AUDIT QUALITY AND EARNINGS MANAGEMENT

--- EMPIRICAL EVIDENCE FROM CHINA'S STOCK MARKET

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Doctor of Philosophy

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CERTIFICATE OF ORIGINALITY

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Abstract:

Motivated by the special features of earnings management in Chinese listed firms and the characteristics in the Chinese audit market, I study the association between audit quality and earnings management in China. I measure audit quality as auditor size, auditor location, auditors' attitudes towards important clients, and auditors' affiliation with the Big 5. There are two earnings management measures: discretionary accruals derived from a performance-matched modified Jones model, and abnormal non-core earnings computed as non-core earnings adjusted by the industry median. The first major finding is that the top 10 domestic auditors are of higher quality than other domestic auditors in deterring opportunistic earnings management. Second, the results support the use of auditor location to proxy for audit quality in China. Local clients report higher abnormal non-core earnings than non-local clients. Third, economic dependence dominates reputation protection incentive in China, so that important clients are given more flexibility in aggressive financial reporting than unimportant clients. Finally, a comparison between the top 10 domestic auditors and the Big 5 suggests that the joint ventures of the Big 5 are more effective than the domestic top 10 in limiting managers' income-increasing choices through non-core earnings. Tests confined to a rights offering sample corroborate the above findings.

Keywords: Audit Quality, Earnings Management, China

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CHAPTER 1

INTRODUCTION

This study empirically examines the role of audit quality in deterring earnings management in the emerging Chinese market. A number of studies have documented the negative association between audit quality and earnings management in the U.S. market (Becker et al., 1998; Kim et al., 2000; Reynolds and Francis, 2000). I extend this line of research into China, motivated by the special features of earnings management in Chinese listed firms and the characteristics of the audit market in China.

Earnings management in Chinese listed firms reveals different features from that in U.S. firms. In U.S., many listed firms manipulate earnings in response to either market-based or contract-based motivation. By contrast, the major earnings management incentives in Chinese listed firms are regulation-induced. For example, the profitability threshold specified in the rights offering regulation creates strong incentives for firms to manage earnings since rights offering is the most important way for Chinese listed firms to raise additional equity capital. Earnings management in U.S. listed firms is primarily through the discretionary choices of accrual accounting. In China, real transactions are very frequently used as a means to manage earnings. The typical transaction-based earnings management includes the misuse of related-party transactions and "generous" fiscal transfers from regional

governments. Differences in the incentives and means of earnings management can lead auditors to apply different procedures or techniques in conducting audits, and to exercise different judgments.

The Chinese audit market is very different from that in U.S. In the U.S., Big 6 (now Big 4) auditors dominate the market. The Big 6 audit 90% of companies on the New York and American Stock Exchanges (Francis et al., 1999). U.S. auditors incur high costs in case of audit failures such as shareholder litigation and compensations, regulatory sanctions and reduced reputations. In 1993, the litigation costs for the Big 6 accounted for as high as 19.4% of their income[1]. In comparison, the major audit suppliers in China are domestic auditors that are not comparable to the Big 5 in terms of size, experience and reputation. Their quality remains an empirical question. Given the small number of listed firms relative to the number of auditors authorized to audit them, the Chinese audit market is highly competitive. At the end of 2000, there were 1,088 listed firms and 78 auditors with the qualification to audit them. Each auditor on average had fewer than 14 clients. Meanwhile, litigation risk is rather low for Chinese auditors currently. Penalties for auditor misconduct mainly stay on the administrative liability level only. It is very difficult for public shareholders to sue listed firms and their auditors and to ask for compensations due to limitations in current civil laws. High competitive pressure and low litigation risk can adversely affect auditors' independence and thus audit quality.

