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TWO ESSAYS ON AUDITING IN CHINA

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PhD

The Hong Kong Polytechnic University

This programme is jointly offered by The Hong Kong

Polytechnic University and Sun Yat-sen University

2019

The Hong Kong Polytechnic University

School of Accounting and Finance

Sun Yat-sen University

Sun Yat-sen Business School

Two Essays on Auditing in China

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A thesis submitted in partial fulfillment of the requirements for the

degree of Doctor of Philosophy

August 2018

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Abstract

My thesis consists of two essays investigating audit fees and audit quality in the Chinese market. The first essay examines the association between audit market concentration and initial-year audit fee discounting in China. The second essay documents the role of regulatory intervention in the audit market by investigating the effect of a Chinese audit fee regulation on audit fees and audit quality.

Previous research provides mixed evidence on the association between audit market concentration and audit fees (Bandyopadhyay and Kao, 2004; DeFond and Zhang, 2014). DeAngelo (1981a) and Chan (1999) argue that market competition is an important determinant of initial-year audit fee discounting. The lack of empirical evidence directly examining market concentration's effect on fee discounting, however, motivates my first essay. I find that a negative association between market concentration (measured by market share and the Herfindahl index) and initial-year audit fee discounting exists, which is more pronounced among small audit firms, but not significant among large audit firms. I also find this negative association is more pronounced in weak legal environments but diminishes in strong legal environments. Analysis at the individual auditor level shows the aforementioned results only exist when both the audit firm and signing auditors are different from those in previous years. Overall, my findings suggest that the audit market concentration decreases initial-year audit fee discounting in the Chinese audit market.

Audit fees, in general, are negotiated by auditors and their clients (DeFond and Zhang, 2014). However, the Chinese government launched an audit fee

regulation in 2010 that imposes a price floor on audit fees. In the second essay, I investigate whether that audit fee regulation affects audit fee and audit quality, especially for small audit firms. I find that compared to large audit firms, small audit firms exhibit greater increases in audit fees and audit quality following the audit fee regulation. Those results are robust to various measures of audit quality and alternative empirical specifications. Further, also after the audit fee regulation implementation, I find that the increases in audit fee and audit quality for small audit firms are more pronounced in a weak legal environment. Overall, my findings lend support for the role of government intervention in the emerging audit market.

Keywords: Audit Market Concentration, Fee Discounting, Regulation, Audit Fee, Audit Quality, China

Acknowledgments

Foremost, I would like to express my deepest gratitude to my chief supervisor, Dr. CHUI Chun Wai Andy, Professor Feng Liu, and my co-supervisor, Dr. Yangyang Chen, for their enduring support, guidance and advice throughout my doctoral study.

Dr. Chui not only guides me in research, but also sets up an excellent example of how a decent person behaves. Although I stayed in Hong Kong for a comparatively short period, his dedication to research , commitment to students and personality motivate me a lot. Without his invaluable guidance and encouragement , I would not be able to complete the thesis.

I thank Dr. Yangyang Chen for his constructive comments on this project. I'm truly grateful for Prof. Feng Liu for introducing me to this Joint PhD programme. I would like to thank Prof. Ji-Chai Lin, Prof. Nancy Su, Dr. Steven Wei, and other faculty members in the School of Accounting and Finance, for their generous support and encouragement within the study periods.

Last but not least, I am very grateful to my parents, husband, and friends, for each of their enduring support and love in my life.

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Chapter 1 Overview

1.1 Motivation and Research Questions

This dissertation focuses on audit fee and audit quality in China. It is comprised of two essays. The first essay, "Audit market concentration and fee discounting in China: an audit firm and individual auditor level analysis," examines the impact of market concentration on initial-year audit fee discounting. And the second essay, "The impact of audit fee regulation on audit outcomes: evidence from China," shedding light on a unique and interesting audit fee regulation implemented in 2010, investigates the government's role on audit fees and audit quality in China.

Essay one is motivated by considerable concern from regulators and practitioners about audit market concentration. Regulators in developed countries have expressed concern about potential adverse effects of a few large audit firms dominating the market, including high audit fees and low audit quality (General Accounting Office, 2003; European Commission, 2010). However, regulators in China are making an effort to increase audit market concentration (Huang, Chang and Chiou, 2016), expressing serious concern that the prevalence of initial-year audit fee discounting may be arising from China's intense competition. Despite regulatory concerns, prior research provides mixed evidence on the relation between audit market concentration and audit fees. Although DeAngelo (1981a) and Chan (1999) argue that market competition is an important determinant of initial-year audit fee discounting, there's a lack of empirical evidence supporting their argument.

My first essay tries to fill the void by examining audit market concentration and fee discounting in the Chinese audit market. Specifically, I investigate the following questions: First, is audit market concentration associated with fee discounting in China? Second, does the association between market concentration and fee discounting differ across different auditor types? Third, does a different legal environment influence the aforementioned associations?

Whether regulator intervention adds value to audit quality is still an empirical question. My second essay is motivated by recent research on the role of regulatory intervention in the audit market. In 2010, the Chinese government launched an audit fee regulation, requiring fees to be based on government-guided pricing and not lower than a set limit. This audit fee regulation provides a unique and interesting setting to examine whether and how it affects audit fees and audit quality in China. Specifically, in the second essay, I investigate the following questions: First, did audit fees increase after the audit fee regulation? Second, did audit quality improve following adoption of the audit fee regulation? Third, have differing legal environments influenced the audit fee regulation's impact on audit outcomes?

1.2 Research Design and Main Findings

In essay one, to investigate the impact of audit market concentration on initial-year audit fee discounting, I use the city-year level market share and Herfindahl index to measure the degree of audit market concentration. Because the

names of signing auditors are disclosed in China, I conduct the auditor change analysis at both audit firm and individual auditor level in the Chinese audit market. Further, I examine whether the association between concentration and fee discounting varies among different auditor types and legal environments.

Theoretically, there could be either a negative or positive association between market concentration and fee discounting. On one hand, fee discounts decrease as concentration increases, because greater market bargaining power is captured by auditors in high concentration market (Pearson and Trompeter, 1994; Ghosh and Lustgarten, 2006). On the other hand, audit market concentration could increase fee discounting. Owing to economies of scale, auditors have the ability to give clients more audit fee discounts (Pearson and Trompeter, 1994). I document that a higher degree of audit market concentration decreases the extent of fee discounting in initial audit engagements. Such findings are robust to alternative measures of market concentration, additional controls, and specifications that address endogeneity concerns. Interestingly, I find that the negative association between concentration and fee discounting is more pronounced among small audit firms and in weak legal environments.

Analysis based on individual partner level shows that the above results only exist when both the audit firm and two signing auditors are different from those in previous years. The results suggest that market concentration has an effect on fee discounting only when audit firm change accompanied two new signing auditors. Overall, the findings provide useful insights on the effect of market concentration on

fee discounting in Chinese audit market. My study has policy implication for regulators in emerging market. It provides evidence suggesting that increase audit market concentration may be an effective way to decrease price competition in the emerging audit market.

In essay two, I partition the sample into a treatment group (small audit firms, which were more likely affected by the audit fee regulation) and a control group (large audit firms, which were relatively unaffected by the fee regulation) and use a difference-in-difference research design to investigate the impact of audit fee regulation on audit fees and audit quality.

Most prior literature generally concludes that large auditors charges higher audit fees and provide higher audit quality than small auditors (DeAngelo, 1981a, 1981b; Francis, 1984; Choi, Kim, Liu, and Simunic, 2008; Chan and Wu, 2011). The Chinese audit fee regulation is expected to have a greater impact on small audit firms. My results show that after the audit fee regulation, small audit firms are more likely than large audit firms to have an increase in audit fees and a decrease in discretionary accruals. Findings on audit quality are robust to alternative audit quality measures such as the likelihood of financial reporting restatement, earnings response coefficients and the likelihood to be sanctioned, suggesting an improved audit quality after the audit fee regulation. But I fail to find that small audit firms are more likely to issue modified audit opinions (MAOs) following the regulation adoption compared with large audit firms. In the robustness test, I also use different sample compositions to mitigate the concern that the results are driven by

confounding events. Further, to address the potential endogeneity problem arising from the choice of small or large audit firms, I conduct a propensity score matching (PSM) approach, and all results are still robust. In addition, further analysis indicates that the main effect of the audit fee regulation varies across different legal environments. The increase in audit fees and audit quality with small audit firms after enacting the regulation are more pronounced in a weaker legal environment.

Collectively, the results in the second essay indicate that the audit fee regulation in China resulted in a greater increase in audit fees for small audit firms. The higher audit fees allow for more auditor staffs and task delegation in the audit procedure, leading to accounting quality improvement. But the fee regulation is less likely to improve auditor independence, since there is no change in MAOs' issue after the regulation. My study contributes to the literature that examines regulatory intervention in the audit market and has policy implications for regulators. It provides useful insight on how government price control affects the audit fees and audit quality. The results indicate that the regulation by increasing audit fees, makes auditors devoting more effort to improve financial reporting quality, but it has not increased auditor's willingness to issue MAOs.

1.3 Structure of the Thesis

The remainder of the paper is organized as follows. Chapter 2 presents the first essay on the association between audit market concentration and initial-year audit fee discounting. Chapter 3 presents the second essay on the impact of the audit

fee regulation on audit fees and audit quality in China. Chapter 4 concludes the

findings and contributions of the thesis.

Chapter 2 Audit Market Concentration and Fee Discounting in China: An Audit Firm and Individual Auditor Level Analysis

2.1 Introduction

Regulators in developed countries have long shown concern that high audit market concentration could increase audit fees and impair audit quality (General Accounting Office, 2003; Oxera, 2006; United States Treasury, 2006; Oxera, 2007; Government Accountability Office, 2008; United States Treasury, 2008; European Commission, 2010). Unlike developed countries in which the Big 4 dominate the audit market, China has a much more dispersed audit market structure. For example, in 2003, the market share of China's Big 10 audit firms was only 25 percent and more than 50 percent of listed firms chose small (non-Big 10) and local audit firms (Wang, Wong and Xia, 2008). Francis, Michas and Seavey (2013) show that the Big 4 audit firms captured only 17 percent market share during 1999-2007 period. Contrary to developed countries, the Chinese government tries to increase audit market concentration, since price competition was deemed as excessive in the Chinese audit market.

Initial-year audit fee discounting ("fee discounting", or "low-balling of initial-year audit fees") is the result of strong competition between auditors in a low concentration audit market (DeAngelo, 1981a; Chan, 1999; Huang et al., 2016). Over the years, Chinese policy makers have expressed concern about the prevalence of low-balling of audit fees in initial audit engagements, which may adversely

impair auditor independence (Magee and Tseng, 1990; Chan, 1999; Craswell and Francis, 1999), audit quality (Srinidhi and Gul, 2007; Asthana and Boone, 2012) and the development of audit. The Public Company Accounting Oversight Board (PCAOB) also raised concern about the initial-year audit fee discounting on auditor independence (PCAOB, 2011).

Since 2000, in an effort to alleviate the thriving price competition and enhance auditor independence and audit quality, regulators took steps to facilitate the merge of certified public accountant (CPA) firms in China, which is a fast and direct way to increase audit market concentration. However, did increased audit market concentration effectively decrease low-balling of audit fees? Initial-year audit fee discounts are the natural action for auditors competing for clients in a competitive market (DeAngelo, 1981a). Chan (1999) argues that initial-year audit fee discounts only occur when competition is intense. However, due to a lack of sufficient studies examining the effect of market concentration on fee discounting, this study intends to fill the gap.

Theoretically and empirically, prior research provides mixed evidence on the relationship between audit market concentration and audit fees (Bandyopadhyay and Kao, 2004; Numan and Willekens, 2012; Dunn, Kohlbeck and Mayhew, 2013; Huang et al., 2016), so it is still premature to draw any definitive conclusion on the effect of concentration on fee discounting. On one hand, audit market concentration could decrease fee discounting by enhancing auditors' market power (Pearson and Trompeter, 1994; Ghosh and Lustgarten, 2006). On the other hand, audit market

concentration could increase fee discounting, owing to economies of scale (Pearson and Trompeter, 1994). Thus, the objective in this chapter is to investigate the effect of concentration on fee discounting in China. Specifically, I conduct an auditor change analysis based on audit firm level and individual auditor level in the Chinese audit market.

The study focuses on the Chinese audit market because of the following reasons. First, unlike developed countries in which Big 4 dominate the audit market, China has a much more dispersed audit market structure. Moreover, the Chinese economy varies significantly across its diverse geographic regions (Fan, Wang and Zhu, 2011), which affects market concentration. Second, the regulation in China requires two engagement partners to sign their completed audit reports. This requirement provided me an opportunity to examine auditor changes at the individual level. Due to the audit firm merge wave beginning in 2000, it is common to see clients follow former partners to a new audit firm. Hence, there were many instances in which the audit firm changed, but one or two signing auditor(s) remained the same. Thus, analysis on fee discounting based on the individual level may be more pertinent.

To investigate the association between market concentration and initial-year audit fee discounting, I collect 9,020 firm-year observations listed in the Chinese A-share market from 2002 to 2010. Following prior studies, I use market share and the Herfindahl index to measure the degree of concentration in the Chinese audit market. I use indicator variables to measure different forms of auditor changes at the

individual partner level. To summarize, first, I find that as audit market concentration increases, initial-year audit fee discounting decreases, consistent with the argument that higher concentration would increase auditors' market power, resulting in fewer fee discounts for an initial audit. The results are robust to alternative market concentration measures, additional controls, and alternative empirical specifications that address endogeneity concerns.

Further, I examine the situations in which the negative relation between concentration and audit fee discounting is expected to vary. I first examine whether the main effect varies across different auditor types. Small audit firms are more likely to compete for clients by offering fee discounts. While large audit firms usually keep a stable audit fee to maintain its high audit quality, regardless of market concentration. I theorize correctly that the negative association between audit market concentration and fee discounting is more pronounced among small audit firms and not significant among large audit firms.

Next, I examine whether variations in legal environment affect the negative association between market concentration and fee discounting. Strong legal environments encourage greater audit performance and fair competition, while price competition would be excessive in a weak legal environment. Consistent with my expectation, the negative association between market concentration and fee discounting is more pronounced in weak legal environments, but it diminishes in strong legal environments.

Analysis based on individual auditor level shows that the above results only exist when both the audit firm and audit partners are different from those in prior years. The study extends previous findings that document the existence of audit fee discounting following audit firm changes involving two new audit partners in China (Huang, Raghunandan, Huang, and Chiou, 2015). The finding suggests that there is a negative association between audit market concentration and initial-year audit fee discounting when both audit firm and two signing auditors are different from previous years.

My study makes several contributions to the literature. First, this study contributes to the literature on initial-year audit fee discounting. Most prior studies focus on the existence of low-balling and whether low-balling would affect auditor independence (DeAngelo, 1981a; Chan, 1999; Craswell and Francis, 1999; Desir, Casterella and Kokina, 2014; Huang et al., 2015). Although Chan (1999) argues that low-balling results from a competitive audit market, the direct role of market concentration on low-balling has drawn little attention. Eshleman and Lawson (2017) find a negative association between market concentration and fee discounting using U.S. data. Different from Eshleman and Lawson (2017) , this study explores fee discounting following auditor changes at both the audit firm and individual auditor level. The results show that the negative association between concentration and fee discounting only exists when both the audit firm and audit partners are different from previous years in Chinese audit market. Analyzing auditor movement on an individual partner level can provide useful insight on whether the fee discounts are

because of competitive pressures or auditor-client relationship. Second, by providing a negative association between market concentration and fee discounting, this study contributes to the debate on the relationship between market concentration and audit pricing (Pearson and Trompeter, 1994; Numan and Willekens, 2012; Gerakos and Syverson, 2015). Additionally, this study highlights the impact of different types of audit firms and different legal environments on the relation between market concentration and fee discounting. Finally, my study echoes the call by DeFond and Zhang (2014) for further research on the relation between audit market concentration and audit fees.

The remainder of this chapter is structured as follows. Section 2.2 reviews the literature. Section 2.3 develops the hypotheses. Section 2.4 introduces the institutional background of the audit market in China. Section 2.5 describes the measurement of key research variables and the empirical model. Section 2.6 presents the sample for empirical tests and descriptive statistics of the key variables. Section 2.7 analyzes the empirical results. Section 2.8 conducts robustness tests. Section 2.9 conducts additional cross-sectional analyses. And section 2.10 concludes.

2.2 Literature Review

2.2.1 Fee Discounting

Initial-year audit fee discounting refers to the practice of discounting fees in the initial-year audit to compete for clients, with the expectation of recouping these

losses in the subsequent audits. DeAngelo (1981a) argues that fee cutting on initial engagements is a common practice in the auditing industry. The start-up cost and transaction cost of changing auditors give the incumbent auditors a cost advantage. In particular, incumbent auditors can set future audit fees above avoidable production costs to earn a future stream of quasi-rents. Therefore, low-balling arises naturally among competing auditors, who expect to become incumbent auditors, procuring future quasi-rents.

While Dye (1991) indicates that low-balling occurs because quasi-rents are unobservable to outsiders. The study points out that DeAngelo's 1981 model rests on the assumption that incumbent auditors have dominant bargaining positions in the auditor-client relationship, by which auditors can determine the prices and thereby earn future quasi-rents. However, low-balling would be eliminated if clients had the bargaining power. For example, clients would possess the entire cost saving by negotiating the fee at the incumbent auditor's cost level. As a result, auditors would not offer fee discounting at the first engagement, expecting zero quasi-rents. Therefore, Dye (1991) deems that the existence and extent of low-balling are the result and reflection of auditor-client bargaining power. Furthermore, the author argues that, if not observable to the public, quasi-rents could act as a tool for firms to get favorable opinions from auditors. But the price of quasi-rent would be zero if it is publicly observable. Thus, Dye's 1991 model suggests that the existence of fee discounting depends on quasi-rents being unobservable.

Finally, Chan (1999) argues that low-balling arises because of price competition. Assuming an imperfectly competitive audit market, the study develops a two-period specialization model to analyze the effect of start-up costs on auditing competition. Taking into account significant start-up costs, Chan (1999) emphasizes incumbent auditors' cost advantage relative to the costs of competitors in the market. My study extends Chan's (1999) research by providing empirical evidence on whether market concentration affects the extent of fee discounting.

Predictions about whether low-balling impair auditor independence are also mixed. In the DeAngelo (1981a) model, initial audit fee reduction is sunk in the future period. Thus, low-balling itself would affect neither the magnitude of future quasi-rents nor auditor independence. Rather, it is the client-specific quasi-rents that affect auditor independence. DeAngelo (1981a) also demonstrates that the regulation aimed at curbing fee discounting would have no effect on auditor independence. However, Lee and Gu (1998) construct a dynamic multiagent moral hazard model and show that low-balling serves as an efficient contracting mechanism for maintaining auditor independence. By considering the bargaining position between auditor and client, Zhang (1999) also analyzes the effect of quasi-rent on auditor independence, and concludes that the degree of auditor independence is a decreasing function of the level of future client-specific quasi-rents.

A branch of empirical research has estimated the existence and magnitude of initial-year audit fee discounting, and the results are mixed. Prior to 2001, fee discounting studies in the U.S. were mainly based on private survey data, since U.S.

firms were not required to disclose audit fees. Several studies find significant fee discounts during the mid-1980s in the U.S. (Simon and Francis, 1988; Ettredge and Greenberg, 1990; Turpen, 1990). Motivated by conflicts in theoretical analyses between DeAngelo (1981a) and Dye (1991), Craswell and Francis (1999) test the existence of low-balling in Australian, where audit fees were publicly disclosed during the mid-1980s. Consistent with Dye (1991) theory, the study finds no evidence of low-balling, except for clients who change from a small audit firm to a larger one. In regard to discounts for switching to a larger audit firm, Craswell and Francis (1999) argue that discounts should raise little concern about auditor independence, since they are a buyer-induced phenomenon due to product quality uncertainty. Using audits of Texas independent school districts, Deis and Giroux (1996) directly examine initial audit fees, audit effort, and audit quality. Controlling for the direct measure of audit quality, they provide evidence that low-balling exists in the first-year audit, while audit quality does not suffer, which is consistent with DeAngelo's (1981a) theory. They also find that in the initial audit year, auditors devote more hours and audit quality is better, but as the audit tenure increases, audit quality decreases.

Recent studies have focused on the impact of the Sarbanes-Oxley Act (SOX) on fee discounting. Both Ghosh and Pawlewicz (2009) and Huang, Raghunandan and Rama (2009) find that initial audit fee discounts were lessened during the post-SOX periods. Huang et al. (2009) find that Big 4 auditors gave new clients a discount of about 24 percent in 2001, but they charged an initial-year audit fee

premium of around 16 percent in the post-SOX period. In contrast, Desir et al. (2014) find that low-balling still exists in an extended post-SOX environment for the years 2007 to 2010. Using Chinese data during the years 2002 to 2011, Huang et al. (2015) examine fee discounting following audit firm and audit partner changes. The results suggest that significant initial-year audit fee discounting exists only when audit firm changes accompanied two new signing partners. I extend Huang et al. (2015) and examine the association between audit market concentration and initial-year audit fee discounting based at audit firm level and individual auditor level in the Chinese audit market.

2.2.2 Market Concentration and Audit Fees

Theoretically and empirically, prior research provides mixed evidence on the relationship between audit market concentration and audit fees. According to the structure theory, audit market concentration could raise audit fees by enhancing auditors' market power and providing specialized audit services (Pearson and Trompeter, 1994; Ghosh and Lustgarten, 2006). Therefore, there is a positive relation between market concentration and audit fees. Alternatively, higher concentration could allow auditors to charge lower audit fees due to economies of scale. As a result, there could be a negative association between audit market concentration and audit fees.

Most empirical studies, however, document a positive relation between audit market concentration and audit fees. For example, Maher, Tiessen, Colson, and Broman (1992) describe the audit fee behavior between 1977 and 1981, a period in

which the U.S. audit market was allegedly becoming more competitive because of a federal investigation of anticompetitive behavior. Using a small sample of 78 companies, they find a significant decrease in audit fees.

Bandyopadhyay and Kao (2001) examine the effect of an Ontario amendment, which assumed to enhance competition in the audit market, on audit fee and Big N premiums. The results indicate that audit fees exhibited a decreasing trend in the post-amendment period as the competition increased, and fee reduction was larger among small audit firms. The result is consistent with the view that audit market concentration is positively related to audit fees.

Bandyopadhyay and Kao (2004) examine the relation between market structure and audit fees at a dual-local perspective, taking into account both auditors' and clients' market power. After controlling for client's influence, they find higher audit fees in more concentrated local markets, but only for non-Big 6 in the Canadian audit market.

Using U.S. data, Kallapur, Sankaraguruswamy and Zang (2010) find audit fees increase when the audit market becomes more concentrated. The concentration is measured by the Herfindahl index at the metropolitan statistical area (MSA) level.

Using Australian data from 1996 to 2007, Carson, Simnett, Soo, and Wright (2012) find that Big N premiums increased significantly for the Big 5 and Big 4 periods compared to the Big 6 period, indicating a positive association between market concentration and audit fees.

Different from prior audit research, Gerakos and Syverson (2015) use economic framework to analyze the audit industry from both demand and supply sides. They claim that if a Big 4 audit firm disappeared, resulting in increased market concentration, overall audit fees could increase by $0.47 billion annually. Collectively, given a change of market concentration due to specific event, such as a regulation change or the disappearance of a Big N firm, the aforementioned studies suggest a positive relation between market concentration and audit fees.

Huang et al. (2016) investigate the effects of audit market concentration on audit fees and audit quality in the Chinese audit market from 2001 to 2011. They find that city-level audit market concentration is associated with significantly higher audit fees.

Contrary to above literature, some studies document a negative association between market concentration and audit fees. According to economies of scale, Pearson and Trompeter (1994) document a negative audit fee-concentration effect. However, their sample includes only two U.S. industries, covering 1982 to 1986. They measure concentration by using the sum of the U.S.'s three largest audit firms' market share. Numan and Willekens (2012) shed light on the competition effects of industry specialization on audit pricing. Contrary to prior audit pricing literature, which implicitly or explicitly assumes that the audit market is perfectly competitive, their study proposes an alternative view, whereby competition in the audit market is imperfect, and product differentiation is a competitive strategy. After controlling for

the auditors' industry location relative to the client and closest competitor, they find a negative association between the Herfindahl index and audit fees.

In a recent study, Eshleman and Lawson (2017) examine the relation between concentration and audit fee in the U.S. using a large sample covering 90 MSAs from 2000 to 2013. Their results indicate that audit market concentration is associated with higher audit fees. They argue that prior research's failure (Pearson and Trompeter, 1994; Numan and Willekens, 2012) to find a positive association can be attributed to not considering the MSA fixed effect in prior research.

2.2.3 Market Concentration and Fee Discounting

There is very little research directly examining the relation between market concentration and fee discounting. Ghosh and Lustgarten (2006) claim that the U.S. audit market is composed of two segments, one is the highly concentrated oligopolistic segment dominated by large audit firms, and the other is highly competitive atomistic segment composed of many small audit firms. They find that fee discounting exists in both sectors, but it is more extensive between small audit firms. This conclusion indirectly proves the association between audit market concentration and fee discounting. The extent of fee discounting differs in the two segments because of differing market concentration. Ghosh and Lustgarten (2006) argue that audit firms in the oligopolistic sector dislike competition through price cutting, which may lead to a price war eventually, harming all suppliers' interests. Instead, oligopolistic firms prefer nonprice competition by providing specialized auditing services and/or high-quality audits that some clients demand and only the

largest audit firms can provide. In contrast, initial audit fee discounts prevail in the atomistic segment. Because in the highly competitive market, clients are more sensitive to price and demand is more elastic, audit firms have greater incentive to cut prices to attract new clients. Therefore, from the market structure perspective, Ghosh and Lustgarten (2006) document a negative association between audit market concentration and initial audit fee discounts.

Eshleman and Lawson (2017) provide evidence that increases in audit market concentration are associated with decreases in fee discounting, but only for clients switching from a non-Big 4 auditor to a new non-Big 4 auditor (lateral switches). However, Eshleman and Lawson (2017) exclude from their analyses clients who switched from a small audit firm to large one or vice versa (non-lateral switches). They argue that fee discounting may pertain to auditor tier, not market competition in the non-lateral switches. Different from Eshleman and Lawson (2017), I examine the association between market concentration and fee discounting using the whole sample. Specifically, I conduct auditor change analysis at audit firm and individual auditor level in the Chinese audit market. Clients follow the incumbent auditor to a new audit firm may because of the auditor-client relationship. However, clients may also change to new audit firm due to market competition. It is more appropriate to identify whether the fee discounts are due to market competition pressures based on individual partner level switches. Thus, my study both complements and extends the concurrent literature on the association between audit market concentration and fee discounting.

2.3 Hypothesis Development

According to microeconomic theory, firms in a perfectly competitive market are price takers. Although in the short term, price may be higher than the average cost and result in a positive profit, in the long run, the equilibrium price will be equal to the average cost with zero economic profit.

Contrarily, a monopolistic market has only one supplier that has total control of market price and can maximize its profit by charging a price higher than the average production cost. Barriers are therefore high for firms entering the market. By comparing the two types of market structure, we find that the equilibrium price is different based on market structure, and price increases as market concentration increases.

Industry organization theory, a branch of economics, has a great deal of literature on the association between price and market concentration (Berger and Hannan, 1989). A positive association between market concentration and price have been proved in a number of industries, such as insurance, banking, airline travel and law services (Berger and Hannan, 1989; Weiss, 1989). Given the market power hypothesis, manufacturers' bargaining power enhances as the market concentration increases. The manufacture can raise prices without concern about client loss. On the other hand, based on market efficiency theory, we cannot dismiss a negative association between concentration and price. Because of the lower product marginal cost resulting from economies of scale, market leaders are able to provide products and services at a lower price. As a result, economies of scale accompanied with

market concentration may lead to a lower price (Mueller, 1997). Taken together, theoretical studies support either a positive or negative association between market concentration and price.

DeAngelo (1981a) argues that initial audit fee discounts are rational responses of auditors facing competition. Start-up cost is significant in the initial audit. However, start-up cost and transaction costs of changing auditors give incumbent auditors a cost advantage over their competitors, allowing incumbents to set future audit fees above avoidable costs. The expectation of future quasi-rents induces them to offer clients a discount on the initial audit engagement. But competition is a necessary condition for the existence of low-balling (DeAngelo, 1981a). Chan (1999) argues that low-balling only occurs when the competition is intense. Competition among audit firms decides auditors' willingness to low-ball and the extent of fee discounting. In a competitive market, clients would ask for larger fee discounts, since they have more bargaining power and more choices of new auditors. Competition increases the auditor difficulty of competing for initial audit engagements. Auditors have to offer larger fee discounts to obtain clients in a competitive market. However, suppose in a highly concentrated market, clients have few choices if changing auditors and auditors have greater market power as concentration increases, thus an incoming auditor would be less likely to give clients fee discounts. Based on these arguments, it supports a negative association between market concentration and fee discounting.

Alternatively, we cannot ignore a possible positive association between audit market concentration and fee discounting. It is possible that higher market concentration results in larger fee discounts in initial audit engagements. As concentration increases, economics of scales allow the market leader to provide audit services at low cost (Pearson and Trompeter, 1994). Owing to economics of scales, low audit cost provides auditors opportunity and ability to give clients more discounts in the initial audit engagements. Thus, it could be a positive association between market concentration and fee discounting. Considering the mixed views, I make no prediction regarding the relationship between audit market concentration and fee discounting. I propose the research hypothesis as follows:

Hypothesis 2.1: Ceteris paribus, there is no relation between audit market concentration and initial-year audit fee discounting.

Hypothesis 2.1a: Ceteris paribus, the higher the audit market concentration, the less the initial-year audit fee discounting.

Hypothesis 2.1b: Ceteris paribus, the higher the audit market concentration, the more the initial-year audit fee discounting.

2.4 Institutional Background in Chinese Audit Market

The Chinese economic structure has undergone tremendous change since economic reforms began in 1978, bringing about the restructure of state-owned enterprises and greatly encouraging foreign investments. What resulted was a

demand for external, independent audits, so the government reestablished its auditing profession in the early 1980s. The first CPA firm was established in 1980, followed by numerous local audit firms. The opening of Shanghai and Shenzhen stock exchange in the early 1990s also accelerated audit market development. However, due to lack of capital, most audit firms were stated-owned and affiliated with a local or central government or a public university, except for joint ventures with Big 4 (DeFond, Wong and Li, 2000). In 1998, the Ministry of Finance (MOF) and the China Securities Regulatory Commission (CSRC) adopted a new regulation requiring all audit firms separate from the affiliated government to maintain auditor independence. With the completion of the disaffiliated reform, the audit market now develops under a competitive market force (Chen, Chen, Lobo, and Wang, 2011).

The Chinese audit market is characterized by intense competition. Unlike developed countries in which the Big 4 dominate the audit market, China has a much more dispersed audit market structure. According to the Chinese Institute of Certified Public Accountants (CICPA), there were 51,349 CPAs and 4,674 CPA firms by the end of 2000. But most audit firms were small and competition intense. Since 2003, the CICPA has published the revenue of the top 100 CPA firms every year (total revenue earned from listed and nonlisted clients). Table 1 lists the total revenue of each top 10 CPA firm from 2002 to 2015. It shows that, in 2002, market share of the national top four CPA firms (Top 4) was 14.90 percent and market share of the national top 10 CPA firms (Top 10) was 18.97 percent, indicating a low market concentration in the audit market. In 2015, market share for the Top 4 and

Top 10 were 21.71 percent and 39.16 percent, respectively. Research results from Francis et al. (2013) shows that Big 4 audit firms captured only 17 percent market share during the 1999-2007 period.

[INSET TABLE 2.1 ABOUT HERE]

In addition, audit firms in China need to apply for a license from CSRC to audit listed firms. In order to get the license, audit firms need to satisfy several requirements. For example, the regulation issued in 2000 requires that the audit firm has at least 20 CPAs and annual revenue of more than 8 million RMB to audit listed companies. Although there is a barrier to enter the audit market of listed companies, market competition was still intense in the early years of this century. For instance, according to CSRC, there were 71 audit firms to audit 1,244 listed companies by the end of 2002. Thus, listed companies had more bargaining power and could impose pressure on audit firms by decreasing the audit fee.

Audit fee discounting is a common price strategy in a highly competitive audit market (DeAngelo, 1981a; Chan, 1999; Huang et al., 2016). Over the years, Chinese policy makers have expressed concern about the prevalence of low audit fees in the competitive audit market, which may adversely impair auditor independence (Magee and Tseng, 1990; Chan, 1999; Craswell and Francis, 1999). In order to alleviate the thriving competition and enhance auditor independence and audit quality, regulators have taken steps to facilitate merges of CPA firms in China since 2000. In recent years, with the aim of increasing audit firm size and audit market concentration to compete with large international audit firms, the

government induced a merge wave among audit firms. In 2012, the MOF and the CSRC issued a new regulation stipulating that an audit firm is qualified to perform audit services for listed companies if it has at least 200 CPAs and more than 80 million RMB annual revenue. Therefore, the regulation-induced merge wave has been prevalent in recent years—a fast and direct way to increase firm size and decrease competition. Table 2.2 and Figure 2.1 present the audit market concentration of listed firms in China. They show that market concentration gradually increased in recent years. In 2001, market share for the Top 4 and Top 10 audit firms based on audit fees were 0.19 and 0.36, respectively. In 2015, market share for the Top 4 and Top 10 based on audit fees were 0.48 and 0.75, respectively. The market share for Top 4 and Top 10 based on clients' assets were 0.73 and 0.91, respectively.

[INSET TABLE 2.2 ABOUT HERE]

[INSET Figure 2.1 ABOUT HERE]

2.5 Methodology

2.5.1 Measurement of Market Concentration

Following Huang et al. (2016), three proxies are selected to measure the city level market concentration. The first is the top 4 audit firms' concentration rate (*CR4*), calculated as a sum of market shares of the top 4 audit firms within city-year groups:

$$CR_k = \sum_1^k \frac{x_i}{\sum_1^n x_i} \qquad\qquad (2.1)$$

where:

n = the total number of audit firms in the audit market for listed firms in city-year group,

k = the number of largest audit firms considered in a city-year group, here k=4, and

x_i = audit fees earned from listed firms by each audit firm in city-year group (In the robustness tests, the market share is calculated based on clients' total assets and number of clients.).

CR4 closer to 1 indicates that the top 4 audit firms possess a high market share and market concentration is very high, and *CR4* closer to 0 implies a very low market concentration. Concentration ratio is common used in the literature. It is easy to use and straightforward. But the information it contains should be interpreted with caution. It only provides information of the several largest firms but not the whole market. The value of concentration ratio varies as the number of largest firms changed.

The second and third proxied of market concentration is calculated based on the Herfindahl index. Herfindahl index is widely used in the literature to measure the audit market concentration (Kallapur et al., 2010; Dunn et al., 2013; Eshleman and Lawson, 2017). It does a better job to measure the market structure (Dunn et al., 2013). Compared to the concentration ratio, Herfindahl index contains all firms' market share information and describes the concentration of the whole audit market. Moreover, owning to squaring the market share, it better captures the relative

$$CR_k = \sum_1^k \frac{x_i}{\sum_1^n x_i}$$

dominance of the largest firms. Specifically, the two measures of market concentration are defined as follows:

$$TOP4HHI = \sum_1^k \left(\frac{x_i}{\sum_1^n x_i} \right)^2 \qquad (2.2)$$

$$ALLHHI = \sum_1^j \left(\frac{x_i}{\sum_1^n x_i} \right)^2 \qquad (2.3)$$

where:

j = the number of all audit firms in a city-year group, and n, k, and x_i have the same definitions as in equation (2.1).

TOP4HHI and *ALLHHI* measure the market concentration of the top 4 audit firms and the whole market, respectively. The value of the two measures range from 0 to 1. It implies a high market concentration if the HHI index closes to 1. On the contrary, it represents a very competitive market if the HHI index approaches to 0.

2.5.2 Measurement of Initial-Year Audit Fee Discounting

Following prior literature (Craswell and Francis, 1999; Ghosh and Lustgarten, 2006; Huang et al., 2015), I include an indicator variable in the cross-sectional audit fee model to measure the auditor change year, with the natural logarithm of audit fees as dependent variable. The negative coefficient of auditor change year indicator variable indicates that there is an initial-year audit fee discounting. Based on Huang et al. (2015), I include indicator variables to measure all instances of audit firm change with individual auditor change. See details at section 2.5.3.

2.5.3 Empirical Model

2.5.3.1 Auditor Change at Firm Level

To examine the association between audit market concentration and initial-year audit fee discounting following auditor firm change, I estimate the following regression model:

$$
\begin{aligned}
LNAF = \ &\beta_0 + \beta_1 INITIAL + \beta_2 INITIAL * CON + \beta_3 CON + \beta_4 SIZE + \beta_5 CURAT \\
&+ \beta_6 LIQ + \beta_7 RECTA + \beta_8 INVTA + \beta_9 LEV + \beta_{10} ROA + \beta_{11} LOSS \\
&+ \beta_{12} ADJRET + \beta_{13} STDRET + \beta_{14} SEG + \beta_{15} MTB + \beta_{16} MAO \\
&+ \beta_{17} AGE + \beta_{18} ISSUEB + \beta_{19} ISSUEH + \beta_{20} BIG4 \\
&+ \beta_{21} AUDTENURE + \beta_{22} CIFIRM + \beta_{23} CICPA + \beta_{24} SPFIRM \\
&+ \beta_{25} SPCPA + \beta_{26} MKTI + \beta_{27} LNLE + \sum INDUSTRY \\
&+ \sum YEAR + \varepsilon \qquad\qquad\qquad\qquad\qquad\qquad\qquad (2.4)
\end{aligned}
$$

where the dependent variable is the natural logarithm of audit fees ($LNAF$) as in most audit fee models (Francis, 1984; Craswell and Francis, 1999; Gul, 2006; Guan, Su, Wu, and Yang, 2016). The main variable of my interest is gauged by the interaction item $INITIAL * CON$, where $INITIAL$ is an indicator variable, indicates the audit firm change year. The coefficient of $INITIAL$, β_1 is expected to be negative if there is a initial-year audit fee discounting (Ghosh and Lustgarten, 2006). CON is city-year level market concentration, proxied by three concentration measures (*TOP4SHARE, TOP4HHI, ALLHHI*). According to prior research (Huang et al., 2016), there is a positive association between audit market concentration and audit fee in Chinese audit market. Therefore, β_3 is expected to be positive. The

main coefficient of my interest, β_2 is expected to be positive, if market concentration can mitigate initial-year audit fee discounting. On the contrary, β_2 is expected to be negative, if market concentration can enhance low-balling. Here, I make no prediction on the sign of β_2, as stated in Hypothesis 2.1.

Following prior research (Simunic, 1980; Ghosh and Lustgarten, 2006; Wang et al., 2008; Guan et al., 2016; Huang et al., 2016), I also control for other variables that may affect audit fees. To control for client size effect, I include the natural logarithm of total assets (*SIZE*), which is expected to be positive with audit fees (Simunic, 1980). The ratio of current assets to total assets (*CURAT*), the inventory ratio (*INVTA*) and the receivables ratio (*RECTA*) are included to capture the impact of client's inherent risk on audit fees. Because greater loss exposure is expected with client's inherent risk, auditors need to devote more efforts and specific auditing procedure. Thus, each of the three variables is expected to be positively associated with audit fees (Simunic, 1980; Ghosh and Lustgarten, 2006). Client profitability and leverage also reflect the extent to which the auditors' potential exposure to future loss (Hay, Knechel and Wong, 2006). In general, poor performance and higher leverage relate to greater risk to be borne by auditors, and higher audit fees would be charged (Bedard and Johnstone, 2004; Choi et al., 2008). I expect that the return on assets (*ROA*) and current ratio (*LIQ*) are negatively related with audit fees (Francis, 1984). And it is expected that the relationship between audit fees and variable leverage (*LEV*) and dummy variable of loss (*LOSS*) are positive. As in Wang et al. (2008) and Huang et al. (2016), I include client's market adjusted

stock return (*ADJRET*) and stock return volatility (*STDRET*). Growth firm represent

more risk. Thus, I include the market to book ratio (*MTB*) in the regression model

(Chen, Gul, Veeraraghavan, and Zolotoy, 2015).

To control for client complexity, I include measures for the number of

segment (*SEG*), whether the client issue B share or H share (*ISSUEB* and *ISSUEH*),

and each of them is expected to be positively related to audit fees (Ghosh and

Lustgarten, 2006; Boone, Khurana and Raman, 2014; Huang et al., 2016). Due to

increased risk and more work effect, modified opinion *(MAO)* is also controlled and

is expected to relate to higher audit fees (Boone et al., 2014). I also control for firm

age (*AGE*) as in Guan et al. (2016)

In the regression model, I also control for several variables relate to auditor

characteristics. Most prior research documents a fee premium for Big 4 audit firms

due to name brand and high audit quality, thus a dummy variable for Big 4 audit

firms (*BIG 4*) is controlled (Choi, Doogar and Ganguly, 2004; Gul, 2006; Huang et

al., 2015). Due to premiums for industry specialization, I include industry

specialized audit firms (*SPFIRM*) and industry specialized audit patterner *(SPCPA)*

(Numan and Willekens, 2012; Eshleman and Lawson, 2017). I further control for the

client importance to the audit firm (*CIFIRM*) and to the audit partners (*CICPA*), and

audit firm tenure (*AUDTENURE*) to measure the client-auditor relationships (Chen,

Sun and Wu, 2010).

Macroeconomic and institutional factors are also considered to affect audit

fees (Gul, 2006; Hay et al., 2006). Because institutional factors would affect

managers' reporting incentive which in turn may affect auditor's assessment of client risk. Therefore, following Guan et al. (2016), I include the market index of Fan et al. (2011) at the province level (*MKTI*) in which the client is located to control for the local institutions variation. I also include the natural logarithm of average living expenditure per person (LNLE) at the province level, because the wage of audit personnel and cost of audit may vary significantly by the geographic region in which the audit is conducted (Eshleman and Lawson, 2017).

Finally, I include industry and year indicators to control for the industry and year fixed effects. The industries are defined by CSRC codes. The standard errors of each model are clustered by client (Petersen, 2009). A detail definition for variables is available in the Appendix A of this thesis.

