improve their audit quality immediately after CSRC investigations also helps to explain why prior studies focusing on CSRC sanctions find a weak effect of regulatory monitoring on audit quality of the involved audit partners.

The effectiveness of regulation of the audit profession is a topic of interest to both researchers and regulators. Effective regulation can motivate audit partners to improve their audit quality. In addition, effective regulation can exclude low-quality partners from the audit market. This paper provides robust evidence on the positive effect of regulatory investigation on the audit quality of involved partners. We also provide descriptive evidence for the effect of regulatory investigations on partner exit from the audit market as we find that within the two years following CSRC investigations of audit partners, approximately 30% of

the audit partners lost all of their listed clients. Reputation concern and regulatory punishment are two potential channels for shaping the effect of regulatory investigations. However, this study does not identify whether one of these channels plays a dominant role. Other factors, such as internal governance within audit firms and audit partners' perception of their own quality, may influence the effect of regulatory investigations. We leave these questions for future studies.

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References

- Andenaes, J. (1966). The general preventive effects of punishment. *University of Pennsylvania Law Review*, 114, 949–983.
- Cahan, S.F., & Sun, J. (2015). The effect of audit experience on audit fees and audit quality. *Journal of Accounting, Auditing and Finance*, 30(1), 78–100.
- Cameran, M., Campa, D., & Francis, J.R. (2017). How important is partner variation in explaining audit quality? Working paper.
- Caramanis, C., & Lennox, C.S. (2008). Audit effort and earnings management. *Journal of Accounting and Economics*, 45(1), 116–138.
- Chaney, P.K., & Philipich, K.L. (2002). Shredded reputation: The cost of audit failure. *Journal of Accounting Research*, 40, 1221–1245.
- Chen, S., Sun, S.Y., & Wu, D. (2010). Client importance, institutional improvements, and audit quality in China: An office and individual auditor level analysis. *The Accounting Review*, 85(1), 127–158.
- Dechow, P., Sloan, R., & Sweeney, A. (1995). Detecting earnings management. *The Accounting Review*, 70, 193–225.
- Dechow, P., Kothari, S.P., & Watts, R. (1998). The relation between earnings and cash flows. *Journal of Accounting and Economics*, 25, 133–168.
- DeFond, M.L., & Francis, J.R. (2005). Audit research after Sarbanes-Oxley. *Auditing: A Journal of Practice and Theory*, 24 (Supplement), 5–30.
- DeFond, M.L., & Jiambalvo, J. (1993). Factors related to auditor–client disagreements over income-increasing accounting methods. *Contemporary Accounting Research*, 9, 415–431.
- DeFond, M.L., & Lennox, C.S. (2017). Do PCAOB inspections improve the quality of internal control audits? *Journal of Accounting Research*, forthcoming.
- Fang, J. (2011). Study on the effectiveness of reputation mechanism in a transitional economy: Evidence from China's audit market. *Journal of Finance and Economics*, 12, 16–26 (in Chinese).
- Fang, J., Xu, P., & Hong, J. (2006). An empirical evaluation of economic consequence of shredded CPA reputation. *South China Journal of Economics*, 6, 90–101 (in Chinese).