[1] Data source: "*Chinese CPAs*", Oct. 14, 2001

Differences in both earnings management and audit market make it very interesting to study the association between audit quality and earnings management in China. Audit quality is defined as the joint probability of detecting and reporting financial statement errors (Watts and Zimmerman, 1980; DeAngelo, 1981). Audit quality is multidimensional and inherently unobservable. In the China context, I use auditor size, auditor location, auditor's attitudes towards important clients, and auditor's affiliation with the Big 5 to proxy for audit quality. Auditor size is a widely accepted proxy for audit quality in the literature. Based on audited client assets, domestic auditors in China are classified as the top 10 and non-top 10 auditors in the study. Auditor location is a measure specific to China. I argue that local auditors (auditors and clients located in the same administrative province or metropolitan city) provide lower audit quality than non-local auditors because of rampant protectionism from regional governments. Audit quality can be also measured as auditors' attitudes towards their important clients. The impact of client importance on auditor behavior has been empirically examined by a few studies in the U.S. (Reynolds and Francis, 2000; Chung and Kallapur, 2003). The empirical test on how Chinese auditors treat their important clients can further explore the issue by examining a market very different from the U.S. Auditor's affiliation with the Big 5 is also used to proxy for audit quality. I define the Big 5's joint ventures as auditors affiliated with the Big 5, and I compare their ability to curb earnings management with the top 10 domestic auditors.

In the current study, I adopt two earnings management measures. The first is discretionary accruals (DAR) derived from a performance-matched modified Jones model constructed by Kothrari et al (2002). Use of discretionary accruals to test for earnings management is widespread in the literature, but accurate estimation of discretionary accruals does not appear to be accomplished using existing models (Fields et al., 2001). Results in Kothari et al. (2002) suggest that performance matching is critical to designing well-specified tests of earnings management. Their results also show that their performance-matched discretionary accrual model exhibits a far smaller degree of mis-specification than the traditional Jones and the modified Jones models. A second earnings management measure in the study is the abnormal non-core earnings (ANCE). It is calculated as the industry-median-adjusted profits from non-core business. The measure of abnormal non-core earnings is specific to China since past studies show that earnings management in China is often achieved by transactions unrelated to core business (Haw et al., 1998; Chen and Yuan, 2001). A significant portion of the real-transaction-based earnings management, such as the related-party assets "sales" and the fiscal supports from regional governments, is reflected in the non-core earnings section. The industry-adjustment approach is used to try to rule out "normal" or "non-discretionary" non-core earnings.

With a total of 3,265 firm-year observations form 1996 to 2000, the empirical results are as follows. First, the positive relation between auditor size and audit quality identified in the literature also applies to the China context. The results

suggest that among domestic auditors, the top 10 auditors are more effective than non-top 10 auditors in limiting earnings management. Second, auditor location is a valid proxy for audit quality in China, and the difference between local and non-local auditors is not only a distinction in location, but a difference in audit independence. The results suggest that non-local auditors are more effective than local auditors in deterring earnings management through non-core business. Third, economic dependence on important clients dominates reputation protection in China. Domestic auditors treat their important clients favorably in that important clients report both higher discretionary accruals and higher abnormal non-core earnings than unimportant clients. Fourth, a comparison between the top 10 and the Big 5 (Big 5's joint ventures in China) suggests that the latter provide higher quality audits than the former. Clients audited by the top 10 report higher income-increasing abnormal non-core earnings than clients audited by the Big 5, and the Big 5 treat their important clients more conservatively than the top 10 auditors do. Moreover, this study provides some evidence supporting the auditor conservatism argument in the literature. That is, auditors prefer income-decreasing accounting choices and thus behave more conservatively when managers choose to boost earnings.

Robustness tests confined to a rights offering sample report very similar results. In the sample period, rights offering is the most important way for listed firms to raise additional equity capital from the market. Stronger earnings management motivation due to the profitability rules in rights offering firms pressures auditors to concede, but the ex ante publicly-known rights offering regulations make the earnings management in such firms more likely to be scrutinized by regulators and

investors and thus forces auditors to behave more conservatively. Rights offering firms then create a more conflicting situation for their auditors than other firms. The study finds that rights offering firms manipulate earnings, mainly through non-core business, to meet the profitability requirements. Most of the identified associations between the audit quality proxies and the earnings management measures in the main tests still hold significantly in the rights offering sample.

Auditors have dual roles. They are both safeguards of the public interest and self-interested economic agents. In markets with effective corporate governance to protect minority shareholders, the cost of a potential audit failure is generally much higher than its benefit, and thus auditors' role as safeguards of the public interest can be more pronounced. However, in markets without effective protection for public shareholders, the cost of a potential audit failure can be less than its benefit, so that auditors' role as self-interested economic agents can become more evident. Therefore, the study of auditor behavior in different corporate governance settings can help better understand the economic role of auditors. The audit quality research in China in the current study can serve as an "out-of-sample" analysis of the accumulated evidence obtained in developed markets, and can also be extended to other emerging markets.