2.5.3.2 Auditor Change at Individual Auditor Level

To examine the association between audit market concentration and initial-year audit fee discounting following auditor change at individual auditor level, I estimate the following regression model:

$$LNAF = \beta_0 + \beta_1 NEWBOTH + \beta_2 NEWFIRM + \beta_3 NEWPRTNR + \beta_4 NEWBOTH$$

$$* CON + \beta_5 NEWFIRM * CON + \beta_6 NEWPRTNR * CON + \beta_7 CON$$

$$+ \beta_8 SIZE + \beta_9 CURAT + \beta_{10} LIQ + \beta_{11} RECTA + \beta_{12} INVTA$$

$$+ \beta_{13} LEV + \beta_{14} ROA + \beta_{15} LOSS + \beta_{16} ADJRET + \beta_{17} STDRET$$

$$+ \beta_{18} SEG + \beta_{19} MTB + \beta_{20} MAO + \beta_{21} AGE + \beta_{22} ISSUEB$$

$$+ \beta_{23} ISSUEH + \beta_{24} BIG4 + \beta_{25} AUDTENURE + \beta_{26} CIFIRM$$

$$+ \beta_{27} CICPA + \beta_{28} SPFIRM + \beta_{29} SPCPA + \beta_{30} MKTI + \beta_{31} LNLE$$

$$+ \sum INDUSTRY + \sum YEAR + \varepsilon \tag{2.5}$$

where the dependent variable is the natural logarithm of audit fees (*LNAF*). Following Huang et al. (2015), I include three indicator variables (*NEWBOTH, NEWFIRM, NEWPRTNR*) to measure different scenarios of auditor change at individual auditor level. *NEWBOTH* equals to 1 if both audit firm and two signing auditors have changed, and 0 otherwise. *NEWFIRM* equals to 1 if there is a new audit firm change, but at least one former signing auditor has not changed, and 0 otherwise. *NEWPRTNR* equals to 1 if there is no audit firm change, but two signing auditors have changed, and 0 otherwise. Thus, the control group is firms without an audit firm change and with at least one audit partners continuing from the prior year. To measure the association between market concentration and fee discounting following auditor change at individual partner level, the main independent variables of my interest are the following interaction items: *NEWBOTH*CON*, *NEWFIRM*CON*, and *NEWPRTNR*CON*. *CON* is city-year level market concentration, proxied by three concentration measures (*TOP4SHARE, TOP4HHI,*

ALLHHI). All control variables are the same as in equation 2.4. The standard errors of each model are clustered by client (Petersen, 2009). A detail definition for variables is available in the Appendix A of this thesis.

2.6 Sample and Descriptive Statistics

2.6.1 Sample

Table 2.3, Panel A presents my sample selection procedures for the audit fee analysis. I begin with observations listed in the A-share market with nonmissing audit fee data in the China Stock Market and Accounting Research (CSMAR) database from 2002 through 2010 (n= 11,553). I then delete (1) 485 observations with missing individual auditor information; (2) 138 observations in the financial industry; (3) 1,140 observations with missing segment data in the WIND database; (4) 770 observations with missing data to calculate other control variables in CSMAR. These result in a final sample of 9,020 firm-year observations covering the period from year 2002 through 2010. In some analyses, the sample size is smaller due to the use of additional variables. Panel B of Table 2.3 presents the sample distribution by years, showing that observations are evenly distributed across the year, ranging from 6 percent in 2002 to 15 percent in 2010. Panel C of Table 2.3 displays that the sample is not distributed evenly across industry. The industry classification is issued by CSRC in 2012, using letters (A, B, C…) to represent different categories and two-digit Arabic numerals to represent classes in a category. In this thesis, all industries are represented by letter categories except for the C

manufacture industry, which uses two-digit class codes. The sample industry consists of 17 categories and the C. The manufacture industry consists of 28 classes. In the sample, industries C14, C19, C20, C21, C23, C24, C40, H, M, N, O, Q, and R cover less than 1 percent of observations. Panel D of Table 2.3 reports the sample distribution by provinces. In the sample, there are 31 provinces and 243 cities. Most listed firms operate in Shanghai, Beijing, and Guangdong provinces. Only 0.53 and 0.64 percent observations operate in Xizang and Qinghai provinces. The sample distribution varies substantially across provinces and portrays the regional disparities of China's economic growth.

The sample years start from 2002, because fiscal year 2001 is the first financial reporting year that listed firms in China were required to disclose audit fees paid to audit firms, and the analysis on auditor change requires the auditor information in previous year. Therefore, I conduct my analysis beginning with year 2002. The sample year ends in year 2010, because begin in 2011, the Chinese listed firms are required to hire auditors to evaluate and issue an independent report on their firms' internal control effectiveness, which may result in an increase in audit fees. Therefore, my sample period ends in year 2010.

[INSET TABLE 2.3 ABOUT HERE]

2.6.2 Descriptive Statistics

Table 2.4 provides the descriptive statistics of variables in the sample. The final sample consists of 9,020 firm-year observations from 2002 through 2010. All continuous variables are winsorized at the 1st and 99th percentiles. A detailed

definition of variables is provided in Appendix A. The minimum and maximum value of audit fees are 30 thousand RMB and 40,500 thousand RMB, respectively. The mean value of dependent variable *LNAF* is 13.09. For the three concentration measure variables, *TOP4SHARE, TOP4HHI* and *TOP4HHI* range from 0.51 to 1.00, 0.07 to 1.00 and 0.10 to 1.00, respectively. They differ across city-year groups with a standard deviation of 0.14, 0.26, 0.26, respectively. On average, auditor switching occurs in 9 percent of the sample (the mean of *INITIAL* is 0.09). The mean of *NEWBOTH* indicates that among 7 percent observations, both audit firm and audit partners are different from previous year. About 2 percent observations have audit firm change but still with at least one previous audit partner. 11 percent observations change both audit partners but still with the same audit firm.

With respect to the control variables, the sample is comparable to those used in previous studies (Chen et al., 2010; Huang et al., 2015; Guan et al., 2016). The mean value of nature logarithm of total assets (*SIZE*) is 21.40. *CURAT* (current assets to total assets) and *LIQ* (current assets to current liabilities) has a mean of 0.52 and 1.60, respectively. On average, listed firms in China have a high leverage. The mean of *LEV* is 0.52. About 13 percent observations report a loss. And 8 percent firm-years received a MAOs (*MAO*). Among the sample, 5 percent observations issue B shares (*ISSUEB*) and 1 percent observations issue H share (*ISSUEH*). Only 4 percent firm-years are audited by the international Big 4 audit firms (*BIG4*). The mean of *CICPA* indicates that a client's total assets are about 22 percent of the total assets audited by the signing auditor. On average, the mean of *SPFIRM* and *SPCPA*

shows that about 17 percent observations hire an industry specialized audit firm and 9 percent observations hire an industry specialized signing auditor. The average mean value of *MKTI* and *LNLE* are 8.18 and 9.24, respectively.

[INSET TABLE 2.4 ABOUT HERE]

Table 2.5 presents the Pearson and Spearman correlations among the key variables. The negative correlation between *INITIAL* and *LNAF* indicating the existence of low-balling. The variable *INITIAL* is negatively correlated with three concentration measures, suggesting that audit firm change is less likely to happen when the audit market concentration is high. *NEWBOTH* is also negatively correlated with concentration variables, indicating that both audit partner and audit firm switching are less likely to incur in higher concentration environment. In general, auditor change is more likely to happen in clients with more complicate business (Pearson correlation coefficient between *INITIAL* and *RECTA* is 0.029), higher leverage (Pearson correlation coefficient between *INITIAL* and *LEV* is 0.061), poor performance (Pearson correlation coefficient between *INITIAL* and *ROA* is -0.076, Pearson correlation coefficient between *INITIAL* and *LOSS* is 0.062), and MAOs (Pearson correlation coefficient between *INITIAL* and *MAO* is 0.084). However, three concentration measures are negatively correlated with the nature logarithm of audit fees, which is not consistence with most prior research (Huang et al., 2016).

[INSET TABLE 2.5 ABOUT HERE]

2.7 Empirical Results

To examine the association between audit market concentration and initial audit fee discounting, I conduct the panel OLS regression model (2.4) and (2.5) as stated in section 2.5.

Table 2.6 presents the multiple-regression results for testing Hypothesis 2.1 based on audit firm change. The analysis is based on the full sample of 9,020 firm-year observations from 2002 through 2010. Column (1) of Table 2.6 investigates the effect of market concentration on audit fees and the existence of initial audit fee discounting as conducted in prior literature (Huang et al., 2015; Huang et al., 2016; Eshleman and Lawson, 2017). The coefficient of indicator variable *INITIAL* is negative and significant at the 5 percent level (t-value = -2.21), suggesting initial audit fee discounting in the Chinese audit market, which is consistent with Huang et al. (2015). The coefficient of the market concentration measure *ALLHHI* is positive (0.120) and significant at the 1 percent level (t-value = 3.33), suggesting a positive association between audit market concentration and audit fees. The results are consistent with prior studies and corroborate the concerns of regulators (Bandyopadhyay and Kao, 2004; Gerakos and Syverson, 2015; Huang et al., 2016).

Columns (2) through (4) in Table 2.6 present the regression results of equation (2.4) to test the association between audit market concentration and fee discounting. I use three measures *TOP4SHARE*, *TOP4HHI* and *ALLHHI* as proxies for the

concentration *CON* in columns (2) through (4), respectively. The primary explanatory variable is the interaction item *INITIAL*CON*. The results in Table 2.6 show that the coefficients of *INITIAL*CON* are all positive and significant. For example, in column (4), the coefficient of *INITIAL*ALLHHI* is 0.172 and significant at the 1 percent level (t-value = 2.65). The results support Hypothesis 2.1a that initial audit fee discounting would decrease as audit market concentration increases.

Based on prior research, I also control for other variables that previous studies document as affecting audit fees (Simunic, 1980; Gul, Chen and Tsui, 2003; Wang et al., 2008; Chen et al., 2015). Consistent with prior research, the coefficients of most control variables in Table 2.6 have the same direction as in previous studies. Specifically, firms that have larger assets (*SIZE*), higher leverage (*LEV*), poorer performance (*ROA*, *ADJRET*), more complicates business (*SEG*, *ISSUEB*) are charged higher audit fees. As expected, Big 4 audit firms (*BIG4*) and industry specialized auditors (*SPCPA*) charge an audit fee premium (DeFond, Francis and Wong, 2000; Huang et al., 2015; Guan et al., 2016). In addition, market index (*MKTI*) is significantly positive associated with audit fees, indicating audit fees are higher in more developed areas. Audit fees are higher when local living expenditures (*LNLE*) are higher. Overall, the values of adjusted R^2 are 0.541 for model (1), and 0.542 for model (2) through (4), respectively, providing confidence in explanatory power of the audit fee model.

Table 2.7 shows the estimation results of equation (2.5) for testing Hypothesis 2.1 based on individual auditor change. I include indicator variables

NEWBOTH, *NEWFIRM* and *NEWPRTNR* to measure different types of auditor changes at individual auditor level. The coefficients of *NEWBOTH* and *NEWPRTNR* are still negative after including the intersection items, indicating the existence of initial-year fee discounting.

The primary interest variable is the intersection item between those indicator variables and concentration proxies. The coefficients of *NEWBOTH*CON* are all significantly positive, suggesting that audit market concentration is negatively related to fee discounting when both audit firm and two signing audit partners are new. Taken the Model (3) of Table 2.7, for example, the coefficient of *NEWBOTH*HHI* is 0.249 and significant at less than the 1 percent level (t-value = 3.08). But the coefficients of *NEWFIRM*ALLHHI* and *NEWPRTNR*ALLHHI* are not significant. Thus, it appears that the association between audit market concentration and initial-year audit fee discounting differs with different types of auditor changes. The association in situations where both audit firm and two signing auditors have changed is different from that in other types of auditor changes involving audit firms or audit partners.

NEWBOTH represents both audit firm and signing auditors have changed, and prior research finds that fee discounting is more likely to happen under this scenario (Huang et al., 2015). I think that *NEWBOTH* represents a real auditor change, thus fee discounting under this scenario would be affected by a different market concentration. While, both *NEWFIRM* and *NEWPRTNR* represent a continued auditor-client relationship, one is a client with a former audit partner, and

the other is a client with a former audit firm. Using data from the Chinese stock market, Chen, Su and Wu (2009) find that earnings-aggressive clients are more likely to follow their former audit partners to a new audit firm, and the former partner becomes more tolerant to the former client's earnings management during the second and third post-switch years. However, it could be the reason that clients want to avoid switching cost and transaction cost that result from changing audit firm or audit partner, thus they would like to keep a continued client-auditor relationship. Therefore, under *NEWFIRM* and *NEWPRTNR*, a client may want to continue the relationship with a former auditor rather than received discounted fees. As a result, the initial audit fee under *NEWFIRM* and *NEWPRTNR* is not sensitive to change in audit market concentration. The control variables in Table 2.7 are similar to those in Table 2.6, in that most coefficients have expected signs as in previous studies.

In summary, the regression results from tables 2.6 and 2.7 provide evidence for the negative association between audit market concentration and initial-year audit fee discounting, analyzing the auditor change at both audit firm and individual auditor level.

[INSET TABLE 2.6 ABOUT HERE]

[INSET TABLE 2.7 ABOUT HERE]

2.8 Robustness Tests

In this section, I conduct several sensitivity tests to further confirm reported findings. First, I use alternative measures of audit market concentration based on clients' total assets and the number of clients. Second, I control for the effect of state ownership. Finally, I conduct a two-stage instrumental variables approach to address the endogenous relation between concentration and audit pricing.

2.8.1 Alternative Measures of Audit Market Concentration

To ensure the robustness of main findings, I use two alternative measures of audit market concentration based on clients' total assets and the number of clients. The results are presented in Table 2.8 and Table 2.9, respectively. From the audit firm level change analysis, Panel A of Table 2.8 shows that the coefficient of *INITIAL*TOP4SHARE* is not significant, and the coefficients of *INITIAL*TOP4HHI* and *INITIAL*ALLHHI* are both significantly positive. Table 2.9 reports the regression results using alternative concentration measure calculated based on number of clients. Panel A of Table 2.9 shows that the coefficients of *INITIAL*TOP4SHARE, INITIAL*TOP4HHI* and *INITIAL*ALLHHI* are all significantly positive. From the individual auditor level change analysis, Panel B of Table 2.8 and Panel B of Table 2.9 present consistent results as those in the main test. Taken together, I conclude that the primary inferences are generally consistent by using different measures of audit market concentration.

[INSET TABLE 2.8 ABOUT HERE]

[INSET TABLE 2.9 ABOUT HERE]

2.8.2 Control for State Ownership

Because a stated owned firm may have different incentives and resources from the government as stated in Wang et al. (2008), it is important to control for state ownership's impact on audit pricing. To account for state ownership, I include a dummy variable indicating the presence of state ownership (*STATE*) in estimating equation (2.4) and (2.5).

Since the state ownership data starts from year 2003 in CSMAR, the number of observations falls by 8,462 observations. In Panel A of Table 2.10, the coefficient of *INITIAL*TOP4SHARE* is significant with a positive sign (t-value = 2.09), and the coefficients of *INITIAL*TOP4HHI* and *INITIAL*ALLHHI* are both significantly positive at the 1 percent level (t-value = 2.61, 2.60, respectively), indicating higher concentration is associated with less initial-year audit fee discounting. Similarly, in Panel B, the coefficients of *NEWBOTH*CON* are all significantly positive. Thus, the findings suggest that the main results are still consistent when include the state ownership effect.

[INSET TABLE 2.10 ABOUT HERE]

2.8.3 Endogeneity Tests

The association between concentration and fee discounting could potentially suffer endogenous problems. To address this concern, I control for firm fixed effects, city fixed effects and use a two-stage instrumental variable approach. It is possible that some constant omitted variable may drive the results. Thus, I reexamine my

main analysis incorporating firm fixed effects and city fixed effects, respectively. Tables 2.11 and 2.12 report the results. These findings support prior results and rule out the possibility that some time-invariant omitted variable is driving the results.

[INSET TABLE 2.11 ABOUT HERE]

[INSET TABLE 2.12 ABOUT HERE]

Concentration itself is possibly driven by product differentiation. For example, some clients demand a high-quality audit, which is charged at high price or has less fee discounting, so differentiated product offerings affect concentration. Next, I conduct a two-stage instrumental variable approach to alleviate the endogeneity concern. Following Boone, Khurana and Raman (2012), I try to find factors that affect an auditor's decision to open an office in a city as exogenous instruments for concentration. Thus, I use foreign investments added during the year (*FINV*), for which data is available from the CEInet Statistics Database.

In the first stage, I regress the audit market concentration measure (*CON*) and the interaction term (*INITIAL*CON*) on the instrument variable (*FINV*) ,the interaction term (*INITIAL*FINV*) , along with other control variables in the baseline regression (2.4). In the second stage, I re-estimate the baseline regression by substituting the predicted values from the first-stage regression ($\widehat{CON}$ and $\widehat{INITIAL*CON}$) for *CON* and for *INITIAL_CON*. I estimate the following regression model:

The first-stage:

$$CON = \beta_0 + \beta_1 FINV + \beta_2 INITAL + \beta_3 INITIAL * FINV + \beta_4 SIZE$$
$$+ \beta_5 CURAT + \beta_6 LIQ + \beta_7 RECTA + \beta_8 INVTA + \beta_9 LEV$$
$$+ \beta_{10} ROA + \beta_{11} LOSS + \beta_{12} ADJRET + \beta_{13} STDRET + \beta_{14} SEG$$
$$+ \beta_{15} MTB + \beta_{16} MAO + \beta_{17} AGE + \beta_{18} ISSUEB + \beta_{19} ISSUEH$$
$$+ \beta_{20} BIG4 + \beta_{21} AUDTENURE + \beta_{22} CIFIRM + \beta_{23} CICPA$$
$$+ \beta_{24} SPFIRM + \beta_{25} SPCPA + \beta_{26} MKTI + \beta_{27} LNLE$$
$$+ \sum INDUSTRY + \sum YEAR + \varepsilon$$

$$(2.6)$$

$$INITIAL * CON = \beta_0 + \beta_1 FINV + \beta_2 INITAL + \beta_3 INITIAL * FINV + \beta_4 SIZE$$
$$+ \beta_5 CURAT + \beta_6 LIQ + \beta_7 RECTA + \beta_8 INVTA + \beta_9 LEV + \beta_{10} ROA$$
$$+ \beta_{11} LOSS + \beta_{12} ADJRET + \beta_{13} STDRET + \beta_{14} SEG + \beta_{15} MTB$$
$$+ \beta_{16} MAO + \beta_{17} AGE + \beta_{18} ISSUEB + \beta_{19} ISSUEH + \beta_{20} BIG4$$
$$+ \beta_{21} AUDTENURE + \beta_{22} CIFIRM + \beta_{23} CICPA + \beta_{24} SPFIRM$$
$$+ \beta_{25} SPCPA + \beta_{26} MKTI + \beta_{27} LNLE + \sum INDUSTRY + \sum YEAR + \varepsilon$$

$$(2.7)$$

The second-stage:

$$LNAF = \beta_0 + \beta_1 INITIAL + \beta_2 \widehat{INITIAL * CON} + \beta_3 \widehat{CON} + \beta_4 SIZE$$
$$+ \beta_5 CURAT + \beta_6 LIQ + \beta_7 RECTA + \beta_8 INVTA + \beta_9 LEV$$
$$+ \beta_{10} ROA + \beta_{11} LOSS + \beta_{12} ADJRET + \beta_{13} STDRET + \beta_{14} SEG$$
$$+ \beta_{15} MTB + \beta_{16} MAO + \beta_{17} AGE + \beta_{18} ISSUEB + \beta_{19} ISSUEH$$
$$+ \beta_{20} BIG4 + \beta_{21} AUDTENURE + \beta_{22} CIFIRM + \beta_{23} CICPA$$
$$+ \beta_{24} SPFIRM + \beta_{25} SPCPA + \beta_{26} MKTI + \beta_{27} LNLE$$
$$+ \sum INDUSTRY + \sum YEAR + \varepsilon$$

$$(2.8)$$

I then estimate *CON* with the three instrument variables and the other control variables used in the equation (2.4). I then re-estimate equation (2.4) by substituting the predicted value from the first-stage regression for *CON*. In the second-stage

regression, the slope coefficient on *INITIAL*CON* is positive and significant at the 10 percent level in model (1) and at the 1 percent level in models (2) and (3) in Table 2.13. Assuming the appropriateness of using the instrumental variable approach, its estimates suggest that the statistically significant negative association between concentration and fee discounting is robust to possible endogeneity bias.

Panel A1 and A2 of Table 2.13 present the first-stage results. The instrument variables are significantly positively associated with the concentration measure (*CON*) and the interaction term (*INITIAL_CON*). I also perform several tests that access the validity of the instruments. Specifically, the Wu-Hausman test rejects the null hypothesis that audit market concentration measures are exogenous. The high F-statistic and Partial R^2 imply that the instruments are not weakly identified. Panel B of Table 2.13 report the results for the second-stage estimation, where the coefficient on $\widehat{INITIAL * CON}$ are all significantly positive. Consistent with Hypothesis 2.1a, the results suggest that high audit market concentration is associated with less initial-year audit fee discounts after control for endogeneity.

[INSET TABLE 2.13 ABOUT HERE]

2.9 Additional Analyses

To better understand the negative association between audit market concentration and fee discounting, I provide additional analyses to examine whether the association varies across different auditor types and legal environments.

2.9.1 The Effect of Auditor Type

Because of reputation concern (DeAngelo, 1981b) and auditors' deep pockets (Lennox, 1999), large audit firms usually provide higher quality services and charge higher audit fees than small audit firms (DeAngelo, 1981b). Studies have shown that large audit firm fee premium exists worldwide (Francis, 1984; Palmrose, 1986; Craswell, Francis and Taylor, 1995; Choi et al., 2008; Ghosh and Pawlewicz, 2009). Moreover, Choi et al. (2008) argue that audit fees for Big 4 auditors' clients change less than those for non-Big 4 auditors' clients as the legal liability regime becomes stronger across different countries. Since Big 4 auditors still provide high-quality audit even in weak legal regime countries, they charge similar level of audit fees, regardless of different strength of legal regimes. Therefore, I expect that the negative association between concentration and initial audit fee discounting would be less pronounced among big audit firms than among small audit firms. To maintain high-quality services, initial-year audit fee discounting offered by large audit firms should be stable, regardless of market concentration. Fee structure for small audit firms, on the other hand, would depend upon the degree of market concentration.

To test whether the main effect of market concentration on fee discounting varies across different auditor types, I divide the sample into two groups: companies audited by Top 10 (large) audit firms versus companies audited by non-Top 10 (small) audit firms. I delete the variable *BIG4* in equations (2.4) and (2.5) and

re-estimate the regressions in the two subsamples. Tables 2.14 and 2.15 report the results based on auditor change at audit firm and individual auditor level.

The results in tables 2.14 and 2.15 show that initial-year audit fee discounting exists among both big and small audit firms. In Panel A of Table 2.14, there is little evidence of a relationship between concentration and fee discounting among big audit firms. The results are similar in the Panel A of Table 2.15 based on the individual auditor level analysis. However, evidence shows that among small audit firms, there is a more significantly negative association between market concentration and fee discounting. Based on audit firm level analysis, the coefficients of *INITIAL*CON* in Panel B of Table 2.14 are all positively significant among small audit firms. Similarly, individual auditor level analysis shows that the coefficients of *NEWBOTH*CON* are also significantly positive among small audit firms. Overall, the findings are consistent with my prediction, that the negative association between concentration and fee discounting is more pronounced among small audit firms.

[INSET TABLE 2.14 ABOUT HERE]

[INSET TABLE 2.15 ABOUT HERE]

2.9.2 The Effect of Legal Liability

Prior research has shown that legal liability plays an important role in the audit pricing process (Simunic, 1980). According to the audit fee model proposed by Simunic (1980), audit fees are the sum of the cost of auditor effort and potential liability loss, whose risk shapes auditors' pricing decision. Choi et al. (2008) provide

evidence of the legal liability impact on audit pricing and Big 4 fee premium in a cross-country setting. They find that auditors' expected legal liability loss and audit fees increase monotonically as a country's legal regime becomes stricter. This leads auditors to charge a higher audit fee for the increased audit effort or risk premium. In a similar vein, Ghosh and Pawlewicz (2009) find that large firms do not offer fee discounts to clients in post-SOX years, after which increased workloads and the threat of litigation limited large auditors from offering initial audit fee discounts.

The strength and strictness of legal regimes are geographically different in China. Given that legal environment affects auditors' effort level and audit fees (Choi et al., 2008), I propose that in strong legal environments, auditors are exposed to greater legal liability loss, thus audit firms are less likely to offer fee discounts on initial audit engagements, regardless of different level of market concentration. Conversely, in a weak legal environment, auditors would be more likely to cut prices to attract new clients if market concentration were low, because auditors would be less likely to sustain a legal liability loss in a weak legal environment.

What's more, strong legal environment or law enforcement encourages fair competition (Ghosal, 2011). Auditors would be less likely to engage in destructive competition by offering large fee discounts in a strong legal regime, regardless of different levels of market concentration. Thus, I anticipate that the negative association between audit market concentration and initial audit fee discounting is more pronounced in weak legal environments.

Taking into account the effect of legal liability on the relation between concentration and fee discounting, I re-estimate the audit fee regression model in two subsamples. Based on the median value of *MKTI*, I divide the sample into two groups: firms located in strong legal environments and firms located in weak legal environments. I delete the variable *MKTI* in equations (2.4) and (2.5) and re-estimate the regression in the two subsamples.

Results shown in tables 2.16 and 2.17 present the effect of legal liability on the association between market concentration and fee discounting. The findings suggest that a strong legal liability completely attenuates the extent of fee discounting related to audit market concentration. There is little evidence of a relationship between concentration and fee discounting in strong legal environments. The coefficients of *INITIAL*CON* are not significant in Panel A of Table 2.16. So are the coefficients of *NEWBOTH*CON* in Panel A of Table 2.17. However, the association between concentration and fee discounting still exists in weak legal environments. The coefficient of *INITIAL*TOP4HHI* is 0.188, and t-value is 2.41. In Panel B of Table 2.17, the coefficient of *NEWBOTH*TOPHHI* is 0.278, and t-value is 2.85. Collectively, the evidence is consistent with my prediction, that the negative association between market concentration and fee discounting is more pronounced in weak legal environments.

[INSET TABLE 2.16 ABOUT HERE]

[INSET TABLE 2.17 ABOUT HERE]

2.10 Conclusion

In this chapter, I examine the association between audit market concentration and initial-year audit fee discounting in the Chinese audit market. Chan (1999) argues that low-balling only exists in competitive markets. However, few researchers provide direct empirical evidence on the role of market concentration on fee discounting, which motivates my research interest. Additionally, given the mixed findings on concentration and audit pricing, DeFond and Zhang (2014) call for further research in this area. Therefore, my study addresses this call.

Contrary to developed countries, China has a competitive audit market, and price competition is prevalent in the local audit market. Moreover, the disclosure of auditor partners' names provides opportunities for me to conduct the auditor change analysis at individual auditor level. Therefore, it is also interesting and important to explore the relation between audit market concentration and fee discounting in such an important developing country.

In this chapter, I find that an increase in market concentration would result in reduced low-balling, consistent with prior research that finds a positive association between concentration and audit fees (Huang et al., 2016). Additionally, the results suggest that the negative association between concentration and fee discounting diminished for large audit firms and firms located in strong legal environments. In other words, the attenuated effect of concentration on fee discounting is more pronounced with small audit firms and firms located in weak legal environments. In a separate analysis of individual partner changes, I find such results are only found

when both the audit firm and audit partners are different from those in the previous year. Analyses based on the individual partner level can better demonstrate that the influencing factor on fee discounting is market concentration, not auditor-client relationship.

The study complements the existing literature on fee discounting. The analysis presented here supports the view that competition is a necessary condition for fee discounting by (DeAngelo, 1981a) and (Chan, 1999). My study provides empirical evidence that concentration affects the extent of initial-year audit fee discounting. For those concerned about audit market concentration's effect on audit pricing, this study's results lend support to China's audit firm merge wave, as it creates a way to reduce price competition in that market. However, the study is limited by observing data from a single market, so the results cannot necessarily be generalized to other markets. Additionally, because I could not observe audit firms' true cost, initial-year audit fee discounts are only indirect evidence of low-balling.

[INSET APPENDIX A ABOUT HERE]

Chapter 3 The Impact of Audit Fee Regulation on Audit Outcomes: Evidence from China

3.1 Introduction

Audit fees, in general, are outcome of negotiation between clients and auditors (DeFond and Zhang, 2014). However, in China, audit fees are quasi-regulated by the government. In 2010, the Chinese government launched an audit fee regulation, which works as imposing a price floor on audit fees, with the aim of increasing audit fees and enhancing audit quality. Whether the government should intervene in the audit market is a critical and inconclusive research question (Porta, Lopez and Shleifer, 2006; Aobdia and Shroff, 2017). The audit fee regulation in China provides a unique and interesting setting to address the question of whether government intervention in audit fee structure adds value to the audit quality in a developing country. Specifically, in this essay, I focus on the impact of this audit fee regulation on small audit firms, which comprise a large market share in the Chinese audit market (Chen et al., 2011; Huang et al., 2016) and are more likely to be affected by the audit fee regulation.

Most prior literature generally concludes that large, or Big N, auditors charge higher audit fees and provide higher audit quality than small or non-Big N auditors (DeAngelo, 1981a, 1981b; Francis, 1984; Choi et al., 2008; Chan and Wu, 2011). Stronger incentives arising from higher litigation and reputation risk, as well as greater competencies, motivate large auditors to deliver high-quality audit services.

Given less litigation exposure and reputation loss, small auditors lack the incentives and resources to supply high audit quality (Simunic, 1980; Palmrose, 1988; Becker, Defond, Jiambalvo, and Subramanyam, 1998; Lennox, 2003; Khurana and Raman, 2004; Behn, Choi and Kang, 2008) and are more likely to compete for clients by charging lower audit fees (Francis, 1984; Palmrose, 1986; Ghosh and Lustgarten, 2006), a practice particularly prominent among most small audit firms in China (Huang et al., 2015). Unlike developed countries in which the Big 4 dominate the audit market, China has a much more competitive audit market structure. Many small auditors compete for clients through price competition with regard to the low litigation risk in China (Chen et al., 2010; Ke, Lennox and Xin, 2014; Chen, Peng, Xue, Yang, and Ye, 2016; He, Pittman, Rui, and Wu, 2017).

Regulators in China have long been concerned about the adverse impact of low audit fees on auditor competency and audit quality (Liu, 2010). After controlling for a certain level of audit risk, fees reflect the extent of audit effort devoted to the audit process that is related to audit quality (Simunic, 1980; Francis, 2011; Zhang, 2018). Low audit fees would deter auditors' competency and incentive to provide high audit quality, since funding doesn't allow for additional resources and personnel required for a thorough audit procedure (DeFond and Zhang, 2014; Huang et al., 2016). In January 2010, China's Ministry of Finance (MOF) and National Development and Reform Commission (NDRC) jointly enacted the *Administrative Measures for the Service Charges of CPA Firms*, an audit fee regulation that specifies a price floor on audit fees. It requires CPA firms to follow

government-guided prices to set audit fees, and the final actual audit fees should not be lower than a set lower-limit price. Regulators in China believe that increasing audit fees, especially for small audit firms, is a way to improve audit quality.

However, existing literature offers differing views on the fee-quality association (Frankel, Johnson and Nelson, 2002; Kinney, Palmrose and Scholz, 2004). On one hand, high audit fees reflect more auditor effort, resulting in high audit quality (Srinidhi and Gul, 2007). On the other hand, auditors might compromise their independence because of an economic bond with clients, resulting in low audit quality (DeAngelo, 1981a; Dye, 1991). Therefore, ex ante we have little knowledge about whether the government intervention in audit fee could improve audit quality.

Testing whether the regulation affects audit fees and audit quality is a challenge, because all auditors within the market are subject to the same regulation. However, large and small auditors in this setting are subject to different levels of regulatory oversight, due to the fees they charge their clients. Prior research finds that large auditors charge higher audit fees and provide higher audit quality in China (Gul, Kim and Qiu, 2010; Chan and Wu, 2011; Chen et al., 2011). In other words, large auditors are less likely to set a price lower than the price floor, while small auditors are more likely to do so. As a result, the audit fee regulation is less likely to affect large auditors to much of an extent, if any, while small auditors that are more likely to compete and offer lower audit fees are strongly affected (Ghosh and Lustgarten, 2006; Huang et al., 2015). Therefore, classifying large and small

auditors in this setting also identifies different affected groups subject to regulatory oversight. Because small auditors are subject to greater regulatory oversight by the regulation than large auditors, I focus on the audit outcomes of small auditors and use large auditors as a control sample, using a difference-in-difference research design to examine the research question.

Specifically, I shed light on small audit firms and try to answer the following questions: (1) Did audit fees increase after the audit fee regulation? (2) Did audit quality improve following the audit fee regulation's adoption? (3) Was there a difference in audit outcomes following the audit fee regulation across different legal environments?

To investigate the impact of China audit fee regulation on audit fees and audit quality, I collect 5,333 firm-year observations listed in China's A-share market covering the 2007 to 2008 preregulation period and the 2010 to 2011 postregulation period. Because the regulation was announced in January 2010 and the government required all provinces to implement the regulation before the end of June 2010, I delete fiscal year 2009 because of uncertainty about the adoption date for each company in year 2010. The non-Big N auditors that I focus on are my treatment group, while the Big N auditors are the control group.

First, I examine the effect of audit fee regulation on audit fees. Because of deep pockets (Lennox, 1999) and reputation concern (Lennox, 1999; Ferguson and Stokes, 2002), large audit firms usually provide higher audit quality services (DeAngelo, 1981b) and charge higher audit fees compared with small audit firms.

Prior studies document that large audit firm fee premiums exist in the U.S. market and around the world (Francis, 1984; Palmrose, 1986; Craswell et al., 1995; Simon, 1997; Choi et al., 2008). Small auditors, in general, charge lower audit fees than large auditors (Palmrose, 1986; DeFond et al., 2000; Ireland and Lennox, 2002; Ferguson, Francis and Stokes, 2003). According to the act, audit fees must be increased if preregulation audit fees were lower than the price floor, based on the standard audit price table in each province. I expect that the audit fee regulation is more likely to increase audit fees for small auditors. The results show that, compared with large auditor firms, small auditors exhibit a greater increase in audit fees following the audit fee regulation. The results remain robust to a variety of sensitivity checks.

Next, I examine the impact of the audit fee regulation on audit quality. Ex ante, it is unclear how the audit fee regulation affects the audit quality for small audit firms. If the regulation increases audit fees, auditors may devote more resources to audit procedures, resulting in higher audit quality (Srinidhi and Gul, 2007); or they may compromise independence because of increased economic dependence on clients (Craswell, Stokes and Laughton, 2002; Larcker and Richardson, 2004; Blay and Geiger, 2013), which results in lower audit quality; or they may just receive the extra audit fees, but do nothing, keeping audit quality unchanged, but increasing profit. In the main test, I use performance-matched discretionary accruals (Kothari, Leone and Wasley, 2005) and abnormal working capital accruals from Dechow and Dichev (2002) model to measure audit quality.

The evidence suggests that discretionary accruals have a larger decrease for small auditors than for large auditors in the postregulation period. The results are still robust to various measures of audit quality and alternative empirical specifications.

In the robustness checks, I conduct a subsample analysis, examining the audit fee regulation's effect between small and large audit firms' subsamples, respectively. Next, I include firm fixed effects to mitigate concern that the results are driven by time-invariant client characteristics. Next, I use the likelihood of modified audit opinions MAOs issuance, the likelihood of financial reporting restatements, earnings response coefficients (ERCs), and the likelihood of being sanctioned as alternative proxies for audit quality. The results suggest that companies audited by small audit firms have a lower likelihood of subsequent accounting restatements, a higher ERCs, and a lower likelihood of being sanctioned for problematic financial statements and audits than firms audited by large audit firms following the audit fee regulation. But I fail to find that small auditors are more likely to issue MAOs following the regulation adoption compared with large auditors. Given clients' avoidance to unfavorable audit opinions (Lennox, 2000; Piotroski, Wong and Zhang, 2015; Chen et al., 2016), it is not surprising that there is no significant change on auditor's propensity to issue unclean audit opinions following the audit fee regulation, as economic dependence on clients increases. Overall, it is likely that the audit fee regulation simply spurs auditors to devote more effort, but it cannot improve auditor independence.

In addition, I reexamine the main test using different subsamples to mitigate the concern that confounding events may affect the results. First, I drop companies audited by audit firms that change to a limited liability partnership (LLP) structure during the sample period to eliminate the concern that results are driven by audit firm structure reform. Also, I exclude companies that voluntarily or mandatorily implemented internal control audits to avoid the confounding effect that increased audit fees and improved audit quality arose from its implementation. The results are still consistent when use different subsamples. Also, I exclude observations that switched auditors during the sample period, because auditor switched are likely to affect audit fees. The results are still consistent. Moreover, I also conduct a propensity score matching (PSM) approach, to mitigate the concern that the endogeneity problem arose from choosing either a small or large audit firm, and the results are still consistent. Finally, I use different method to identify the treatment and control sample. I partition the sample based on standardized audit fees and client size, and the results and still consistent.

To further understand the audit fee regulation's impact on audit outcome, I also investigate how audit fee and audit quality vary across provinces with different legal environments. The results indicate that audit fees and audit quality increases are more pronounced in weak legal environments. Taken together, the results in my second essay indicate that China's audit fee regulation has led to an increase in audit fees and improvements in audit quality, especially for companies audited by small auditors. Accordingly, higher audit fees enjoyed by small auditors after regulation

implementation represent greater audit effort, but do not reflect an improvement in auditor independence.

There is a paper by Kasai and Takada (2012) examines the economic effects of a Japanese audit fee regulation and deregulation. My paper differs from Kasai and Takada (2012) in several respects. First, research question and findings are different. In 2004, Japan discontinued the issuance of an audit fee pricing table, which applied as a pricing ceiling. Kasai and Takada (2012) focus on the fee-quality relationship in the regulation and deregulation periods. They find that higher audit fees are associated with poor accrual quality during both periods. Their results also indicate that the audit fee regulation has not improved accrual quality in Japan. My study examines the impact of a Chinese audit fee regulation on audit fees and audit quality. The results show that the Chinese audit fee regulation has increases small auditors' audit fees and improved their audit quality. Second, my paper focuses on the regulation's effect on small auditors, which are more likely to be affected by the regulation. I use small auditors as treatment group and large auditors as control group to conduct a difference-in-difference analysis. While Kasai and Takada (2012) do not shed light on the possible differing effect between small and large audit firms. Third, audit market structure varies between the two countries. China has a much more competitive audit market structure. Non-Big 4 auditors take a larger market share in Chinese audit market, while in Japan, Big 4 dominates the audit market (Kawanishi and Takeda, 2011). Therefore, exploring non-Big 4 auditors' behaviors is very critical in emerging market.

This study contributes to several strands of literature. First, regarding regulatory intervention's role on the audit market, auditing is not just a service companies purchase, it is a mechanism through which companies assure investors they are providing reliable accounting information (DeFond and Zhang, 2014). To improve audit quality, regulatory intervention plays a critical role by altering clients' and auditors' incentives and competencies (DeFond and Zhang, 2014). However, whether regulator intervention adds value to audit quality is still an empirical question. A growing body of research examines the effect of specific SOX provisions (Raghunandan and Rama, 2006; Ghosh and Pawlewicz, 2009; Landsman, Nelson and Rountree, 2009; Defond and Lennox, 2017), PCAOB inspections on audit outcome yield ambiguous results (DeFond, 2010; Gunny and Zhang, 2013; Lamoreaux, 2016; Aobdia and Shroff, 2017). My study investigates the economic effects of the Chinese audit fee regulation, imposing a price floor on audit prices. The results suggest that price control on audit fees help increase audit fees and enhance audit quality. And although my study is setting specific—China, it provides evidence that regulatory intervention on audit pricing does affect audit outcome. On a broader scale, my study adds to the debate on government oversight's role in the capital market (Barth, Caprio and Levine, 2004; Porta et al., 2006; Jackson and Roe, 2009; Granja, 2018).

This chapter also offers a better understanding of different outcomes based on large and small audit firms after the regulation's implementation (DeAngelo, 1981b; Choi et al., 2008; Ghosh and Pawlewicz, 2009; Lawrence, Minutti-Meza and

Zhang, 2011). My findings corroborate prior studies that find Big N auditors provide higher audit quality and charge higher audit fees (DeAngelo, 1981b; Becker et al., 1998; Ireland and Lennox, 2002; Basioudis and Francis, 2007; Francis and Wang, 2008).

Moreover, my study contributes to the audit fee–audit quality literature. Although regulators and others raise considerable concern that audit fees might impair auditor independence, empirical evidence about the relation between audit fees and audit quality are mixed (Frankel et al., 2002; Ashbaugh, LaFond and Mayhew, 2003; Chung and Kallapur, 2003; Blay and Geiger, 2013). The Chinese audit fee regulation can act as an exogenous shock to companies, previously paying audit fees lower than the price floor, when fees suddenly increase. The findings are consistent with the argument that auditors may devote more effort to the audit procedure with audit fee increases (Srinidhi and Gul, 2007). In the same vein, unexpected audit fee increases may serve as an auditor's motivational device to exert extra effort when performing audits.

Finally, my research has important policy implications for regulators. My study's results provide direct evidence that audit fees and quality increased after the Chinese government implemented a price control policy on auditing services. These results lend support for the Chinese government's audit fee regulation and provide relevant information to regulators in developing countries where price competition is intense in audit markets and strong institutions have not yet been established.

The remainder of the chapter is structured as follows. Section 3.2 introduces the institutional background. Section 3.3 offers literature review on large and small auditors and regulation intervention on audit outcomes. Section 3.4 develops my hypotheses. Section 3.5 describes the research method. Section 3.6 presents the sample and descriptive statistics for the empirical tests. Section 3.7 analyzes the empirical results. Section 3.8 conducts additional robustness checks. Section 3.9 conducts further analysis. And section 3.10 concludes.

3.2 Institutional Background

Price competition is prevalent in the Chinese audit market (DeFond et al., 2000; Chen et al., 2010; Chen et al., 2011; Francis et al., 2013). Offering low audit fees is a way for most existing small audit firms to compete for clients (Ghosh and Pawlewicz, 2009; Huang et al., 2015; Huang et al., 2016).