- Firth, M. (1990). Auditor reputation: The impact of critical reports issued by government inspectors. *RAND Journal of Economics*, 21, 374–387.
- Firth, M., Mo, P.L., & Wong, R.M. (2012). Auditors' organizational form, legal liability, and reporting conservatism: Evidence from China. *Contemporary Accounting Research*, 29(1), 57–93.
- Firth, M., Mo, P.L., & Wong, R.M. (2014). Auditors' reporting conservatism after regulatory sanctions: Evidence from China. *Journal of International Accounting Research*, 13, 1–24.
- Francis, J.R. (2011). A framework for understanding and researching audit quality. *Auditing: A Journal of Practice and Theory*, 30, 125–152.
- Francis, J.R., & Michas, P.N. (2013). The contagion effect of low-quality audits. *The Accounting Review*, 88, 521–552.
- Gramling, A.A., Krishnan, J., & Zhang, Y. (2011). Are PCAOB-identified audit deficiencies associated with a change in reporting decisions of triennially inspected audit firms? *Auditing: A Journal of Practice and Theory*, 30, 59–79.
- Gul, F.A., Wu, D., & Yang, Z. (2013). Do individual auditors affect audit quality? Evidence from archival data. *The Accounting Review*, 88, 1993–2023.
- He, K., Pan, X., & Tian, G. (2017). Legal liability, government intervention, and auditor behavior: Evidence from structural reform of audit firms in China. *European Accounting Review*, 26(1), 61–95.
- Knechel, W.R., Vanstraelen, A., & Zerni, M. (2015). Does the identity of engagement partners matter? An analysis of audit partner reporting decisions. *Contemporary Accounting Research*, 32, 1443–1478.
- Kothari, S.P., Leone, A.J., & Wasley, C.E. (2005). Performance matched discretionary accrual measures. *Journal of Accounting and Economics*, 39(1), 163–197.
- Krishnamurthy, K., Zhou, J., & Zhou, N. (2006). Auditor reputation, auditor independence, and the stock-market impact of Andersen's indictment on its client firms. *Contemporary Accounting Research*, 23, 465–490.
- Lennox, C.S., & Li, B. (2012). The consequences of protecting audit partners' personal assets from the threat of liability. *Journal of Accounting and Economics*, 54, 154–173.
- Lennox, C.S., & Li, B. (2014). Accounting misstatements following lawsuits against auditors. *Journal of Accounting and Economics*, 57(1), 58–75.
- Lennox, C.S., & Wu, X. (2016). A review of the literature on audit partners. Working paper.
- Li, L., Qi, B., Tian, G., & Zhang, G. (2017). The contagion effect of low-quality audits at the level of individual auditors. *The Accounting Review*, 92(1), 137–163.
- Liu, Q., Guo, J., & Tang, Y. (2015). Audit firms' organizational form, legal liability, and audit quality: An individual auditor level analysis. *Accounting Research*, 4, 20–27 (in Chinese).
- Liu, X. (2013). Auditor sanctions and audit pricing: Based on the data of listed clients of auditors disciplined by the CSRC. *Auditing Research*, 2, 90–98 (in Chinese).
- Moreland, K.A. (1995). Criticisms of auditors and the association between earnings and returns of client firms. *Auditing: A Journal of Practice and Theory*, 14(1), 94–104.
- Muth, J.F. (1961). Rational expectations and the theory of price movements. *Econometrica*, 29(3), 315–335.
- Nelson, M., Elliott, J., & Tarpley, R. (2002). Evidence from auditors about managers' and auditors' earnings management decisions. *The Accounting Review*, 77(Supplement), 175–202.
- Sami, H., Kim, J.B., Zhou, H., & Fang, J. (2012). Restoring trust among investors after shredded CPA reputation: Evidence from China. Working paper.
- Su, L., & Wu, D. (2016). Is audit behavior contagious? Teamwork experience and audit quality by individual auditors. Working paper.
- Townsend, R.M. (1978). Rational expectations and Bayesian analysis. *International Economic Review*, 19, 481–494.
- Wang, B., Li, J., Su, W., & Tang, Y. (2011). Can administrative punishment improve audit quality? Evidence from CSRC sanctions. *Accounting Research*, 12, 86–92 (in Chinese).
- Wang, B., Xin, Q., & Yang, D. (2009). Does auditor reputation influence share pricing? Evidence from the IPO market in China. *Accounting Research*, 11, 73–81 (in Chinese).
- Wilson, T.E., Jr., & Grimlund, R.A. (1990). An examination of the importance of an auditor's reputation. *Auditing: A Journal of Practice and Theory*, 9, 43–59.

- Wu, X. (2008). Consequence of regulatory sanctions on an individual auditor but not on the audit firm: Empirical evidence. *Accounting Research*, 8, 23–31 (in Chinese).
- Wu, X., & Zhang, J. (2014). Stock market reaction to regulatory investigation announcements. *China Journal of Accounting Studies*, 2, 37–52.
- Zheng, G., & Xu, Y. (2011). Study on regulatory effectiveness in the capital market: Empirical evidence from CSRC sanctions of auditors. Annual Conference Proceedings of the Accounting Society of China (in Chinese).
- Zhu, C., & Wu, L. (2009). Auditors' reaction to companies' accounting and financial irregularities: Analysis of the punishment bulletins of the CRSC. *SSE and SZSE Auditing Research*, 4, 42–51 (in Chinese).
- Zhu, H., He, X., Sun, Y., & Lu, W. (2008). Does the market care about auditors' reputation? Evidence and implications from the case of 'KeLong Electric'. *Auditing Research*, 4, 44–52 (in Chinese).