The rest of the thesis is structured as follows. Chapter 2 describes the research background, including earnings management in Chinese listed firms, development of the Chinese audit profession and the entry of foreign auditors into China. Chapter 3 reviews related literature. Chapter 4 investigates the effect of audit quality on earnings

management in detail. Then, chapter 5 further examines earnings management behavior and auditor behavior in rights offering firms. Finally, chapter 6 concludes the study.

□ CHAPTER 2

EARNINGS MANAGEMENT IN CHINESE LISTED FIRMS AND THE CHINESE AUDIT MAREKT

2.1 EARNINGS MANAGEMENT IN CHINESE LISTED FIRMS

Numerous studies have been devoted to the detection and explanation of earnings management (see the review by Healy and Wahlen, 1999). With China's transition from a centrally-planned economy to a market-oriented economy, earnings management in China presents some special characteristics different from that in the developed U.S. market.

First of all, profitability regulations set by the central government create strong incentives for earnings management. Among these regulations, a major requirement is imposed on firms that intend to raise additional capital by rights offering. In the examined period, rights offering is the most important way for a listed firm to obtain equity financing from the market. Both the government and the firm realize the importance of rights offering. Therefore, on the one hand, the regulators (the central government) have to set stringent regulations with the purpose of helping investors discriminate good firms from bad ones. These regulations usually set specific profitability requirements. On the other hand, firms

are motivated by such profitability regulations to use all the means at their disposal, including earnings management, to achieve the required profitability levels.

The requirements for rights offering transactions have kept changing over years. The 1993 guideline simply required two successive years of positive profits for intended rights offering firms. This threshold became tighter in 1994. A listed firm needed to remain profitable for three successive years and achieve an average return on equity (ROE) of 10% (for certain industries such as agriculture, energy, raw materials, infrastructure and high-technology, the ROE requirement was only 9%) if it intended to undertake rights offering. This 10% average ROE requirement was further tightened in 1996 by requiring 10% ROE in each of the three years preceding the year of rights offering. In early 1999, the rights offering regulation was modified a third time. An intended rights offering firm had to have a ROE of 6% in each of the preceding three years and an average ROE of 10% over the three years. In 2001, the newest ROE rule required an average ROE of 6% over the previous three years. Basically, the rights offering regulations center on the reported ROE level. Appendix C gives a summary of the rights offering regulations in China.

Since in the examined period, rights offering is the most important way for a listed firm to raise additional equity capital after an IPO, earnings management motivated by rights offering regulations is pervasive in all listed firms in China. By contrast, in the U.S. market, the regulatory motivation for earnings management

affects specific industries or a limited number of firms only, rather than a wider segment of the economy (Healy and Wahlen, 1999).

Empirical evidence confirms that Chinese managers manipulate earnings in response to rights offering profit rules. The rampant earnings management behavior to achieve the required ROE levels is described as the "10% phenomenon" (e.g. Jiang and Wei, 1998) and "6% phenomenon" (e.g. Yan et al., 2001) by academics. Jiang and Wei (1998) document an abnormally large percentage of firms with ROE slightly above 10% during their sample period 1994-1997. Chen (1998) documents unusual increases in accounting receivables (as a percentage of sales) in firms with ROEs slightly above 10%. Haw et al. (1998) and Chen et al. (2000) report unusually high discretionary accruals and non-core profits in firms with ROE falling within [10%, 12%]. Firms' earnings management behavior also changes with the change in rules. In response to the reduction of required ROE level from 10% to 6%, [6%, 7%] became another concentration area for ROE (Yan et al., 2001). Chen and Yuan (2001) find that firms gaining the rights offering qualification through earnings management perform worse after the rights offering than those without earnings management. They also demonstrate that Chinese regulators seem to have gradually increased their scrutiny of earnings management in the approval process, though such scrutiny is rather limited. Most research on this issue simply looks at the distribution of reported ROE. Directly examining the performance and earnings management behavior of rights offering firms is rare.