Chinese audit market price control can be traced back to 1989, when the Chinese government implemented an audit fee policy requiring audit firms to apply a government-guided price, under which audit price is determined by audit firm and clients, but the final price must fall within a specific range of standardized audit fees. However, in 1999, this audit fee policy changed to follow a market-guided price, only determined by audit firms and their clients. Since then, price competition in Chinese audit market has been a long concern by regulators.

Given China's intense audit market competition, regulators were concerned that low audit fees could impair auditor independence and affect China's audit

market development. One of the reasons is that low audit fees aren't sufficient for auditors to perform adequate audits, resulting in low audit quality (Liu, 2010). Therefore, in January 2010, the MOF and NDRC jointly enacted the *Administrative Measures for the Service Charges of CPA Firms*, to deter price competition of auditing services and protect the public's interest. The measures indicate that CPA firms' service charges shall be subject to government-guided prices or market-guided prices. Specifically, the following audit services shall be subject to government-guided prices:

(1) examining the financial statements of enterprises and issuing audit reports;

(2) verifying the capital of enterprises and issuing the capital verification reports;

(3) handing the audit services in merge, split, liquidation and other matters of enterprises, and issuing the relevant reports; and

(4) other audit services as prescribed by laws and administrative regulations.

According to the measures, audit services can be charged based on value or time, or a combination of the two. If based on value, fees are calculated under different brackets and margin rate, and total fees are the cumulative sum of each bracket fee. If based on time, fees are the product of units of time and rate per unit.

The MOF and NDRC require local governments to issue a standardized fee table by setting the calculation method, bracket range, rate, and fluctuation range of specific service charges for local CPA firms before July 2010. Appendix C presents

the standardized audit fee table of Guangdong province as an example. Therefore, for each firm, a standardized audit fee range can be calculated based on each local government fee table. The measures emphasize, the actual audit fee shall not be lower than the lower bound of the government-guided standardized price, and the government will impose administrative penalties if a firm violates this regulation. Moreover, these measures prohibit CPA firms using commissions, rebates, or other forms to reduce service charges. In 2011, MOF issued *Notice on Further Implementing the Administrative Measures for the Service Charges of Accounting Firms*, which closely follow the previous measures and strengthen the monitoring and regulation of price competition among CPA firms. However, in 2015, NDRC issued a notice to decontrol audit service prices.

Due to a lack of detailed contract information between audit firms and clients, I cannot calculate the standard audit fee for each firm based on local government provisions. Therefore, I classify large and small auditors in this setting to identify different affected groups subject to the regulatory oversight, and I take small auditors as my treatment group and large auditors as the control group.

3.3 Literature Review

3.3.1 Large and Small Auditors

Most prior literature generally concludes that large or Big N auditors charge higher audit fees and provide higher audit quality than small or non-Big N auditors (DeAngelo, 1981a, 1981b; Francis, 1984; Choi et al., 2008; Chan and Wu, 2011).

Prior literature provides evidence that large auditors (Big N) enjoy a fee premium around the world, such as in the U.S. (Palmrose, 1986; Francis and Simon, 1987), UK (Pong and Whittington, 1994; Ireland and Lennox, 2002), Australia (Francis, 1984; Craswell et al., 1995), and Hong Kong (DeFond et al., 2000). For example, using UK data, Ireland and Lennox (2002) find that fee premiums for large auditors are more than twice as large when the auditor selection effect is controlled for. Simon and Francis (1988) find that the average Big 8 premium in U.S. market was 16.2 percent. Also, prior Chinese studies provide evidence that there is a Big N premium in the China audit market (Wang et al., 2008; Huang et al., 2015; Huang et al., 2016). However, empirical results about the existence and magnitude of Big N premiums are actually mixed (Choi et al., 2008). Some studies fail to find any fee premium associated with large auditors (Simunic, 1980; Firth, 1997; Chaney, Jeter and Shivakumar, 2004; Antle, Gordon, Narayanamoorthy, and Zhou, 2006). For example, Simunic (1980) finds that there is no fee premium in the U.S. market. Chaney et al. (2004) find that there is no Big 5 premium among private firms after controlling for self-selection.

Although it is widely believed that large auditors charge higher audit fees, explanations for the existence of Big N premium are still inconclusive (DeFond and Zhang, 2014). The literature argues that Big N premiums may arise from monopoly pricing (Simunic, 1980), product differentiation (Francis, 1984), or simply a risk premium (DeFond and Zhang, 2014). Francis and Simon (1987) argue that evidence of Big 8 fee premiums in a small auditee segment of the U.S. audit market implies

Big 8 product differentiation. Ghosh and Lustgarten (2006) explain the initial audit fee discount from a market structure perspective. They argue that greater audit fee discounting among small auditors is due to the competitive market structure in the atomistic segment. Very few studies provide evidence that Big N premiums are due to monopoly pricing. However, it is premature to conclude that Big N premiums are because of production differentiation. Based on the Simunic (1980) audit fee model, audit fees are a function of auditor effort and risk premium. It is difficult to address whether fee premiums for large auditors reflect more auditor effort or just a risk premium (DeFond and Zhang, 2014).

Based on the production differentiation explanation and overwhelmingly substantiated in several studies, evidence that large auditors charge higher audit fees is consistent with their providing higher audit quality, whose outcomes result in fewer restatements (Archambeault, Dezoort and Hermanson, 2008; Francis, Michas and Yu, 2013), lower cost of equity (Khurana and Raman, 2004), smaller discretionary accruals (Becker et al., 1998; Kim, Chung and Firth, 2003), greater association between discretionary accruals and future profitability (Krishnan, 2003), higher analyst forecast accuracy (Behn et al., 2008), and higher financial statement comparability (Francis, Pinnuck and Watanabe, 2013). Lawrence et al. (2011) question the widely held view that Big N auditors are associated with higher audit quality. Using a propensity score matching model to control for client characteristics, they find that differences in audit quality between Big 4 and non-Big 4 auditors is insignificant. DeFond, Erkens and Zhang (2014) later argue that the results in

Lawrence et al. (2011) may be attributed to their research design choice. DeFond and Zhang (2014) posit that self-selection is the major challenge for Big N research.

Incentives for independence and competency are two important determinants of audit quality (Watts and Zimmerman, 1981). Incentive represents an auditor's willingness to report the discovered misreporting. Stronger incentives mainly arise from litigation and reputation risk (Dye, 1993), while competency reflects an auditor's ability to provide high-quality audit service (DeFond and Zhang, 2014). Existing literature focuses primarily on incentives that motivate auditors to deliver high-quality audit services, while DeFond and Zhang (2014) call for future research toward shedding light on auditor competency perspective.

DeAngelo (1981b) argue that audit quality is associated with auditor size. Large auditors have more quasi-rents than small auditors, which make them more independent, because reputation damage could let them lose more compared with small auditors. An alternative explanation for the auditor size effect is litigation concern. Large auditors' deep pockets expose them to greater likelihood of litigation (Dye, 1993; DeFond et al., 2014). Therefore, to protect their reputation and avoid potential loss, large auditors have greater incentive to provide high-quality audits. They also have greater competency, because they attract more capable employees and allocate more resources into audit processes, resulting in high audit quality (Dopuch, 1982). While given reduced litigation exposure and reputation loss, small auditors lack the incentive and resources to supply high audit quality (Simunic, 1980; Palmrose, 1988; Becker et al., 1998; Lennox, 2003; Khurana and Raman, 2004;

Behn et al., 2008). In summary, both reputation risk and litigation risk motivate large auditors to provide high-quality service, and greater competency also provides a necessary condition . However, because auditors in the U.S. have high litigation risk, it is difficult to conclude whether reputation concerns, litigation risk, or greater competency motivate large auditors to provide high-quality audits in the U.S. market.

Although China's legal environment is weaker than that in the U.S., litigation risk is not negligible for auditors in China. Along with institutional improvements, auditors in China are subject to increased legal liability and regulatory penalties if audit fails (Chen et al., 2010; Chen et al., 2011; Guan et al., 2016), particularly for large auditors (DeFond et al., 2000; Choi et al., 2008). Some studies argue that auditors in China have less incentive to provide high audit quality due to poor investor protections and a weak legal environment (Wang et al., 2008; Yang, 2013; Ke et al., 2014), but evidence indicates that large auditors differentiate themselves from small auditors through higher audit quality. DeFond et al. (2000) find that large auditors are more likely to issue modified audit opinions following the adoption of new auditing standards in China, consistent with the view that large auditors are more independent than small auditors. Gul et al. (2010) suggest that the Big 4 in China are associated with lower stock price synchronicity. Using a special setting of audit firm merges in China, Chan and Wu (2011) find that, due to larger quasi-rents, large auditors are more independent and have more incentive to provide high audit quality.

From the auditor competency perspective, regulators in China implemented the audit fee regulation with an aim of enhancing audit quality. Audit fees as an input to audit process, are related to the audit quality. Small auditors' low audit fees prevent them from recruiting highly educated employees and allocating more resources into audit procedures (Dopuch, 1982), resulting in a low audit quality. However, whether the audit fee regulation that sets a price floor on audit services improves small auditors' audit quality through their resultant increased audit fees is an empirical question.

3.3.2 Regulatory Intervention and Audit Outcomes

Auditing assures investors of reliable accounting information that affects economic resources allocation in the capital market (DeFond and Zhang, 2014). However, it is difficult for most investors to assess a high audit quality, and economic dependence on a client is a threat to auditor independence (Magee and Tseng, 1990; Craswell et al., 2002; Choi, Kim and Zang, 2010). Therefore, it is important for regulators to take a role in the audit market, overseeing auditor behavior, and assuring a certain level of audit quality. A growing body of research examines the effect of specific SOX provisions (Raghunandan and Rama, 2006; Ghosh and Pawlewicz, 2009; Landsman et al., 2009; Defond and Lennox, 2017) and PCAOB inspections on audit outcomes and yields ambiguous results (DeFond, 2010; Gunny and Zhang, 2013; Lamoreaux, 2016; Aobdia and Shroff, 2017).

The passage of SOX represents government-regulated times in the U.S. audit market. A large body of research focuses on the net benefits of SOX. Anecdotal

evidence and research suggest that audit fees increased following adoption of Section 404 of SOX, due to increased auditing work and expected litigation liability (Raghunandan and Rama, 2006; Ghosh and Pawlewicz, 2009). Ghosh and Pawlewicz (2009) find that audit fees increased substantially in the post-SOX period, especially for large auditors, with Big 4 audit firms increasing audit fees by 42 percent more than small auditors. Huang et al. (2009) show that Big 4 auditors are less likely to give audit fee discounts in the post-SOX period. Krishnan, Krishnan and Song (2011) examine the impact of Auditing Standard No. 5 (AS5) on audit fees. In contrast to regulators' expectations that audit fees would be lower for small audit firms in the AS5 period relative to AS2 period, their research fails to find evidence that the smallest firms benefited.

Whether regulatory intervention adds value to audit quality is also an empirical question (Aobdia and Shroff, 2017). Regulators try to alter auditors' incentives and competency through regulatory intervention and change audit quality equilibrium (DeFond and Zhang, 2014). Geiger, Raghunandan and Rama (2005) provide evidence that auditors of financially stressed companies are more likely to issue going-concern opinions in the post-SOX period, consistent with improved audit quality. Cohen, Dey and Lys (2008) find that SOX passage decreases accrual-based earnings management but increases real earnings management, which may be even worse to the shareholders.

The mandated PCAOB inspections are also a controversial oversight policy. Lennox and Pittman (2010) find that PCAOB inspection reports provide less

valuable information than peer-reviewed reports. However, Gramling, Krishnan and Zhang (2011) indicate that PCAOB inspections increase going-concern opinions. Some studies provide evidence on the spillover effects of PCAOB inspections (Defond and Lennox, 2017; Fung, Raman and Zhu, 2017). For example, Fung et al. (2017) find that the PCAOB international inspection program improves audit quality for non-U.S. clients. Taken together, it is unclear if regulatory intervention affects audit quality overall, although regulators expect audit quality to improve through oversight mechanisms and regulatory intervention. My study contributes to this line of literature by examining the Chinese audit fee regulations' impact on audit outcomes.

3.4 Hypothesis Development

3.4.1 Audit Fee Regulation and Audit Fee

Unlike most developed countries in which the Big N have a large market share, China's audit market is dominated by many small audit firms (Wang et al., 2008; Gul, Zhou and Zhu, 2013). Regulators in the U.S. express concern about high audit fees arising from the high market concentration, while regulators in China have long been concerned about low audit fees arising from intense competition from both demand and supply sides.

Firms in China have low demand for high audit quality because of the ownership structure, low investor protection, and political and economic institutions (DeFond et al., 2000; Wang et al., 2008). The low demand for high audit quality

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gives managers the incentive to choose small audit firms that offer low audit fees, irrespective of the audit's quality. DeFond et al. (2000) find that China's large audit firms' market share decreased as their independence increased following adoption of the new standards. Wang et al. (2008) provide evidence that state-owned enterprises in China prefer small and local audit firms. The low demand for independent audits explains why so many small audit firms, as well as low audit fees, exist in China's competitive market. Given the low demand for high audit quality in China's market (DeFond et al., 2000), we could expect that a low-price audit would be more attractive to managers. As audit market competition increases audit service suppliers, it enhances clients' bargaining power and further decreases audit fees (Huang et al., 2016)..

From the supply side, lowing audit fees is an effective way to attract clients, especially in a competitive market like China. Additionally, litigation risk is relatively lower for auditors in China (Wang et al., 2008; Chen et al., 2010; Chen et al., 2011). With a lower expectation of liability losses from shareholder litigation, auditors have more incentive to lower their prices to compete for clients.

Regulators in China attempt to restrict price competition and improve audit quality through price control on audit fees. I expect that the regulation would lead audit fees to increase for firms whose fees were lower than the regulated minimum price prior to the regulation's enactment. Particularly, I expect that small auditors would have a larger increase in audit fees compared with large auditors, since prior studies provide evidence that there is a Big N premium in China's audit market

(Wang et al., 2008; Huang et al., 2015; Huang et al., 2016). Although the litigation environment in China is weaker than that in the U.S., litigation risk is not negligible for auditors in China (Chen et al., 2010; Chen et al., 2011). Because large auditors in China are associated with higher audit quality and higher audit fees (Chan and Wu, 2011; Huang et al., 2015), I speculate that the audit fee regulation would less likely affect large auditors much, if at all, while small auditors would be strongly affected, resulting in a larger increase in audit fees after the regulation. Thus, my first hypothesis in this chapter is as follows:

Hypothesis 3.1: Ceteris paribus, there is an increase in audit fees for small auditors after the audit fee regulation.

3.4.2 Audit Fee Regulation and Audit Quality

The motivation for the audit fee regulation is to enhance audit quality by increasing audit fees. Regulators expect that increased audit fees would benefit small auditors, encouraging them to improve human capital and devote more resources into their audit process (Liu, 2010). However, previous research on the relation between audit fee and audit quality is inconclusive (Frankel et al., 2002; Ashbaugh et al., 2003; Choi et al., 2010; Asthana and Boone, 2012; Blankley, Hurtt and MacGregor, 2012). Thus, the audit fee policy could have either a positive or negative effect on audit quality.

On one hand, the audit fee regulation could increase audit quality. Some studies document a positive association between audit fees and audit quality (Larcker and Richardson, 2004; Blankley et al., 2012; Lobo and Zhao, 2013).

Higher audit fees represent a greater level of service and more effort, while lower audit fees may deter auditors from doing enough substantive testing due to profitability concern, thereby reducing audit quality (Blankley et al., 2012). Both Blankley et al. (2012) and Lobo and Zhao (2013) find that higher audit fees are associated with a reduced likelihood of restatements. The results are consistent with the notion that higher audit fees reflect greater audit efforts (Srinidhi and Gul, 2007). In a similar vein, if the Chinese audit fee regulation is effective and leads to increases in audit fees for affected firms, then there should be an increase in audit quality after the regulation. From the supply side, increased audit fees may enable small auditors to perform sufficient substantive testing and competent audits, thereby increasing audit quality. In addition, from the demand side, clients would also request higher audit quality if they had to pay higher audit fees, or they could give their business to a large, more capable auditor.

On the other hand, the audit fee regulation could decrease audit quality by increasing audit fees. Another stream literature argues that audit fees, which create an economic bond between auditor and client, may impair auditor independence (Magee and Tseng, 1990; Becker et al., 1998; Choi et al., 2010). DeAngelo (1981b) argues that it is the client-specific quasi-rents that affect auditors' cost of telling the truth and auditor independence. Auditors may try to retain and appease their incumbent clients to maintain future quasi-rents from the client. Consistent with this view, Blay and Geiger (2013) find that auditors are less likely to issue a going concern modified opinion for clients pay higher subsequent total fees. Gul, Jaggi and

Krishnan (2007) show that non-audit fees may impair auditor independence and lead a positive discretionary accrual. Choi et al. (2010) find that the relation between abnormal audit fees and audit quality is asymmetric. They find that only positive abnormal audit fees are negatively associated with audit quality. In line with this stream of literature, rather than enhancing audit quality, increased audit fees that increase small auditors' economic dependence on clients could affect auditors' professional judgment and impair auditor independence (Blankley et al., 2012), resulting in a diminished audit quality. This could be particularly probable for small auditors that have more incentive to retain their clients due to the competitive market structure. Thus, with increased audit fees, small auditors may compromise their independence to please the clients.

To summarize, to what degree China's audit fee regulation affects audit quality is open to debate. Thus, I do not make predictions regarding the relation between the audit fee regulation and audit quality. Below, I state my hypothesis in the null form (H3.2) as well as two competing alternative forms (H3.2a and H3.2b).

Hypothesis 3.2: Ceteris paribus, there is no change in audit quality for small auditors after the audit fee regulation.

Hypothesis 3.2a: Ceteris paribus, there is an increase in audit quality for small auditors after the audit fee regulation.

Hypothesis 3.2b: Ceteris paribus, there is a decrease in audit quality after for small auditors after the audit fee regulation.

3.5 Methodology

3.5.1 Measurement of Audit Quality

One way to interpret audit quality is to use the output-based measures of audit process, such as financial reporting quality, auditor opinions and investor perception-based measures (DeFond and Zhang, 2014). In the main test, I use performance-matched discretionary accruals (Kothari et al., 2005) and abnormal working capital accruals from Dechow and Dichev (2002) model to measure audit quality, since high-quality auditors have low tolerance for earnings management (DeFond and Zhang, 2014). And in the robustness test, I use modified audit opinions (*MAO*), the likelihood of financial reporting restatement, earnings response coefficients (*ERC*) and the likelihood to be sanctioned (*SANCTION*) as alternative measures of audit quality.

Discretionary Accruals

I use two different models to estimate discretionary accruals. The first is performance-matched discretionary accruals model (Kothari et al., 2005; Dee, Lulseged and Zhang, 2015). Specifically, I first estimate the following modified Jones (1991) model (3.1) cross-sectionally for each industry-year:

$$TA_{it}/Asset_{i,t-1} = \alpha_0 + \beta_1(1/Asset_{i,t-1}) + \beta_2(\Delta SALE - \Delta REC)/Asset_{i,t-1} +$$

$$\beta_3(PPE/Asset_{i,t-1}) + \varepsilon \tag{3.1}$$

where TA_{it} is total accruals in year t, defined as the difference between earnings before extraordinary items minus cash flow from operations ; $Asset_{i,t-1}$ is total assets in year *t-1*; $\Delta SALE$ is change in sales from years t-1 to t; ΔREV is change in

receivable from years t-1 to t; PPE represents gross property, plant, and equipment in year t. I estimate model (3.1) cross-sectionally for each industry-year. Following the CSRC industry classification scheme, manufacturing section is measured in two-digit code, and other sectors are measured in one-digit code. There should be at least ten observations for each industry-year to estimate the regression model. The residual obtained from the annual cross-sectional industry regression model in equation (3.1) are the unadjusted discretionary accruals (UDA).

Following Dee et al. (2015), I then match each firm-year observation with another observation from the same industry- year with the closest return on assets (ROA, net income divided by total assets). An observation's performance-matched discretionary accrual is the unadjusted discretionary accruals (UDA) in year t minus its performance-matched firm's unadjusted discretionary accruals in year t. Finally, I use the raw value of the performance-matched discretionary accruals, $DACC\_PM$, as one measures of audit quality. The higher the $DACC\_PM$, the lower the implied audit quality.

Alternatively, I use abnormal working capital accruals to proxy for audit quality. The abnormal working capital accruals are derived from a modified version of Dechow and Dichev (2002) model (Fung et al., 2017). The model defines working capital accruals as a function of lagged, current, and future operating cash flows, as well as sales growth and the level of fixed assets, as follows:

$$\Delta WC_t = \alpha_0 + \beta_1 CFO_{t-1} + \beta_2 CFO_t + \beta_3 CFO_{t+1} + \beta_4 \Delta SALE_t + \beta_5 PPE_t + \varepsilon \quad (3.2)$$

where ΔWC_t is working capital accruals in year t, computed as the change in non-cash current asset, minus the change in current liabilities (excluding debt in current liabilities); $CFO_{t-1}, CFO_t,$ and CFO_{t+1} are operating cash flows in years *t-1*, *t* and *t+1*, respectively; and $\Delta SALE_t$ is change in sales from years t-1 to t; PPE_t represents gross property, plant, and equipment in year t. In model (3.2), each variable is scaled by the total assets in year t-1 to reduce heteroscedasticity. The model is also estimated cross-sectionally for each industry year. Following the CSRC industry classification scheme, manufacturing section is measured in two-digit code, and other sectors are measured in one-digit code. And the residual of the model is abnormal working capital discretionary accruals, *DACC_DD*, as another measure of audit quality. The higher the *DACC_DD*, the lower the implied audit quality.

3.5.2 Empirical Model

3.5.2.1 Audit Fee Model

To examine the influence of China audit fee regulation on audit fees for small auditors, I take small auditors as treatment group, and large auditors as control group, then estimate the following audit fee model based on previous research (Huang et al., 2015; Guan et al., 2016):

$$LNAF = \alpha_0 + \beta_1 SMALL + \beta_2 SMALL * POST + \beta_3 POST + \beta_4 LNTA + \beta_5 RECTA$$

$$+ \beta_6 INVTA + \beta_7 LIQ + \beta_8 LEV + \beta_9 RET + \beta_{10} ROE + \beta_{11} Q$$

$$+ \beta_{12} CFO + \beta_{13} LOSS + \beta_{14} FRSALE + \beta_{15} AGE + \beta_{16} TOP1$$

$$+ \beta_{17} SOEs + \beta_{18} SPCPA + \beta_{19} LOCAL + \beta_{20} MAO + \beta_{21} MKTI$$

$$+ \sum INDUSTRY + \sum YEAR + \varepsilon$$

(3.3)

where the dependent variable is the natural logarithm of audit fees (*LNAF*). Variable *SMALL* represents small auditors. Here, I use two dummy variables *NONBIG4* and *NONBIG10* as two proxies for *SMALL*. *NONBIG4* equals to 1 if the auditor is not an international Big 4 auditor and 0 otherwise. *NONBIG10* equals to 1 if the auditor is not a top 10 auditor (the top 10 including the international Big 4) and 0 otherwise. *POST* is an indicator variable that equals to 1 for years after the adoption of audit fee regulation (fiscal year 2010-2011), and 0 for years before the adoption of audit fee regulation (fiscal year 2007-2008). The main variable of my interest is gauged by the interaction term between the two dummy variables, *SMALL*POST*. The coefficient of *SMALL*POST*, β_2, captures the change in audit pricing from preregulation period to postregulation period for small auditors, compared with change over the same time period for large auditors. As stated in Hypothesis 3.1, I expect that β_2 should be positive.

Following prior research (Simunic, 1980; Ghosh and Lustgarten, 2006; Wang et al., 2008; Gul et al., 2013; Guan et al., 2016; Huang et al., 2016), I also control other variables that may affect audit fees. To control for the client size effect,

I include *LNTA* (natural logarithm of total assets), which is expected to be positive with audit fees (Simunic, 1980). *RECTA* (receivables ratio, receivables divided by total assets) and *INVTA* (inventory ratio, inventories divided by total assets) are included to capture the impact of client's inherent risk on audit fees. Because greater loss exposure is expected with client's inherent risk, auditors need to devote more efforts and specific auditing procedure. Thus, each of the two variables is expected to be positively associated with audit fees (Simunic, 1980; Ghosh and Lustgarten, 2006; Hogan and Wilkins, 2008). Client profitability and leverage also reflect the extent to which the auditors' potential exposure to future loss (Hay et al., 2006). I control for *LIQ* (current ratio, current assets divided by current liability), *LEV* (leverage), *RET* (annual stock return), *ROE* (operation net income divided by equity), *CFO* (Net operating cash flow divided by total assets) and *LOSS*. In general, poor performance and higher leverage relate to greater risk to be borne by auditors, and the higher audit fees would be charged (Bedard and Johnstone, 2004; Choi et al., 2008). I expect that *LIQ, RET* and *ROE* are negatively related with audit fees (Francis, 1984; Wang et al., 2008), and variable *LEV* and dummy variable *LOSS* are positive associated with audit fees. Since growth firm represent more risk, thus, I include *Q* (Tobin's q) in the regression model (Chen et al., 2015; Guan et al., 2016). To control for client complexity, I include *FSALE* (foreign sale), which is expected to be positively related to audit fees (Ghosh and Lustgarten, 2006; Boone et al., 2014; Huang et al., 2016). Due to increased risk and more work effect, modified opinion *(MAO)* is also controlled and is expected to relate to higher audit fees

(Boone et al., 2014). I also control for firm age (*AGE*) as in Guan et al. (2016). And *SOE* and *TOP1* are included for controlling for the state ownership and controlling shareholder effect.

In the regression model, I also control for measures relate to auditor characteristics. Due to premiums for industry specialization, I include *SPCPA* (industry specialized audit patterner) and *LOCAL* (local auditor) (Numan and Willekens, 2012; Eshleman and Lawson, 2017). Macroeconomic and institutional factors are also considered to affect audit fees (Gul, 2006; Hay et al., 2006). Because institutional factors would affect managers' reporting incentive which in turn may affect auditor's assessment of client risk. Therefore, following Guan et al. (2016), I include the market index of Fan et al. (2011) at the province level (*MKTI*) in which the client is located to control for the local institutions variation.

Finally, I include industry and year indicators to control for the industry and year fixed effect. The industries are defined by CSRC codes. Manufacturing section is measured in two-digit code, and other sectors are measured in one-digit code. The standard errors of each model are clustered by client (Petersen, 2009). A detail definition for variables is available in the Appendix B of this thesis.

3.5.2.2 Audit Quality Model

Using discretionary accruals as audit quality measures, I construct the following OLS regression model to examine the impact of audit fee regulation on audit quality:

$$DACC = \alpha_0 + \beta_1 SMALL + \beta_2 SMALL * POST + \beta_3 POST + \beta_4 LNMV + \beta_5 LEV$$

$$+ \beta_6 RET + \beta_7 ROE + \beta_8 BM + \beta_9 STDRET + \beta_{10} Q + \beta_{11} CFO$$

$$+ \beta_{12} LOSS + \beta_{13} AGE + \beta_{14} TOP1 + \beta_{15} SOE + \beta_{16} CI + \beta_{17} SPCPA$$

$$+ \beta_{18} LOCAL + \beta_{19} MKTI + \sum INDUSTRY + \sum YEAR + \varepsilon$$

$$(3.4)$$

where the dependent variable *DACC* is discretionary accruals. I use performance-matched discretionary accruals (Kothari et al., 2005), *DACC_PM*, and abnormal working capital accruals *DACC_DD* from Dechow and Dichev (2002) model to measure *DACC*. The detailed calculation of the two measures are defined in section 3.5.1. The main variable of my interest is gauged by the interaction term between the two dummy variables, *SMALL*POST*. The coefficient of *SMALL*POST*, β_2, captures the change in accruals quality *DACC* from preregulation period to postregulation period for small auditors, compared with change over the same time period for large auditors. Since it is uncertain how the audit fee regulation influences audit quality. Here, I make no prediction on the sign of β_2, as stated in Hypothesis 3.2.

Following prior research (Huang et al., 2015; Guan et al., 2016), I also control for client characteristics including *LNMV* (market value of equity), *LEV* (leverage), *RET* (annual stock return), *ROE* (operation net income divided by equity), *BM* (book value of equity divided by the market value of equity), *STDRET* (standard deviation of residuals from the market model estimated with weekly stock returns during the year), *Q* (Tobin's q), *CFO* (operating cash flow), *LOSS* and *AGE* (client

age). I include *SOE* (state ownership) and *TOP1* (controlling shareholder ownership) to control for the impact of state and controlling shareholder ownership on audit quality (Wang et al., 2008). Prior literature finds that client-auditor relationship and economic dependence on large client may affect audit independence, thus, *IC* (client importance) is also controlled. To control for auditor characteristics, I also control for *SPCPA* (industry specialized audit patterner) and *LOCAL* (local auditor). I include the market index of Fan et al. (2011) at the province level (*MKTI*) in which the client is located to control for the local institutional variation. A detail definition for variables is available in the Appendix B of this thesis.

3.6 Sample and Descriptive Statistics

3.6.1 Sample

Table 3.1 summarizes the sample selection process for the analysis. I begin with observations listed in the A-share market with non-missing audit fee data in the China Stock Market and Accounting Research (CSMAR) database covering the 2007 to 2008 preregulation period and the 2010 to 2011 postregulation period (n = 7,798). I then delete (1) 1,518 observations in year 2009;[1] (2) 88 observations in financial industry; and (3) 859 observations with missing data to calculate other control variables in CSMAR. These results comprise my final sample of 5,333 firm-year observations from 2007 to 2011. In the audit-quality analyses, the sample size is smaller, due to the use of additional variables. Panel B of Table 3.1 presents

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[1] The MOF and NDRC required local governments to issue a standardized fee table before July 2010. I delete fiscal year 2009 because of uncertainty about the adoption date for each company in year 2010.

the sample distribution by years. It shows that observations are evenly distributed across the year, ranging from 18.75 percent observations in 2007 to 32.18 percent observations in 2011.

[INSET TABLE 3.1 ABOUT HERE]

3.6.2 Descriptive Statistics

Table 3.2, Panel A, reports descriptive statistics for the full sample. The final sample consists of 5,333 firm-year observations covering the 2007 to 2008 preregulation period and the 2010 to 2011 postregulation period. All continuous variables are winsorized at the 1st and 99th percentiles, detailed definitions of which are provided in Appendix B. For the full sample, the mean (median) audit fees (*Afee*) are 781 (550) in thousands RMB. The mean value of dependent variable *LNAF* is 13.269. Considering audit-quality measures, the mean value for *DACC_PM* and *DACC_DD* is -0.004 and 0.003, respectively. The mean value of *POST* is 0.584, indicating about 58.4 percent of observations are in the postregulation period. Less than 10 percent of the sample hire international Big 4 audit firms (*NONBIG4*), and about 64.1 percent observations hire non-Big 10 auditors in China.

In general, the descriptive statistics for most control variables are consistent with prior China-related studies of audit fees and audit quality (Huang et al., 2015; Guan et al., 2016). The mean value for the natural logarithm of total assets (*LNTA*) and natural logarithm of market value (*LNMV*) are 21.708 and 22.082, respectively. On average, receivables (*RECTA*) and inventory (*INVTA*) are about 8.6 percent and 18.0 percent of total assets, respectively. Listed firms in China are usually highly

leveraged. The mean of *LEV* is 0.484, book to market ratio (*BM*) is 0.411, and mean *CFO* is 0.043. About 8.8 percent of observations report a loss (*LOSS*). The average controlling shareholder ownership is about 36.255 percent (*TOP1*), and more than half of observations are controlled by the government (*SOE*). On average, a client's total assets are about 3.5 percent of total assets audited by the engaged audit firm (*CI*). About 7.6 percent of observations hire an industry-specialized audit partner, and 32.7 percent of observations hire a local auditor (*LOCAL*).

Panels B and C report and compare the means and medians of main variables for non-Big 4 and Big 4, non-Big 10 and Big 10 audit firms, respectively. Panel B shows that clients that hire small auditors have lower audit fees and smaller firm size. The receivables (*RECTA*), inventories (*INVTA*), and current ratios (*LIQ*) are higher for companies audited by non-Big 4 auditors than those audited by Big 4 auditors. The treatment firms also have lower leverage, higher stock returns, and lower operating cash flow compared with the control firms.

[INSET TABLE 3.2 ABOUT HERE]

3.7 Empirical Results

In this section, I first report and discuss the regression analyses to test the impact of China's audit fee regulation on audit outcomes, including audit fees and discretionary accruals. In addition, I conduct several robustness tests to further elevate the confidence of my inferences.

3.7.1 Audit Fee Regulation and Audit Fees

Table 3.3 reports the results for the audit fee regressions in equation (3.3) to test Hypothesis 3.1. Similar to prior studies, the audit fee models have substantial explanatory power with a high adjusted R^2. Columns (1) and (2) use *NONBIG4* and *NONBIG10* to proxy for small auditors, respectively. Consistent with prior research (Wang et al., 2008), the coefficients on *NONBIG4* and *NONBIG10* are both significantly negative, suggesting that small auditors generally offer a fee discount. The coefficients of *NONBIG4_POST* (coefficient = 0.139, t = 2.39) and *NONBIG10_POST* (coefficient = 0.072, t = 2.95) are both consistently positive and significant, supporting the prediction that the audit fee regulation has a positive effect on small audit firms' pricing, which is consistent with Hypothesis 3.1. The results suggest that, compared with large audit firms, small audit firms charge higher audit fees during the postregulation period than in the preregulation period, holding all other variables constant at their means.

Consistent with prior research, the coefficients of most control variables in Table 3.3 have the same direction as in previous studies (Guan et al., 2016). Specifically, audit fees are higher for firms that have larger assets (*LNAT*), fewer current asses (*LIQ*), lower profitability (*ROE*) and that received a MAOs. As expected, small audit firms charge lower audit fees than large audit firm (*NONBIG4, NONBIG10*), and industry specialized auditor (*SPCPA*) charge an audit fee premium (DeFond et al., 2000; Huang et al., 2015; Guan et al., 2016). In addition, market

index (*MKTI*) is significantly positive associated with audit fees indicating audit fees

are higher in more developed market.

[INSET TABLE 3.3 ABOUT HERE]

3.7.2 Audit Fee Regulation and Audit Quality

To examine the effect of the audit fee regulation on small audit firms' audit

quality, Table 3.4 reports the estimates for equation (3.4). Columns (1) and (2) show

the effect of price control on performance-matched discretionary accruals,

DACC_PM, while columns (3) and (4) display the effect of price control on

abnormal working capital accruals, *DACC_DD*. Consistent with prior arguments that

small auditors have lower audit quality, all the coefficients on *NONBIG4* and

NONBIG10 are significantly positive. The coefficients on the primary variable of

interest, *NONBIG4_POST,* are -0.030 and -0.013, with t-value of -2.14 and -2.07,

respectively, when *DACC_PM* in column (1) and *DACC_DD* in column (3) are the

dependent variable. The coefficients of *NONBIG10_POST,* are -0.014 and -0.005,

with t-value of -2.37 and -1.66, respectively, when *DACC_PM* in column (2) and

DACC_DD in column (4) are dependent variable. Results in Table 3.4 suggest that

companies audited by small audit firms report significantly lower discretionary

accruals following the audit fee regulation compared with those audited by large

audit firms, which is consistent with Hypothesis 3.2a. The results indicate greater

increases in small auditors' audit quality. In addition, the coefficients on control

variables are also generally consistent with previous studies. As expected, the higher

discretionary accruals are associated with larger firm size (*LNMV*), lower book to

market ratio (*BM*) and lower operating cash flow (*CFO*) (Huang et al., 2016).

[INSET TABLE 3.4 ABOUT HERE]

3.8 Robustness Checks

In this section, I conduct several sensitivity tests to further confirm reported

findings. First, I conduct a subsample analysis. Second, I include firm fixed effects

to mitigate the concern that the results are driven by time-invariant client

characteristics. Third, I use alternative measures to further examine the audit fee

regulation's impact on audit quality, including the likelihood of modified audit

opinions issuance (*MAO*), the likelihood of financial reporting restatements (*RS*),

earnings response coefficients (*ERC*), and the likelihood of being sanctioned

(*SANCTION*) as alternative proxies for audit quality. At last, I consider confounding

events that may affect the main tests. First, I drop companies audited by audit firms

that change to a limited liability partnership structure during the sample period to

eliminate the concern that the results are driven by audit firm structure reform. Also,

I exclude companies that voluntarily implemented internal control audits to avoid

the confounding effect that increased audit fees and improved audit quality arose

from its implementation. In addition, I conduct a PSM approach, to mitigate the

concern that the endogeneity problem arose from choosing a small or large audit

firm.

3.8.1 Subsample Regression

I classify the sample into two groups by different auditor type: companies audited by small auditors and companies audited by large auditors and examine the audit fee and audit quality regressions in each subsample. Table 3.5 presents the results of non-Big 4 and Big 4 subsamples. And Table 3.6 presents the results of non-Big 10 and Big 10 subsamples. Here, take the results in Table 3.5 for example. In Panel A of Table 3.5, where audit fees are the dependent variable, the coefficient on *POST* is significantly positive at the 1 percent level in the subsample of non-Big 4 auditors, but insignificant in the subsample of Big 4 auditors. The results are consistent with Hypothesis 3.1, suggesting that increases in audit fees are more pronounced among small audit firms after the audit fee regulation, compared with large audit firms. The audit fee results in Panel A of Table 3.6 are also consistent with my expectations.

Panel B of Table 3.5 reports the audit quality results among non-Big 4 and Big 4 subsamples. In columns (1) and (2), where *DACC_PM* is the dependent variable, the coefficient on *POST* is significantly negative in the subsample of non-Big 4 auditors, but insignificant in the subsample of Big 4 auditors. The results are similar in columns (3) and (4), where *DACC_DD* is the dependent variable. In summary, the results suggest that decreases in discretionary accruals are more significant for small auditors compared with large auditors following the audit fee regulation, indicating greater improvement in small auditors' audit quality. In Panel

B of Table 3.6, columns (1) and (2) provide similar results. But results in columns (3) and (4) are not consistent my expectation.

[INSET TABLE 3.5 ABOUT HERE]

[INSET TABLE 3.6 ABOUT HERE]

3.8.2 Firm Fixed Effects

To mitigate the concern that the results are driven by the time-invariant client characteristics, Table 3.7 reexamines the main tests with firm fixed effects. Panel A of Table 3.7 reports the audit fee regression result. The coefficient of *NONBIG4_POST* is 0.132, with a t-value of 3.37, consistent with the main result. But the coefficient of *NONBIG10_POST* is not significant.

Panel B of Table 3.7 reports the audit quality regression results including firm fixed effects. The coefficients of *NONBIG4_POST* are negatively associated with two discretionary accruals measures. The coefficient of *NONBIG10_POST* is significantly negative when *DACC_PM* is the dependent variable, but insignificant when *DACC_DD* is the dependent variable. In summary, the results confirm that, after accounting for firm fixed effects, small auditors have greater increase in audit fees and audit quality following the audit fee regulation compared with large auditors.

[INSET TABLE 3.7 ABOUT HERE]

3.8.3 Alternative Measures of Audit Quality

Modified audit opinions (MAOs)

An audit opinion is a direct measure of audit quality, communicating an auditor's evaluation of a company's financial information with shareholders (DeFond et al., 2014). It also represents an auditor's independence (Craswell et al., 2002; Lim and Tan, 2008). Several studies argue that MAOs have reasonable power to capture variation in audit quality in China (Chen et al., 2010; Chan and Wu, 2011; He et al., 2017). Accordingly, I use MAOs as alternative measures of audit quality to check my findings' robustness.

Audit opinions in China include the following types: (1) clean, unqualified, (2) unqualified with explanatory notes, (3) qualified, (4) disclaimer, or (5) adverse. Following prior China-related literature (Gul et al., 2013; Huang et al., 2015; Guan et al., 2016), I define *MAO* as equal to 1 if a client received a unqualified opinion with explanatory notes, qualified, disclaimer, or an adverse audit opinion, and 0 if a client received a clean, unqualified opinion. A greater propensity of MAOs issuance indicates higher professional skepticism and auditor independence.

Following aforementioned hypotheses, the audit fee regulation would affect small auditors' audit quality in one of two competing ways with increased audit fees. On one hand, increased audit fees after the regulation would enable auditors to exert more effort toward discovering financial reporting irregularities, leading to a higher MAOs-issuance likelihood, On the other hand, auditors' dependence on earning increased fees may deter them from challenging their clients' irregularities, thereby reducing the likelihood of issuing MAOs. Here, I choose a linear probability model,

because the dependent variable *MAO* is a dummy variable and the variable of interest is an interaction item (Ai and Norton, 2003; Correa and Lel, 2016).

Results in Table 3.8 show that, both the coefficients of *NONTIBG4_POST* and *NONBIG10_POST* are statistically insignificant, suggesting no evidence that the audit fee regulation increases small auditors' propensity to issue modified audit opinions compared with large auditors. Given increased economic dependence on clients and clients' avoidance to unfavorable audit opinion (Lennox, 2000; Piotroski et al., 2015; Chen et al., 2016), it is not surprising that there isn't a significant change on MAOs' issues following the audit fee regulation. In summary, the results on MAOs may suggest that the audit fee regulation do not improve auditor independence.

[INSET TABLE 3.8 ABOUT HERE]

Restatement

I then use the likelihood of earnings restatements as a second alternative measure of audit quality. Accounting restatements occur when there is a material misstatement in the previously issued financial statements (Gul, Wu and Yang, 2013). Restatements capture the audit quality from an ex post perspective. I manually collect the restatement data from the "Material Accounting Errors" section of financial statement footnotes. Following Gul et al. (2013), I exclude restatements due to changes in accounting standards or government tax rules, mergers and acquisitions, or other issues uncreated to accounting irregularities. The dependent variable *RS* equals to 1 if a client has restatements in subsequent years and 0

otherwise. *RS_DOWN* equals to 1 if a client has downward restatements in subsequent years and 0 otherwise.

Table 3.9 reports the results of accounting restatements. In column (1), the coefficient of *NONBIG4_POST* is -0.078, and significant at the 1 percent level (t-value = -7.35), while in column (3), the coefficient of *NONBIG10_POST* is -0.048 and significant at the 1 percent level (t-value = -3.68). The results suggest that companies audited by small auditors are less likely to have financial restatements after the audit fee regulation compared with those audited by large auditors. Further, I focus on downward restatements, which represent overstated accounting information. The coefficients of *NONBIG4_POST* and *NONBIG10_POST* are both negatively significant at the 1 percent level, indicating that companies audited by small auditors are less likely to have downward restatements after the audit fee regulation compared with those audited by large auditors. The findings on restatements document an improvement in audit quality of small auditors after the audit fee regulation.

[INSET TABLE 3.9 ABOUT HERE]

Earnings response coefficients (ERCs)

The third alternative measure of audit quality is earnings response coefficients (ERCs), which is a perception-based measure (DeFond and Zhang, 2014). Here, I investigate whether companies audited by small auditors experience an increase in ERCs following the audit fee regulation compared with those audited by large auditors. To do so, I following prior ERCs studies (Chan, Chen, Chen, and Yu, 2012; Guan et al., 2016), regress *CAR[-1,1]* (a 3-day window cumulative

market-adjusted abnormal returns from day -1 to day +1, where day 0 is the earnings announcement day) on *UE* (unexpected earnings, measured as earnings in Q4 in year t minus Q4 in year t-1, scaled by the market value of equity at the beginning of day -1). To test the impact of audit fee regulation on ERCs for small audit firms, I focus on the interaction term *UE_NONBIG4_POST* and *UE_NONBIG10_POST*. Table 3.10 presents the results of ERCs regression model. As shown, the coefficient of *UE_NONBIG4_POST* is positively significant at the 1 percent level (0.001, t = 3.54) and the coefficient of *UE_NONBIG10_POST* is positively significant at the 5 percent level (0.001, t = 1.98). Consistent with my prediction, the results indicate that ERCs are higher for companies audited by small audit firms following the audit fee regulation, suggesting small auditors' improvement in audit quality.

[INSET TABLE 3.10 ABOUT HERE]

SANCTION

At last, I also use the likelihood of being sanctioned by regulators as another alternative measure of audit quality. *SANCTION* equals to 1 if client is sanctioned for problematic financial statements, and 0 otherwise. The data is collected from the CSMAR database. Table 3.11 report the results. In column (1) of Table 3.11, the coefficient of *NONBIG4_POST* is significantly negative, indicating that companies audited by small auditors are less likely to be sanctioned following the audit fee regulation. But in column (2), the coefficient of *NONBIG10_POST* is statistically insignificant.

[INSET TABLE 3.11 ABOUT HERE]

In summary, the previous results suggest that firms audited by small audit firms are less likely to have a restatement, have higher ERCs, and are less likely to be sanctioned for financial problems after the audit fee regulation compared with those audited by large auditors. The results provide significant evidence that the audit fee regulation improves small audit firms' audit quality. But I fail to find evidence that small auditors are more likely to issue MAOs after the audit fee regulation. Therefore, it is likely that high audit fees arising from the audit fee regulation do not improve audit independence, but they simply lead auditors to devote more effort, so fewer errors occur in the auditing process.

3.8.4 Potentially Confounding Events

One concern with my identification strategy is that audit fee regulation adoption coincided with another confounding event that could independently affect small and large audit firms' audit quality. To mitigate this concern, I reexamine the main test using different subsamples.

Since 2010, the Chinese MOF has required licensed audit firms to audit listed firms that transform from a limited liability company (*LLC*) structure to a limited liability partnership (*LLP*) structure. Audit firms under an LLP structure face more liability exposure, which would affect audit fees and audit quality. Most audit firms complete the structure reform in 2012 and 2013. To eliminate the concern that results are driven by the audit firm structure reform, I drop companies audited by audit firms changing to a limited liability partnership (LLP) structure during the sample period and re-estimate equations (3.3) and (3.4). Table 3.12, Panel A and Panel B report the

regression results for audit fees and audit quality, respectively. For the audit fee regression in Panel A, the coefficient of *NONBIG4_POST* (0.123, t = 2.12) and *NONBIG10_POST* (0.049, t = 1.98) are both positively significant at the 5 percent level. Results using discretionary accruals as dependent variable are presented in Panel B. The coefficient of *NONBIG4_POST* and *NONBIG10_POST* are all negatively associated with the two discretionary accruals measures. The main results continue to hold. Overall, these test results indicate previous findings that the audit fee regulation increases audit fees and improves audit quality are not driven by audit firm structure reform.

<center>[INSET TABLE 3.12 ABOUT HERE]</center>

There is another confounding event which may affect the result. Since 2011, the Chinese listed firms are required to hire auditors to evaluate and issue an independent report on their firms' internal control effectiveness. The internal control audit policy in China is similar as Section 404(b) of SOX. The cross-listed firms are first required to implement the internal control audit in 2011, then listed firms on the main board are required to implement the policy in 2012. I exclude firms that voluntarily or mandatorily implemented the internal control audit to eliminate the concern that increased audit fees and improved audit quality are driven by the implementation of an internal control audit. Table 3.13, Panel A and Panel B report the regression results for audit fees and audit quality, respectively. For the audit fee regression in Panel A, the coefficient of *NONBIG4_POST* (0.183, t = 3.03) and *NONBIG10_POST* (0.116, t = 4.16) are both positively significant at the 1 percent

level. The results for audit quality are shown in Panel B. The coefficients of *NONBIG4_POST* and *NONBIG10_POST10* are all negatively associated with the two discretionary accruals measures. The main results continue to hold. Overall, these test results indicate that previous findings on audit fees and audit quality are not driven by the implementation of internal control audit.

[INSET TABLE 3.13 ABOUT HERE]

Auditor switches are likely to affect audit fees. Thus, I conduct a sensitivity test using a constant sample by removing the firms that switched auditors during the sample period. Table 3.14, Panel A and Panel B report the regression results for audit fees and audit quality, respectively. For the audit fee regression in Panel A, the coefficient of *NONBIG10_POST* (0.064, t = 2.33) are both positively significant at the 5 percent level, consistent with previous result that larger increase in audit fees of small auditors following the audit fee regulation compared with large auditors. Results using discretionary accruals as dependent variable are presented in Panel B. Consistent with previous findings, the coefficient of *NONBIG4_POST* and *NONBIG10_POST* are all negatively associated with the two discretionary accruals measures. The main results continue to hold.

[INSET TABLE 3.14 ABOUT HERE]

3.8.5 PSM

In the main test, companies audited by small auditors are taken as a treatment sample, while firms audited by large auditors are taken as control sample. Companies' choice of a large or small auditor does not represent a randomly selected

sample. The selection decision may be related to omitted factors that could also affect audit outcomes. The auditor-client self-selection problem is a major challenge in this research design. Alternatively, I adopt a PSM approach to address the endogeneity arising from the choice of large auditors, due to differences in observable firm characteristics.

I begin with a sample of 1047 (766) firms that hired non-Big4 (non-Big10) auditors before the regulation (in year 2008). I match each of these firms with a firm that hired Big4 or Big10 auditors before the regulation. Using the propensity scores estimated from a logit model, I form the matched pairs. In the first stage, applying the logistic model , I regress *NONBIG4* or *NONBIG10* on relevant covariates and estimate the probability (the propensity sore) for a firm that hire a large audit firm . Following (Guan et al. 2016), all the control variables in equation 3.3, except for *SPCPA*, *LOCAL* and *MAO*, which are related to individual auditor characteristic. Colum 1 in Panel A of Table 3.15 and Colum 1 in Panel A of Table 3.16 shows the results of this logistic regression model used to explain the firm's choice of auditors. Next, I match each firm that hired a small auditor (treatment group) to a firm that hired a large auditor (control group) before the regulation with the closest propensity score. Without replacement, I use nearest-neighbor matching to create the propensity-matched sample. Because of the small sample size of observations that hire large auditors, I fail to match 987 (426) firms that hired non-Big4 (non-Big10) auditors before the regulation (in year 2008). My final sample therefore consists of

60 (340) matched pairs and a total sample of 437 (2482) observations when treatment group is non-Big4 (non-Big10).

To evaluate whether the matching is successful, I perform tow diagnostic test. First, Column (2) of Panel A in Table 3.15 and 3.16, shows the logistic regression results using the marched sample. The results indicate that the control variables , except *LNAT*, do not explain any variation in firms' choice of auditors. Second, Panel B of Table 3.15 and 3.16 report the mean differences of each matched variable between the treatment and control samples. The results show that the differences in means between the treatment and control sample are not significant, indicating covariate balance is well achieved. Collectively, these tests provide support for the success of the matching procedure.

In the second stage, I re-estimate the baseline regression using the matched sample. Panel C and Panel D in Table 3.15 and 3.16, report the regression results for audit fees and audit quality, respectively. For the audit fee regression in Panel C of Table 3.15 and 3.16, the coefficient of *NONBIG4_POST* (0.140, t = 2.15) and *NONBIG10_POST* (0.069, t = 2.47) are both positively significant at the 5 percent level, consistent with previous result that larger increase in audit fees of small auditors following the audit fee regulation compared with large auditors. Results using discretionary accruals as dependent variable are presented in Panel D. Consistent with previous findings, the coefficient of *NONBIG4_POST* and *NONBIG10_POST* are all negatively associated with the two discretionary accruals

measures. Therefore, previous finding that the audit fee regulation improves small auditors' audit quality is not influenced by the potential self-selection problem.

[INSET TABLE 3.15 ABOUT HERE]

[INSET TABLE 3.16 ABOUT HERE]

3.8.6 Sample partition based on standardized audit fees

Because lack of client-auditor contract details, I cannot unequivocally determine the treatment sample and control sample. However, I can calculate the standardized audit fees based on client size. The treatment group (*TREAT* = 1) comprises companies that paid audit fees lower than the minimum fee level before the adoption year. Other companies belong to the control group (*TREAT* = 0). Then I use the difference-in-difference design to test whether the difference in audit quality between the treatment and control groups when moving from the preregulation period to the postregulation period.

Table 3.17 and Table 3.18 present the results for audit fees and MAOs. For the audit fee regression in Table 3.17, the coefficient of *TREAT_POST* (0.063, t = 3.23) is significantly positive, indicating the audit fee regulation increase treatment firms' audit fees , which is consistent with Hypothesis 3.1. In Table 3.18, the coefficient of *TREAT_POST* (0.878, z = 2.11) is significantly positive, indicating treatment firms are more likely to received MAOs after the audit fee regulation.

[INSET TABLE 3.17 ABOUT HERE]

[INSET TABLE 3.18 ABOUT HERE]

3.8.7 Sample partition based on client size

In the main test, the sample partition is based on Big 4 vs. non-Big 4 or Top 10 vs. non-Top 10 audit firms. However, it seems that the regulation would have a bigger impact on small clients. Here, I consider the client size effect and divided the sample into two groups based on client size. I let *SC* equals to one if a firm's average asset before the regulation (fiscal year 2007 and 2008) falls in the bottom 50% (20% or 10%), and *SC* equals to zero otherwise. Table 3.19 reports the audit fee and audit quality results.

In Panel A of Table 3.19, all the coefficients of *SC_POST* are significant and positive, indicating a larger increase in audit fees for small clients after the fee regulation. Panel B show the effect of price control on performance-matched discretionary accruals, *DACC_PM*, while Panel C display the effect of price control on abnormal working capital accruals, *DACC_DD*. Some coefficients of *SC_POST* are significantly negative in Panel B and C of Table 3.19. The results show that there are increase in accruals quality for small clients following the audit fee regulation.

[INSET TABLE 3.19 ABOUT HERE]

3.9 Additional Analyses

To better understand the audit fee regulation's effect on audit outcomes, I conduct a cross-sectional analysis to examine whether the audit fee regulation effects differ across different legal environment.

Litigation risk plays a critical role in shaping auditor incentive and behavior (Firth, Mo and Wong, 2012; DeFond and Zhang, 2014). Auditors are exposed to legal liability if an audit fail happens (Simunic and Stein, 1996). As a result, litigation risk motivates auditors to exert more effort in the auditing process, with increases in audit quality and audit fee (Simunic, 1980; Choi et al., 2008; Ghosh and Pawlewicz, 2009). Alternatively, auditors can charge a risk premium to compensate for the expected litigation loss (Simunic, 1980; Bell, Doogar and Solomon, 2008). Choi et al. (2008) argue that audit fees increase monotonically with the strength of a country's legal liability regime. Auditors in stronger legal regimes would charge higher audit fee to compensate for the increased effort and expected litigation loss.

Since legal environments in China differ across regions (Wang et al., 2008), I speculate that auditors in weak legal environments would be more likely to compete for clients through price competition, charging low audit fees. Also, because litigation risk is not a main concern, both clients and auditors would have low demand for high audit quality in weaker legal environments. Therefore, the audit fee regulation would more likely affect firms in weak legal environments compared with those in strong legal environments. Specifically, I predict that the increase in audit fees and audit quality for small auditors following the audit fee regulation would be accentuated (attenuated) for firms in weak (strong) legal environments. Following Wang et al. (2008), the legal environment index is from Fan et al. (2011) at province level. Based on the median value of the legal environment index, the firms are considered to be either in a high or a low legal environment.

Table 3.20, Panel A, Panel B and Panel C report the regression results for audit fees, *DACC_PM* and *DACC_DD*, respectively. Columns (1) and (2) report the regression results for *NONBIG4* measure, and columns (3) and (4) report the regression result for *NONBIG10* measure. Here, takes column (3) and (4) for example. The coefficient on *NONBIG10_POST* is significantly positive (0.118, t = 3.25) when firms in weak legal environment (in column (4) of Panel A); the coefficient on *NONBIG10_POST* becomes insignificant (0.003, t = 0.09) for firms in strong legal environment (in column (3) of Panel A). The F-test reported indicate that there are significant differences between the two coefficients of *NONBIG10_POST* for firms in strong and weak legal environments. Consistent with my prediction, the increases in audit fees of small auditors after the regulation are more pronounced in weak legal environment.

Panel B report the results when *DACC_PM* is the dependent variable. Since the results for *NONBIG4* and *NONBIG10* measures are similar. Here, I highlight the results in columns (1) and (2). The coefficient on *NONBIG4_POST* is significantly negative (-0.067, t =- 3.12) when firms in weak legal environments (in column (2) of Panel B); the coefficient on *NONBIG4_POST* becomes insignificant (-0.013, t = -0.71) for firms in strong legal environments (in column (1) of Panel B). The F-test reported indicate that there are significant differences between the two coefficients of *NONBIG4_POST* for firms in strong and weak legal environment. Consistent with my prediction, the increases in *DACC_PM* of small auditors after the regulation

are more pronounced in weak legal environment, indicating increases in audit quality are more pronounced in weak legal environment.

The results are similar in Panel C when *DACC_DD* is the dependent variable. The coefficient on *NONBIG4_POST* is significantly negative (-0.023, t = -2.04) when firms in weak legal environment (in column (2) of Panel C); the coefficient on *NONBIG4_POST* becomes insignificant (-0.009, t = -1.32) for firms in strong legal environments (in column (1) of Panel C). F-test indicate that the two coefficients are not equal. Therefore, the results are consistent with my prediction, that the increase in audit quality is more pronounced in weak legal environment. Collectively, the results indicated that the effect of the audit fee regulation on audit pricing and audit quality is more pronounced in weak legal environment.

[INSET TABLE 3.20 ABOUT HERE]

3.10 Conclusion

In general, audit fees are the outcome of negotiations between clients and audit firms. Audit fees reflect auditor effort and any risk premium for expected legal liability (Simunic, 1980). In this chapter, I investigate an interesting setting to explore the government's role in China's economy, as a visible hand on audit pricing and audit quality.

In January 2010, China's Ministry of Finance (MOF) and National Development and Reform Commission (NDRC) jointly promulgated the *Administrative Measures for the Service Charges of CPA Firms*, with an aim at

restricting price competition and enhancing audit quality. The fee regulation requires CPA firms to follow government-guided pricing when setting audit fees, and the final actual audit fees should not be lower than the set lowest limit price.

This paper examines the impact of the audit fee regulation on small audit firms' audit pricing and audit quality. The findings show that compared with large auditor firms, small auditors exhibit greater increases in audit fees following the audit fee regulation. The main aim of this audit fee regulation is to enhance audit quality. Regulators in China are concerned that low audit fees may impair audit quality, due to inefficient resources and efforts. The findings show that small audit firms experience a greater decrease in discretionary accruals following the fee regulation, compared with large audit firms. The main results lend support to the evidence that the audit fee regulation increases small audit firms' audit pricing and audit quality. Results remain robust to a variety of sensitivity checks, including controlling for firm fixed effect, using different measures of audit quality, different subsamples, and the PSM approach. Except for MAOs, the results are still robust when using restatements, ERCs, and sanctions as alternative measures of audit quality. Moreover, cross-sectional analyses indicate that the increase in audit pricing and audit quality is more pronounced in low legal environments.

This essay contributes to the literature on regulatory intervention and how government plays an economic role in the audit market of developing countries, where price competition is prevalent. Noteworthy is how government price control regulations affect audit fees and audit quality. However, this essay also has several

limitations. First, I cannot rule out confounding events that could affect my findings. Second, the self-selection problem is still a main concern in the research design. Finally, because I do not have client-auditor contract details, I cannot unequivocally determine which firms set their audit fees lower than the regulated price floor. I believe such issues deserve additional investigation in future research.

[INSET APPENDIX B ABOUT HERE]

Chapter 4 Conclusion

Regulators in China have long been concerned about price competition in the audit market and are therefore working toward improving audit quality. To increase audit market concentration in China, regulators have taken steps to facilitate mergers of certified public accountant firms since 2000. In the first essay, I examine whether and how market concentration influences audit fee discounting in initial-year audits. With the aim of alleviating price competition in the audit market, the Chinese government implemented an audit fee regulation in 2010 ,which sets a price floor for audit pricing. In the second essay, I investigate the audit fee regulation's effect on audit outcomes in China's audit market.

In essay one, in line with previous research that suggests a positive association between market concentration and audit fees, I find that greater market concentration leads to less fee discounting in initial-year audits. Further, I find that the negative association between audit market concentration and fee discounting stems primarily from small auditors and in weak legal environments. Analysis based on individual partner level shows that the above results only exist when both the audit firm and audit partners are different from those in previous years. My results are consistent with the arguments of DeAngelo (1981a) and Chan (1999) that market competition is a main determinant of low-balling on initial audit engagements.

The first essay has several contributions. First, this study contributes to the debate on the relationship between audit market concentration and audit pricing. Second, my findings help to illuminate the role of market concentration on fee

discounting. Third, it has policy implications for regulators, who, in China and in developed countries have different views on market concentration. My findings suggest that market concentration is associated with less fee discounting in China. Although the results may be not generalizable to other countries, my study still provides useful insight for regulators when drafting future policies against concentration.

In the second essay, I find that the audit fee regulation, which sets a price floor on audit pricing, has influenced audit fees and audit quality in China. The results show that small auditors exhibit greater increases in audit fees following the audit fee regulation. In addition, clients audited by small auditors exhibit a greater increase in accruals quality, a lower likelihood of subsequent accounting restatements, a higher ERC, and a lower likelihood of being sanctioned for problematic financial statements and audits than those audited by large auditors after the audit fee regulation. But I fail to find that small auditors are more likely to issue MAOs following regulation adoption compared with large auditors. The results indicate that higher audit fees resulting from the audit fee regulation lead auditors to delegate more audit efforts, but fees do not necessarily improve their independence.

The second essay contributes to recent research on the role of regulatory intervention in the capital market. Although the audit fee regulation is China specific, it provides evidence that regulatory intervention on audit pricing affects audit outcomes. Additionally, the results help us understand audit fees' effect on auditor

incentives. The findings suggest that higher audit fees may encourage more audit

effort, but they do not improve auditor independence.

Appendix A

Variable Definitions

Variable	Definition
CON	Audit market concentration measure: *TOP4SHARE, TOP4HHI, ALLHHI*
TOP4SHARE	The market share of top 4 audit firms based on audit fees earned from listed clients in city-year groupings.
TOP4HHI	The Herfindahl index, computed as the sum of the squares of each top 4 audit firm's market share of audit fees earned from listed clients within city-year groupings
ALLHHI	The Herfindahl index, computed as the sum of the squares of each audit firm's market share of audit fees earned from listed clients within city-year groupings
INITIAL	Equals to 1 if there is an audit firm change, and 0 otherwise.
NEWBOTH	Equals to 1 if both audit firm and two singing auditors have changed, and 0 otherwise
NEWFIRM	Equals to 1 if there is an audit firm change, but at least one previous signing auditor has not changed, and 0 otherwise
NEWPRTNR	Equals to 1 if there is no audit firm change, but two signing auditors have changed, and 0 otherwise.
AFEE	Audit fees in RMB yuan
LNAF	Natural logarithm of audit fees
SIZE	Natural logarithm of total assets
CURAT	Ratio of current assets over total assets
LIQ	Ratio of current assets over current liabilities
RECTA	Ratio of receivables over total assets
INVTA	Ratio of inventories over total assets
LEV	Ratio of total liabilities over total assets
ROA	Net income divided by total assets
LOSS	Equals to 1 if there is a loss, and 0 otherwise.
ADJRET	Adjusted annual stock return
STDRET	The standard deviation of residuals from the market model estimated with weekly stock returns during the year
SEG	The number of business segments
MTB	The ratio of market value over book value
MAO	Equals to 1 if a firm receives a modified audit opinion, and 0 otherwise
AGE	The number of years an audit client has been listed
ISSUEB	Equals to 1 if a firm issues b shares, and 0 otherwise
ISSUEH	Equals to 1 if a firm issues h shares, and 0 otherwise
BIG4	Equals to 1 if a firm is audited by a big 4 international audit firm, and 0

	otherwise
AUDTENURE	The number of years of audit firm tenure
CIFIRM	A client's total assets in logarithmic form divided by its audit firm's sum of total assets audited in logarithmic form
CICPA	A client's total assets in logarithmic form divided by the sum of its audit partner's sum of total assets audited in logarithmic form
SPFIRM	Equals to 1 if the engaged audit firm has the largest market share of more than 10 percent of the market share of client total assets audited in an industry-year grouping, and 0 otherwise
SPCPA	Equals to 1 if the engaged audit partners has the largest market share of more than 10 percent of the market share of client total assets audited in an industry-year grouping, and 0 otherwise
MKTI	Market index of Fan et al. (2011) at the province level
LNLE	The natural logarithm of average living expenditures in RMB per person in a province
SOE	Equals to 1 if a client's ultimate controller is the government, and 0 otherwise

Appendix B

Variable Definitions

Variable	Definition
Afee	Audit fees in thousand RMB yuan.
LNAF	Natural logarithm of audit fees.
LNAT	Natural logarithm of total assets.
LNMV	Natural logarithm of market value of equity.
DACC_PM	Performance-matched discretionary accruals.
DACC_DD	Discretionary accruals estimated by the DD model.
POST	Dummy variable equals to 1 for years after the adoption of audit fee regulation (fiscal year 2007-2008), and 0 for years before the adoption of audit fee regulation (fiscal year 2010-2011).
NONBIG4	Dummy variable equals to 1 if the auditor is not an international Big 4 auditor and 0 otherwise.
NONBIG10	Dummy variable equals to 1 if the auditor is not a top 10 auditor (the top 10 including the international Big 4) and 0 otherwise.
RECTA	Ratio of receivables over total assets.
INVTA	Ratio of inventories over total assets.
LIQ	Ratio of current assets over current liabilities.
LEV	Ratio of total liabilities over total assets.
RET	Annual stock return.
ROE	Core operating net income divided by equity.
BM	Book value of equity divided by the market value of equity.
STDRET	The standard deviation of residuals from the market model estimated with weekly stock returns during the year.
Q	Tobin's q, the sum market values of common equity and book value of debt, divided by total assets.
CFO	Net operating cash flow divided by total assets.
LOSS	Dummy variable equals to 1 if there is a loss, and 0 otherwise.
FRSALE	Foreign sales divided by operating income.
AGE	The number of years an audit client has been listed.
TOP1	Percentage of shares held by the largest shareholder.
SOE	Equals to 1 if a client's ultimate controller is the government, and 0 otherwise
CI	A client's total assets in logarithmic form divided by its audit firm's sum of total assets audited in logarithmic form
SPCPA	Equals to 1 if the engaged audit partners have the largest market share of more than 10 percent of the market share of client total assets audited in an industry-year grouping, and 0 otherwise
LOCAL	Dummy variable equals to 1 if the client hired an audit firm that have a practice office in the same province and 0 otherwise.

MAO	Equals to 1 if a firm receives a modified audit opinion (MAO), and 0 otherwise. MAO include unqualified onions with explanatory notes, qualified opinions, and disclaimers or adverse opinions.
MKTI	Market index of Fan et al. (2011) at the province level
RS	Dummy variable equals to 1 if a client has a restatement in subsequent years and 0 otherwise.
RS_DOWN	Dummy variable equals to 1 if a client has a downward restatement in subsequent years and zero otherwise.
CAR	Cumulative market-adjusted stock returns from trading day -1 to +1, where day 0 is the earnings announcement day.
UE	Earnings in Q4 of year t minus earnings in Q4 of year t-1.
MagUE	The absolute value of UE.
BETA	Estimated by the market model fitting on daily return for 200 trading days before the [-1,1]
SIZE	Log of the market value at the end of year -2.
SANCTION	Dummy variable equals to 1 if client is sanctioned for problematic financial statements, and 0 otherwise.

Appendix C

The following is the standardized audit fee table of Guangdong province. The standardized audit fee is charged based on the higher value of the client firms' total asset and sales, and is calculated in progression.   For the part under 50, audit fees is 2000. For the part between 50 and 100, the audit fees accounts for 2‰. Also, it give the standardized fees if the services are charged based on time.

Guangdong Province Standardized Audit Fee Table (by value)

Higher value of asset or sales (in ten thousand RMB)	Audit fee
<=50	2000RMB
(50,100]	2‰
(100,500]	0.9‰
(500,1000]	0.7‰
(1000,5000]	0.5‰
(5000,10000]	0.3‰
(10000,50000]	0.15‰
(50000,100000]	0.1‰
>100000	0.08‰

Guangdong Province Standardized Audit Fee Table (by time)

Staff level	fee (per hour)
junior assistant	300
assistant	600
CPA	1000
project manager	1500
department manager	2000
partner	3000

Tables

Table 2.1 Audit Market Concentration in China

Rank	1	2	3	4	CR4	5	6	7	8	9	10	CR10	
CPA Firm	PwC	KPMG	Deloitte	E&Y		Shu Lun Pan	Yuehua	China Rightson	Beijing Jingdu	ShineWing	China Audit		
Year2002	76,631	33,439	29,152	24,632	14.90%	10,089	8,342	7,081	6,498	6,464	6,324	18.97%	1,100,000
CPA Firm	PwC	KPMG	Deloitte	E&Y		Shu Lun Pan	Yuehua	ShineWing	China Audit	China Rightson	Jiangsu Gongzheng		
Year2003	90,233	43,176	37,636	32,926	16.06%	11,360	8,619	8,473	7,459	7,368	6,833	20.01%	1,270,000
CPA Firm	PwC	KPMG	Deloitte	E&Y		Shu Lun Pan	ShineWing	China Audit	Yuehua	China Rightson	Beijing Jingdu		
Year2004	124,677	71,578	65,797	62,846	21.10%	15,330	12,095	11,659	10,096	8,423	7,540	25.33%	1,540,000
CPA Firm	PwC	E&Y	Deloitte	KPMG		Shu Lun Pan	Yuehua	ShineWing	Wanlong	China Audit	China Rightson		
Year2005	180,296	97,166	90,876	91,478	25.13%	18,324	16,405	14,957	13,844	13,367	13,050	30.04%	1,830,000
CPA Firm	PwC	E&Y	Deloitte	KPMG		Shu Lun Pan	Yuehua	ShineWing	China Audit	China Rightson	Wanlong		
Year2006	203,762	159,833	138,564	123,747	28.30%	21,983	21,049	20,252	18,551	16,888	15,232	33.46%	2,211,500
CPA Firm	PwC	E&Y	Deloitte	KPMG		RSM China	Shu Lun Pan	ShineWing	WUYIGE	Wanlong	REANDA		
Year2007	262,571	231,580	212,428	194,496	32.28%	50,467	37,140	25,432	22,907	19,441	18,778	38.52%	2,791,100

Rank	1	2	3	4	CR4	5	6	7	8	9	10	CR10	
CPA Firm	PwC	E&Y	Deloitte	KPMG		RSM China	Shu Lun Pan	Wanlong Asia	Zhejiang Pan-China Dongfang	WUYIGE	ShineWing		
Year2008	275,518	270,000	249,882	243,517	33.51%	65,217	66,639	39,839	31,466	31,373	26,153	41.92%	3,100,000
CPA Firm	PwC	Deloitte	KPMG	E&Y		RSM China	Shu Lun Pan	ShineWing	Pan-China	Crowe Horwath	WUYIGE		
Year2009	257,843	237,025	222,110	196,064	28.73%	87,205	66,266	51,860	50,266	53,225	51,676	40.07%	3,178,000
CPA Firm	PwC	Deloitte	E&Y	KPMG		RSM China	Shu Lun Pan	WUYIGE	Pan-China	ShineWing	WUYIGE		
Year2010	296,065	260,007	209,413	186,203	25.38%	103,929	81,725	70,245	65,034	56,395	63,956	37.15%	3,750,000
CPA Firm	PwC	Deloitte	E&Y	KPMG		Shu Lun Pan	RSM China	Pan-China	ShineWing	Crowe Horwath	Da Hua		
Year2011	295,674	292,844	227,749	192,842	22.93%	150,418	131,672	90,746	84,139	88,748	80,326	37.16%	4,400,000
CPA Firm	PwC	Deloitte	Rui Hua	E&Y		Shu Lun Pan	KPMG	WUYIGE	Pan-China	ShineWing	Da Hua		
Year2012	322,629	304,451	243,709	223,646	21.50%	177,357	213,576	136,557	110,515	104,103	100,808	38.06%	5,090,000
CPA Firm	PwC	Deloitte	Rui Hua	Shu Lun Pan		E&Y	KPMG	Pan-China	Da Hua	ShineWing	WUYIGE		
Year2013	335,141	288,123	277,593	250,911	20.75%	236,434	234,717	134,146	123,788	117,517	110,055	37.99%	5,550,000
CPA Firm	PwC	Deloitte	E&Y	Rui Hua		Shu Lun Pan	KPMG	Pan-China	ShineWing	Baker Tilly China	Grant Thornton		
Year2014	371,348	313,092	283,323	306,203	21.63%	290,696	235,072	150,590	128,289	121,706	119,627	39.39%	5,890,000

Rank	1	2	3	4	CR4	5	6	7	8	9	10	CR10	
CPA Firm	PwC	Rui Hua	Deloitte	Shu Lun Pan		E&Y	KPMG	Pan-China	ShineWing	Baker Tilly China	Grant Thornton		
Year2015	411,733	403,015	332,477	350,169	21.71%	296,072	253,335	192,841	156,075	152,275	152,857	39.16%	6,897,100

Note: Table 2.1 reports the total revenue (in ten thousand RMB, earned from listed and nonlisted clients) of the largest ten audit firms in China each year, market share of Top 4 audit firms each year (CR4) and market share of Top 10 audit firms each year (CR10). The last column is the total revenue of the whole audit market (in ten thousand RMB).

Table 2.2 Audit Market Concentration in China among Listed Firms

year	CR4_fee	CR10_fee	CR4_firm	CR10_firm	CR4_ast	CR10_ast	CR4_rev	CR10_rev
2001	0.19	0.36	0.16	0.33	0.28	0.43	0.17	0.36
2002	0.18	0.35	0.15	0.31	0.46	0.59	0.35	0.50
2003	0.18	0.35	0.16	0.31	0.36	0.51	0.21	0.41
2004	0.19	0.36	0.17	0.31	0.38	0.57	0.37	0.53
2005	0.20	0.36	0.17	0.32	0.41	0.60	0.43	0.58
2006	0.38	0.54	0.18	0.34	0.66	0.81	0.47	0.64
2007	0.36	0.56	0.19	0.38	0.65	0.83	0.46	0.65
2008	0.31	0.56	0.23	0.44	0.52	0.75	0.36	0.63
2009	0.30	0.57	0.27	0.51	0.46	0.74	0.36	0.65
2010	0.30	0.58	0.28	0.52	0.45	0.77	0.40	0.67
2011	0.35	0.63	0.32	0.55	0.57	0.81	0.41	0.69
2012	0.44	0.72	0.39	0.65	0.68	0.89	0.45	0.75
2013	0.42	0.72	0.46	0.69	0.62	0.85	0.44	0.77
2014	0.45	0.72	0.47	0.69	0.62	0.86	0.47	0.78
2015	0.48	0.75	0.46	0.70	0.73	0.91	0.56	0.82

Note: Table 2.2 reports the market share of Top 4 audit firms each year (CR4) and market share of Top 10 audit firms each year (CR10) in Chinese listed firms audit market. The market share are calculated based on audit fees (CR_fee), numbers of clients (CR_firm), clients' total assets (CR_ast) and clients' revenue (CR_rev), respectively.

Figure 2.1 Audit Market Concentration in China among Listed Firms
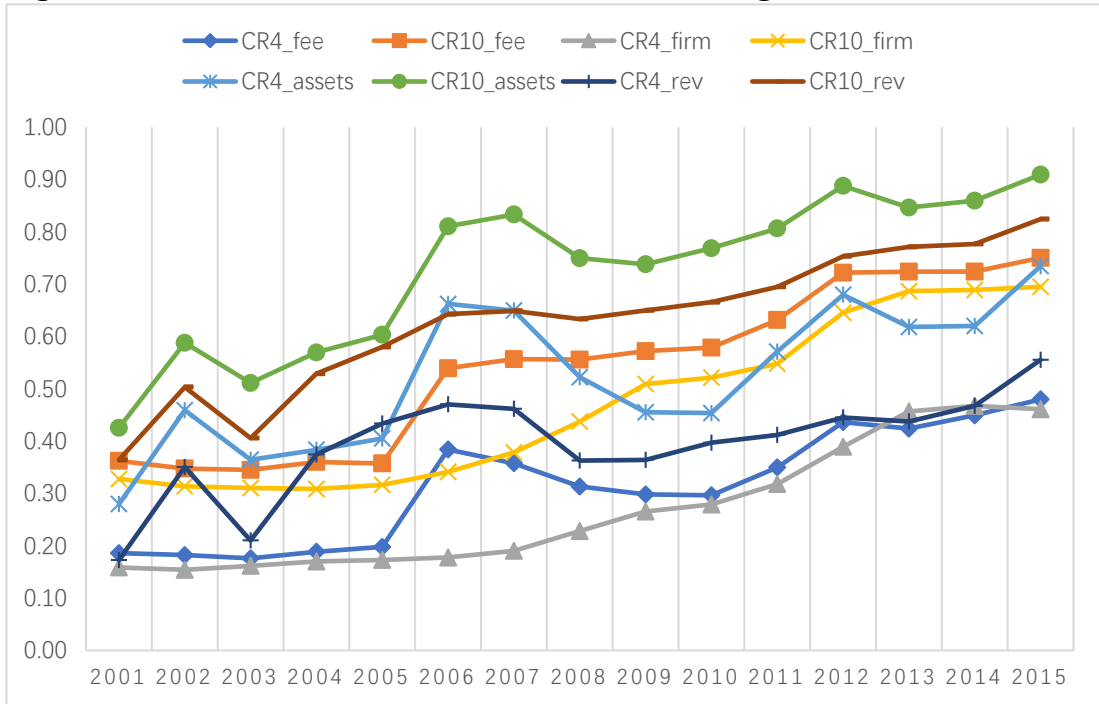
Table 2.3 Sample

Panel A: Sample Selection	Obs
Firm-year observations with audit fees data for 2002-2010 in CSMAR	11,553
Less: missing individual auditor data	(485)
Less: financial sector	(138)
Less: missing segment data in WIND	(1,140)
Less: missing other control variables in CSMAR	(770)
Final sample of firm-year observations	9,020

Panel B: Sample distribution by years

Year	Obs	%
2002	558	6.19
2003	938	10.40
2004	928	10.29
2005	968	10.73
2006	957	10.61
2007	914	10.13
2008	1113	12.34
2009	1279	14.18
2010	1365	15.13
Total	9020	100.00

Panel C: Sample distribution by industries

CSRC Industry	Obs	%
A: Agriculture, forestry, animal husbandry and fishery	187	2.07
B: Mining	162	1.80
C13: Agricultural and sideline food processing	144	1.60
C14: Food manufacturing	66	0.73
C15: Alcohol, beverage and refined tea manufacturing	175	1.94
C17: Textile industry	247	2.74
C18: Textile garment and apparel industry	86	0.95
C19: Leathers, furs, feathers and related products and footwear industry	7	0.08
C20: Wood processing and wood, bamboo, rattan, Palm fiber, and straw product industry	9	0.10
C21: Furniture manufacturing	19	0.21
C22: Papermaking and paper product industry	113	1.25
C23: Printing and recording media reproduction industry	20	0.22
C24: Manufacturing of stationery, industrial arts, sports and entertainment supplies	8	0.09
C25: Industries of petroleum processing, coking, and nuclear fuel	93	1.03

processing

C26: Manufacturing of chemical raw materials and chemical products	650	7.21
C27: Pharmaceutical industry	554	6.14
C28: Chemical fiber manufacturing	130	1.44
C29: Industry of rubber and plastic products	134	1.49
C30: Industry of non-metallic mineral products	307	3.40
C31: Industry of ferrous metal smelting and rolling processing	200	2.22
C32: Industry of non-ferrous metal smelting and rolling processing	196	2.17
C33: Metal product industry	120	1.33
C34: General equipment manufacturing	241	2.67
C35: Special-purpose equipment manufacturing	320	3.55
C36: Automobile manufacturing	240	2.66
C37: Manufacturing of railways, ships, aircrafts, spacecrafts and other transportation equipment	168	1.86
C38: Electric machinery and equipment manufacturing	261	2.89
C39: Manufacturing of computers, communications and other electronic equipment	598	6.63
C40: Instrument and meter manufacturing	53	0.59
C41: Other manufacturing industries	127	1.41
D: Industry of electric power, heat, gas and water production and supply	384	4.26
E: Construction industry	205	2.27
F: Wholesale and retail industry	712	7.89
G: Transport, storage and postal service industry	404	4.48
H: Accommodation and catering industry	50	0.55
I: Industry of information transmission, software and information technology services	353	3.91
K: Real estate industry	538	5.96
L: Leasing and commercial service industry	103	1.14
M: Scientific research and technical service industry	7	0.08
N: Water conservancy, environment and public facility management industry	70	0.78
O: Industry of resident service, repair and other services	45	0.50
Q: Health and social work	2	0.02
R: Industry of culture, sports and entertainment	38	0.42
S: Diversified industries	474	5.25
Total	9,020	100.00

Panel D: Sample distribution by provinces

Province	# of cities	Obs	%
Shanghai	1	935	10.37
Yunnan	7	137	1.52
Neimeng	7	112	1.24
Beijing	1	596	6.61
Jilin	5	205	2.27
Sichuan	14	399	4.42
Tianjin	1	169	1.87
Ningxia	3	82	0.91
Anhui	16	256	2.84
Shandong	15	497	5.51
Shanxi	9	134	1.49
Guangdong	18	1,121	12.43
Guangxi	8	159	1.76
Xinjiang	9	193	2.14
Jiangsu	12	558	6.19
Jiangxi	9	151	1.67
Hebei	11	215	2.38
Henan	15	196	2.17
Zhejiang	11	623	6.91
Hainan	3	148	1.64
Hubei	11	379	4.20
Hunan	11	284	3.15
Gansu	7	113	1.25
Fujian	9	312	3.46
Xizang	2	48	0.53
Guizhou	4	105	1.16
Liaoning	11	329	3.65
Chongqing	1	183	2.03
Shanxi	4	161	1.78
Qinghai	2	58	0.64
Heilongjiang	6	162	1.80
Total		9,020	100

Note: Table 2.3 reports the sample selection procedures and sample distribution by years, industries and provinces.

Table 2.4 Descriptive Statistics

Variable	Mean	Median	Std Dev	P25	P75	Min	Max
AFee (thousand RMB)	611.42	450.00	960.03	350.00	650.00	30.00	40500.00
LNAF	13.09	13.02	0.55	12.77	13.38	11.92	14.92
TOP4SHARE	0.85	0.88	0.14	0.74	1.00	0.51	1.00
TOP4HHI	0.37	0.28	0.26	0.18	0.51	0.07	1.00
ALLHHI	0.38	0.28	0.26	0.19	0.51	0.10	1.00
INITIAL	0.09	0.00	0.29	0.00	0.00	0.00	1.00
NEWBOTH	0.07	0.00	0.26	0.00	0.00	0.00	1.00
NEWFIRM	0.02	0.00	0.13	0.00	0.00	0.00	1.00
NEWPRTNR	0.11	0.00	0.32	0.00	0.00	0.00	1.00
SIZE	21.40	21.31	1.10	20.67	22.04	18.66	24.60
CURAT	0.52	0.53	0.21	0.36	0.68	0.08	0.97
LIQ	1.60	1.22	1.56	0.86	1.76	0.13	13.25
RECTA	0.11	0.08	0.10	0.03	0.16	0.00	0.48
INVTA	0.17	0.13	0.15	0.06	0.22	0.00	0.71
LEV	0.52	0.51	0.28	0.37	0.64	0.06	2.39
ROA	0.03	0.03	0.09	0.01	0.07	-0.49	0.23
LOSS	0.13	0.00	0.33	0.00	0.00	0.00	1.00
ADJRET	0.14	0.00	0.62	-0.19	0.29	-0.97	2.84
STDRET	0.05	0.05	0.02	0.04	0.06	0.02	0.11
SEG	2.66	2.00	1.66	1.00	4.00	1.00	8.00
MTB	0.00	0.00	0.08	0.00	0.00	-7.32	0.99
MAO	0.08	0.00	0.27	0.00	0.00	0.00	1.00
AGE	1.91	2.08	0.70	1.61	2.40	0.00	2.83
ISSUEB	0.05	0.00	0.21	0.00	0.00	0.00	1.00
ISSUEH	0.01	0.00	0.11	0.00	0.00	0.00	1.00
BIG4	0.04	0.00	0.20	0.00	0.00	0.00	1.00
AUDTENURE	4.26	4.00	2.41	2.00	6.00	1.00	10.00
CIFIRM	0.05	0.04	0.04	0.02	0.06	0.01	0.27
CICPA	0.22	0.19	0.12	0.13	0.26	0.06	0.50
SPFIRM	0.17	0.00	0.38	0.00	0.00	0.00	1.00
SPCPA	0.09	0.00	0.28	0.00	0.00	0.00	1.00
MKTI	8.18	8.31	2.17	6.44	10.18	0.38	11.80
LNLE	9.24	9.26	0.38	8.92	9.51	8.46	10.05

Note: Table 2.4 reports the descriptive statistic for all variables used in the analysis. The final sample consists of 9020 firm-year observations from 2002 to 2010. The continuous variables are winsorized at the 1st and 99th percentiles. For detailed variable definitions, see Appendix A.