Like rights offering regulations, regulations on initial public offering (IPO) and delisting also create strong motivations for managers to manipulate earnings. The major criterion for intended IPO firms is "at least two consecutive years of operating profits". Moreover, the government recommends a P/E multiple of 12 to 15 to set the initial IPO price. Thus, intended IPO firms are strongly motivated to boost earnings.

The current delisting regulations mandate that any listed firm with two consecutive years of loss or with asset value per share less than the face value per share will be subject to special treatment (ST), and a firm suffering losses successively for three years will be classified as a Particular Transfer (PT) firm. ST and PT firms are subject to trading limitations and regulatory scrutiny. For example, there is a price limit of $\pm$5% in the daily share trading of ST firms. ST firms' interim reports are subject to statutory audit. The shares of a PT firm can only be traded on Fridays and its price increase is subject to a 5% limit but it has no limit for price decrease. A PT firm could be delisted at any minute. Therefore, the ST and PT regulations directly motivate managers to manipulate earnings to avoid losses.

While government regulations account for many earnings management activities to avoid losses in China, the motivations for earnings management to avoid losses in the U.S. market are explained by transaction cost theory and prospect theory (Burgstahler and Dichev, 1997). Transaction cost theory argues that managers opportunistically avoid reporting earnings losses to decrease the costs

imposed on the firm in transactions with stakeholders, assuming that stakeholder decisions are often based on heuristic cutoffs such as zero levels of earnings. Prospect theory (Kahneman and Tversky, 1979) suggests that the largest gains in utility, and hence the largest incentives to manage earnings, occur when moving from a relative or absolute loss to a gain.

A second important characteristic of earnings management in China is in the ways and means of earnings management. With a well-developed legal and accounting infrastructure, earnings management in the U.S. is primarily through managers' discretion over accrual choices[2]. For example, managers may "adjust" earnings by changing estimations of all kinds of allowances across years. By contrast, in China, earnings management is very frequently achieved through real transactions. Typically, these real transactions include related-party transactions among listed firms and their controlling shareholders or affiliated firms, and fiscal subsidies from regional governments to listed firms.

Related-party transactions among affiliated firms are not necessarily unfair transactions. In fact, many studies argue that the group structure and related-party transactions among member firms can help to reduce transaction costs and overcome the difficulties in enforcing property rights and contracts essential for production (Fisman and Khanna, 1998; Shin and Park, 1999; Chang and Hong, 2000;

[2] Some U.S. firms also use real transactions to manipulate earnings, such as R &D spending and timing of the profit on investment securities.

Fan and Goyal, 2002; etc.). For example, Chang and Hong (2000) find that, compared with unaffiliated firms, group-affiliated firms have better performance when the transfers of products and managerial expertise within the group increase.

However, controlling shareholders can take advantage of related-party transactions for opportunistic purposes such as expropriating minority shareholders. Johnson et al. (2000) use the term "tunneling" to describe the transfer of resources away from firms to benefit their controlling shareholders. As argued in Liu and Lu (2002), tunneling activities may occur wherever there is a conflict of interest between controlling shareholders and minority shareholders, but it can be particularly serious in emerging markets such as China, where fewer corporate governance mechanisms, such as independent boards and active external takeover markets, exist to protect minority shareholders. Based on newspaper information, among the sampled 1,018 Chinese listed firms in 2001, 949 firms (93.2%) had related-party transactions of all kinds[3].

The widespread use of related-party transactions to manage earnings in China has its historical and institutional background. Historically, in order to be listed, a firm's total assets were usually divided into two parts. Assets of "good quality" were injected into a subsidiary that would be listed, while assets of "bad quality" remained within the parent firm or other subsidiaries. Under such arrangements, the listed subsidiary is "obligated" to transfer raised funds to its

[3] Data source: "*Securities Market Press*" March, 2001.

controlling firm and other affiliates. The controlling shareholder will reap large benefits if its subsidiary goes public and even more if the subsidiary can qualify for rights offering. That is why the listed firm can count on generous help from its parent firm and other affiliates if in need, such as to meet the profitability level specified in the rights offering regulations.

Institutionally, over-concentration of ownership structure and lack of effective protection for minority shareholders facilitate tunneling activities in China. Listed firms and their parent firms are often "two name plates on the same office"; the parent firms have the right to appoint the board members and top management in listed firms, so the owner-manager agency conflict in Chinese firms is not as serious as that in American listed firms. Instead, the agency conflict between controlling shareholders and minority shareholders created by over-concentration of ownership is a chief concern in many East Asian firms (Fan and Wong, 2002). Additionally, over-concentration of ownership and effective control by the majority shareholder can make conventional corporate governance mechanisms such as external takeovers and boards of directors ineffective in constraining controlling shareholders' tunneling activities. Because of direct control, the transaction cost of using related-party transactions between listed firms and their parent firms to manage earnings is much lower in China than in the U.S. market. Moreover, in the current emerging Chinese market, protections for minority shareholders need to be greatly strengthened. For example, in the examined sample period, there is no requirement or regulation on the hiring of independent external directors.

In addition to related-party transactions, some Chinese listed firms also manage earnings through the assistance from regional governments. Regional governments collude with listed firms (in particular those in which regional governments hold significant percentages) in their jurisdictions, and help firms with earnings management to circumvent regulations set by central government, a phenomenon called "Chinese Tango" (Chen et al., 2003). The assistance from regional governments generally takes the forms of taxation privileges or fiscal transfers. Taxation privileges refer to the use of a preferred tax rate to achieve tax exemptions and tax reductions. Fiscal transfers have several types, including income tax rebates, value-added tax rebates, compensatory subsidies for social infrastructure, project subsidies for technology, innovation, environment, etc., and direct financial assistance. Some statistics show that in 1999 alone, over 54% of listed firms enjoyed different kinds of fiscal subsidies from regional governments[4].

The rampant protectionism from regional governments can be explained by the hard-to-cut-off close relationship between regional governments and listed firms, and the political performance considerations of regional governors. In the sample of Chen et al. (2003), provincial governments or metropolitan city governments ultimately owned about 85% of listed firms. The tangled relationship between regional government and listed firms is inherited from the old planned economy and is hard to remove in a short period of time. The political promotion of the regional governor is to a great extent based on the economic performance of his or her

[4] Data source: http://www.cninfo.com.cn Sept. 30, 2003

jurisdiction, such as the number of listed firms, the amount of raised capital, the amount of attracted foreign investment, and the employment rate, etc.

Earnings management by real transactions may affect both the operating and non-operating sections in financial statements. For example, related-party sales and purchases are reflected in core-earnings, and intra-group assets sales belong to non-core business items. While intra-group sales and purchases are only applied when listed firms are customers or suppliers of their controlling shareholders or affiliated firms, related-party assets sales can be used freely among listed firms and their controlling shareholders. Fiscal transfers from regional governments are mainly disclosed in the non-operating section and footnotes.

Empirically, earnings management through accruals (Haw, et al., 1998; Wu, 2001; Liu and Lu, 2002, etc.) and through real transactions (Jian and Wong, 2003; Chen, et al., 2003) are both investigated in the literature. Wu (2001) reports income-increasing abnormal accruals in big firms, IPO firms, and intended rights offering firms, but he finds no evidence of use of accruals to avoid delisting regulations. Liu and Lu (2002) demonstrate that total accruals and industry median adjusted accruals are positively correlated with the largest shareholders' interest in a firm, top executives' interests in the firm, and whether the board of directors is chaired by the CEO, and are negatively related to a firm's dual listing status. They think of their results as evidence supporting "tunneling" of resources from firms by controlling shareholders.

Chen and Yuan (2001) find that Chinese listed firms manipulate non-core business items to comply with the accounting–based rights offering regulation. Using a sample of 131 Chinese listed firms in the basic materials industries, Jian and Wong (2003) directly investigate related-party transactions in China. They find that firms that are controlled by a corporate group engage in more related-party transactions than firms that are not. Their results also show that firms report abnormally high levels of related-party sales to their parent firms or affiliates when motivated by delisting and rights offering regulation. Government-assisted earnings management is empirically investigated by Chen et al (2003). Their empirical results suggest that regional governments freely use taxation preferences to compete to attract economic activities into their regions. Regional governments also use fiscal transfers to help their substantially-held listed firms manage earnings to circumvent the regulations set by central government.

The central government's use of accounting earnings in setting capital market rules makes regulation-induced earnings management motivations both strong and rampant in current China. The use of real transactions in earnings management complicates investors' assessment of earnings quality. It may lead auditors to exercise judgment and to apply auditing procedures and techniques that are different from those applied to auditing earnings management through accruals.