Table 2.5 Correlation Matrix

	LNAF	TOP4SHARE	TOP4HHI	ALLHHI	INITIAL	NEWBOTH	NEWFIRM	NEWPRTNR	SIZE	CURAT	LIQ	RECAT	INVAT	LEV	ROA	LOSS
LNAF		-0.109***	-0.062***	-0.066***	-0.046***	-0.053***	0.005	-0.015	0.634***	-0.028***	-0.100***	-0.151***	0.058***	0.159***	0.132***	-0.110***
TOP4SHARE	-0.123***		0.904***	0.901***	-0.040***	-0.048***	0.009	0.026**	-0.068***	-0.127***	-0.066***	0.010	-0.025**	-0.006	-0.012	0.010
TOP4HHI	-0.067***	0.742***		0.999***	-0.049***	-0.059***	0.011	0.032***	-0.048***	-0.104***	-0.047***	0.005	-0.021**	-0.006	0.005	0.002
ALLHHI	-0.067***	0.730***	1.000***		-0.047***	-0.058***	0.013	0.032***	-0.051***	-0.105***	-0.048***	0.005	-0.020*	-0.005	0.004	0.003
INITIAL	-0.035***	-0.043***	-0.041***	-0.040***		0.896***	0.412***	-0.112***	-0.021*	0.003	-0.031***	0.028***	-0.004	0.051***	-0.062***	0.062***
NEWBOTH	-0.043***	-0.050***	-0.053***	-0.052***	0.896***		-0.036***	-0.100***	-0.036***	0.008	-0.032***	0.036***	-0.003	0.049***	-0.064***	0.060***
NEWFIRM	0.010	0.007	0.016	0.016	0.412***	-0.036***		-0.046***	0.027**	-0.009	-0.004	-0.011	-0.002	0.015	-0.006	0.016
NEWPRTNR	-0.021*	0.024**	0.032***	0.033***	-0.112***	-0.100***	-0.046***		-0.007	0.009	0.016	0.002	0.008	-0.010	0.014	0.003
SIZE	0.672***	-0.070***	-0.049***	-0.049***	-0.017	-0.035***	0.032***	-0.006		-0.089***	-0.104***	-0.292***	0.060***	0.196***	0.228***	-0.215***
CURAT	-0.027***	-0.119***	-0.105***	-0.104***	0.003	0.007	-0.008	0.009	-0.087***		0.563***	0.349***	0.623***	0.074***	0.053***	-0.069***
LIQ	-0.131***	-0.048***	-0.035***	-0.035***	-0.016	-0.020*	0.004	0.022**	-0.129***	0.314***		0.116***	0.251***	-0.625***	0.328***	-0.235***
RECTA	-0.144***	-0.022**	-0.029***	-0.029***	0.029***	0.037***	-0.012	-0.001	-0.283***	0.360***	-0.022**		0.075***	0.053***	-0.191***	0.117***
INVTA	0.051***	-0.076***	-0.064***	-0.064***	-0.002	-0.004	0.002	0.003	0.099***	0.632***	0.032***	-0.078***		0.216***	-0.018*	-0.068***
LEV	0.059***	-0.017	-0.022**	-0.022**	0.061***	0.060***	0.014	-0.020*	-0.020*	0.036***	-0.470***	0.137***	0.126***		-0.391***	0.243***
ROA	0.139***	0.003	0.014	0.014	-0.076***	-0.080***	-0.007	0.018*	0.284***	0.052***	0.233***	-0.225***	0.032***	-0.555***		-0.558***
LOSS	-0.106***	0.004	0.011	0.012	0.062***	0.060***	0.016	0.003	-0.218***	-0.069***	-0.131***	0.161***	-0.063***	0.314***	-0.643***	
ADJRET	0.071***	0.001	-0.006	-0.005	0.037***	0.030***	0.023**	-0.006	0.081***	0.043***	0.008	-0.150***	0.058***	-0.019*	0.169***	-0.113***
STDRET	0.000	-0.038***	-0.033***	-0.031***	0.083***	0.070***	0.043***	-0.005	-0.107***	0.081***	-0.023**	-0.029***	0.097***	0.127***	-0.088***	0.096***
SEG	0.165***	-0.100***	-0.087***	-0.088***	-0.021**	-0.016	-0.015	-0.008	0.118***	-0.001	-0.086***	-0.006	0.048***	0.025**	-0.014	-0.024**
MTB	-0.006	-0.005	0.005	0.006	-0.033***	-0.037***	0.001	0.002	0.003	0.000	0.009	0.006	0.001	-0.029***	0.026**	-0.001
MAO	-0.103***	-0.037***	-0.013	-0.012	0.084***	0.092***	0.002	-0.016	-0.238***	-0.036***	-0.124***	0.180***	-0.091***	0.433***	-0.508***	0.426***
AGE	0.128***	-0.126***	-0.141***	-0.141***	0.030***	0.028***	0.010	-0.027***	0.139***	-0.080***	-0.169***	-0.119***	0.086***	0.202***	-0.142***	0.090***
ISSUEB	0.160***	-0.157***	-0.113***	-0.112***	0.021**	0.008	0.030***	-0.014	0.078***	-0.030***	-0.040***	-0.017	-0.008	0.019*	-0.029***	0.023**
ISSUEH	0.183***	-0.050***	-0.039***	-0.039***	-0.009	-0.010	0.001	0.005	0.193***	-0.043***	-0.013	-0.039***	-0.018*	-0.023**	0.036***	-0.012

	LNAF	TOP4SHARE	TOP4HHI	ALLHHI	INITIAL	NEWBOTH	NEWFIRM	NEWPRTNR	SIZE	CURAT	LIQ	RECAT	INVAT	LEV	ROA	LOSS
BIG4	0.393***	-0.139***	-0.104***	-0.103***	0.033***	0.023**	0.026**	0.012	0.293***	-0.066***	-0.017	-0.074***	-0.022**	-0.031***	0.082***	-0.045***
AUDTENURE	0.145***	0.009	-0.006	-0.006	-0.411***	-0.368***	-0.168***	0.059***	0.168***	-0.055***	-0.041***	-0.174***	0.047***	0.005	0.060***	-0.058***
CIFIRM	-0.048***	0.075***	0.024**	0.023**	0.037***	0.051***	-0.021*	-0.006	0.015	-0.016	-0.044***	0.053***	-0.003	0.016	-0.012	0.030***
CICPA	0.107***	-0.047***	-0.040***	-0.038***	0.087***	0.072***	0.046***	0.043***	0.128***	-0.007	-0.015	-0.050***	0.030***	0.020*	0.018*	0.010
SPFIRM	0.282***	-0.066***	-0.052***	-0.052***	0.016	0.007	0.022**	-0.015	0.302***	-0.066***	-0.055***	-0.084***	-0.012	-0.008	0.062***	-0.048***
SPCPA	0.286***	-0.052***	-0.042***	-0.043***	0.002	-0.004	0.012	-0.013	0.325***	-0.075***	-0.063***	-0.067***	-0.032***	0.000	0.066***	-0.048***
MKTI	0.264***	-0.292***	-0.206***	-0.207***	-0.036***	-0.026**	-0.029***	-0.016	0.132***	0.128***	0.069***	-0.052***	0.107***	-0.030***	0.104***	-0.091***
LNLE	0.324***	-0.385***	-0.279***	-0.279***	-0.014	-0.013	-0.006	-0.014	0.197***	0.115***	0.094***	-0.149***	0.113***	-0.027**	0.103***	-0.090***

Table 2.5 Correlation matrix (Continued)

	ADJRET	STDREG	SEG	MTB	MAO	AGE	ISSUEB	ISSUEH	BIG4	AUDTENURE	CIFIRM	CICPA	SPFIRM	SPCPA	MKTI	LNLE
LNAF	0.103***	0.017	0.163***	-0.063***	-0.102***	0.153***	0.138***	0.127***	0.266***	0.153***	-0.141***	0.080***	0.246***	0.233***	0.265***	0.315***
TOP4SHARE	-0.017	-0.039***	-0.110***	-0.069***	-0.028***	-0.187***	-0.146***	-0.051***	-0.132***	0.014	0.095***	-0.033***	-0.066***	-0.052***	-0.301***	-0.390***
TOP4HHI	-0.023**	-0.045***	-0.092***	-0.066***	-0.032***	-0.200***	-0.139***	-0.047***	-0.130***	0.014	0.067***	-0.056***	-0.058***	-0.045***	-0.231***	-0.316***
ALLHHI	-0.022**	-0.042***	-0.094***	-0.064***	-0.031***	-0.203***	-0.143***	-0.049***	-0.132***	0.013	0.070***	-0.052***	-0.061***	-0.047***	-0.242***	-0.327***
INITIAL	0.018*	0.081***	-0.022**	0.004	0.084***	0.024**	0.021**	-0.009	0.033***	-0.476***	0.006	0.080***	0.016	0.002	-0.037***	-0.016
NEWBOTH	0.012	0.068***	-0.014	0.003	0.092***	0.025**	0.008	-0.010	0.023**	-0.427***	0.021**	0.064***	0.007	-0.004	-0.026**	-0.013
NEWFIRM	0.016	0.045***	-0.021**	0.003	0.002	0.004	0.030***	0.001	0.026**	-0.195***	-0.029***	0.049***	0.022**	0.012	-0.029***	-0.008
NEWPRTNR	-0.006	-0.002	-0.012	0.015	-0.016	-0.026**	-0.014	0.005	0.012	0.074***	-0.013	0.044***	-0.015	-0.013	-0.015	-0.012
SIZE	0.113***	-0.089***	0.112***	-0.211***	-0.217***	0.149***	0.076***	0.144***	0.231***	0.175***	-0.015	0.133***	0.262***	0.277***	0.135***	0.188***
CURAT	0.028***	0.087***	-0.006	0.146***	-0.035***	-0.051***	-0.030***	-0.038***	-0.061***	-0.057***	-0.059***	-0.002	-0.059***	-0.072***	0.135***	0.122***
LIQ	0.052***	-0.039***	-0.056***	0.098***	-0.223***	-0.163***	-0.041***	0.008	-0.021**	-0.048***	-0.057***	-0.020*	-0.062***	-0.069***	0.087***	0.100***
RECTA	-0.175***	-0.039***	0.021**	-0.015	0.112***	-0.208***	-0.024**	-0.039***	-0.083***	-0.173***	0.072***	-0.062***	-0.092***	-0.070***	-0.055***	-0.161***
INVTA	0.054***	0.105***	0.053***	0.046***	-0.111***	0.043***	-0.021*	-0.014	-0.043***	0.040***	-0.034***	0.034***	-0.006	-0.023**	0.076***	0.071***
LEV	-0.031***	0.108***	0.075***	-0.027**	0.239***	0.202***	0.011	-0.027**	-0.024**	0.034***	0.013	0.048***	0.026**	0.035***	-0.032***	-0.031***

	ADJRET	STDREG	SEG	MTB	MAO	AGE	ISSUEB	ISSUEH	BIG4	AUDTENURE	CIFIRM	CICPA	SPFIRM	SPCPA	MKTI	LNLE
ROA	0.232***	-0.069***	-0.060***	0.190***	-0.338***	-0.149***	-0.019*	0.042***	0.106***	0.033***	-0.044***	0.019*	0.060***	0.059***	0.135***	0.128***
LOSS	-0.158***	0.095***	-0.016	-0.039***	0.426***	0.070***	0.023**	-0.012	-0.045***	-0.056***	0.036***	0.004	-0.048***	-0.048***	-0.094***	-0.089***
ADJRET		0.339***	-0.038***	0.405***	-0.123***	0.103***	-0.011	-0.008	0.000	0.113***	-0.150***	0.073***	0.022**	0.010	0.110***	0.223***
STDRET	0.417***		-0.051***	0.318***	0.061***	0.217***	0.034***	-0.034***	-0.042***	0.192***	-0.151***	0.137***	-0.055***	-0.066***	0.209***	0.297***
SEG	-0.033***	-0.035***		-0.067***	-0.010	0.137***	0.039***	0.025**	-0.004	0.067***	0.018*	-0.027***	0.056***	0.053***	0.069***	0.050***
MTB	-0.018*	-0.006	0.004		-0.066***	0.080***	-0.058***	-0.065***	-0.067***	0.016	-0.186***	0.010	-0.039***	-0.074***	0.104***	0.207***
MAO	-0.088***	0.061***	-0.016	-0.007		0.062***	0.015	-0.026**	-0.041***	-0.085***	0.027***	0.008	-0.056***	-0.054***	-0.067***	-0.074***
AGE	0.075***	0.165***	0.136***	-0.001	0.078***		0.225***	-0.009	0.010	0.383***	-0.140***	0.049***	0.035***	-0.007	0.185***	0.314***
ISSUEB	-0.006	0.035***	0.036***	-0.003	0.015	0.184***		-0.025**	0.161***	-0.043***	-0.009	0.021**	0.080***	0.046***	0.164***	0.157***
ISSUEH	-0.007	-0.033***	0.046***	0.000	-0.026**	-0.016	-0.025**		0.297***	-0.014	0.053***	0.085***	0.139***	0.191***	0.050***	0.056***
BIG4	-0.012	-0.048***	0.010	0.000	-0.041***	0.006	0.161***	0.297***		-0.045***	0.142***	0.192***	0.188***	0.229***	0.101***	0.111***
AUDTENURE	0.099***	0.171***	0.063***	0.014	-0.084***	0.416***	-0.042***	-0.011	-0.040***		-0.108***	0.000	-0.006	-0.007	0.169***	0.254***
CIFIRM	-0.055***	-0.060***	-0.011	0.000	0.019*	-0.041***	-0.011	0.047***	0.116***	-0.107***		0.181***	-0.170***	0.034***	-0.266***	-0.417***
CICPA	0.061***	0.116***	-0.020*	-0.004	0.019*	0.026**	0.019*	0.088***	0.208***	-0.021**	0.256***		0.016	0.015	-0.011	0.033***
SPFIRM	0.002	-0.056***	0.069***	0.003	-0.056***	0.028***	0.080***	0.139***	0.188***	-0.002	-0.111***	0.017		0.620***	0.084***	0.115***
SPCPA	-0.004	-0.063***	0.065***	0.001	-0.054***	0.002	0.046***	0.191***	0.229***	-0.008	0.029***	0.015	0.620***		0.031***	0.045***
MKTI	0.074***	0.182***	0.076***	0.039***	-0.067***	0.099***	0.159***	0.050***	0.098***	0.176***	-0.144***	0.003	0.085***	0.034***		0.844***
LNLE	0.160***	0.271***	0.063***	0.008	-0.076***	0.209***	0.162***	0.055***	0.115***	0.294***	-0.256***	0.041***	0.116***	0.046***	0.822***	

Note: Table 2.5 provides correlation matrix for all variables in this chapter. The Pearson correlation is presented in the lower diagonal and the Spearman correlation is presented in the upper diagonal. The final sample consists of 9020 firm-year observations from 2002 to 2010. The continuous variables are winsorized at the 1st and 99th percentiles. For detailed variable definitions, see Appendix A. The superscripts *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Table 2.6 Audit Market Concentration and Initial-Year Audit Fee Discounting: Audit Firm Level

	(1)		(2)		(3)		(4)	
	Coeff	t-stat	Coeff	t-stat	Coeff	t-stat	Coeff	t-stat
INITIAL	-0.044**	[-2.21]	-0.273**	[-2.38]	-0.103***	[-3.07]	-0.105***	[-3.07]
INITIAL*TOP4SHARE			0.274**	[2.11]				
TOP4SHARE			0.205***	[3.15]				
INITIAL*TOP4HHI					0.170***	[2.67]		
TOP4HHI					0.105***	[2.94]		
INITIAL*ALLHHI							0.172***	[2.65]
ALLHHI	0.120***	[3.33]					0.105***	[2.88]
SIZE	0.305***	[21.88]	0.307***	[22.17]	0.305***	[21.93]	0.305***	[21.92]
CURAT	0.116	[1.45]	0.12	[1.52]	0.117	[1.47]	0.117	[1.47]
LIQ	-0.041***	[-6.74]	-0.041***	[-6.89]	-0.041***	[-6.77]	-0.041***	[-6.76]
RECAT	0.126	[1.05]	0.126	[1.05]	0.125	[1.04]	0.125	[1.04]
INVAT	0	[-0.00]	-0.002	[-0.02]	0	[-0.00]	0	[-0.00]
LEV	0.163***	[3.28]	0.162***	[3.28]	0.163***	[3.28]	0.163***	[3.28]
ROA	-0.523***	[-3.79]	-0.515***	[-3.75]	-0.516***	[-3.75]	-0.516***	[-3.75]
LOSS	-0.003	[-0.15]	-0.002	[-0.07]	-0.003	[-0.15]	-0.003	[-0.15]
ADJRET	-0.076***	[-8.52]	-0.077***	[-8.69]	-0.076***	[-8.52]	-0.076***	[-8.51]
STDRET	-0.783*	[-1.71]	-0.71	[-1.55]	-0.769*	[-1.68]	-0.772*	[-1.68]
SEG	0.035***	[6.87]	0.035***	[6.85]	0.035***	[6.88]	0.035***	[6.87]
MTB	-0.590**	[-2.08]	-0.582**	[-2.01]	-0.625**	[-2.23]	-0.625**	[-2.23]
MAO	-0.111***	[-3.16]	-0.103***	[-2.96]	-0.109***	[-3.13]	-0.110***	[-3.13]
AGE	0.008	[0.60]	0.008	[0.57]	0.009	[0.66]	0.009	[0.66]
ISSUEB	0.185***	[4.22]	0.188***	[4.26]	0.184***	[4.21]	0.184***	[4.20]
ISSUEH	0.067	[0.71]	0.07	[0.74]	0.068	[0.71]	0.068	[0.71]
BIG4	0.541***	[11.21]	0.543***	[11.31]	0.542***	[11.25]	0.542***	[11.23]
AUDTENURE	0.006	[1.53]	0.006	[1.47]	0.006	[1.49]	0.006	[1.50]
CIFIRM	-0.519**	[-2.37]	-0.556**	[-2.55]	-0.530**	[-2.42]	-0.529**	[-2.42]
CICPA	0.058	[1.01]	0.064	[1.11]	0.06	[1.03]	0.059	[1.03]
SPFIRM	0.057**	[2.48]	0.056**	[2.42]	0.056**	[2.44]	0.056**	[2.44]
SPCPA	0.143***	[3.73]	0.140***	[3.65]	0.143***	[3.74]	0.143***	[3.74]
MKTI	0.022**	[2.46]	0.021**	[2.37]	0.023**	[2.48]	0.023**	[2.49]
LNLE	0.121*	[1.76]	0.142**	[2.05]	0.120*	[1.75]	0.120*	[1.74]
Industry Fixed effects	Yes		Yes		Yes		Yes	
Year Fixed effects	Yes		Yes		Yes		Yes	

N	9020	9020	9020	9020
Adj. R-square	0.541	0.542	0.542	0.542

Note: Table 2.6 reports the regression results examining the association between audit market concentration and initial-year audit fee discounting following audit firm level changes. For detailed variable definitions, see Appendix A. The superscripts *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Table 2.7 Audit Market Concentration and Initial-Year Audit Fee Discounting: Individual Auditor Level

	(1)		(2)		(3)	
	Coeff	t-stat	Coeff	t-stat	Coeff	t-stat
NEWBOTH	-0.365***	[-2.87]	-0.136***	[-3.64]	-0.139***	[-3.63]
NEWFIRM	0.065	[0.28]	-0.028	[-0.42]	-0.03	[-0.43]
NEWPRTNR	-0.162*	[-1.87]	-0.077***	[-3.00]	-0.079***	[-2.97]
NEWBOTH*TOP4SHARE	0.372**	[2.55]				
NEWFIRM*TOP4SHARE	-0.1	[-0.39]				
NEWPRTNR*TOP4SHARE	0.134	[1.32]				
TOP4SHARE	0.187***	[2.79]				
NEWBOTH*TOP4HHI			0.246***	[3.11]		
NEWFIRM*TOPHHI			0.011	[0.10]		
NEWPRTNR*TOP4HHI			0.078	[1.41]		
TOP4HHI			0.095***	[2.62]		
NEWBOTH*ALLHHI					0.249***	[3.08]
NEWFIRM*ALLHHI					0.015	[0.13]
NEWPRTNR*ALLHHI					0.081	[1.43]
ALLHHI					0.095**	[2.57]
SIZE	0.307***	[22.17]	0.304***	[21.90]	0.304***	[21.89]
CURAT	0.123	[1.55]	0.12	[1.51]	0.12	[1.51]
LIQ	-0.041***	[-6.91]	-0.041***	[-6.79]	-0.041***	[-6.79]
RECAT	0.127	[1.06]	0.127	[1.05]	0.126	[1.05]
INVAT	-0.001	[-0.01]	-0.001	[-0.01]	-0.001	[-0.01]
LEV	0.163***	[3.31]	0.163***	[3.30]	0.163***	[3.30]
ROA	-0.514***	[-3.74]	-0.509***	[-3.72]	-0.509***	[-3.72]
LOSS	0	[-0.01]	-0.001	[-0.05]	-0.001	[-0.06]
ADJRET	-0.077***	[-8.71]	-0.076***	[-8.55]	-0.076***	[-8.55]
STDRET	-0.725	[-1.58]	-0.780*	[-1.70]	-0.782*	[-1.71]
SEG	0.035***	[6.84]	0.035***	[6.88]	0.035***	[6.88]
MTB	-0.583**	[-2.01]	-0.641**	[-2.28]	-0.640**	[-2.27]
MAO	-0.104***	[-2.99]	-0.109***	[-3.13]	-0.110***	[-3.14]
AGE	0.008	[0.53]	0.009	[0.63]	0.009	[0.63]
ISSUEB	0.187***	[4.24]	0.183***	[4.19]	0.183***	[4.19]
ISSUEH	0.069	[0.73]	0.068	[0.71]	0.068	[0.71]
BIG4	0.545***	[11.40]	0.544***	[11.34]	0.544***	[11.33]
AUDTENURE	0.006	[1.53]	0.007	[1.56]	0.007	[1.57]
CIFIRM	-0.560**	[-2.58]	-0.533**	[-2.45]	-0.532**	[-2.45]
CICPA	0.069	[1.19]	0.065	[1.13]	0.065	[1.12]
SPFIRM	0.055**	[2.41]	0.056**	[2.47]	0.056**	[2.47]
SPCPA	0.139***	[3.64]	0.142***	[3.72]	0.142***	[3.72]

MKTI	0.021**	[2.38]	0.023**	[2.50]	0.023**	[2.50]
LNLE	0.140**	[2.02]	0.118*	[1.72]	0.117*	[1.71]
Industry Fixed effects	Yes		Yes		Yes
Year Fixed effects	Yes		Yes		Yes
N	9020		9020		9020
Adj. R-square	0.543		0.543		0.543

Note: Table 2.7 reports the regression results examining the association between audit market concentration and initial-year audit fee discounting following audit partner level changes. For detailed variable definitions, see Appendix A. The superscripts *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Table 2.8 Robustness Test: Concentration Measure Based on Clients' Total Assets

Panel A: Audit firm level

	(1)		(2)		(3)	
	Coeff	t-stat	Coeff	t-stat	Coeff	t-stat
INITIAL	-0.2	[-1.00]	-0.095**	[-2.30]	-0.097**	[-2.33]
INITIAL*TOP4SHARE	0.173	[0.81]				
TOP4SHARE	0.323***	[3.26]				
INITIAL*TOP4HHI			0.116*	[1.67]		
TOP4HHI			0.097***	[2.72]		
INITIAL*ALLHHI					0.120*	[1.71]
ALLHHI					0.097***	[2.71]
SIZE	0.306***	[22.07]	0.305***	[21.85]	0.305***	[21.85]
CURAT	0.115	[1.44]	0.114	[1.43]	0.114	[1.43]
LIQ	-0.042***	[-6.91]	-0.041***	[-6.76]	-0.041***	[-6.75]
RECAT	0.13	[1.09]	0.125	[1.05]	0.125	[1.04]
INVAT	0.001	[0.01]	-0.001	[-0.01]	-0.001	[-0.01]
LEV	0.163***	[3.30]	0.165***	[3.31]	0.165***	[3.31]
ROA	-0.512***	[-3.73]	-0.510***	[-3.70]	-0.510***	[-3.70]
LOSS	-0.001	[-0.04]	-0.002	[-0.09]	-0.002	[-0.09]
ADJRET	-0.077***	[-8.65]	-0.076***	[-8.50]	-0.076***	[-8.50]
STDRET	-0.701	[-1.53]	-0.770*	[-1.68]	-0.771*	[-1.68]
SEG	0.035***	[6.86]	0.035***	[6.85]	0.035***	[6.85]
MTB	-0.574**	[-1.98]	-0.605**	[-2.14]	-0.605**	[-2.15]
MAO	-0.106***	[-3.02]	-0.112***	[-3.18]	-0.112***	[-3.18]
AGE	0.007	[0.48]	0.007	[0.46]	0.007	[0.46]
ISSUEB	0.186***	[4.23]	0.183***	[4.15]	0.183***	[4.15]
ISSUEH	0.069	[0.72]	0.069	[0.72]	0.069	[0.72]
BIG4	0.541***	[11.22]	0.540***	[11.14]	0.540***	[11.14]
AUDTENURE	0.006	[1.53]	0.007	[1.61]	0.007	[1.62]
CIFIRM	-0.563***	[-2.58]	-0.534**	[-2.46]	-0.534**	[-2.46]
CICPA	0.061	[1.05]	0.057	[0.99]	0.057	[0.99]
SPFIRM	0.056**	[2.43]	0.055**	[2.40]	0.055**	[2.40]
SPCPA	0.139***	[3.63]	0.143***	[3.72]	0.143***	[3.72]
MKTI	0.024***	[2.72]	0.024***	[2.62]	0.024***	[2.62]
LNLE	0.105	[1.55]	0.101	[1.49]	0.101	[1.49]
Industry Fixed effects	Yes		Yes		Yes	
Year Fixed effects	Yes		Yes		Yes	
N	9020		9020		9020	
Adj. R-square	0.541		0.541		0.541	

Panel B: Individual auditor level

	(1)		(2)		(3)	
	Coeff	p-value	Coeff	p-value	Coeff	p-value
NEWBOTH	-0.314	[-1.41]	-0.120***	[-2.60]	-0.122***	[-2.62]
NEWFIRM	0.299	[0.70]	-0.035	[-0.40]	-0.037	[-0.41]
NEWPRTNR	-0.17	[-1.10]	-0.073**	[-2.24]	-0.074**	[-2.23]
NEWBOTH*TOP4SHARE	0.285	[1.19]				
NEWFIRM*TOP4SHARE	-0.344	[-0.76]				
NEWPRTNR*TOP4SHARE	0.132	[0.79]				
TOP4SHARE	0.307***	[3.05]				
NEWBOTH*TOP4HHI			0.151*	[1.80]		
NEWFIRM*TOP4HHI			0.025	[0.19]		
NEWPRTNR*TOP4HHI			0.051	[0.88]		
TOP4HHI			0.091**	[2.54]		
NEWBOTH*ALLHHI					0.156*	[1.83]
NEWFIRM*ALLHHI					0.028	[0.22]
NEWPRTNR*ALLHHI					0.052	[0.89]
ALLHHI					0.092**	[2.53]
SIZE	0.306***	[22.06]	0.304***	[21.82]	0.304***	[21.82]
CURAT	0.118	[1.49]	0.117	[1.48]	0.117	[1.48]
LIQ	-0.041***	[-6.95]	-0.041***	[-6.80]	-0.041***	[-6.80]
RECAT	0.129	[1.08]	0.124	[1.04]	0.124	[1.03]
INVAT	0.001	[0.01]	-0.002	[-0.02]	-0.002	[-0.02]
LEV	0.163***	[3.32]	0.164***	[3.32]	0.164***	[3.32]
ROA	-0.511***	[-3.73]	-0.506***	[-3.68]	-0.506***	[-3.68]
LOSS	0	[0.01]	0	[0.00]	0	[0.00]
ADJRET	-0.077***	[-8.66]	-0.076***	[-8.53]	-0.076***	[-8.52]
STDRET	-0.713	[-1.55]	-0.778*	[-1.69]	-0.779*	[-1.70]
SEG	0.035***	[6.86]	0.035***	[6.84]	0.035***	[6.84]
MTB	-0.572**	[-1.96]	-0.609**	[-2.14]	-0.610**	[-2.15]
MAO	-0.106***	[-3.05]	-0.112***	[-3.19]	-0.112***	[-3.19]
AGE	0.006	[0.45]	0.006	[0.43]	0.006	[0.43]
ISSUEB	0.185***	[4.21]	0.182***	[4.14]	0.182***	[4.14]
ISSUEH	0.069	[0.72]	0.07	[0.73]	0.07	[0.73]
BIG4	0.542***	[11.29]	0.542***	[11.22]	0.542***	[11.22]
AUDTENURE	0.007	[1.59]	0.007*	[1.68]	0.007*	[1.68]
CIFIRM	-0.564***	[-2.60]	-0.537**	[-2.48]	-0.536**	[-2.48]
CICPA	0.066	[1.14]	0.063	[1.09]	0.063	[1.09]
SPFIRM	0.056**	[2.43]	0.055**	[2.41]	0.055**	[2.41]
SPCPA	0.139***	[3.61]	0.142***	[3.70]	0.142***	[3.70]

MKTI	0.024***	[2.71]	0.024***	[2.62]	0.024***	[2.62]
LNLE	0.105	[1.54]	0.1	[1.47]	0.1	[1.48]
Industry Fixed effects	Yes		Yes		Yes	
Year Fixed effects	Yes		Yes		Yes	
N	9020		9020		9020	
Adj. R-square	0.542		0.542		0.542	

Note: Table 2.8 reports the regression results using clients' total assets to calculate the market concentration. For detailed variable definitions, see Appendix A. The superscripts *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Table 2.9 Robustness Test: Concentration Measure Based on Number of Clients

Panel A: Audit firm level

	(1) Coeff	(1) t-stat	(2) Coeff	(2) t-stat	(3) Coeff	(3) t-stat
INITIAL	-0.191**	[-2.03]	-0.098***	[-3.12]	-0.101***	[-3.13]
INITIAL*TOP4SHARE	0.183*	[1.68]				
TOP4SHARE	0.036	[0.56]				
INITIAL*TOP4HHI			0.169***	[2.76]		
TOP4HHI			0.054	[1.44]		
INITIAL*ALLHHI					0.173***	[2.76]
ALLHHI					0.057	[1.47]
SIZE	0.305***	[21.83]	0.305***	[21.84]	0.305***	[21.84]
CURAT	0.113	[1.42]	0.116	[1.45]	0.116	[1.45]
LIQ	-0.041***	[-6.79]	-0.041***	[-6.78]	-0.041***	[-6.79]
RECAT	0.116	[0.97]	0.119	[0.99]	0.119	[0.99]
INVAT	0.003	[0.04]	0.002	[0.02]	0.002	[0.02]
LEV	0.165***	[3.31]	0.163***	[3.28]	0.163***	[3.27]
ROA	-0.501***	[-3.63]	-0.510***	[-3.70]	-0.511***	[-3.70]
LOSS	-0.002	[-0.09]	-0.003	[-0.14]	-0.003	[-0.15]
ADJRET	-0.076***	[-8.55]	-0.076***	[-8.49]	-0.076***	[-8.49]
STDRET	-0.772*	[-1.68]	-0.776*	[-1.69]	-0.777*	[-1.69]
SEG	0.035***	[6.77]	0.035***	[6.80]	0.035***	[6.80]
MTB	-0.560*	[-1.93]	-0.606**	[-2.14]	-0.606**	[-2.15]
MAO	-0.107***	[-3.02]	-0.108***	[-3.06]	-0.108***	[-3.07]
AGE	0.007	[0.46]	0.008	[0.56]	0.008	[0.56]
ISSUEB	0.179***	[4.05]	0.180***	[4.09]	0.180***	[4.09]
ISSUEH	0.069	[0.72]	0.069	[0.71]	0.069	[0.71]
BIG4	0.536***	[11.01]	0.538***	[11.08]	0.538***	[11.08]
AUDTENURE	0.007	[1.63]	0.007	[1.56]	0.007	[1.56]
CIFIRM	-0.544**	[-2.46]	-0.539**	[-2.44]	-0.538**	[-2.44]
CICPA	0.058	[1.00]	0.06	[1.04]	0.06	[1.04]
SPFIRM	0.055**	[2.42]	0.055**	[2.41]	0.055**	[2.42]
SPCPA	0.140***	[3.66]	0.142***	[3.73]	0.142***	[3.73]
MKTI	0.024***	[2.63]	0.023**	[2.55]	0.023**	[2.55]
LNLE	0.1	[1.46]	0.11	[1.59]	0.111	[1.60]
Industry Fixed effects	Yes		Yes		Yes	
Year Fixed effects	Yes		Yes		Yes	
N	9020		9020		9020	
Adj. R-square	0.539		0.540		0.540	

Panel B: Individual auditor level

	(1)		(2)		(3)	
	Coeff	p-value	Coeff	p-value	Coeff	p-value
NEWBOTH	-0.282***	[-2.71]	-0.131***	[-3.71]	-0.134***	[-3.71]
NEWFIRM	0.111	[0.55]	-0.026	[-0.41]	-0.029	[-0.45]
NEWPRTNR	-0.170**	[-2.08]	-0.075***	[-2.91]	-0.076***	[-2.89]
NEWBOTH*TOP4SHARE	0.282**	[2.29]				
NEWFIRM*TOP4SHARE	-0.152	[-0.67]				
NEWPRTNR*TOP4SHARE	0.147	[1.52]				
TOP4SHARE	0.02	[0.30]				
NEWBOTH*TOP4HHI			0.246***	[3.21]		
NEWFIRM*TOP4HHI			0.017	[0.16]		
NEWPRTNR*TOP4HHI			0.077	[1.38]		
TOP4HHI			0.045	[1.17]		
NEWBOTH*ALLHHI					0.249***	[3.18]
NEWFIRM*ALLHHI					0.024	[0.22]
NEWPRTNR*ALLHHI					0.08	[1.41]
ALLHHI					0.047	[1.19]
SIZE	0.304***	[21.83]	0.304***	[21.81]	0.304***	[21.82]
CURAT	0.117	[1.47]	0.12	[1.50]	0.119	[1.50]
LIQ	-0.041***	[-6.81]	-0.041***	[-6.82]	-0.041***	[-6.82]
RECAT	0.115	[0.96]	0.119	[0.99]	0.119	[1.00]
INVAT	0.004	[0.05]	0.002	[0.02]	0.002	[0.02]
LEV	0.165***	[3.34]	0.162***	[3.29]	0.162***	[3.28]
ROA	-0.498***	[-3.62]	-0.503***	[-3.67]	-0.504***	[-3.67]
LOSS	0	[-0.01]	-0.001	[-0.05]	-0.001	[-0.06]
ADJRET	-0.076***	[-8.55]	-0.076***	[-8.51]	-0.076***	[-8.51]
STDRET	-0.789*	[-1.72]	-0.786*	[-1.71]	-0.786*	[-1.71]
SEG	0.035***	[6.75]	0.035***	[6.80]	0.035***	[6.80]
MTB	-0.561*	[-1.93]	-0.621**	[-2.19]	-0.621**	[-2.19]
MAO	-0.108***	[-3.04]	-0.108***	[-3.06]	-0.108***	[-3.06]
AGE	0.006	[0.45]	0.008	[0.53]	0.008	[0.53]
ISSUEB	0.178***	[4.03]	0.178***	[4.07]	0.179***	[4.07]
ISSUEH	0.067	[0.70]	0.068	[0.70]	0.068	[0.71]
BIG4	0.539***	[11.13]	0.541***	[11.19]	0.541***	[11.19]
AUDTENURE	0.007*	[1.67]	0.007	[1.62]	0.007	[1.62]
CIFIRM	-0.543**	[-2.47]	-0.540**	[-2.46]	-0.539**	[-2.46]
CICPA	0.063	[1.08]	0.066	[1.13]	0.066	[1.13]
SPFIRM	0.055**	[2.41]	0.056**	[2.44]	0.056**	[2.44]
SPCPA	0.139***	[3.65]	0.141***	[3.71]	0.141***	[3.71]

MKTI	0.023***	[2.62]	0.023**	[2.55]	0.023**	[2.55]
LNLE	0.101	[1.48]	0.109	[1.58]	0.11	[1.59]
Industry Fixed effects	Yes		Yes		Yes	
Year Fixed effects	Yes		Yes		Yes	
N	9020		9020		9020	
Adj. R-square	0.540		0.541		0.541	

Note: Table 2.9 reports the regression results using number of clients to calculate the market concentration. For detailed variable definitions, see Appendix A. The superscripts *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Table 2.10 Robustness Test: Control for State Ownership

Panel A: Audit firm level

	(1)		(2)		(3)	
	Coeff	t-stat	Coeff	t-stat	Coeff	t-stat
INITIAL	-0.268**	[-2.34]	-0.100***	[-2.99]	-0.103***	[-2.99]
INITIAL*TOP4SHARE	0.270**	[2.09]				
TOP4SHARE	0.199***	[3.07]				
INITIAL*TOP4HHI			0.167***	[2.61]		
TOP4HHI			0.104***	[2.92]		
INITIAL*ALLHHI					0.169***	[2.60]
ALLHHI					0.105***	[2.87]
SIZE	0.309***	[22.36]	0.307***	[22.13]	0.307***	[22.13]
CURAT	0.12	[1.51]	0.117	[1.47]	0.117	[1.47]
LIQ	-0.042***	[-6.98]	-0.041***	[-6.86]	-0.041***	[-6.86]
RECAT	0.12	[1.00]	0.119	[0.99]	0.119	[0.99]
INVAT	0	[0.00]	0.002	[0.02]	0.002	[0.02]
LEV	0.159***	[3.21]	0.159***	[3.21]	0.159***	[3.21]
ROA	-0.528***	[-3.84]	-0.531***	[-3.85]	-0.531***	[-3.85]
LOSS	-0.003	[-0.13]	-0.005	[-0.22]	-0.005	[-0.22]
ADJRET	-0.078***	[-8.77]	-0.077***	[-8.61]	-0.077***	[-8.61]
STDRET	-0.747	[-1.63]	-0.808*	[-1.77]	-0.810*	[-1.77]
SEG	0.035***	[6.89]	0.035***	[6.92]	0.035***	[6.91]
MTB	-0.595**	[-2.04]	-0.639**	[-2.25]	-0.638**	[-2.25]
MAO	-0.107***	[-3.04]	-0.113***	[-3.21]	-0.113***	[-3.22]
SOE	-0.026	[-1.26]	-0.028	[-1.37]	-0.028	[-1.37]
AGE	0.011	[0.78]	0.013	[0.89]	0.013	[0.89]
ISSUEB	0.190***	[4.28]	0.186***	[4.24]	0.186***	[4.24]
ISSUEH	0.074	[0.76]	0.072	[0.74]	0.072	[0.74]
BIG4	0.541***	[11.33]	0.540***	[11.27]	0.539***	[11.26]
AUDTENURE	0.006	[1.45]	0.006	[1.47]	0.006	[1.48]
CIFIRM	-0.561***	[-2.59]	-0.535**	[-2.47]	-0.534**	[-2.47]
CICPA	0.069	[1.20]	0.065	[1.13]	0.065	[1.13]
SPFIRM	0.056**	[2.45]	0.056**	[2.47]	0.056**	[2.47]
SPCPA	0.139***	[3.64]	0.143***	[3.73]	0.143***	[3.73]
MKTI	0.020**	[2.26]	0.021**	[2.36]	0.021**	[2.36]
LNLE	0.145**	[2.10]	0.125*	[1.82]	0.125*	[1.82]
Industry Fixed effects	Yes		Yes		Yes	
Year Fixed effects	Yes		Yes		Yes	
N	8462		8462		8462	
Adj. R-square	0.542		0.542		0.542	

Panel B: Individual auditor level

	(1)		(2)		(3)	
	Coeff	p-value	Coeff	p-value	Coeff	p-value
NEWBOTH	-0.360***	[-2.84]	-0.133***	[-3.57]	-0.136***	[-3.56]
NEWFIRM	0.069	[0.29]	-0.026	[-0.38]	-0.027	[-0.39]
NEWPRTNR	-0.164*	[-1.88]	-0.078***	[-3.02]	-0.080***	[-2.99]
NEWBOTH*TOP4SHARE	0.369**	[2.53]				
NEWFIRM*TOP4SHARE	-0.102	[-0.40]				
NEWPRTNR*TOP4SHARE	0.135	[1.34]				
TOP4SHARE	0.181***	[2.71]				
NEWBOTH*TOP4HHI			0.243***	[3.06]		
NEWFIRM*TOP4HHI			0.009	[0.08]		
NEWPRTNR*TOP4HHI			0.08	[1.45]		
TOP4HHI			0.094***	[2.59]		
NEWBOTH*ALLHHI					0.245***	[3.03]
NEWFIRM*ALLHHI					0.012	[0.11]
NEWPRTNR*ALLHHI					0.083	[1.47]
ALLHHI					0.094**	[2.54]
SIZE	0.308***	[22.35]	0.307***	[22.10]	0.307***	[22.09]
CURAT	0.122	[1.55]	0.12	[1.51]	0.12	[1.51]
LIQ	-0.041***	[-7.00]	-0.041***	[-6.89]	-0.041***	[-6.89]
RECAT	0.121	[1.01]	0.12	[1.00]	0.12	[1.00]
INVAT	0.001	[0.01]	0.001	[0.01]	0.001	[0.01]
LEV	0.160***	[3.25]	0.159***	[3.23]	0.159***	[3.22]
ROA	-0.527***	[-3.83]	-0.524***	[-3.82]	-0.524***	[-3.81]
LOSS	-0.002	[-0.07]	-0.003	[-0.12]	-0.003	[-0.12]
ADJRET	-0.078***	[-8.79]	-0.077***	[-8.65]	-0.077***	[-8.65]
STDRET	-0.762*	[-1.67]	-0.818*	[-1.79]	-0.820*	[-1.79]
SEG	0.035***	[6.87]	0.035***	[6.92]	0.035***	[6.92]
MTB	-0.596**	[-2.03]	-0.654**	[-2.30]	-0.653**	[-2.30]
MAO	-0.107***	[-3.07]	-0.113***	[-3.22]	-0.113***	[-3.23]
SOE	-0.026	[-1.26]	-0.028	[-1.37]	-0.028	[-1.37]
AGE	0.011	[0.75]	0.012	[0.86]	0.012	[0.86]
ISSUEB	0.188***	[4.26]	0.185***	[4.23]	0.185***	[4.23]
ISSUEH	0.073	[0.76]	0.072	[0.74]	0.072	[0.74]
BIG4	0.543***	[11.43]	0.542***	[11.37]	0.542***	[11.36]
AUDTENURE	0.006	[1.51]	0.006	[1.54]	0.007	[1.54]
CIFIRM	-0.564***	[-2.62]	-0.538**	[-2.50]	-0.537**	[-2.49]
CICPA	0.074	[1.28]	0.07	[1.22]	0.07	[1.22]
SPFIRM	0.056**	[2.44]	0.057**	[2.50]	0.057**	[2.50]

SPCPA	0.139***	[3.63]	0.142***	[3.71]	0.142***	[3.71]
MKTI	0.021**	[2.28]	0.022**	[2.37]	0.022**	[2.38]
LNLE	0.144**	[2.08]	0.123*	[1.79]	0.123*	[1.79]
Industry Fixed effects	Yes		Yes		Yes	
Year Fixed effects	Yes		Yes		Yes	
N	8462		8462		8462	
Adj. R-square	0.543		0.543		0.543	

Note: Table 2.10 reports the regression results controlling for state ownership. For detailed variable definitions, see Appendix A. The superscripts *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Table 2.11 Robustness Test: Firm Fixed Effects

	(1)		(2)		(3)	
	Coeff	t-stat	Coeff	t-stat	Coeff	t-stat
INITIAL	-0.170**	[-1.99]	-0.046*	[-1.77]	-0.046*	[-1.76]
INITIAL*TOP4SHARE	0.183*	[1.92]				
TOP4SHARE	0.018	[0.26]				
INITIAL*TOP4HHI			0.081*	[1.70]		
TOP4HHI			0.066	[1.57]		
INITIAL*ALLHHI					0.081*	[1.66]
ALLHHI					0.069	[1.59]
SIZE	0.163***	[9.91]	0.163***	[9.83]	0.163***	[9.82]
CURAT	-0.048	[-0.86]	-0.046	[-0.83]	-0.046	[-0.83]
LIQ	-0.022***	[-3.45]	-0.022***	[-3.50]	-0.022***	[-3.50]
RECAT	0.389***	[4.30]	0.393***	[4.34]	0.393***	[4.35]
INVAT	0.11	[1.59]	0.11	[1.57]	0.11	[1.57]
LEV	0.049	[1.14]	0.049	[1.14]	0.049	[1.14]
ROA	-0.362***	[-3.91]	-0.366***	[-3.96]	-0.366***	[-3.96]
LOSS	-0.017	[-1.14]	-0.016	[-1.13]	-0.016	[-1.13]
ADJRET	-0.052***	[-7.99]	-0.051***	[-7.92]	-0.051***	[-7.92]
STDRET	-0.356	[-1.15]	-0.363	[-1.18]	-0.363	[-1.18]
SEG	0.006	[1.44]	0.006	[1.45]	0.006	[1.45]
MTB	-0.095	[-0.34]	-0.101	[-0.37]	-0.101	[-0.37]
MAO	-0.054**	[-2.08]	-0.055**	[-2.12]	-0.055**	[-2.12]
AGE	-0.009	[-0.41]	-0.008	[-0.35]	-0.008	[-0.34]
ISSUEH	1.237***	[16.24]	1.223***	[16.31]	1.223***	[16.31]
BIG4	0.409***	[5.75]	0.407***	[5.74]	0.407***	[5.74]
AUDTENURE	0.008*	[1.95]	0.008*	[1.87]	0.008*	[1.87]
CIFIRM	-0.357**	[-2.00]	-0.342*	[-1.92]	-0.342*	[-1.91]
CICPA	0.080**	[2.03]	0.081**	[2.07]	0.081**	[2.07]
SPFIRM	0.030*	[1.65]	0.029	[1.62]	0.029	[1.62]
SPCPA	0.018	[0.55]	0.018	[0.54]	0.018	[0.54]
MKTI	-0.01	[-0.71]	-0.009	[-0.65]	-0.009	[-0.65]
LNLE	0.116	[1.10]	0.095	[0.90]	0.094	[0.89]
Firm Fixed effects	Yes		Yes		Yes	
Year Fixed effects	Yes		Yes		Yes	
N	9020		9020		9020	
Adj. R-square	0.852		0.852		0.852	

Note: Table 2.11 reports the regression results controlling for firm fixed effects. For detailed variable definitions, see Appendix A. The superscripts *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Table 2.12 Robustness Test: City Fixed Effects

	(1)		(2)		(3)	
	Coeff	t-stat	Coeff	t-stat	Coeff	t-stat
INITIAL	-0.211***	[-3.84]	-0.085**	[-3.27]	-0.087**	[-3.26]
INITIAL*TOP4SHARE	0.198**	[3.26]				
TOP4SHARE	0.028	[1.03]				
INITIAL*TOP4HHI			0.118***	[4.23]		
TOP4HHI			0.145**	[2.85]		
INITIAL*ALLHHI					0.120***	[4.14]
ALLHHI					0.150**	[2.91]
SIZE	0.303***	[19.13]	0.303***	[19.30]	0.303***	[19.29]
CURAT	0.048	[0.55]	0.049	[0.56]	0.049	[0.56]
LIQ	-0.040***	[-5.94]	-0.040***	[-5.95]	-0.040***	[-5.96]
RECAT	0.145	[1.23]	0.151	[1.28]	0.151	[1.29]
INVAT	0.011	[0.12]	0.009	[0.11]	0.009	[0.11]
LEV	0.178**	[3.40]	0.178**	[3.41]	0.178**	[3.41]
ROA	-0.367**	[-2.44]	-0.369**	[-2.47]	-0.369**	[-2.47]
LOSS	-0.003	[-0.09]	-0.003	[-0.10]	-0.003	[-0.10]
ADJRET	-0.072**	[-3.11]	-0.072**	[-3.12]	-0.072**	[-3.11]
STDRET	-0.738	[-1.12]	-0.749	[-1.12]	-0.748	[-1.12]
SEG	0.028***	[5.55]	0.028***	[5.57]	0.028***	[5.57]
MTB	-0.69	[-1.88]	-0.732*	[-1.96]	-0.732*	[-1.96]
MAO	-0.083**	[-2.66]	-0.085**	[-2.78]	-0.085**	[-2.78]
AGE	0.022	[1.63]	0.022	[1.68]	0.022	[1.68]
ISSUEH	0.203**	[3.29]	0.202**	[3.29]	0.203**	[3.29]
BIG4	0.102	[0.82]	0.102	[0.82]	0.103	[0.82]
AUDTENURE	0.558***	[8.80]	0.557***	[8.83]	0.557***	[8.83]
CIFIRM	0.007	[1.68]	0.006	[1.55]	0.006	[1.55]
CICPA	-0.545**	[-3.32]	-0.541**	[-3.29]	-0.540**	[-3.28]
SPFIRM	0.036	[0.63]	0.039	[0.67]	0.039	[0.67]
SPCPA	0.055**	[2.55]	0.055**	[2.51]	0.055**	[2.51]
MKTI	0.110**	[3.15]	0.110**	[3.20]	0.110**	[3.20]
LNLE	-0.008	[-0.42]	-0.006	[-0.35]	-0.006	[-0.34]
Industry Fixed effects	Yes		Yes		Yes	
City Fixed effects	Yes		Yes		Yes	
Year Fixed effects	Yes		Yes		Yes	
N	9020		9020		9020	
Adj. R-square	0.608		0.608		0.609	

Note: Table 2.12 reports the regression results controlling for city level fixed effects. For detailed variable definitions, see Appendix A. The superscripts *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Table 2.13 Robustness Test: Two-Stage Least-Squares Regression

Panel A1: First-stage results for *CON*

	(1) TOP4SHARE		(2) TOP4HHI		(3) ALLHHI	
	Coeff	t-stat.	Coeff	t-stat.	Coeff	t-stat.
INITIAL	-0.001	[-0.07]	-0.108*	[-1.75]	-0.107*	[-1.75]
FINV	-0.041***	[-52.61]	-0.088***	[-46.05]	-0.087***	[-45.58]
INITIAL_FINV	0.000	[0.00]	0.009*	[1.74]	0.009*	[1.75]
SIZE	-0.006***	[-2.71]	0.008**	[2.37]	0.008**	[2.44]
CURAT	-0.011	[-0.88]	0.015	[0.73]	0.015	[0.76]
LIQ	0.000	[-0.03]	-0.005***	[-2.62]	-0.005***	[-2.68]
RECAT	-0.018	[-0.87]	-0.077**	[-2.35]	-0.076**	[-2.37]
INVAT	-0.030**	[-2.02]	-0.048**	[-2.00]	-0.046*	[-1.94]
LEV	0.008	[0.94]	0.011	[0.78]	0.011	[0.77]
ROA	0.004	[0.14]	0.028	[0.55]	0.030	[0.59]
LOSS	-0.008	[-1.35]	-0.002	[-0.17]	-0.001	[-0.11]
ADJRET	0.004	[1.35]	-0.004	[-0.86]	-0.004	[-0.90]
STDRET	-0.387***	[-3.32]	-0.118	[-0.57]	-0.098	[-0.48]
SEG	-0.002*	[-1.91]	-0.002	[-1.27]	-0.002	[-1.24]
MTB	0.004	[0.04]	-0.213	[-1.25]	-0.210	[-1.27]
MAO	-0.036***	[-4.48]	-0.013	[-0.98]	-0.011	[-0.82]
AGE	-0.002	[-0.79]	-0.014***	[-3.30]	-0.014***	[-3.40]
ISSUEB	-0.019***	[-2.76]	-0.008	[-0.76]	-0.007	[-0.66]
ISSUEH	0.002	[0.16]	0.012	[0.66]	0.011	[0.62]
BIG4	-0.026***	[-3.47]	-0.025**	[-2.28]	-0.023**	[-2.17]
AUDTENURE	0.004***	[4.98]	0.006***	[4.36]	0.006***	[4.32]
CIFIRM	0.043	[1.20]	-0.196***	[-2.82]	-0.199***	[-2.93]
CICPA	-0.045***	[-3.46]	-0.068***	[-3.02]	-0.064***	[-2.92]
SPFIRM	-0.003	[-0.67]	-0.018**	[-2.41]	-0.018**	[-2.45]
SPCPA	0.008	[1.36]	0.006	[0.63]	0.006	[0.61]
MKTI	0.032***	[21.07]	0.041***	[15.29]	0.040***	[15.27]
LNLE	-0.182***	[-17.62]	-0.059***	[-3.28]	-0.059***	[-3.34]
Industry Fixed effects	Yes		Yes		Yes	
Year Fixed effects	Yes		Yes		Yes	
N	8523		8523		8523	
Adj. R-square	0.430		0.410		0.411	
Test of endogeneity and weak instruments						
Wu-Hausman F-statistic	4.37 (p=0.013)		8.92 (p=0.000)		8.77 (p=0.000)	
F-statistic	1466.35 (p=0.000)		1083.46 (p=0.000)		1061.30 (p=0.000)	
Partial R2	0.240		0.317		0.318	

Panel A2: First-stage results for *INITIAL_CON*

	(1) INITIAL_TOP4SHARE		(2) INITIAL_TOP4HHI		(3) INITIAL_ALLHHI	
	Coeff	t-stat.	Coeff	t-stat.	Coeff	t-stat.
INITIAL	1.288***	[62.67]	1.023***	[16.64]	1.017***	[16.75]
FINV	0.000	[-1.32]	-0.002***	[-5.04]	-0.002***	[-4.99]
INITIAL_FINV	-0.042***	[-23.00]	-0.063***	[-12.53]	-0.062***	[-12.42]
SIZE	-0.001	[-1.36]	0.000	[0.36]	0.000	[0.39]
CURAT	-0.007*	[-1.88]	-0.005	[-0.77]	-0.004	[-0.75]
LIQ	0.000	[1.32]	0.000	[0.02]	0.000	[-0.01]
RECAT	-0.002	[-0.31]	-0.004	[-0.43]	-0.004	[-0.44]
INVAT	0.004	[1.00]	0.002	[0.31]	0.002	[0.29]
LEV	0.003	[0.92]	0.000	[-0.02]	0.000	[-0.02]
ROA	-0.014	[-1.34]	-0.030	[-1.37]	-0.029	[-1.35]
LOSS	-0.002	[-1.13]	-0.006	[-1.54]	-0.006	[-1.54]
ADJRET	0.001	[1.39]	-0.001	[-0.47]	-0.001	[-0.53]
STDRET	-0.044	[-1.06]	0.029	[0.38]	0.030	[0.42]
SEG	0.000	[-0.29]	0.000	[-0.36]	0.000	[-0.33]
MTB	-0.001	[-0.06]	-0.024	[-0.78]	-0.023	[-0.78]
MAO	-0.008**	[-2.39]	-0.007	[-1.21]	-0.006	[-1.14]
AGE	-0.002***	[-2.73]	-0.003**	[-2.23]	-0.003**	[-2.16]
ISSUEB	0.001	[0.33]	0.000	[-0.01]	0.000	[-0.06]
ISSUEH	-0.003	[-0.80]	-0.006	[-1.46]	-0.006	[-1.51]
BIG4	-0.004	[-1.39]	-0.004	[-1.13]	-0.003	[-1.07]
AUDTENURE	0.000*	[1.75]	0.001	[1.60]	0.000	[1.51]
CIFIRM	0.031**	[2.27]	0.052*	[1.96]	0.050*	[1.91]
CICPA	-0.002	[-0.46]	-0.006	[-0.77]	-0.006	[-0.77]
SPFIRM	-0.001	[-0.37]	0.003	[1.31]	0.003	[1.32]
SPCPA	0.003*	[1.78]	-0.001	[-0.23]	-0.001	[-0.26]
MKTI	0.002***	[4.05]	0.003***	[4.28]	0.003***	[4.34]
LNLE	-0.005*	[-1.70]	0.001	[0.28]	0.001	[0.18]
Industry Fixed effects	Yes		Yes		Yes	
Year Fixed effects	Yes		Yes		Yes	
N	8523		8523		8523	
adj. R-sq	0.980		0.741		0.758	
Test of endogeneity and weak instruments						
Wu-Hausman F-statistic	4.37 (p=0.013)		8.92 (p=0.000)		8.77 (p=0.000)	
F-statistic	275.37 (p=0.000)		78.82 (p=0.000)		77.35 (p=0.000)	
Partial R2	0.378		0.316		0.318	

Panel B : second-stage results

	(1) LNAF		(2) LNAF		(3) LNAF	
	Coeff	Z-stat.	Coeff	Z-stat.	Coeff	Z-stat.
INITIAL	-0.468***	[-2.64]	-0.158***	[-3.06]	-0.163***	[-3.05]
INITIAL * $\widehat{TOP4SHARE}$	0.509**	[2.40]				
$\widehat{TOP4SHARE}$	0.065	[0.83]				
INITIAL * $\widehat{TOP4HHI}$			0.341**	[2.42]		
$\widehat{TOP4HHI}$			0.025	[0.69]		
INITIAL * $\widehat{ALLHHI}$					0.348**	[2.42]
$\widehat{ALLHHI}$					0.026	[0.69]
SIZE	0.318***	[40.12]	0.317***	[40.19]	0.317***	[40.18]
CURAT	0.176***	[3.81]	0.173***	[3.75]	0.173***	[3.75]
LIQ	-0.046***	[-10.88]	-0.046***	[-10.80]	-0.046***	[-10.80]
RECAT	0.012	[0.16]	0.013	[0.18]	0.013	[0.18]
INVAT	-0.057	[-1.03]	-0.056	[-1.02]	-0.056	[-1.02]
LEV	0.198***	[5.54]	0.199***	[5.61]	0.199***	[5.61]
ROA	-0.453***	[-4.11]	-0.451***	[-4.11]	-0.451***	[-4.11]
LOSS	0.010	[0.46]	0.010	[0.46]	0.010	[0.46]
ADJRET	-0.080***	[-8.12]	-0.078***	[-7.97]	-0.078***	[-7.97]
STDRET	-0.855**	[-1.98]	-0.909**	[-2.12]	-0.911**	[-2.12]
SEG	0.033***	[10.71]	0.033***	[10.71]	0.033***	[10.71]
MTB	-0.660	[-1.42]	-0.646	[-1.41]	-0.646	[-1.41]
MAO	-0.117***	[-4.05]	-0.121***	[-4.19]	-0.121***	[-4.20]
AGE	0.011	[1.27]	0.011	[1.30]	0.011	[1.29]
ISSUEB	0.160***	[6.25]	0.159***	[6.26]	0.159***	[6.26]
ISSUEH	0.046	[0.77]	0.046	[0.78]	0.047	[0.78]
BIG4	0.550***	[16.77]	0.548***	[16.77]	0.548***	[16.77]
AUDTENURE	0.008***	[2.69]	0.008***	[2.72]	0.008***	[2.73]
CIFIRM	-0.521***	[-3.84]	-0.515***	[-3.80]	-0.515***	[-3.79]
CICPA	0.090**	[1.99]	0.090**	[1.99]	0.090**	[1.99]
SPFIRM	0.050***	[2.86]	0.049***	[2.80]	0.049***	[2.80]
SPCPA	0.081***	[3.20]	0.083***	[3.29]	0.083***	[3.29]
MKTI	0.016***	[2.68]	0.017***	[2.98]	0.017***	[2.98]
LNLE	0.107**	[2.30]	0.094**	[2.29]	0.094**	[2.29]
Industry Fixed effects	Yes		Yes		Yes	
Year Fixed effects	Yes		Yes		Yes	
N	8523		8523		8523	
adj. R-sq	0.517		0.516		0.516	

Note: Table 2.13 reports the regression results using two-stage least-square regressions. For detailed variable definitions, see Appendix A. The superscripts *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Table 2.14 The Effect of Auditor Type: Audit Market Concentration and Initial-Year Audit Fee Discounting (Audit Firm Level)

Panel A: Big audit firm group:

	(1)		(2)		(3)	
	Coeff	t-stat.	Coeff	t-stat.	Coeff	t-stat.
INITIAL	-0.14	[-0.61]	-0.128**	[-2.15]	-0.131**	[-2.15]
INITIAL*TOP4SHARE	0.085	[0.32]				
TOP4SHARE	0.097	[0.69]				
INITIAL*TOP4HHI			0.183	[1.50]		
TOP4HHI			-0.011	[-0.14]		
INITIAL*ALLHHI					0.187	[1.51]
ALLHHI					-0.014	[-0.17]
SIZE	0.368***	[14.86]	0.366***	[14.77]	0.366***	[14.77]
CURAT	-0.034	[-0.20]	-0.033	[-0.19]	-0.033	[-0.19]
LIQ	-0.037***	[-2.88]	-0.037***	[-2.85]	-0.037***	[-2.85]
RECAT	0.482**	[1.98]	0.464*	[1.91]	0.464*	[1.91]
INVAT	-0.103	[-0.58]	-0.109	[-0.61]	-0.109	[-0.61]
LEV	0.243*	[1.87]	0.249*	[1.92]	0.249*	[1.92]
ROA	-0.565*	[-1.86]	-0.557*	[-1.84]	-0.556*	[-1.84]
LOSS	-0.02	[-0.34]	-0.019	[-0.32]	-0.018	[-0.32]
ADJRET	-0.087***	[-4.15]	-0.085***	[-4.05]	-0.085***	[-4.05]
STDRET	-2.303**	[-2.32]	-2.326**	[-2.36]	-2.325**	[-2.36]
SEG	0.042***	[3.80]	0.042***	[3.84]	0.042***	[3.84]
MTB	0.442	[0.63]	0.463	[0.66]	0.463	[0.66]
MAO	-0.203**	[-2.51]	-0.205**	[-2.55]	-0.205**	[-2.55]
AGE	-0.026	[-0.90]	-0.026	[-0.90]	-0.026	[-0.90]
ISSUEB	0.405***	[6.46]	0.397***	[6.44]	0.397***	[6.44]
ISSUEH	0.167	[1.48]	0.167	[1.46]	0.167	[1.46]
AUDTENURE	0.008	[1.03]	0.009	[1.08]	0.009	[1.08]
CIFIRM	1.119	[1.62]	1.106	[1.60]	1.106	[1.60]
CICPA	0.167	[1.34]	0.164	[1.31]	0.163	[1.31]
SPFIRM	-0.013	[-0.35]	-0.015	[-0.39]	-0.015	[-0.39]
SPCPA	0.154***	[2.69]	0.154***	[2.71]	0.154***	[2.71]
MKTI	0.031*	[1.95]	0.033**	[2.12]	0.033**	[2.13]
LNLE	0.119	[1.00]	0.092	[0.79]	0.091	[0.78]
Industry Fixed effects	Yes		Yes		Yes	
Year Fixed effects	Yes		Yes		Yes	
N	2189		2189		2189	
Adj. R-square	0.581		0.582		0.582	

Panel B: Small audit firm group:

	(1)		(2)		(3)	
	Coeff	t-stat.	Coeff	t-stat.	Coeff	t-stat.
INITIAL	-0.247**	[-2.04]	-0.090***	[-2.64]	-0.092***	[-2.64]
INITIAL*TOP4SHARE	0.250*	[1.83]				
TOP4SHARE	0.191***	[2.90]				
INITIAL*TOP4HHI			0.147**	[2.29]		
TOP4HHI			0.096***	[2.65]		
INITIAL*ALLHHI					0.150**	[2.29]
ALLHHI					0.096***	[2.59]
SIZE	0.302***	[21.32]	0.301***	[21.12]	0.301***	[21.11]
CURAT	0.111	[1.39]	0.108	[1.35]	0.108	[1.35]
LIQ	-0.040***	[-6.81]	-0.040***	[-6.68]	-0.040***	[-6.68]
RECAT	0.097	[0.80]	0.098	[0.81]	0.097	[0.80]
INVAT	0.013	[0.13]	0.014	[0.15]	0.015	[0.15]
LEV	0.149***	[3.05]	0.150***	[3.05]	0.151***	[3.05]
ROA	-0.511***	[-3.70]	-0.512***	[-3.70]	-0.512***	[-3.70]
LOSS	-0.002	[-0.07]	-0.004	[-0.16]	-0.004	[-0.17]
ADJRET	-0.076***	[-8.43]	-0.074***	[-8.27]	-0.074***	[-8.27]
STDRET	-0.643	[-1.39]	-0.7	[-1.52]	-0.702	[-1.52]
SEG	0.034***	[6.61]	0.034***	[6.63]	0.034***	[6.63]
MTB	-0.592**	[-2.09]	-0.629**	[-2.29]	-0.629**	[-2.29]
MAO	-0.102***	[-2.94]	-0.107***	[-3.08]	-0.108***	[-3.09]
AGE	0.012	[0.82]	0.013	[0.91]	0.013	[0.91]
ISSUEB	0.170***	[3.60]	0.168***	[3.60]	0.168***	[3.59]
ISSUEH	0.259**	[2.42]	0.261**	[2.45]	0.261**	[2.46]
AUDTENURE	0.007	[1.63]	0.007*	[1.66]	0.007*	[1.66]
CIFIRM	-0.534**	[-2.41]	-0.507**	[-2.29]	-0.507**	[-2.28]
CICPA	0.047	[0.80]	0.041	[0.70]	0.041	[0.70]
SPFIRM	0.061***	[2.59]	0.062***	[2.64]	0.062***	[2.64]
SPCPA	0.176***	[4.36]	0.178***	[4.40]	0.178***	[4.40]
MKTI	0.026***	[2.84]	0.027***	[2.95]	0.027***	[2.96]
LNLE	0.134*	[1.92]	0.112	[1.61]	0.112	[1.61]
Industry Fixed effects	Yes		Yes		Yes	
Year Fixed effects	Yes		Yes		Yes	
N	6831		6831		6831	
Adj. R-square	0.449		0.449		0.449	

Note: Table 2.14 reports the regression results examining the effect of different auditor types on the association between audit market concentration and initial-year audit fee discounting following audit firm level changes. For detailed variable definitions, see Appendix A. The superscripts *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Table 2.15 The Effect of Auditor Type: Audit Market Concentration and Initial-Year Audit Fee Discounting (Individual Auditor Level)

Panel A: Large audit firm group:

	(1)		(2)		(3)	
	Coeff	t-stat.	Coeff	t-stat.	Coeff	t-stat.
NEWBOTH	-0.205	[-0.79]	-0.141**	[-2.12]	-0.144**	[-2.10]
NEWFIRM	0.099	[0.26]	-0.116	[-1.15]	-0.119	[-1.16]
NEWPRTNR	-0.155	[-0.77]	-0.082	[-1.47]	-0.081	[-1.41]
NEWBOTH*TOP4SHARE	0.157	[0.51]				
NEWFIRM*TOP4SHARE	-0.232	[-0.53]				
NEWPRTNR*TOP4SHARE	0.042	[0.18]				
TOP4SHARE	0.122	[0.84]				
NEWBOTH*TOP4HHI			0.214	[1.43]		
NEWFIRM*TOP4HHI			0.05	[0.27]		
NEWPRTNR*TOP4HHI			-0.099	[-0.85]		
TOP4HHI			0.015	[0.20]		
NEWBOTH*ALLHHI					0.216	[1.42]
NEWFIRM*ALLHHI					0.059	[0.31]
NEWPRTNR*ALLHHI					-0.1	[-0.84]
ALLHHI					0.013	[0.16]
SIZE	0.368***	[15.00]	0.366***	[14.87]	0.366***	[14.87]
CURAT	-0.023	[-0.13]	-0.018	[-0.10]	-0.018	[-0.10]
LIQ	-0.037***	[-2.91]	-0.037***	[-2.86]	-0.037***	[-2.86]
RECAT	0.457*	[1.88]	0.433*	[1.79]	0.433*	[1.79]
INVAT	-0.104	[-0.59]	-0.118	[-0.66]	-0.118	[-0.66]
LEV	0.239*	[1.83]	0.246*	[1.89]	0.246*	[1.89]
ROA	-0.582*	[-1.93]	-0.565*	[-1.88]	-0.564*	[-1.88]
LOSS	-0.022	[-0.38]	-0.019	[-0.32]	-0.019	[-0.32]
ADJRET	-0.088***	[-4.27]	-0.087***	[-4.16]	-0.087***	[-4.16]
STDRET	-2.313**	[-2.34]	-2.368**	[-2.39]	-2.366**	[-2.39]
SEG	0.040***	[3.69]	0.041***	[3.73]	0.041***	[3.73]
MTB	0.483	[0.68]	0.503	[0.71]	0.504	[0.71]
MAO	-0.208**	[-2.57]	-0.210***	[-2.62]	-0.210***	[-2.62]
AGE	-0.03	[-1.06]	-0.03	[-1.05]	-0.03	[-1.05]
ISSUEB	0.410***	[6.61]	0.401***	[6.57]	0.401***	[6.57]
ISSUEH	0.162	[1.45]	0.16	[1.41]	0.16	[1.41]
AUDTENURE	0.009	[1.13]	0.01	[1.19]	0.01	[1.19]
CIFIRM	1.171*	[1.72]	1.130*	[1.66]	1.130*	[1.66]
CICPA	0.18	[1.44]	0.178	[1.43]	0.178	[1.43]
SPFIRM	-0.015	[-0.39]	-0.016	[-0.42]	-0.016	[-0.42]
SPCPA	0.152***	[2.66]	0.153***	[2.70]	0.153***	[2.70]

	(1)					
MKTI	0.029*	[1.84]	0.031**	[2.00]	0.031**	[2.00]
LNLE	0.131	[1.11]	0.103	[0.89]	0.102	[0.88]
Industry Fixed effects	Yes		Yes		Yes	
Year Fixed effects	Yes		Yes		Yes	
N	2189		2189		2189	
Adj. R-square	0.584		0.584		0.584	

Panel B: Small audit firm group:

	(1)		(2)		(3)	
	Coeff	p-value	Coeff	p-value	Coeff	p-value
NEWBOTH	-0.321**	[-2.19]	-0.119***	[-2.73]	-0.122***	[-2.74]
NEWFIRM	0.126	[0.41]	0.015	[0.16]	0.014	[0.15]
NEWPRTNR	-0.089	[-0.98]	-0.049*	[-1.69]	-0.050*	[-1.69]
NEWBOTH*TOP4SHARE	0.321*	[1.93]				
NEWFIRM*TOP4SHARE	-0.13	[-0.40]				
NEWPRTNR*TOP4SHARE	0.082	[0.77]				
TOP4SHARE	0.196***	[2.71]				
NEWBOTH*TOP4HHI			0.194**	[2.15]		
NEWFIRM*TOP4HHI			-0.018	[-0.14]		
NEWPRTNR*TOP4HHI			0.077	[1.19]		
TOP4HHI			0.105***	[2.69]		
NEWBOTH*ALLHHI					0.198**	[2.15]
NEWFIRM*ALLHHI					-0.016	[-0.12]
NEWPRTNR*ALLHHI					0.08	[1.20]
ALLHHI					0.106***	[2.65]
SIZE	0.284***	[18.51]	0.283***	[18.37]	0.283***	[18.37]
CURAT	0.151*	[1.83]	0.146*	[1.78]	0.146*	[1.77]
LIQ	-0.042***	[-6.58]	-0.042***	[-6.47]	-0.042***	[-6.47]
RECAT	0.008	[0.06]	0.018	[0.14]	0.018	[0.14]
INVAT	0.01	[0.10]	0.012	[0.12]	0.012	[0.12]
LEV	0.110**	[2.19]	0.111**	[2.18]	0.111**	[2.18]
ROA	-0.538***	[-3.76]	-0.530***	[-3.68]	-0.530***	[-3.68]
LOSS	-0.004	[-0.17]	-0.005	[-0.20]	-0.005	[-0.21]
ADJRET	-0.072***	[-7.40]	-0.071***	[-7.27]	-0.071***	[-7.27]
STDRET	-0.186	[-0.36]	-0.252	[-0.48]	-0.255	[-0.49]
SEG	0.033***	[6.03]	0.033***	[6.08]	0.033***	[6.08]
MTB	-0.795**	[-2.39]	-0.861***	[-2.85]	-0.861***	[-2.85]
MAO	-0.072*	[-1.86]	-0.077**	[-1.99]	-0.077**	[-2.00]
AGE	0.011	[0.73]	0.012	[0.77]	0.012	[0.77]
ISSUEB	0.120**	[2.17]	0.122**	[2.20]	0.122**	[2.20]
ISSUEH	0.262**	[2.08]	0.269**	[2.16]	0.270**	[2.17]

AUDTENURE	0.010*	[1.93]	0.010**	[1.96]	0.010**	[1.97]
CIFIRM	-0.26	[-1.15]	-0.221	[-0.98]	-0.22	[-0.97]
CICPA	0.086	[1.33]	0.081	[1.26]	0.081	[1.25]
SPFIRM	0.067**	[2.32]	0.068**	[2.33]	0.068**	[2.33]
SPCPA	0.155***	[3.20]	0.158***	[3.24]	0.158***	[3.24]
MKTI	0.021**	[2.07]	0.021**	[2.14]	0.022**	[2.14]
LNLE	0.130*	[1.71]	0.11	[1.47]	0.109	[1.47]
Industry Fixed effects	Yes		Yes		Yes	
Year Fixed effects	Yes		Yes		Yes	
N	6831		6831		6831	
Adj. R-square	0.41		0.411		0.411	

Note: Table 2.15 reports the regression results examining the effect of different auditor type on the association between audit market concentration and initial-year audit fee discounting following individual partner level changes. For detailed variable definitions, see Appendix A. The superscripts *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Table 2.16 The Effect of Legal Liability: Audit Market Concentration and Initial-Year Audit Fee Discounting (Firm Level)

Panel A: Strong legal environment:

	(1)		(2)		(3)	
	Coeff	t-stat.	Coeff	t-stat.	Coeff	t-stat.
INITIAL	-0.187	[-1.18]	-0.098*	[-1.92]	-0.099*	[-1.87]
INITIAL*TOP4SHARE	0.145	[0.74]				
TOP4SHARE	0.322***	[3.80]				
INITIAL*TOP4HHI			0.092	[0.71]		
TOP4HHI			0.304***	[5.89]		
INITIAL*ALLHHI					0.091	[0.69]
ALLHHI					0.313***	[5.89]
SIZE	0.335***	[17.80]	0.335***	[17.82]	0.335***	[17.82]
CURAT	0.096	[0.84]	0.087	[0.77]	0.087	[0.77]
LIQ	-0.040***	[-4.50]	-0.040***	[-4.43]	-0.040***	[-4.43]
RECAT	0.219	[1.28]	0.247	[1.44]	0.247	[1.44]
INVAT	0.167	[1.27]	0.157	[1.20]	0.157	[1.19]
LEV	0.173**	[2.19]	0.163**	[2.10]	0.163**	[2.10]
ROA	-0.673***	[-3.50]	-0.685***	[-3.59]	-0.686***	[-3.59]
LOSS	-0.016	[-0.46]	-0.015	[-0.46]	-0.015	[-0.46]
ADJRET	-0.077***	[-5.72]	-0.077***	[-5.71]	-0.077***	[-5.71]
STDRET	-0.047	[-0.07]	-0.05	[-0.07]	-0.053	[-0.07]
SEG	0.032***	[4.61]	0.032***	[4.58]	0.032***	[4.58]
MTB	-1.344*	[-1.75]	-1.351*	[-1.81]	-1.348*	[-1.81]
MAO	-0.105**	[-2.00]	-0.109**	[-2.13]	-0.110**	[-2.15]
AGE	0.006	[0.30]	0.011	[0.55]	0.011	[0.56]
ISSUEB	0.164***	[3.09]	0.169***	[3.24]	0.168***	[3.23]
ISSUEH	0.079	[0.69]	0.076	[0.65]	0.076	[0.65]
BIG4	0.516***	[8.66]	0.516***	[8.61]	0.515***	[8.60]
AUDTENURE	0.012*	[1.88]	0.013*	[1.92]	0.013*	[1.92]
CIFIRM	-0.792***	[-2.74]	-0.686**	[-2.38]	-0.682**	[-2.36]
CICPA	0.058	[0.68]	0.063	[0.76]	0.063	[0.75]
SPFIRM	0.082**	[2.57]	0.087***	[2.74]	0.087***	[2.75]
SPCPA	0.054	[0.98]	0.058	[1.06]	0.058	[1.06]
LNLE	0.190**	[2.30]	0.180**	[2.25]	0.181**	[2.26]
Industry Fixed effects	Yes		Yes		Yes	
Year Fixed effects	Yes		Yes		Yes	
N	4510		4510		4510	
Adj. R-square	0.557		0.562		0.562	

Panel B: Weak legal environment:

	(1)		(2)		(3)	
	Coeff	p-value	Coeff	p-value	Coeff	p-value
INITIAL	-0.204	[-1.05]	-0.091*	[-1.92]	-0.094*	[-1.94]
INITIAL*TOP4SHARE	0.216	[1.04]				
TOP4SHARE	0.088	[0.89]				
INITIAL*TOP4HHI			0.188**	[2.41]		
TOP4HHI			0.006	[0.14]		
INITIAL*ALLHHI					0.190**	[2.41]
ALLHHI					0.004	[0.10]
SIZE	0.288***	[15.36]	0.287***	[15.38]	0.287***	[15.38]
CURAT	0.169*	[1.67]	0.170*	[1.68]	0.170*	[1.68]
LIQ	-0.041***	[-4.95]	-0.041***	[-4.96]	-0.042***	[-4.97]
RECAT	0.026	[0.16]	0.02	[0.12]	0.02	[0.12]
INVAT	-0.212*	[-1.65]	-0.209	[-1.63]	-0.209	[-1.62]
LEV	0.168***	[2.83]	0.170***	[2.88]	0.171***	[2.88]
ROA	-0.413**	[-2.35]	-0.402**	[-2.29]	-0.402**	[-2.29]
LOSS	0.007	[0.24]	0.006	[0.22]	0.006	[0.22]
ADJRET	-0.075***	[-6.68]	-0.075***	[-6.64]	-0.075***	[-6.64]
STDRET	-1.525***	[-2.74]	-1.534***	[-2.76]	-1.535***	[-2.76]
SEG	0.034***	[4.99]	0.033***	[4.97]	0.033***	[4.97]
MTB	-0.3	[-0.98]	-0.337	[-1.08]	-0.336	[-1.07]
MAO	-0.113**	[-2.52]	-0.114**	[-2.53]	-0.114**	[-2.53]
AGE	0.017	[0.85]	0.018	[0.90]	0.018	[0.90]
ISSUEB	0.246***	[2.85]	0.246***	[2.87]	0.246***	[2.87]
ISSUEH	0.171	[1.48]	0.174	[1.51]	0.175	[1.51]
BIG4	0.636***	[8.65]	0.635***	[8.65]	0.635***	[8.64]
AUDTENURE	0.004	[0.76]	0.004	[0.78]	0.004	[0.79]
CIFIRM	-0.221	[-0.72]	-0.221	[-0.72]	-0.221	[-0.71]
CICPA	0.116	[1.58]	0.115	[1.57]	0.115	[1.57]
SPFIRM	0.018	[0.58]	0.017	[0.54]	0.017	[0.54]
SPCPA	0.237***	[4.96]	0.238***	[5.00]	0.238***	[5.00]
LNLE	0.466***	[4.16]	0.464***	[4.12]	0.463***	[4.12]
Industry Fixed effects	Yes		Yes		Yes	
Year Fixed effects	Yes		Yes		Yes	
N	4510		4510		4510	
Adj. R-square	0.519		0.519		0.519	

Note: Table 2.16 reports the regression results examining the effect of different legal liability on the association between audit market concentration and initial-year audit fee discounting following audit firm level changes. For detailed variable definitions, see Appendix A. The superscripts *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Table 2.17 The Effect of Legal Liability: Audit Market Concentration and Initial-Year Audit Fee Discounting (Individual Auditor Level)

Panel A: Strong legal environment:

	(1)		(2)		(3)	
	Coeff	t-stat.	Coeff	t-stat.	Coeff	t-stat.
NEWBOTH	-0.282	[-1.63]	-0.125**	[-2.25]	-0.127**	[-2.20]
NEWFIRM	0.124	[0.38]	-0.032	[-0.29]	-0.028	[-0.25]
NEWPRTNR	-0.214*	[-1.95]	-0.115***	[-3.22]	-0.118***	[-3.17]
NEWBOTH*TOP4SHARE	0.256	[1.20]				
NEWFIRM*TOP4SHARE	-0.253	[-0.63]				
NEWPRTNR*TOP4SHARE	0.169	[1.26]				
TOP4SHARE	0.295***	[3.36]				
NEWBOTH*TOP4HHI			0.156	[1.09]		
NEWFIRM*TOP4HHI			-0.155	[-0.50]		
NEWPRTNR*TOP4HHI			0.112	[1.31]		
TOP4HHI			0.291***	[5.45]		
NEWBOTH*ALLHHI					0.157	[1.07]
NEWFIRM*ALLHHI					-0.161	[-0.50]
NEWPRTNR*ALLHHI					0.118	[1.34]
ALLHHI					0.299***	[5.45]
SIZE	0.335***	[17.81]	0.334***	[17.86]	0.334***	[17.85]
CURAT	0.093	[0.82]	0.085	[0.75]	0.085	[0.75]
LIQ	-0.040***	[-4.51]	-0.040***	[-4.46]	-0.040***	[-4.46]
RECAT	0.224	[1.32]	0.252	[1.48]	0.252	[1.48]
INVAT	0.176	[1.34]	0.164	[1.26]	0.164	[1.25]
LEV	0.174**	[2.23]	0.164**	[2.14]	0.164**	[2.14]
ROA	-0.674***	[-3.49]	-0.686***	[-3.59]	-0.686***	[-3.58]
LOSS	-0.012	[-0.36]	-0.011	[-0.33]	-0.011	[-0.32]
ADJRET	-0.077***	[-5.68]	-0.076***	[-5.66]	-0.076***	[-5.66]
STDRET	-0.014	[-0.02]	-0.018	[-0.03]	-0.021	[-0.03]
SEG	0.032***	[4.59]	0.031***	[4.58]	0.031***	[4.57]
MTB	-1.322*	[-1.72]	-1.328*	[-1.78]	-1.325*	[-1.78]
MAO	-0.108**	[-2.07]	-0.112**	[-2.20]	-0.113**	[-2.21]
AGE	0.004	[0.20]	0.009	[0.46]	0.009	[0.47]
ISSUEB	0.163***	[3.09]	0.169***	[3.25]	0.168***	[3.24]
ISSUEH	0.08	[0.70]	0.077	[0.67]	0.077	[0.66]
BIG4	0.520***	[8.79]	0.520***	[8.74]	0.520***	[8.73]
AUDTENURE	0.013**	[1.97]	0.013**	[2.02]	0.013**	[2.02]
CIFIRM	-0.812***	[-2.82]	-0.708**	[-2.46]	-0.703**	[-2.44]
CICPA	0.067	[0.79]	0.072	[0.87]	0.072	[0.86]
SPFIRM	0.079**	[2.51]	0.085***	[2.69]	0.085***	[2.70]

	(1)		(2)		(3)	
SPCPA	0.056	[1.02]	0.06	[1.09]	0.06	[1.09]
LNLE	0.182**	[2.22]	0.173**	[2.16]	0.174**	[2.18]
Industry Fixed effects	Yes		Yes		Yes	
Year Fixed effects	Yes		Yes		Yes	
N	4510		4510		4510	
Adj. R-square	0.584		0.584		0.584	

Panel B:Weak legal environment:

	(1)		(2)		(3)	
	Coeff	p-value	Coeff	p-value	Coeff	p-value
NEWBOTH	-0.308	[-1.43]	-0.132**	[-2.48]	-0.136**	[-2.49]
NEWFIRM	0.453	[1.30]	0.041	[0.45]	0.039	[0.43]
NEWPRTNR	0.161	[1.11]	-0.025	[-0.69]	-0.026	[-0.70]
NEWBOTH*TOP4SHARE	0.323	[1.38]				
NEWFIRM*TOP4SHARE	-0.473	[-1.29]				
NEWPRTNR*TOP4SHARE	-0.21	[-1.29]				
TOP4SHARE	0.114	[1.13]				
NEWBOTH*TOP4HHI			0.278***	[2.85]		
NEWFIRM*TOP4HHI			-0.038	[-0.29]		
NEWPRTNR*TOP4HHI			-0.01	[-0.14]		
TOP4HHI			0.007	[0.17]		
NEWBOTH*ALLHHI					0.282***	[2.84]
NEWFIRM*ALLHHI					-0.033	[-0.26]
NEWPRTNR*ALLHHI					-0.007	[-0.11]
ALLHHI					0.005	[0.11]
SIZE	0.288***	[15.34]	0.286***	[15.27]	0.286***	[15.27]
CURAT	0.173*	[1.72]	0.176*	[1.74]	0.175*	[1.74]
LIQ	-0.041***	[-4.95]	-0.042***	[-4.96]	-0.042***	[-4.96]
RECAT	0.022	[0.13]	0.016	[0.10]	0.016	[0.10]
INVAT	-0.217*	[-1.71]	-0.218*	[-1.70]	-0.217*	[-1.70]
LEV	0.168***	[2.84]	0.172***	[2.91]	0.171***	[2.91]
ROA	-0.418**	[-2.39]	-0.385**	[-2.22]	-0.385**	[-2.22]
LOSS	0.006	[0.22]	0.008	[0.26]	0.008	[0.26]
ADJRET	-0.074***	[-6.50]	-0.075***	[-6.60]	-0.075***	[-6.61]
STDRET	-1.581***	[-2.84]	-1.573***	[-2.83]	-1.573***	[-2.83]
SEG	0.033***	[4.97]	0.034***	[4.98]	0.034***	[4.98]
MTB	-0.308	[-1.01]	-0.372	[-1.16]	-0.37	[-1.16]
MAO	-0.112**	[-2.51]	-0.113**	[-2.51]	-0.113**	[-2.50]
AGE	0.016	[0.80]	0.018	[0.87]	0.018	[0.87]
ISSUEB	0.249***	[2.87]	0.247***	[2.90]	0.247***	[2.90]
ISSUEH	0.172	[1.48]	0.175	[1.51]	0.175	[1.51]

BIG4	0.639***	[8.74]	0.636***	[8.69]	0.636***	[8.67]
AUDTENURE	0.004	[0.81]	0.004	[0.82]	0.004	[0.83]
CIFIRM	-0.214	[-0.70]	-0.218	[-0.71]	-0.217	[-0.71]
CICPA	0.116	[1.58]	0.119	[1.62]	0.119	[1.62]
SPFIRM	0.018	[0.58]	0.019	[0.59]	0.019	[0.59]
SPCPA	0.237***	[4.93]	0.237***	[4.97]	0.237***	[4.96]
LNLE	0.470***	[4.21]	0.465***	[4.15]	0.465***	[4.14]
Industry Fixed effects	Yes		Yes		Yes	
Year Fixed effects	Yes		Yes		Yes	
N	4510		4510		4510	
Adj. R-square	0.52		0.52		0.52	

Note: Table 2.17 reports the regression results examining the effect of different legal liability on the association between audit market concentration and initial-year audit fee discounting following individual partner level changes. For detailed variable definitions, see Appendix A. The superscripts *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Table 3.1 Sample

Panel A: Sample Selection	Obs
Firm-year observations with audit fees data for 2007-2011 in CSMAR	7,798
Less: observations in year 2009	(1,518)
Less: financial sector	(88)
Less: missing other control variables	(859)
Final sample of firm-year observations	5,333

Panel B: Sample distribution by years

Year	Obs	%
2007	1000	18.75
2008	1217	22.82
2010	1400	26.25
2011	1716	32.18
Total	5333	100.00

Note: Table 3.1 presents sample selection and sample distribution. Panel A provides the detail of sample selection process. Panel B presents the sample composition by firm fiscal year.