2.2 DEVELOPMENT OF THE CHINESE AUDIT PROFESSION

In China, an audit performed by a CPA firm is called a "social audit" (as opposed to a government audit). Under the traditional planned economy before the 1980s, social audits were virtually nonexistent. The first domestic CPA firm was founded in Shanghai in January 1981, driven by the need to attract foreign investment into China. Its emergence signaled a completely new starting point of the audit industry in China. However, at that time, auditors' clients were confined to enterprises with foreign investments only, and the major user of audit reports was the tax department. Auditors neither needed to report to investors nor to bear any audit risk. The development of the audit profession at that stage was rather limited.

With the dramatic development of economic reform over the past two decades--particularly the expansion of the stock market, the continuous deepening of accounting reforms, and the decentralization of state-owned enterprises--the audit industry in China has undergone substantial growth. Based on recent statistics, by the end of 2001, there are more than 4,200 accounting and auditing firms in total. Meanwhile, there were over 125,800 CPAs, including over 55,900 practicing CPAs[5]. In addition to the rapid expansion in quantity, audit quality has also been improving over the years. In 1982, the National Audit Bureau (NAB) was disaffiliated from the Ministry of Finance (MOF) to be in charge of government audits. In 1989, the

[5] Data source: *"CPAs Say No --- Analysis of Audit Opinions in Chinese Listed Firms"*, published by the CSRC.

Chinese Institute of CPAs (CICPA) was established under the supervision of the MOF. It is responsible for the monitoring and disciplining of CPA firms and CPAs, that is, social audits. In the 1980's, there were two types of auditors in the market. One is the "audit firms" under the supervision of the NAB, whose major clients were state owned enterprises (SOEs) (but with an increasing number of foreign firms and shareholding firms later), and the other is the CPA firms or accounting firms monitored by the CICPA, whose clients focused on enterprises with foreign investment (Wang, 1989). To facilitate effective monitoring and to fully utilize the existing audit resources, mergers of the two types of auditors began in 1995.

One of the most critical events in the development history of the Chinese audit industry is the promulgation of independent auditing standards. Before the birth of auditing standards, Chinese CPAs followed some temporary rules or regulations issued by the MOF, NAB and some other government departments. At that time, the CICPA also issued auditing standards on a voluntary basis in order to educate auditors and auditees and to improve audit quality, but these standards were not effectively enforced. Then, laws and regulations in areas such as securities, taxation and financial accounting also provided important references for auditors. The CPA Law promulgated in 1993 made auditing standard setting a statutory requirement. It empowered the CICPA to draft standards and the MOF to approve the CICPA's drafts. In December 1995, the first set of independent auditing standards was promulgated and became effective on January 1, 1996, an important milestone in the development of the Chinese audit profession. Another two sets of

standards took effect on January 1, 1997 and July 1, 1999. The Chinese auditing standards are basically government-sanctioned, mandatory-regulated and foreign-standard based (Xiao et al. 2000).

Xiao et al. (2000) summarize eight main factors that are considered to have motivated auditing standard setting in China, including the need to educate auditors, the need to improve audit quality and credibility, the need to educate auditees, the need to survive competition, problems with old standards, the effect of financial scandals, the need to develop a legal regime to govern the CPA profession, and the need to achieve international harmonization. Lin and Chan (2000) make a comparison between Chinese auditing standards and the international auditing standards and guidelines in five broad areas such as the auditor and attest function, independence, ethical principles and enforcement, audit evidence and audit reports. The Chinese independent auditing standards contain both international themes and Chinese features. Their comparison suggests that the Chinese standards most closely resemble international standards and guidelines in a number of important dimensions. Differences exist with respect to how auditor's professional competence is examined, how independence is defined and practiced, how ethical standards are established and enforced, and how certain audit procedures are emphasized and performed. Additionally, to fit the unique economic environment in China, the verification of capital contributions is set to be a statutory audit in the guidelines.

The impact of the promulgation of independent auditing standards on the CPA industry is empirically examined by DeFond et al. (2000). They find that auditor independence is improved thanks to the new auditing standards, based on the finding that the frequency of modified opinions increases nine-fold since the adoption of the independent auditing standards. However, their study also documents a decrease in market share among large auditors along with the improvement of auditor independence. They ascribe their "flight from audit quality" results to the insufficient demand for independent auditors in China.