Table 3.2 Descriptive Statistics
Panel A: Full Sample

Variable	N	Mean	Median	Std Dev	P25	P75	Min	Max
Afee	5333	781	550	1459	400	800	45	40500
LNAF	5333	13.269	13.218	0.599	12.899	13.592	12.101	15.357
DACC_PM	5116	-0.004	-0.002	0.120	-0.074	0.065	-0.323	0.327
DACC_DD	4702	0.003	0.001	0.061	-0.032	0.037	-0.202	0.168
POST	5333	0.584	1.000	0.493	0.000	1.000	0.000	1.000
NONBIG4	5333	0.947	1.000	0.224	1.000	1.000	0.000	1.000
NONBIG10	5333	0.641	1.000	0.480	0.000	1.000	0.000	1.000
LNTA	5333	21.708	21.591	1.184	20.879	22.419	18.416	25.059
LNMV	5333	22.082	21.966	0.993	21.398	22.667	20.124	24.999
RECTA	5333	0.086	0.060	0.085	0.018	0.128	0.000	0.388
INVTA	5333	0.180	0.140	0.162	0.069	0.232	0.000	0.766
LIQ	5333	2.028	1.317	2.676	0.921	2.040	0.122	23.725
LEV	5333	0.484	0.497	0.203	0.340	0.637	0.040	0.998
RET	5333	0.177	-0.222	1.042	-0.462	0.335	-0.788	4.322
ROE	5333	0.071	0.082	0.176	0.028	0.149	-0.939	0.448
BM	5333	0.411	0.340	0.277	0.206	0.546	0.001	1.335
STDRET	5246	0.057	0.054	0.020	0.042	0.069	0.022	0.119
Q	5333	2.518	1.953	1.863	1.364	2.948	0.895	14.319
CFO	5333	0.043	0.043	0.084	-0.001	0.090	-0.230	0.284
LOSS	5333	0.088	0.000	0.283	0.000	0.000	0.000	1.000
FRSALE	5333	0.107	0.000	0.199	0.000	0.127	0.000	0.904
AGE	5333	9.353	10.000	4.886	5.000	13.000	1.000	18.000
TOP1	5333	36.255	34.380	15.424	23.490	48.050	8.810	75.400
SOE	5333	0.583	1.000	0.493	0.000	1.000	0.000	1.000
CI	5333	0.035	0.024	0.036	0.012	0.041	0.004	0.216
SPCPA	5333	0.076	0.000	0.266	0.000	0.000	0.000	1.000
LOCAL	5333	0.327	0.000	0.469	0.000	1.000	0.000	1.000
MAO	5333	0.037	0.000	0.190	0.000	0.000	0.000	1.000
MKTI	5333	8.895	8.930	2.051	7.390	10.550	0.380	11.800

Panel B: NONBIG4 and BIG4

Variable	N	NONBIG4 Mean	NONBIG4 Median	N	BIG4 Mean	BIG4 Median	Differences Mean	Differences Median
LNAF	5050	13.201	13.122	283	14.484	14.457	-1.283***	-1.335***
DACC_PM	4835	-0.003	-0.002	281	-0.017	-0.011	0.014*	0.009*
DACC_DD	4437	0.003	0.001	265	0.006	0.009	-0.003	-0.008
LNTA	5050	21.617	21.527	283	23.333	23.360	-1.716***	-1.833***
LNMV	5050	22.017	21.921	283	23.233	23.298	-1.216***	-1.377***
RECTA	5050	0.086	0.062	283	0.071	0.035	0.015***	0.027***
INVTA	5050	0.181	0.141	283	0.160	0.132	0.021**	0.009***
LIQ	5050	2.068	1.330	283	1.313	1.144	0.755***	0.186***
LEV	5050	0.482	0.495	283	0.518	0.521	-0.036***	-0.026**
RET	5050	0.186	-0.218	283	0.000	-0.259	0.186***	0.041**
ROE	5050	0.069	0.081	283	0.112	0.121	-0.043***	-0.04***
BM	5050	0.398	0.332	283	0.635	0.588	-0.237***	-0.256***
STDRET	4965	0.058	0.055	281	0.047	0.045	0.011***	0.010***
Q	5050	2.557	1.981	283	1.810	1.320	0.747***	0.661***
CFO	5050	0.042	0.042	283	0.060	0.063	-0.018***	-0.021***
LOSS	5050	0.090	0.000	283	0.053	0.000	0.037**	0.000**
FRSALE	5050	0.109	0.000	283	0.087	0.001	0.022*	-0.001
AGE	5050	9.329	10.000	283	9.784	10.000	-0.455	0.000
TOP1	5050	35.833	33.810	283	43.797	44.010	-7.964***	-10.200***
SOE	5050	0.573	1.000	283	0.763	1.000	-0.190***	0.000***
CI	5050	0.034	0.023	283	0.048	0.035	-0.014***	-0.012***
SPCPA	5050	0.063	0.000	283	0.307	0.000	-0.244***	0.000***
LOCAL	5050	0.326	0.000	283	0.336	0.000	-0.010	0.000
MAO	5050	0.038	0.000	283	0.018	0.000	0.020*	0.000*
MKTI	5050	8.852	8.930	283	9.657	10.420	-0.805***	-1.490***

Panel C: NONBIG10 and BIG10

	NONBIG10			BIG10			Differences	
Variable	N	Mean	Median	N	Mean	Median	Mean	Median
LNAF	3420	13.137	13.122	1913	13.507	13.385	-0.370***	-0.263***
DACC_PM	3245	-0.003	-0.002	1871	-0.004	-0.002	0.001	0.000
DACC_DD	3012	0.003	0.001	1690	0.002	0.003	0.001	-0.002
LNTA	3420	21.545	21.473	1913	22.000	21.796	-0.455***	-0.323***
LNMV	3420	21.972	21.877	1913	22.279	22.130	-0.307***	-0.253***
RECTA	3420	0.083	0.057	1913	0.090	0.065	-0.007**	-0.008***
INVTA	3420	0.180	0.137	1913	0.181	0.144	-0.001	-0.007
LIQ	3420	2.040	1.305	1913	2.005	1.340	0.035	-0.035
LEV	3420	0.482	0.495	1913	0.487	0.502	-0.005	-0.007
RET	3420	0.255	-0.189	1913	0.036	-0.266	0.219***	0.077***
ROE	3420	0.067	0.079	1913	0.080	0.088	-0.013***	-0.009***
BM	3420	0.391	0.322	1913	0.446	0.376	-0.055***	-0.054***
STDRET	3356	0.060	0.057	1890	0.053	0.050	0.007***	0.007***
Q	3420	2.622	2.007	1913	2.330	1.832	0.292***	0.175***
CFO	3420	0.043	0.043	1913	0.042	0.042	0.001	0.001
LOSS	3420	0.093	0.000	1913	0.078	0.000	0.015*	0.000*
FRSALE	3420	0.100	0.000	1913	0.121	0.005	-0.021***	-0.005***
AGE	3420	9.416	10.000	1913	9.239	10.000	0.177	0.000
TOP1	3420	35.349	33.240	1913	37.875	36.800	-2.526***	-3.560***
SOE	3420	0.571	1.000	1913	0.604	1.000	-0.033**	0.000**
CI	3420	0.044	0.032	1913	0.018	0.010	0.026***	0.022***
SPCPA	3420	0.053	0.000	1913	0.118	0.000	-0.065***	0.000***
LOCAL	3420	0.351	0.000	1913	0.283	0.000	0.068***	0.000***
MAO	3420	0.039	0.000	1913	0.035	0.000	0.004	0.000
MKTI	3420	8.679	8.780	1913	9.279	9.870	-0.600***	-1.090***

Notes: Table 3.2 reports descriptive statistics for main variables. Panel A present descriptive statistics for the full sample. Panel B compare the differences in mean and median value between NONBIG4 and BIG4 subsamples. Panel C compare the differences in mean and median value between NONBIG10 and BIG10 subsamples. ***, ** and * indicate two-tailed statistical significance at the1%,5%, and 10%levels, respectively. See the appendix for detail variable definitions.

Table 3.3 Audit Fee Regulation and Audit Fee

	(1) LNAF		(2) LNAF	
	Coeff	t-stat.	Coeff.	t-stat.
NONBIG4	-0.763***	[-11.66]		
NONBIG4_POST	0.139**	[2.39]		
NONBIG10			-0.224***	[-8.74]
NONBIG10_POST			0.072***	[2.95]
POST	-0.058	[-0.97]	-0.027	[-0.90]
LNTA	0.339***	[27.84]	0.373***	[30.21]
RECTA	0.084	[0.73]	0.107	[0.87]
INVTA	-0.057	[-0.89]	-0.087	[-1.30]
LIQ	-0.013***	[-4.44]	-0.016***	[-5.30]
LEV	-0.020	[-0.35]	-0.087	[-1.48]
RET	0.003	[0.32]	-0.010	[-0.95]
ROE	-0.063	[-1.35]	-0.105**	[-2.09]
Q	0.022***	[4.21]	0.028***	[5.01]
CFO	0.011	[0.14]	0.058	[0.69]
LOSS	0.030	[1.44]	0.031	[1.39]
FRSALE	-0.079*	[-1.84]	-0.108**	[-2.41]
AGE	0.005**	[2.31]	0.005**	[2.30]
TOP1	0.000	[-0.66]	0.000	[-0.55]
SOE	-0.083***	[-4.42]	-0.090***	[-4.60]
SPCPA	0.119***	[2.91]	0.165***	[3.75]
LOCAL	0.054***	[2.83]	0.062***	[3.20]
MAO	0.102***	[3.00]	0.103***	[2.82]
MKTI	0.041***	[9.13]	0.041***	[8.61]
Industry fixed effects	Yes		Yes	
Year fixed effects	Yes		Yes	
N	5333		5333	
Adj. R-square	0.629		0.592	

Notes: Table 3.3 presents the regression results of the effect of audit fee regulation on audit pricing. ***, ** and * indicate two-tailed statistical significance at the1%,5%, and 10%levels, respectively. The dependent variables are audit fee. See the appendix for the detail variable definitions.

Table 3.4 Audit Fee Regulation and Audit Quality

	(1)		(2)		(3)		(4)	
	DACC_PM		DACC_PM		DACC_DD		DACC_DD	
	Coeff	t-stat.	Coeff.	t-stat.	Coeff	t-stat.	Coeff.	t-stat.
NONBIG4	0.021*	[1.81]			0.014***	[2.73]		
NONBIG4_POST	-0.030**	[-2.14]			-0.013**	[-2.07]		
NONBIG10			0.010**	[2.08]			0.006**	[2.42]
NONBIG10_POST			-0.014**	[-2.37]			-0.005*	[-1.66]
POST	0.013	[0.88]	-0.005	[-0.60]	-0.014*	[-1.86]	-0.022***	[-4.49]
LNMV	0.005**	[2.06]	0.004**	[2.03]	0.008***	[6.96]	0.008***	[6.96]
LEV	-0.040***	[-4.30]	-0.040***	[-4.25]	-0.035***	[-6.01]	-0.035***	[-6.00]
RET	0.002	[0.72]	0.003	[0.83]	-0.008***	[-4.02]	-0.008***	[-3.93]
ROE	0.129***	[9.47]	0.130***	[9.42]	0.188***	[18.08]	0.188***	[18.05]
BM	-0.026***	[-3.51]	-0.026***	[-3.50]	-0.013***	[-3.08]	-0.013***	[-3.17]
STDRET	-0.203*	[-1.78]	-0.201*	[-1.77]	-0.264***	[-4.02]	-0.265***	[-4.02]
Q	0.003*	[1.93]	0.003*	[1.92]	0.001	[1.56]	0.001	[1.51]
CFO	-0.932***	[-46.14]	-0.933***	[-46.23]	-0.200***	[-16.07]	-0.201***	[-16.18]
LOSS	0.019***	[2.92]	0.019***	[2.95]	-0.012***	[-3.02]	-0.012***	[-2.99]
AGE	-0.000	[-0.11]	-0.000	[-0.07]	-0.000**	[-1.97]	-0.000*	[-1.94]
TOP1	0.000	[1.40]	0.000	[1.49]	0.000*	[1.73]	0.000*	[1.80]
SOE	0.006*	[1.66]	0.006*	[1.74]	-0.007***	[-3.43]	-0.007***	[-3.35]
CI	-0.048	[-1.09]	-0.056	[-1.20]	0.025	[1.11]	0.008	[0.34]
SPCPA	-0.001	[-0.12]	-0.001	[-0.13]	-0.012***	[-2.74]	-0.012***	[-2.80]
LOCAL	-0.002	[-0.65]	-0.002	[-0.68]	-0.000	[-0.13]	-0.000	[-0.25]
MKTI	-0.000	[-0.52]	-0.000	[-0.42]	-0.000	[-0.21]	-0.000	[-0.08]
Industry fixed effects	Yes		Yes		Yes		Yes	
Year fixed effects	Yes		Yes		Yes		Yes	
N	5116		5116		4391		4391	
Adj. R-square	0.338		0.338		0.416		0.416	

Notes: Table 3.4 presents the regression results of the effect of audit fee regulation on audit quality. ***, ** and * indicate two-tailed statistical significance at the1%,5%, and 10%levels, respectively. In column (1) and (2), the dependent variable is performance matched discretionary accruals. In column (3) and (4), the dependent variable is abnormal working capital accruals See the appendix for the detail variable definitions.

Table 3.5 Subsample Regression: Non-Big 4 versus Big 4

Panel A: Audit fee

	(1)		(2)	
	Non-Big 4		Big 4	
	Coeff	t-stat.	Coeff.	t-stat.
POST	0.165***	[6.86]	0.057	[0.41]
LNTA	0.327***	[27.30]	0.453***	[9.21]
RECTA	0.065	[0.56]	-0.365	[-0.63]
INVTA	-0.061	[-0.97]	0.151	[0.31]
LIQ	-0.014***	[-4.61]	-0.029	[-0.44]
LEV	-0.031	[-0.54]	-0.211	[-0.57]
RET	0.007	[0.69]	0.070	[1.28]
ROE	-0.077	[-1.64]	-0.360	[-1.19]
Q	0.019***	[3.73]	-0.046	[-1.19]
CFO	-0.018	[-0.23]	1.252**	[2.26]
LOSS	0.017	[0.85]	0.167	[1.29]
FRSALE	-0.078*	[-1.82]	-0.076	[-0.28]
AGE	0.005***	[2.61]	-0.007	[-0.58]
TOP1	0.000	[0.45]	-0.006**	[-2.01]
SOE	-0.081***	[-4.29]	-0.221	[-1.66]
SPCPA	0.153***	[3.45]	-0.044	[-0.48]
LOCAL	0.067***	[3.54]	0.000	[0.00]
MAO	0.111***	[3.23]	-0.365	[-1.19]
MKTI	0.044***	[9.87]	-0.028	[-1.01]
Industry fixed effects	Yes		Yes	
Year fixed effects	Yes		Yes	
N	5050		283	
Adj. R-square	0.523		0.630	

Panel B : Audit quality

	DACC_PM				DACC_DD			
	(1)		(2)		(3)		(4)	
	NONBIG4		BIG4		NONBIG4		BIG4	
	Coeff	t-stat.	Coeff.	t-stat.	Coeff	t-stat.	Coeff.	t-stat.
POST	-0.015*	[-1.89]	-0.022	[-0.58]	-0.027***	[-5.87]	-0.003	[-0.16]
LNMV	0.005**	[2.12]	0.014	[1.49]	0.009***	[7.26]	0.000	[-0.12]
LEV	-0.038***	[-3.92]	-0.173***	[-3.05]	-0.034***	[-5.66]	-0.071***	[-2.66]
RET	0.003	[0.89]	-0.006	[-0.38]	-0.008***	[-3.91]	-0.008	[-1.19]
ROE	0.128***	[9.22]	0.125**	[2.04]	0.185***	[17.26]	0.223***	[10.80]
BM	-0.030***	[-3.74]	0.049**	[2.12]	-0.012***	[-2.77]	-0.007	[-0.66]
STDRET	-0.239**	[-2.07]	0.524	[0.79]	-0.263***	[-3.90]	-0.249	[-0.77]
Q	0.002*	[1.82]	0.007	[0.90]	0.001	[1.49]	0.007*	[1.79]
CFO	-0.936***	[-45.35]	-0.899***	[-7.79]	-0.202***	[-15.82]	-0.102*	[-1.89]
LOSS	0.019***	[2.89]	0.017	[0.46]	-0.013***	[-3.14]	0.007	[0.44]
AGE	0.000	[-0.12]	0.000	[0.15]	-0.000*	[-1.79]	-0.001	[-1.30]
TOP1	0.000	[1.55]	0.000	[0.17]	0.000*	[1.66]	0.000	[0.59]
SOE	0.006*	[1.71]	-0.003	[-0.12]	-0.007***	[-3.60]	-0.003	[-0.37]
CI	-0.049	[-1.09]	0.043	[0.19]	0.025	[1.08]	0.052	[0.52]
SPCPA	0.000	[-0.01]	-0.025	[-1.22]	-0.011**	[-2.28]	-0.007	[-0.65]
LOCAL	-0.002	[-0.63]	-0.020	[-1.19]	0.000	[-0.07]	0.000	[0.04]
MKTI	0.000	[-0.51]	0.001	[0.40]	0.000	[-0.20]	-0.001	[-0.42]
Industry fixed effects	Yes		Yes		Yes		Yes	
Year fixed effects	Yes		Yes		Yes		Yes	
N	4837		279		4145		246	
Adj. R-square	0.343		0.255		0.416		0.509	

Notes: Table 3.5 presents the subsample regression results of the effect of audit fee regulation on audit fee (Panel A) and audit quality (Panel B) in the NONBIG4 and BIG4 subsamples. ***, ** and * indicate two-tailed statistical significance at the1%,5%, and 10%levels, respectively. See the appendix for the detail variable definitions.

Table 3.6 Subsample Regression: Non-Big 10 versus Big 10
Panel A: Audit fee

	(1)		(2)	
	Non-Big 10		Big 10	
	Coeff	t-stat.	Coeff.	t-stat.
POST	0.151***	[5.21]	-0.087*	[-1.79]
LNTA	0.312***	[22.62]	0.457***	[22.96]
RECTA	0.086	[0.59]	0.249	[1.27]
INVTA	-0.011	[-0.15]	-0.265**	[-2.18]
LIQ	-0.015***	[-4.30]	-0.017***	[-3.52]
LEV	-0.044	[-0.71]	-0.204*	[-1.87]
RET	0.008	[0.71]	-0.040*	[-1.74]
ROE	-0.053	[-1.02]	-0.178*	[-1.69]
Q	0.017***	[3.16]	0.036***	[3.25]
CFO	0.048	[0.52]	0.047	[0.29]
LOSS	0.047*	[1.89]	-0.007	[-0.16]
FRSALE	-0.072	[-1.27]	-0.145**	[-2.05]
AGE	0.006**	[2.56]	0.005	[1.41]
TOP1	0.001	[1.35]	-0.003**	[-2.58]
SOE	-0.082***	[-3.89]	-0.114***	[-3.14]
SPCPA	0.156***	[2.78]	0.102*	[1.70]
LOCAL	0.048**	[2.29]	0.078**	[2.10]
MAO	0.122***	[3.05]	0.081	[1.08]
MKTI	0.035***	[6.69]	0.051***	[6.41]
Industry fixed effects	Yes		Yes	
Year fixed effects	Yes		Yes	
N	3420		1913	
Adj. R-square	0.495		0.637	

Panel B : Audit quality

	DACC_PM				DACC_DD			
	(1)		(2)		(3)		(4)	
	NONBIG10		BIG10		NONBIG10		BIG10	
	Coeff	t-stat.	Coeff.	t-stat.	Coeff	t-stat.	Coeff.	t-stat.
POST	-0.016*	[-1.70]	-0.016	[-1.11]	-0.024***	[-4.43]	-0.029***	[-3.90]
LNMV	0.002	[0.66]	0.009***	[2.95]	0.010***	[6.43]	0.007***	[3.46]
LEV	-0.030***	[-2.61]	-0.058***	[-3.70]	-0.027***	[-3.84]	-0.047***	[-5.08]
RET	0.004	[1.12]	-0.001	[-0.15]	-0.007***	[-2.91]	-0.011***	[-3.41]
ROE	0.135***	[8.27]	0.117***	[5.12]	0.182***	[14.31]	0.200***	[12.57]
BM	-0.030***	[-2.90]	-0.016	[-1.44]	-0.013**	[-2.49]	-0.015**	[-2.28]
STDRET	-0.256*	[-1.80]	-0.094	[-0.48]	-0.263***	[-3.29]	-0.279**	[-2.39]
Q	0.002	[1.52]	0.003	[1.16]	0.002*	[1.67]	0.000	[-0.18]
CFO	-0.942***	[-37.15]	-0.920***	[-28.06]	-0.199***	[-12.98]	-0.203***	[-10.00]
LOSS	0.014*	[1.75]	0.030***	[2.97]	-0.015***	[-2.98]	-0.005	[-0.80]
AGE	0.000	[0.28]	0.000	[-0.38]	-0.001**	[-2.49]	0.000	[-0.62]
TOP1	0.000*	[1.82]	0.000	[-0.20]	0.000*	[1.90]	0.000	[0.26]
SOE	0.005	[1.18]	0.009	[1.56]	-0.009***	[-3.67]	-0.003	[-0.77]
CI	-0.056	[-1.13]	-0.118	[-0.82]	0.003	[0.14]	0.043	[0.64]
SPCPA	-0.001	[-0.05]	-0.004	[-0.46]	-0.013*	[-1.95]	-0.011*	[-1.84]
LOCAL	-0.005	[-1.09]	0.003	[0.53]	0.000	[-0.18]	0.001	[0.31]
MKTI	0.000	[-0.11]	0.000	[-0.33]	0.000	[-0.13]	0.000	[-0.29]
Industry fixed effects	Yes		Yes		Yes		Yes	
Year fixed effects	Yes		Yes		Yes		Yes	
N	3267		1849		2817		1574	
Adj. R-square	0.341		0.330		0.414		0.431	

Notes: Table 3.6 presents the subsample regression results of the effect of audit fee regulation on audit fee (Panel A) and audit quality (Panel B) in the NONBIG10 and BIG10 subsamples. ***, ** and * indicate two-tailed statistical significance at the1%,5%, and 10%levels, respectively. See the appendix for the detail variable definitions.

Table 3.7 Firm Fixed Effects
Panel A: Audit Fee

	(1)		(2)	
	LNAF		LNAF	
	Coeff	t-stat.	Coeff.	t-stat.
NONBIG4	-0.468***	[-5.74]		
NONBIG4_POST	0.132***	[3.37]		
NONBIG10			-0.070***	[-4.01]
NONBIG10_POST			0.013	[0.81]
POST	-0.132	[-1.47]	-0.022	[-0.26]
LNTA	0.265***	[15.08]	0.267***	[15.09]
RECTA	0.476***	[3.44]	0.487***	[3.40]
INVTA	-0.066	[-0.94]	-0.046	[-0.64]
LIQ	-0.006**	[-2.10]	-0.006**	[-2.01]
LEV	-0.031	[-0.51]	-0.025	[-0.40]
RET	-0.003	[-0.50]	-0.007	[-1.02]
ROE	-0.015	[-0.39]	-0.020	[-0.52]
Q	0.010***	[2.73]	0.011***	[3.22]
CFO	0.054	[1.11]	0.059	[1.21]
LOSS	0.016	[1.23]	0.015	[1.08]
FRSALE	-0.017	[-0.24]	-0.007	[-0.10]
AGE	0.036*	[1.75]	0.035	[1.64]
TOP1	0.000	[0.37]	0.000	[0.29]
SOEs	0.023	[0.51]	0.018	[0.40]
SPCPA	-0.002	[-0.08]	0.004	[0.16]
LOCAL	-0.023	[-1.10]	-0.023	[-1.09]
MAO	0.009	[0.39]	0.008	[0.33]
MKTI	-0.008	[-0.61]	-0.010	[-0.70]
Firm fixed effects	Yes		Yes	
Year fixed effects	Yes		Yes	
N	5333		5333	
Adj. R-square	0.418		0.397	

Panel B: Audit quality (DACC)

	(1)		(2)		(3)		(4)	
	DACC_PM		DACC_PM		DACC_DD		DACC_DD	
	Coeff	t-stat.	Coeff.	t-stat.	Coeff	t-stat.	Coeff.	t-stat.
NONBIG4	0.005	[0.23]			0.001	[0.13]		
NONBIG4_POST	-0.032**	[-2.05]			-0.009**	[-2.01]		
NONBIG10			0.003	[0.42]			0.003	[0.75]
NONBIG10_POST			-0.013**	[-1.99]			-0.004	[-1.14]
POST	-0.064	[-1.24]	-0.084	[-1.56]	-0.036	[-1.15]	-0.043	[-1.45]
LNMV	0.011	[1.62]	0.011*	[1.70]	0.016***	[4.08]	0.015***	[3.85]
LEV	-0.063***	[-3.05]	-0.060***	[-2.92]	-0.029**	[-2.52]	-0.031***	[-2.64]
RET	0.002	[0.50]	0.002	[0.55]	-0.011***	[-5.06]	-0.010***	[-5.01]
ROE	0.096***	[5.56]	0.097***	[5.93]	0.197***	[17.16]	0.197***	[17.36]
BM	-0.017	[-1.34]	-0.014	[-1.06]	0.016**	[2.47]	0.016**	[2.44]
STDRET	-0.141	[-1.00]	-0.114	[-0.81]	-0.216***	[-2.94]	-0.208***	[-2.86]
Q	0.001	[0.69]	0.001	[0.73]	-0.001	[-1.00]	-0.001	[-0.88]
CFO	-0.978***	[-34.43]	-0.973***	[-39.20]	-0.144***	[-10.79]	-0.145***	[-10.64]
LOSS	0.016**	[2.11]	0.015**	[2.02]	-0.007*	[-1.80]	-0.007*	[-1.75]
AGE	0.020	[1.64]	0.020	[1.49]	0.002	[0.22]	0.002	[0.28]
TOP1	0.000	[0.61]	0.000	[0.91]	0.001**	[2.49]	0.001***	[2.61]
SOE	-0.004	[-0.34]	-0.000	[-0.01]	-0.002	[-0.34]	0.001	[0.13]
CI	0.018	[0.21]	0.026	[0.30]	0.019	[0.47]	0.018	[0.41]
SPCPA	-0.007	[-0.72]	-0.008	[-0.68]	-0.001	[-0.20]	-0.002	[-0.31]
LOCAL	0.007	[0.84]	0.008	[0.87]	0.005	[1.03]	0.006	[1.28]
MKTI	0.000	[0.03]	-0.001	[-0.20]	-0.002	[-0.82]	-0.004	[-1.32]
Firm fixed effects	Yes		Yes		Yes		Yes	
Year fixed effects	Yes		Yes		Yes		Yes	
N	5116		5116		4702		4702	
Adj. R-square	0.327		0.327		0.345		0.340	

Notes: Table 3.7 presents the regression results of the effect of audit fee regulation on audit pricing and audit quality including firm fixed effects. ***, ** and * indicate two-tailed statistical significance at the1%,5%, and 10%levels, respectively. Panel A reports the audit fee regulation In column (1) and (2), the dependent variable is performance matched discretionary accruals. In column (3) and (4), the dependent variable is abnormal working capital accruals See the appendix for the detail variable definitions.

Table 3.8 Alternative Measure of Audit Quality: MAOs

	(1) MAO Coeff	(1) t-stat.	(2) MAO Coeff.	(2) t-stat.
NONBIG4	-0.002	[-0.24]		
NONBIG4_POST	-0.013	[-1.20]		
NONBIG10			-0.007	[-0.83]
NONBIG10_POST			-0.000	[-0.04]
POST	-0.012	[-0.91]	-0.025**	[-2.15]
LNMV	-0.001	[-0.37]	-0.001	[-0.33]
RECTA	-0.035	[-1.29]	-0.036	[-1.21]
INVTA	-0.016	[-0.95]	-0.017	[-1.00]
LIQ	0.000	[0.05]	0.000	[0.04]
LEV	0.045***	[2.62]	0.045***	[2.62]
RET	-0.016***	[-3.68]	-0.016***	[-3.67]
ROE	-0.200***	[-5.46]	-0.200***	[-5.04]
Q	0.009***	[4.07]	0.009***	[4.15]
CFO	0.026	[0.72]	0.026	[0.66]
LOSS	0.050***	[2.97]	0.050***	[2.83]
AGE	0.000	[0.33]	0.000	[0.33]
TOP1	-0.000**	[-2.31]	-0.000**	[-2.33]
SOE	0.001	[0.21]	0.001	[0.19]
CI	-0.031	[-0.45]	0.003	[0.04]
SPCPA	-0.004	[-0.74]	-0.004	[-0.83]
LOCAL	0.004	[0.81]	0.004	[0.90]
LagMAO	0.483***	[14.72]	0.483***	[15.24]
MKTI	-0.000	[-0.33]	-0.000	[-0.43]
Industry fixed effects	Yes		Yes	
Year fixed effects	Yes		Yes	
N	5338		5338	
Adj. R-square	0.402		0.402	

Notes: Table 3.8 presents audit quality regression results when use alternative audit quality measure of modified audit opinions (MAOs). ***, ** and * indicate two-tailed statistical significance at the1%,5%, and 10%levels, respectively. The dependent variables are MAOs. See the appendix for the detail variable definitions.

Table 3.9 Alternative Measure of Audit Quality: Restatements

	(1) RS		(2) RS_Down		(3) RS		(4) RS_Down	
	Coeff	t-stat.	Coeff.	t-stat.	Coeff	t-stat.	Coeff.	t-stat.
NONBIG4	0.095***	[9.36]	0.045***	[5.93]				
NONBIG4_POST	-0.078***	[-7.35]	-0.042***	[-4.65]				
NONBIG10					0.050***	[4.10]	0.021**	[2.18]
NONBIG10_POST					-0.048***	[-3.68]	-0.030***	[-2.96]
POST	-0.013	[-0.74]	-0.011	[-0.77]	-0.052**	[-2.55]	-0.030*	[-1.94]
LNMV	0.001	[0.31]	0.001	[0.38]	-0.000	[-0.10]	0.000	[0.05]
RECTA	0.061	[1.26]	0.037	[0.96]	0.068	[1.38]	0.038	[1.00]
INVTA	-0.043	[-1.41]	-0.006	[-0.28]	-0.040	[-1.31]	-0.005	[-0.23]
LIQ	0.003**	[2.36]	0.003**	[2.48]	0.003**	[2.47]	0.003**	[2.56]
LEV	0.074***	[3.15]	0.061***	[3.56]	0.077***	[3.28]	0.062***	[3.64]
RET	0.001	[0.12]	-0.003	[-0.52]	0.002	[0.33]	-0.002	[-0.38]
ROE	-0.052	[-1.59]	-0.028	[-0.98]	-0.049	[-1.48]	-0.026	[-0.92]
Q	-0.002	[-1.18]	-0.001	[-0.53]	-0.002	[-1.16]	-0.001	[-0.47]
CFO	-0.021	[-0.45]	-0.026	[-0.67]	-0.024	[-0.51]	-0.028	[-0.72]
LOSS	0.034*	[1.85]	0.041**	[2.56]	0.035*	[1.91]	0.042***	[2.59]
AGE	0.000	[0.11]	-0.001	[-0.97]	0.000	[0.18]	-0.000	[-0.89]
TOP1	-0.001***	[-3.55]	-0.001***	[-3.97]	-0.001***	[-3.49]	-0.001***	[-3.89]
SOE	0.004	[0.54]	0.002	[0.45]	0.005	[0.69]	0.003	[0.52]
CI	0.213*	[1.92]	0.164*	[1.83]	0.101	[0.87]	0.146	[1.54]
SPCPA	0.009	[0.58]	-0.005	[-0.50]	0.007	[0.46]	-0.007	[-0.67]
LOCAL	0.004	[0.54]	0.007	[1.20]	0.003	[0.36]	0.007	[1.20]
MKTI	-0.004**	[-2.48]	-0.003**	[-2.32]	-0.004**	[-2.23]	-0.003**	[-2.30]
Industry fixed effects	Yes		Yes		Yes		Yes	
Year fixed effects	Yes		Yes		Yes		Yes	
N	5250		5250		5250		5250	
Adj. R-square	0.045		0.031		0.045		0.032	

Notes: Table 3.9 presents the audit quality regression results when use alternative audit quality measure of the likelihood of financial reporting restatement. ***, ** and * indicate two-tailed statistical significance at the1%,5%, and 10%levels, respectively. The dependent variables are the likelihood of financial reporting restatement. See the appendix for the detail variable definitions

Table 3.10 Alternative Measure of Audit Quality: ERCs

	(1) CAR		(2) CAR	
	Coeff	t-stat.	Coeff.	t-stat.
UE	0.001	[0.37]	0.000	[-0.15]
NONBIG4_POST	0.006	[0.64]		
UE_NONBIG4_POST	0.001***	[3.54]		
NONBIG10_POST			0.006	[1.16]
UE_NONBIG10_POST			0.001**	[1.98]
NONBIG4	-0.012*	[-1.95]		
UE_NONBIG4	-0.001**	[-2.38]		
NONBIG10			-0.009**	[-2.12]
UE_NONBIG10			-0.000	[-1.57]
POST	0.004	[0.44]	0.004	[0.86]
UE_POST	-0.001***	[-2.98]	-0.000	[-0.68]
LOSS	0.009	[1.30]	0.009	[1.30]
UE_LOSS	-0.000	[-0.82]	-0.000	[-0.73]
MagUE	-0.000	[-1.18]	-0.000	[-1.09]
UE_MagUE	-0.000	[-0.72]	-0.000	[-0.80]
BETA	-0.012**	[-1.97]	-0.012**	[-2.09]
UE_BETA	-0.000	[-0.87]	-0.000	[-0.63]
BM	-0.000	[-1.19]	-0.000	[-1.19]
UE_BM	-0.000	[-0.30]	-0.000	[-0.26]
SIZE	-0.002	[-1.47]	-0.002	[-1.49]
UE_SIZE	0.000	[0.78]	0.000	[0.84]
LOCAL	0.001	[0.39]	0.001	[0.54]
UE_LOCAL	-0.000	[-0.37]	-0.000	[-0.32]
Industry fixed effects	Yes		Yes	
Year fixed effects	Yes		Yes	
N	2479		2479	
Adj. R-square	0.004		0.004	

Notes: Table 3.10 presents the audit quality regression results when use alternative audit quality measure of ERCs. ***, ** and * indicate two-tailed statistical significance at the1%,5%, and 10%levels, respectively. The dependent variables are ERCs. See the appendix for the detail variable definitions

Table 3.11 Alternative Measure of Audit Quality : Sanction

	(1) SANCTION		(2) SANCTION	
	Coeff	t-stat.	Coeff.	t-stat.
NONBIG4	0.052***	[2.91]		
NONBIG4_POST	-0.053**	[-2.02]		
NONBIG10			0.018	[1.18]
NONBIG10_POST			0.001	[0.08]
POST	0.120***	[3.64]	0.071***	[2.68]
LNMV	-0.032***	[-5.08]	-0.032***	[-5.21]
RECTA	0.110	[1.57]	0.115*	[1.65]
INVTA	-0.042	[-1.05]	-0.041	[-1.01]
LIQ	-0.004**	[-2.27]	-0.005**	[-2.28]
LEV	0.045	[1.36]	0.046	[1.39]
RET	0.006	[0.65]	0.007	[0.74]
ROE	-0.056	[-1.33]	-0.056	[-1.32]
BM	-0.054**	[-2.33]	-0.053**	[-2.31]
Q	0.001	[0.29]	0.001	[0.26]
CFO	-0.067	[-1.06]	-0.067	[-1.07]
LOSS	0.050**	[2.03]	0.050**	[2.03]
AGE	-0.000	[-0.42]	-0.001	[-0.42]
TOP1	-0.001***	[-3.99]	-0.001***	[-3.99]
SOE	-0.041***	[-3.79]	-0.040***	[-3.71]
CI	0.472***	[3.18]	0.380**	[2.41]
SPCPA	0.028	[1.52]	0.028	[1.55]
LOCAL	-0.022**	[-2.18]	-0.023**	[-2.31]
MKTI	-0.006**	[-2.43]	-0.005**	[-2.24]
Industry fixed effects		Yes		Yes
Year fixed effects		Yes		Yes
N		5338		5338
Adj. R-square		0.044		0.045

Notes: Table 3.11 presents the audit quality regression results when use alternative audit quality measure of the likelihood to be sanctioned. ***, ** and * indicate two-tailed statistical significance at the1%,5%, and 10%levels, respectively. See the appendix for the detail variable definitions

Table 3.12 Subsample (drop LLP)

Panel A: Audit Fee

	(1)		(2)	
	LNAF		LNAF	
	Coeff	t-stat.	Coeff.	t-stat.
NONBIG4	-0.769***	[-11.84]		
NONBIG4_POST	0.123**	[2.12]		
NONBIG10			-0.226***	[-8.79]
NONBIG10_POST			0.049**	[1.98]
POST	0.007	[0.12]	0.074**	[2.26]
LNTA	0.337***	[27.23]	0.375***	[29.64]
RECTA	0.103	[0.86]	0.128	[1.00]
INVTA	-0.027	[-0.42]	-0.053	[-0.77]
LIQ	-0.013***	[-3.87]	-0.016***	[-4.80]
LEV	-0.023	[-0.41]	-0.103*	[-1.72]
RET	0.004	[0.38]	-0.009	[-0.81]
ROE	-0.056	[-1.19]	-0.106**	[-2.11]
Q	0.022***	[4.15]	0.028***	[4.97]
CFO	0.015	[0.18]	0.077	[0.87]
LOSS	0.043**	[2.04]	0.043*	[1.88]
FRSALE	-0.084*	[-1.86]	-0.119**	[-2.50]
AGE	0.005***	[2.59]	0.005**	[2.41]
TOP1	0.000	[-0.48]	0.000	[-0.46]
SOE	-0.090***	[-4.67]	-0.098***	[-4.86]
SPCPA	0.116***	[2.77]	0.166***	[3.68]
LOCAL	0.048**	[2.47]	0.057***	[2.88]
MAO	0.108***	[3.16]	0.108***	[2.89]
MKTI	0.038***	[8.39]	0.040***	[8.22]
Industry fixed effects	Yes		Yes	
Year fixed effects	Yes		Yes	
N	4848		4848	
Adj. R-square	0.634		0.594	

Panel B: Audit Quality (DACC)

	(1)		(2)		(3)		(4)	
	DACC_PM		DACC_PM		DACC_DD		DACC_DD	
	Coeff	t-stat.	Coeff.	t-stat.	Coeff	t-stat.	Coeff.	t-stat.
NONBIG4	0.020*	[1.69]			0.013**	[2.53]		
NONBIG4_POST	-0.030**	[-2.16]			-0.013**	[-2.06]		
NONBIG10			0.011**	[2.15]			0.006**	[2.32]
NONBIG10_POST			-0.014**	[-2.28]			-0.006*	[-1.76]
POST	0.012	[0.83]	-0.005	[-0.58]	-0.013*	[-1.76]	-0.021***	[-4.16]
LNMV	0.003	[1.24]	0.003	[1.26]	0.008***	[6.38]	0.008***	[6.40]
LEV	-0.039***	[-4.03]	-0.039***	[-3.98]	-0.033***	[-5.43]	-0.033***	[-5.43]
RET	0.002	[0.67]	0.002	[0.78]	-0.008***	[-4.07]	-0.008***	[-3.99]
ROE	0.133***	[9.34]	0.133***	[9.28]	0.188***	[17.84]	0.188***	[17.83]
BM	-0.025***	[-3.15]	-0.024***	[-3.11]	-0.014***	[-3.18]	-0.014***	[-3.26]
STDRET	-0.178	[-1.52]	-0.178	[-1.51]	-0.263***	[-3.84]	-0.263***	[-3.84]
Q	0.003**	[2.10]	0.003**	[2.08]	0.002**	[2.04]	0.002**	[2.00]
CFO	-0.934***	[-44.39]	-0.935***	[-44.50]	-0.203***	[-15.66]	-0.204***	[-15.77]
LOSS	0.019***	[2.75]	0.019***	[2.78]	-0.014***	[-3.45]	-0.014***	[-3.41]
AGE	0.000	[0.05]	0.000	[0.09]	-0.000**	[-2.10]	-0.000**	[-2.07]
TOP1	0.000*	[1.65]	0.000*	[1.72]	0.000**	[2.01]	0.000**	[2.09]
SOE	0.005	[1.36]	0.005	[1.44]	-0.008***	[-3.70]	-0.008***	[-3.62]
CI	-0.049	[-1.09]	-0.062	[-1.32]	0.021	[0.91]	0.007	[0.28]
SPCPA	-0.001	[-0.09]	0.000	[-0.06]	-0.013***	[-2.70]	-0.013***	[-2.76]
LOCAL	-0.004	[-1.00]	-0.004	[-1.04]	-0.001	[-0.51]	-0.001	[-0.61]
MKTI	0.000	[-0.19]	0.000	[0.00]	-0.000	[-0.10]	0.000	[0.02]
Industry fixed effects	Yes		Yes		Yes		Yes	
Year fixed effects	Yes		Yes		Yes		Yes	
N	4645		4645		4299		4299	
Adj. R-square	0.341		0.341		0.420		0.418	

Notes: Table 3.12 presents the results of effect of audit fee regulation on audit fee and audit quality when drop firms audited by audit firms that change to limited liability partnership (LLP) structure during the sample period. ***, ** and * indicate two-tailed statistical significance at the1%,5%, and 10%levels, respectively. Panel A reports the audit regression results. Panel B reports the audit quality regression results. See the appendix for the detail variable definitions

Table 3.13 Subsample (drop IC)
Panel A: Audit Fee

| | (1) | | (2) | |
| | LNAF | | LNAF | |
	Coeff	t-stat.	Coeff.	t-stat.
NONBIG4	-0.774***	[-11.28]		
NONBIG4_POST	0.183***	[3.03]		
NONBIG10			-0.252***	[-9.06]
NONBIG10_POST			0.116***	[4.16]
POST	-0.040	[-0.61]	-0.015	[-0.41]
LNTA	0.327***	[24.70]	0.356***	[26.26]
RECTA	0.080	[0.65]	0.075	[0.57]
INVTA	-0.149**	[-2.20]	-0.175**	[-2.49]
LIQ	-0.013***	[-3.24]	-0.016***	[-3.68]
LEV	0.021	[0.34]	-0.031	[-0.48]
RET	-0.002	[-0.21]	-0.018	[-1.56]
ROE	-0.039	[-0.87]	-0.064	[-1.30]
Q	0.026***	[4.41]	0.031***	[5.04]
CFO	-0.063	[-0.72]	-0.009	[-0.09]
LOSS	0.007	[0.31]	0.005	[0.21]
FRSALE	-0.096**	[-2.10]	-0.124**	[-2.53]
AGE	0.005**	[2.24]	0.005**	[2.09]
TOP1	-0.000	[-0.49]	-0.000	[-0.36]
SOE	-0.084***	[-4.18]	-0.090***	[-4.31]
SPCPA	0.092**	[1.99]	0.150***	[3.04]
LOCAL	0.050**	[2.40]	0.058***	[2.76]
MAO	0.088***	[2.66]	0.091**	[2.55]
MKTI	0.039***	[7.68]	0.037***	[7.10]
Industry fixed effects	Yes		Yes	
Year fixed effects	Yes		Yes	
N	3882		3882	
Adj. R-square	0.608		0.573	

Panel B: Audit Quality (DACC)

	(1)		(2)		(3)		(4)	
	DACC_PM		DACC_PM		DACC_DD		DACC_DD	
	Coeff	t-stat.	Coeff.	t-stat.	Coeff	t-stat.	Coeff.	t-stat.
NONBIG4	0.021*	[1.71]			0.015***	[2.59]		
NONBIG4_POST	-0.035**	[-2.27]			-0.015**	[-2.20]		
NONBIG10			0.016***	[2.76]			0.008***	[2.80]
NONBIG10_POST			-0.017**	[-2.50]			-0.008**	[-2.18]
POST	0.023	[1.37]	0.002	[0.23]	-0.011	[-1.31]	-0.019***	[-3.41]
LNMV	0.004	[1.46]	0.004	[1.56]	0.009***	[6.24]	0.009***	[6.24]
LEV	-0.040***	[-3.65]	-0.039***	[-3.60]	-0.029***	[-4.46]	-0.029***	[-4.48]
RET	0.002	[0.57]	0.002	[0.68]	-0.007***	[-3.29]	-0.007***	[-3.19]
ROE	0.118***	[8.03]	0.118***	[7.97]	0.176***	[16.52]	0.176***	[16.51]
BM	-0.029***	[-3.25]	-0.029***	[-3.28]	-0.013***	[-2.71]	-0.013***	[-2.83]
STDRET	-0.146	[-1.11]	-0.146	[-1.11]	-0.248***	[-3.45]	-0.249***	[-3.47]
Q	0.001	[0.68]	0.001	[0.62]	0.001	[0.93]	0.001	[0.86]
CFO	-0.910***	[-38.58]	-0.911***	[-38.71]	-0.193***	[-13.65]	-0.194***	[-13.77]
LOSS	0.013*	[1.85]	0.013*	[1.90]	-0.015***	[-3.59]	-0.015***	[-3.55]
AGE	-0.000	[-0.31]	-0.000	[-0.27]	-0.001**	[-2.04]	-0.001**	[-2.02]
TOP1	0.000	[1.27]	0.000	[1.35]	0.000**	[2.02]	0.000**	[2.09]
SOE	0.006	[1.45]	0.006	[1.55]	-0.007***	[-3.26]	-0.007***	[-3.18]
CI	-0.057	[-1.12]	-0.081	[-1.49]	0.025	[1.00]	0.007	[0.26]
SPCPA	0.004	[0.41]	0.004	[0.46]	-0.012**	[-2.11]	-0.012**	[-2.19]
LOCAL	-0.002	[-0.37]	-0.002	[-0.48]	-0.000	[-0.14]	-0.001	[-0.28]
MKTI	-0.001	[-0.60]	-0.000	[-0.35]	0.000	[0.42]	0.000	[0.59]
Industry fixed effects	Yes		Yes		Yes		Yes	
Year fixed effects	Yes		Yes		Yes		Yes	
N	3707		3707		3533		3533	
Adj. R-square	0.333		0.333		0.420		0.420	

Notes: Table 3.13 presents the results of effect of audit fee regulation on audit fee and audit quality when drop firms that voluntarily or mandatorily implemented the internal control audit. ***, ** and * indicate two-tailed statistical significance at the1%,5%, and 10%levels, respectively. Panel A reports the audit fee regression results. Panel B reports the audit quality regression results. See the appendix for the detail variable definitions

Table 3.14: Subsample analysis excluding switching observations
Panel A: Audit fee

	(1)		(2)	
	LNAF		LNAF	
	Coeff	t-stat.	Coeff.	t-stat.
NONBIG4	-0.690***	[-9.07]		
NONBIG4_POST	0.059	[0.83]		
NONBIG10			-0.230***	[-7.82]
NONBIG10_POST			0.064**	[2.33]
POST	-0.013	[-0.18]	-0.032	[-1.29]
LNTA	0.338***	[25.07]	0.371***	[25.66]
RECTA	0.032	[0.23]	0.029	[0.20]
INVTA	-0.033	[-0.44]	-0.081	[-1.01]
LIQ	-0.014***	[-4.35]	-0.017***	[-4.86]
LEV	-0.016	[-0.24]	-0.074	[-1.10]
RET	-0.030***	[-4.70]	-0.033***	[-4.84]
ROE	-0.053	[-0.85]	-0.063	[-0.93]
Q	0.017***	[2.93]	0.021***	[3.34]
CFO	0.078	[0.80]	0.111	[1.10]
LOSS	0.026	[1.03]	0.039	[1.44]
FRSALE	-0.087*	[-1.90]	-0.087*	[-1.85]
AGE	0.003	[1.40]	0.003	[1.25]
TOP1	-0.001	[-1.08]	0.000	[-0.64]
SOE	-0.090***	[-4.05]	-0.089***	[-4.03]
SPCPA	0.143***	[2.85]	0.189***	[3.62]
LOCAL	0.056**	[2.56]	0.068***	[3.03]
MAO	0.072*	[1.77]	0.062	[1.43]
MKTI	0.043***	[8.44]	0.039***	[7.22]
Industry fixed effect	Yes		Yes	
Year fixed effect	Yes		Yes	
N	3793		3793	
adj. R-sq	0.628		0.601	

Panel B: Audit quality

	(1)		(2)		(3)		(4)	
	DACC_PM		DACC_PM		DACC_DD		DACC_DD	
	Coeff	t-stat.	Coeff.	t-stat.	Coeff	t-stat.	Coeff.	t-stat.
NONBIG4	0.023	[1.64]			0.027***	[4.85]		
NONBIG4_POST	-0.041***	[-2.64]			-0.025***	[-3.24]		
NONBIG10			0.014**	[2.23]			0.008***	[2.59]
NONBIG10_POST			-0.013*	[-1.88]			-0.006*	[-1.73]
POST	0.021	[1.25]	-0.008	[-0.75]	-0.007	[-0.81]	-0.025***	[-4.58]
LNMV	0.003	[1.24]	0.004	[1.43]	0.009***	[5.86]	0.008***	[5.57]
LEV	-0.037***	[-3.40]	-0.036***	[-3.33]	-0.041***	[-5.91]	-0.041***	[-5.92]
RET	0.001	[0.24]	0.001	[0.35]	-0.010***	[-4.58]	-0.009***	[-4.33]
ROE	0.143***	[8.20]	0.143***	[8.11]	0.210***	[15.69]	0.209***	[15.64]
BM	-0.027***	[-2.82]	-0.024***	[-2.62]	-0.004	[-0.83]	-0.005	[-0.95]
STDRET	-0.309**	[-2.26]	-0.310**	[-2.27]	-0.242***	[-3.15]	-0.243***	[-3.15]
Q	0.004**	[2.56]	0.004**	[2.57]	0.002**	[2.09]	0.002**	[2.06]
CFO	-0.944***	[-39.31]	-0.944***	[-39.34]	-0.200***	[-13.78]	-0.202***	[-13.87]
LOSS	0.024***	[3.11]	0.025***	[3.15]	-0.008*	[-1.68]	-0.008*	[-1.71]
AGE	0.000	[0.73]	0.000	[0.70]	-0.001**	[-2.27]	-0.001**	[-2.22]
TOP1	0.000	[1.37]	0.000	[1.41]	0.000	[1.16]	0.000	[1.19]
SOE	0.005	[1.32]	0.005	[1.38]	-0.007***	[-3.00]	-0.007***	[-2.99]
CI	-0.057	[-1.04]	-0.080	[-1.35]	0.009	[0.32]	-0.016	[-0.54]
SPCPA	0.000	[0.00]	0.001	[0.15]	-0.017***	[-3.21]	-0.018***	[-3.24]
LOCAL	-0.001	[-0.29]	-0.002	[-0.42]	0.002	[0.77]	0.001	[0.61]
MKTI	0.000	[-0.33]	0.000	[-0.05]	0.000	[-0.48]	0.000	[-0.33]
Industry fixed effect	Yes		Yes		Yes		Yes	
Year fixed effect	Yes		Yes		Yes		Yes	
N	3644		3644		3073		3073	
adj. R-sq	0.344		0.344		0.444		0.442	

Notes: Table 3.14 presents the results of effect of audit fee regulation on audit fee and audit quality using a constant sample by excluding the switching observations during the sample period. ***, ** and * indicate two-tailed statistical significance at the1%,5%, and 10%levels, respectively. Panel A reports the audit fee regression results. Panel B reports the audit quality regression results. See the appendix for the detail variable definitions

Table 3.15 PSM (treatment group: NONBIG4=1)

Panel A: Logit regression

| | (1) | | (2) | |
| | NONBIG4 | | NONBIG4 | |
	Coeff	Z-stat.	Coeff	Z-stat.
LNTA	-1.613***	[-6.84]	0.956***	[2.75]
RECTA	-0.032	[-0.01]	3.221	[0.49]
INVTA	-0.309	[-0.18]	-1.857	[-0.67]
LIQ	0.800**	[2.14]	-0.431	[-0.87]
LEV	4.458***	[2.70]	-2.946	[-1.16]
RET	0.227	[0.32]	2.134	[1.08]
ROE	2.192	[1.42]	-0.760	[-0.44]
Q	-0.032	[-0.13]	-0.494	[-1.04]
CFO	-5.685**	[-2.44]	2.358	[0.69]
LOSS	-0.050	[-0.07]	-0.031	[-0.03]
FRSALE	0.760	[0.69]	-1.677	[-0.95]
AGE	0.009	[0.20]	0.021	[0.35]
TOP1	0.007	[0.69]	-0.012	[-0.64]
SOEs	0.528	[1.39]	-1.147	[-1.62]
MKTI	-0.219*	[-1.94]	0.150	[0.90]
Industry fixed effect	Yes		Yes	
Year fixed effect	Yes		Yes	
N	945		115	
pseudo R2	0.316		0.096	

Panel B: Difference in observations

| | NONBIG4=1 | NONBIG4=0 | | |
	Mean	Mean	Difference	t-stat.
LNTA	23.350	23.080	0.270	1.43
RECTA	0.044	0.052	-0.008	-0.87
INVTA	0.152	0.154	-0.003	-0.08
LIQ	1.129	1.145	-0.016	-0.13
LEV	0.505	0.514	-0.009	-0.32
RET	-0.601	-0.615	0.015	0.49
ROE	0.086	0.068	0.019	0.53
Q	1.319	1.371	-0.051	-0.43
CFO	0.087	0.082	0.005	0.32
LOSS	0.133	0.133	0.000	0.00
FRSALE	0.088	0.100	-0.013	-0.38
AGE	9.367	9.083	0.283	0.36
TOP1	42.208	42.447	-0.239	-0.08
SOEs	0.733	0.733	0.000	0.00
MKTI	9.103	9.161	-0.059	-0.20
N	60	60		

Panel C: final matched sample audit fee regression

	(1) LNAF	
	Coeff	t-stat.
NONBIG4	-0.580***	[-7.59]
NONBIG4_POST	0.140**	[2.15]
POST	-0.019	[-0.17]
LNTA	0.469***	[8.61]
RECTA	0.835	[1.11]
INVTA	-0.042	[-0.12]
LIQ	0.000	[0.00]
LEV	0.189	[0.54]
RET	-0.005	[-0.13]
ROE	0.029	[0.12]
Q	0.034	[1.06]
CFO	0.557	[1.43]
LOSS	0.035	[0.34]
FRSALE	0.637**	[2.20]
AGE	0.008	[0.73]
TOP1	-0.002	[-0.72]
SOEs	-0.214**	[-2.41]
SPCPA	0.012	[0.13]
LOCAL	0.038	[0.37]
MAO	0.130	[0.64]
MKTI	0.015	[0.55]
Industry fixed effect	Yes	
Year fixed effect	Yes	
N	437	
Adj. R-sq	0.609	

Panel D: final matched sample audit quality   regression

	(1) DACC_PM		(2) DACC_PM	
	Coeff	t-stat.	Coeff.	t-stat.
NONBIG4	0.032*	[1.92]	0.023***	[3.43]
NONBIG4_POST	-0.044*	[-1.90]	-0.028***	[-3.36]
POST	-0.009	[-0.31]	-0.015	[-1.02]
LNMV	0.002	[0.27]	0.000	[0.15]
LEV	-0.089**	[-2.60]	-0.054***	[-2.73]
RET	-0.011	[-1.19]	-0.007	[-1.24]
ROE	0.165***	[3.23]	0.226***	[9.18]
BM	0.015	[0.66]	0.002	[0.21]
STDRET	0.316	[0.73]	-0.304	[-1.39]
Q	0.014**	[1.99]	0.006	[1.41]
CFO	-1.018***	[-14.94]	-0.220***	[-5.71]
LOSS	0.025	[0.92]	0.007	[0.42]
AGE	0.002*	[1.74]	0.000	[0.21]
TOP1	0.000	[1.03]	0.000	[-0.49]
SOE	-0.001	[-0.10]	0.000	[0.03]
CI	0.013	[0.08]	-0.015	[-0.19]
SPCPA	-0.014	[-1.15]	-0.006	[-0.86]
LOCAL	-0.022*	[-1.69]	0.001	[0.19]
MKTI	0.005*	[1.79]	0.001	[0.62]
Industry fixed effect	Yes		Yes	
Year fixed effect	Yes		Yes	
N	430		382	
adj. R-sq	0.354		0.465	

Notes: Table 3.15 presents the results of effect of audit fee regulation on audit fee and audit quality using PSM approach when treatment sample is NONBIG4=1.***, ** and * indicate two-tailed statistical significance at the1%,5%, and 10%levels, respectively. Panel A reports the audit regression results. Panel B reports the audit quality regression results. See the appendix for the detail variable definitions

Table 3.16: PSM (treatment group: NONBIG10=1)
Panel A: Logit regression

	(1)		(2)	
	NONBIG10		NONBIG10	
	Coeff	Z-stat.	Coeff	Z-stat.
LNTA	-0.569***	[-6.48]	-0.055	[-0.56]
RECTA	-1.360	[-1.17]	0.895	[0.64]
INVTA	-0.237	[-0.39]	0.489	[0.65]
LIQ	0.101*	[1.65]	-0.122	[-1.13]
LEV	0.797	[1.35]	-0.223	[-0.30]
RET	0.007	[0.03]	-0.459	[-0.73]
ROE	0.305	[0.50]	0.059	[0.10]
Q	-0.076	[-0.83]	-0.014	[-0.12]
CFO	-0.020	[-0.02]	0.256	[0.23]
LOSS	-0.481*	[-1.69]	-0.097	[-0.31]
FRSALE	-0.809**	[-2.14]	-0.168	[-0.41]
AGE	0.023	[1.21]	-0.003	[-0.15]
TOP1	-0.003	[-0.63]	-0.003	[-0.54]
SOEs	-0.057	[-0.32]	0.241	[1.21]
MKTI	-0.293***	[-6.01]	0.079	[1.41]
Industry fixed effect	Yes		Yes	
Year fixed effect	Yes		Yes	
N	1092		676	
pseudo R2	0.125		0.014	

Panel B: Difference in observations

	NONBIG10=1	NONBIG10=0		
	Mean	Mean	Difference	t-stat.
LNTA	21.876	21.965	-0.089	-1.01
RECTA	0.086	0.082	0.004	0.67
INVTA	0.189	0.180	0.009	0.75
LIQ	1.370	1.438	-0.067	-0.86
LEV	0.516	0.510	0.006	0.44
RET	-0.595	-0.587	-0.008	-0.65
ROE	0.048	0.052	-0.004	-0.25
Q	1.540	1.567	-0.027	-0.39
CFO	0.054	0.057	-0.003	-0.40
LOSS	0.150	0.156	-0.006	-0.21
FRSALE	0.140	0.141	-0.001	-0.03
AGE	8.700	8.585	-8.445	0.34
TOP1	38.216	39.287	-1.071	-0.89
SOEs	0.688	0.676	0.012	0.33
MKTI	9.360	9.174	0.186	1.48
N	340	340		

Panel C: final matched sample audit fee regression

	(1) LNAF	
	Coeff	t-stat.
NONBIG10	-0.250***	[-7.63]
NONBIG10_POST	0.069**	[2.47]
POST	0.013	[0.33]
LNTA	0.390***	[20.10]
RECTA	0.220	[1.07]
INVTA	-0.081	[-0.72]
LIQ	-0.022***	[-3.11]
LEV	-0.128	[-1.32]
RET	-0.011	[-0.77]
ROE	-0.187**	[-2.24]
Q	0.023***	[2.66]
CFO	0.158	[1.23]
LOSS	-0.011	[-0.37]
FRSALE	-0.188***	[-2.82]
AGE	0.007*	[1.88]
TOP1	0.000	[-0.16]
SOEs	-0.120***	[-4.09]
SPCPA	0.119**	[2.02]
LOCAL	0.083**	[2.52]
MAO	0.079	[1.37]
MKTI	0.050***	[6.65]
Industry fixed effect	Yes	
Year fixed effect	Yes	
N	2482	
Adj. R-sq	0.631	

Panel D: final matched sample audit quality regression

	(1) DACC_PM		(2) DACC_PM	
	Coeff	t-stat.	Coeff.	t-stat.
NONBIG10	0.005	[0.85]	0.008**	[2.54]
NONBIG10_POST	-0.006	[-0.82]	-0.009**	[-2.28]
POST	-0.001	[-0.04]	-0.020***	[-3.47]
LNMV	0.005*	[1.71]	0.007***	[4.42]
LEV	-0.066***	[-4.68]	-0.048***	[-5.96]
RET	0.005	[1.10]	-0.007***	[-3.11]
ROE	0.129***	[5.68]	0.212***	[15.18]
BM	-0.023**	[-2.18]	-0.012**	[-2.20]
STDRET	-0.360**	[-2.24]	-0.233***	[-2.66]
Q	0.003	[1.55]	0.000	[-0.01]
CFO	-0.946***	[-31.21]	-0.204***	[-11.65]
LOSS	0.014	[1.59]	-0.004	[-0.84]
AGE	0.000	[-0.89]	0.000	[-0.08]
TOP1	0.000	[0.84]	0.000	[-0.20]
SOE	0.003	[0.60]	-0.006**	[-2.07]
CI	-0.024	[-0.33]	-0.016	[-0.54]
SPCPA	-0.002	[-0.18]	-0.007	[-1.46]
LOCAL	-0.001	[-0.28]	0.000	[0.04]
MKTI	-0.001	[-0.91]	0.000	[0.70]
Industry fixed effect	Yes		Yes	
Year fixed effect	Yes		Yes	
N	2404		2211	
adj. R-sq	0.324		0.453	

Notes: Table 3.16 presents the results of effect of audit fee regulation on audit fee and audit quality using PSM approach when treatment sample is NONBIG10=1.***, ** and * indicate two-tailed statistical significance at the1%,5%, and 10%levels, respectively. Panel A reports the audit regression results. Panel B reports the audit quality regression results. See the appendix for the detail variable definitions

Table 3.17 Sample partition based on standardized audit fees: audit fee regression

	(1) LNAF	
	Coeff	t-stat.
TREAT_POST	0.063***	[3.23]
TREAT	-0.338***	[-21.56]
NONBIG4	-0.186***	[-9.66]
LNTA	0.370***	[62.52]
CURRENT	-0.008	[-0.23]
RECTA	0.000	[-0.00]
INVTA	-0.115**	[-2.55]
LEV	0.051*	[1.91]
ROE	-0.019	[-0.53]
MTB	0.001***	[3.22]
MAO	0.110***	[4.23]
SOEs	-0.091***	[-9.33]
ISSUEB	0.281***	[11.59]
ISSUEH	0.291***	[5.91]
AUDTENURE	0.006***	[4.43]
SPFIRM	0.042***	[3.80]
MKTI	-0.037	[-1.55]
Industry Fixed effects	Yes	
Year Fixed effects	Yes	
N	7306	
adj. R-sq	0.621	

Notes: Table 3.17 presents the regression results of the effect of audit fee regulation on audit fees, where the sample partition is based on standardized audit fees. ***, ** and * indicate two-tailed statistical significance at the1%,5%, and 10%levels, respectively. The dependent variables are audit fee. See the appendix for the detail variable definitions.

Table 3.18 Sample partition based on standardized audit fees: audit quality regression

	(1)	
	MAO	
	Coeff	Z-stat.
TREAT_POST	0.878**	[2.11]
TREAT	-0.646**	[-2.08]
LNMV	-0.436***	[-2.81]
CURRENT	2.405***	[3.82]
RECTA	-2.558*	[-1.88]
INVTA	-3.683***	[-3.27]
LEV	1.048**	[2.07]
RET	-0.132	[-0.69]
ROE	-3.267***	[-4.98]
Q	0.069	[1.38]
MTB	0.000	[0.31]
CFO	-0.876	[-0.68]
LOSS	0.739**	[2.30]
AGE	0.043*	[1.78]
TOP1	-0.014*	[-1.74]
SOEs	-0.342	[-1.63]
CI	-1.936	[-0.56]
SPFIRM	-0.518	[-0.58]
AUDTENURE	0.003	[0.10]
LAGMAO	4.152***	[16.16]
MKTI	-0.012	[-0.22]
Industry Fixed effects	Yes	
Year Fixed effects	Yes	
N	6289	
pseudo R~q	0.479	

Notes: Table 3.18 presents the regression results of the effect of audit fee regulation on MAOs, where the sample partition is based on standardized audit fees. ***, ** and * indicate two-tailed statistical significance at the1%,5%, and 10%levels, respectively. The dependent variables are audit fee. See the appendix for the detail variable definitions.

Table 3.19: Sample partition based on client size

Panel A: Audit fee

	(1) LNAF 50%		(2) LNAF 20%		(3) LNAF 10%	
	Coeff	t-stat.	Coeff.	t-stat.	Coeff	t-stat.
SC	-0.268***	[-11.80]	-0.318***	[-11.41]	-0.302***	[-7.55]
SC_POST	0.037*	[1.92]	0.056**	[2.15]	0.087**	[2.03]
POST	0.253***	[8.74]	0.289***	[10.63]	0.288***	[10.47]
NONBIG4	-0.943***	[-15.31]	-0.959***	[-15.29]	-0.969***	[-15.47]
RECTA	-0.419***	[-3.21]	-0.439***	[-3.29]	-0.537***	[-3.96]
INVTA	-0.069	[-0.89]	-0.077	[-0.99]	-0.098	[-1.24]
LIQ	-0.016***	[-4.87]	-0.013***	[-3.95]	-0.013***	[-3.95]
LEV	0.352***	[5.95]	0.385***	[6.50]	0.411***	[6.93]
RET	0.037***	[3.30]	0.036***	[3.23]	0.035***	[3.07]
ROE	0.494***	[6.99]	0.525***	[7.29]	0.558***	[7.60]
Q	-0.039***	[-7.38]	-0.035***	[-6.43]	-0.041***	[-7.58]
CFO	0.034	[0.36]	-0.037	[-0.38]	-0.059	[-0.60]
LOSS	0.076***	[2.59]	0.069**	[2.28]	0.071**	[2.31]
FRSALE	-0.052	[-1.02]	-0.065	[-1.26]	-0.056	[-1.07]
AGE	0.006**	[2.56]	0.006**	[2.23]	0.005**	[2.12]
TOP1	0.002***	[3.06]	0.002***	[2.91]	0.002***	[3.25]
SOE	-0.011	[-0.47]	0.001	[0.04]	0.009	[0.38]
SPCPA	0.469***	[9.64]	0.511***	[10.45]	0.519***	[10.62]
LOCAL	0.051**	[2.23]	0.068***	[2.91]	0.062***	[2.62]
MAO	-0.030	[-0.87]	-0.024	[-0.68]	-0.024	[-0.68]
MKTI	0.044***	[8.27]	0.046***	[8.64]	0.047***	[8.68]
Industry fixed effect	Yes		Yes		Yes	
Year fixed effect	Yes		Yes		Yes	
N	5333		5333		5333	
Adj. R-sq	0.478		0.467		0.455	

Panel B: Audit quality (DACC_PM):

	(1) DACC_PM 50%		(2) DACC_PM 20%		(3) DACC_PM 10%	
	Coeff	t-stat.	Coeff.	t-stat.	Coeff	t-stat.
SC	0.000	[0.10]	0.009	[1.36]	0.002	[0.18]
SC_POST	-0.011*	[-1.87]	-0.019***	[-2.60]	-0.012	[-1.14]
POST	-0.009	[-1.13]	-0.011	[-1.37]	-0.014*	[-1.82]
NONBIG4	0.000	[0.06]	-0.001	[-0.08]	-0.001	[-0.09]
LEV	-0.044***	[-4.53]	-0.041***	[-4.31]	-0.040***	[-4.27]
RET	0.003	[1.09]	0.004	[1.24]	0.003	[1.12]
ROE	0.131***	[9.80]	0.134***	[10.03]	0.134***	[10.09]
BM	-0.028***	[-3.78]	-0.027***	[-3.56]	-0.026***	[-3.51]
STDRET	-0.226**	[-1.99]	-0.238**	[-2.11]	-0.238**	[-2.11]
Q	0.003**	[2.03]	0.003**	[2.14]	0.003**	[2.19]
CFO	-0.932***	[-46.06]	-0.932***	[-45.94]	-0.932***	[-45.99]
LOSS	0.019***	[2.90]	0.019***	[2.92]	0.019***	[2.93]
AGE	0.000	[-0.12]	0.000	[-0.06]	0.000	[0.00]
TOP1	0.000	[1.56]	0.000*	[1.70]	0.000*	[1.76]
SOE	0.007*	[1.92]	0.007*	[1.89]	0.006*	[1.86]
CI	-0.046	[-1.06]	-0.050	[-1.15]	-0.050	[-1.15]
SPCPA	0.003	[0.40]	0.004	[0.53]	0.003	[0.48]
LOCAL	-0.002	[-0.59]	-0.002	[-0.57]	-0.002	[-0.60]
MKTI	0.000	[-0.43]	0.000	[-0.45]	0.000	[-0.48]
Industry fixed effect	Yes		Yes		Yes	
Year fixed effect	Yes		Yes		Yes	
N	5116		5116		5116	
Adj. R-sq	0.337		0.337		0.337	

Panel C: Audit quality (DACC_DD):

	(4) DACC_DD 50%		(5) DACC_DD 20%		(6) DACC_DD 10%	
	Coeff	t-stat.	Coeff.	t-stat.	Coeff.	t-stat.
SC	-0.010***	[-3.96]	-0.009***	[-2.71]	-0.009*	[-1.80]
SC_POST	-0.007**	[-2.22]	-0.005	[-1.10]	-0.009	[-1.45]
POST	-0.023***	[-4.83]	-0.026***	[-5.75]	-0.026***	[-5.79]
NONBIG4	0.003	[0.82]	0.001	[0.20]	0.000	[0.14]
LEV	-0.043***	[-7.19]	-0.037***	[-6.24]	-0.036***	[-6.06]
RET	-0.007***	[-3.50]	-0.006***	[-3.34]	-0.006***	[-3.19]
ROE	0.191***	[18.43]	0.196***	[18.63]	0.197***	[18.85]
BM	-0.018***	[-4.35]	-0.016***	[-3.78]	-0.015***	[-3.67]
STDRET	-0.292***	[-4.44]	-0.322***	[-4.84]	-0.340***	[-5.10]
Q	0.001	[1.57]	0.002**	[2.04]	0.002**	[2.17]
CFO	-0.199***	[-15.94]	-0.200***	[-15.89]	-0.200***	[-15.88]
LOSS	-0.011***	[-2.83]	-0.011***	[-2.80]	-0.011***	[-2.79]
AGE	-0.000**	[-2.19]	-0.000*	[-1.82]	0.000	[-1.62]
TOP1	0.000**	[2.22]	0.000***	[2.67]	0.000***	[2.77]
SOE	-0.006***	[-3.03]	-0.006***	[-2.99]	-0.006***	[-2.94]
CI	0.030	[1.36]	0.023	[0.99]	0.024	[1.03]
SPCPA	-0.005	[-1.31]	-0.003	[-0.78]	-0.003	[-0.72]
LOCAL	0.000	[-0.15]	0.000	[0.01]	0.000	[0.01]
MKTI	0.000	[-0.15]	0.000	[-0.21]	0.000	[-0.10]
Industry fixed effect	Yes		Yes		Yes	
Year fixed effect	Yes		Yes		Yes	
N	4391		4391		4391	
Adj. R-sq	0.417		0.411		0.410	

Notes: Table 3.19 presents the regression results of the effect of audit fee regulation on audit fees and audit quality, where the sample partition is based on client size. ***, ** and * indicate two-tailed statistical significance at the 1%, 5%, and 10% levels, respectively. The dependent variables are audit fee. See the appendix for the detail variable definitions.

Table 3.20 The Role of Legal Environment
Panel A: Audit Fee

	High Litigation (1) LNAF Coeff	t-stat.	Low litigation (2) LNAF Coeff.	t-stat.	High Litigation (3) LNAF Coeff	t-stat.	Low litigation (4) LNAF Coeff.	t-stat.
NONBIG4	-0.673***	[-7.68]	-0.961***	[-13.48]				
NONBIG4_POST	0.132*	[1.78]	0.173**	[2.01]				
NONBIG10					-0.251***	[-6.83]	-0.211***	[-5.69]
NONBIG10_POST					0.003	[0.09]	0.118***	[3.25]
POST	0.041	[0.51]	-0.037	[-0.41]	0.073	[1.53]	-0.003	[-0.07]
LNTA	0.358***	[18.95]	0.322***	[21.82]	0.391***	[21.27]	0.355***	[21.38]
RECTA	0.098	[0.56]	0.059	[0.37]	0.064	[0.35]	0.112	[0.67]
INVTA	-0.040	[-0.40]	-0.019	[-0.23]	-0.104	[-0.99]	-0.024	[-0.26]
LIQ	-0.023***	[-4.89]	-0.005*	[-1.68]	-0.026***	[-5.34]	-0.009**	[-2.58]
LEV	-0.084	[-0.89]	-0.012	[-0.17]	-0.169*	[-1.78]	-0.045	[-0.61]
RET	0.010	[0.54]	-0.000	[-0.02]	-0.001	[-0.04]	-0.015	[-1.18]
ROE	-0.064	[-0.82]	-0.086	[-1.53]	-0.140	[-1.64]	-0.091	[-1.49]
Q	0.023***	[2.76]	0.018***	[2.79]	0.026***	[3.04]	0.026***	[3.63]
CFO	0.059	[0.50]	-0.006	[-0.06]	0.089	[0.70]	0.056	[0.49]
LOSS	0.043	[1.27]	0.010	[0.41]	0.040	[1.11]	0.017	[0.63]
FRSALE	-0.048	[-0.74]	-0.147***	[-2.70]	-0.094	[-1.39]	-0.145**	[-2.51]
AGE	0.004	[1.37]	0.006**	[2.17]	0.005	[1.50]	0.005*	[1.73]
TOP1	-0.001	[-0.65]	0.000	[-0.46]	-0.000	[-0.17]	-0.001	[-1.11]
SOE	-0.085***	[-2.72]	-0.084***	[-3.64]	-0.085***	[-2.75]	-0.100***	[-4.00]
SPCPA	0.067	[1.08]	0.191***	[4.06]	0.148**	[2.32]	0.191***	[3.40]
LOCAL	0.069**	[2.55]	0.023	[0.88]	0.056**	[2.01]	0.041	[1.56]
MAO	0.140**	[2.58]	0.084**	[1.96]	0.135**	[2.15]	0.081*	[1.83]
MKTI	0.010	[0.53]	0.045***	[5.95]	-0.027	[-1.37]	0.050***	[6.13]
Industry fixed effects	Yes		Yes		Yes		Yes	
Year fixed effects	Yes		Yes		Yes		Yes	
N	2393		2940		2393		2940	
Adj. R-square	0.628		0.625		0.609		0.572	

Difference in NONBIG4_POST or NONBIG10_POST coefficient:

Chi-square:0.13   Chi-square:5.56**

Panel B: Audit quality (DACC_PM)

	High Litigation (1) DACC_PM		Low litigation (2) DACC_PM		High Litigation (3) DACC_PM		Low litigation (4) DACC_PM	
	Coeff	t-stat.	Coeff.	t-stat.	Coeff	t-stat.	Coeff.	t-stat.
NONBIG4	0.011	[0.73]	0.037**	[2.13]				
NONBIG4_POST	-0.013	[-0.71]	-0.067***	[-3.12]				
NONBIG10					0.005	[0.71]	0.017**	[2.43]
NONBIG10_POST					-0.009	[-1.04]	-0.023***	[-2.74]
POST	-0.010	[-0.52]	0.053**	[2.33]	-0.016	[-1.32]	0.006	[0.52]
LNMV	0.005	[1.58]	0.005*	[1.70]	0.005	[1.53]	0.005*	[1.81]
LEV	-0.052***	[-3.82]	-0.044***	[-3.44]	-0.051***	[-3.80]	-0.044***	[-3.44]
RET	0.004	[0.82]	0.001	[0.24]	0.004	[0.86]	0.002	[0.40]
ROE	0.145***	[5.94]	0.117***	[7.33]	0.146***	[5.98]	0.116***	[7.23]
BM	-0.009	[-0.85]	-0.038***	[-3.86]	-0.010	[-0.87]	-0.037***	[-3.75]
STDRET	-0.185	[-1.02]	-0.258*	[-1.78]	-0.180	[-1.00]	-0.262*	[-1.81]
Q	0.002	[1.23]	0.003	[1.51]	0.002	[1.23]	0.003	[1.44]
CFO	-0.938***	[-30.97]	-0.934***	[-33.29]	-0.938***	[-31.01]	-0.937***	[-33.47]
LOSS	0.015	[1.46]	0.021**	[2.52]	0.016	[1.48]	0.022**	[2.57]
AGE	-0.000	[-0.30]	0.000	[0.53]	-0.000	[-0.28]	0.000	[0.54]
TOP1	0.000	[0.24]	0.000	[1.49]	0.000	[0.26]	0.000	[1.54]
SOE	0.002	[0.46]	0.010**	[2.16]	0.002	[0.46]	0.011**	[2.24]
CI	-0.025	[-0.36]	-0.058	[-1.03]	-0.029	[-0.39]	-0.061	[-1.01]
SPCPA	-0.022**	[-2.21]	0.017*	[1.66]	-0.022**	[-2.30]	0.017	[1.63]
LOCAL	-0.001	[-0.23]	0.001	[0.14]	-0.001	[-0.23]	0.000	[0.06]
MKTI	0.002	[0.55]	0.001	[0.84]	0.001	[0.45]	0.002	[0.98]
Industry fixed effects	Yes		Yes		Yes		Yes	
Year fixed effects	Yes		Yes		Yes		Yes	
N	2283		2833		2283		2833	
Adj. R-square	0.361		0.324		0.361		0.324	

Difference in NONBIG4_POST or NONBIG10_POST coefficient:

| | Chi-square:3.77* | | | | Chi-square:2.91* | | | |

Panel C: Audit quality (DACC_DD)

	High Litigation (1) DACC_DD		Low litigation (2) DACC_DD		High Litigation (3) DACC_DD		Low litigation (4) DACC_DD	
	Coeff	t-stat.	Coeff.	t-stat.	Coeff	t-stat.	Coeff.	t-stat.
NONBIG4	0.008	[1.29]	0.023***	[3.04]				
NONBIG4_POST	-0.009	[-1.32]	-0.023**	[-2.04]				
NONBIG10					0.006	[1.58]	0.009**	[2.32]
NONBIG10_POST					-0.005	[-1.27]	-0.008*	[-1.87]
POST	-0.012	[-1.37]	-0.010	[-0.80]	-0.017**	[-2.51]	-0.025***	[-3.55]
LNMV	0.006***	[3.87]	0.010***	[5.23]	0.006***	[3.96]	0.009***	[5.24]
LEV	-0.039***	[-4.70]	-0.034***	[-4.00]	-0.039***	[-4.67]	-0.034***	[-4.04]
RET	-0.004	[-1.51]	-0.010***	[-3.72]	-0.004	[-1.48]	-0.010***	[-3.63]
ROE	0.217***	[10.61]	0.177***	[15.07]	0.217***	[10.63]	0.177***	[15.01]
BM	-0.007	[-1.12]	-0.016***	[-2.88]	-0.007	[-1.10]	-0.016***	[-2.93]
STDRET	-0.193*	[-1.94]	-0.321***	[-3.75]	-0.193*	[-1.94]	-0.321***	[-3.75]
Q	0.001	[0.64]	0.002	[1.49]	0.001	[0.64]	0.002	[1.41]
CFO	-0.147***	[-8.31]	-0.247***	[-14.04]	-0.148***	[-8.36]	-0.249***	[-14.22]
LOSS	-0.010*	[-1.65]	-0.012**	[-2.31]	-0.010	[-1.60]	-0.012**	[-2.31]
AGE	-0.000	[-1.55]	-0.000	[-1.02]	-0.000	[-1.52]	-0.000	[-1.01]
TOP1	0.000	[0.82]	0.000	[1.54]	0.000	[0.91]	0.000	[1.62]
SOEs	-0.010***	[-3.45]	-0.005*	[-1.87]	-0.010***	[-3.41]	-0.005*	[-1.79]
CI	0.006	[0.15]	0.048*	[1.71]	-0.011	[-0.27]	0.036	[1.24]
SPCPA	-0.025***	[-3.98]	-0.003	[-0.59]	-0.026***	[-4.00]	-0.003	[-0.55]
LOCAL	0.001	[0.36]	-0.001	[-0.40]	0.001	[0.31]	-0.002	[-0.56]
MKTI	-0.003*	[-1.78]	0.000	[0.60]	-0.003	[-1.57]	0.000	[0.56]
Industry fixed effects	Yes		Yes		Yes		Yes	
Year fixed effects	Yes		Yes		Yes		Yes	
N	2253		2449		2253		2449	
Adj. R-square	0.419		0.427		0.419		0.427	

Difference in NONBIG4_POST or NONBIG10_POST coefficient:

<div align="center">Chi-square:3.45*   Chi-square:0.20</div>

Notes: Table 3.20 presents the results of cross-sectional analyses of the role of legal environment on the audit fee regulation effects. ***, ** and * indicate two-tailed statistical significance at the1%,5%, and 10%levels, respectively. Panel A reports the audit fee regression results. Panel B reports the audit quality (DACC_PM) regression results. Panel C reports the audit quality (DACC_DD) regression results. See the appendix for the detail variable definitions.

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