In addition to founding the professional body and setting professional standards, the government has taken some other important measures to improve audit quality. A strict threshold is set for those auditing listed firms. To audit listed firms, auditors must meet certain capital, revenue and personnel requirements and get special permission from the government. For example, according to a related regulation in 2000, to obtain the qualification to audit listed firms, a CPA firm needs: at least 3-years' business operation without any misconduct record; at least 40 CPAs under the age of 60, among which at least 20 CPAs have gained the qualification to audit listed firms; last-year's business income over RMB¥ 8 million; invested capital in a limited-liability-incorporated CPA firm over RMB¥ 2 million, or the net assets in a CPA firm in form of partnership over RMB¥ 1 million. Up to the end of 2001, among the nearly 4,300 auditors, only 78 can audit listed firms, and among the nearly 60,000 practicing CPAs, only about 1,500 are allowed to audit listed

firms[6]. CPAs' qualifications are checked annually and their practice quality is reviewed on a periodic basis. To enhance auditors' independence and to improve investors' confidence, the government first established legal penalties for auditor misconduct in 1992. Up to the end of 2000, 24 accounting firms have received penalties for 27 cases [6,7]. According to the stipulations of present laws and regulations, the legal liabilities of Chinese CPAs include administrative, civil and criminal liabilities.

Furthermore, as all accounting firms were initially attached to a government-related organization, such as a government department, a university or a large state-owned enterprise, the MOF and the CSRC (China Securities Regulatory Committee) began to launch a detachment/disaffiliation program in 1997. It required that an auditor be independent of its sponsor, both in appearance and in substance. The detachment of CPA firms from their sponsors needs to be undertaken in four main areas---personnel, finance, business strategy and name. The detached auditors were required to adopt the form of either a limited liability company or a partnership. This detachment program began with those with permission to audit listed firms and securities-related businesses first. They were required to be completely detached from their sponsors by the end of 1998. The detachment of all other CPA firms was to be finished by the end of 1999.

[6] Data source: *"CPAs Say No --- Analysis of Audit Opinions in Chinese Listed Firms"*, published by the CSRC (China Securities Regulatory Committee).

The impact of the disaffiliation program on auditor independence in China is empirically examined by Yang et al. (2001). They use the number and percentage of non-standard opinions in audit reports as a measure of auditor independence. Non-standard opinions include unqualified opinions with explanatory paragraphs, standard qualified opinions, qualified opinions with explanatory paragraphs, disclaimers and adverse opinions. They find in their study that the number and percentage of non-standard opinions has increased dramatically since 1997. They attribute this increase in non-standard audit opinions to the disaffiliation program.

After years' rapid developments, the auditors' monitoring of both public and private enterprises has been employed by the government as an important mechanism in transforming the original planned economy to a modern market-oriented economy. Today China has the formal structure necessary to support a strong auditing profession: a legislative framework at the national level, a professional body, a systematic education program, and a uniform CPA examination system operating in close concert with government agencies (Lin and Chan, 2000). Now the primary function of auditing in China has shifted from tax compliance checks towards lending credibility to financial statements. According to Article 4 of the Chinese General Standard, the objective of an independent audit in China is "to express an audit opinion on the *legitimacy* and *fairness* of the entity's financial statements and the *consistency* of the accounting treatments" (Lin and Chan, 2000).

Recently, in order to further improve the information quality in the market, Chinese regulators have placed more weight on the use of audit information in monitoring listed firms. The CSRC announced "*Information Disclosure Rules for Listed Firms No. 14 --- Non-standard Audit Opinions and Related Items*" at the end of 2001. It required that a listed firm make appropriate corrections if its auditor finds its financial reports not to conform to laws or rules. If the listed firm refuses to make such corrections and hence receives non-standard unqualified opinions, the CSRC will suspend trading of shares for the listed firm. Additionally, if a listed firm receives a disclaimer from its auditor, it cannot pay dividends or make other profit distributions.

Despite remarkable progress, auditor independence and thus audit quality in the Chinese capital market is still questioned by many. DeFond et al. (2000) summarize several institutional characteristics that impede the supply of, and demand for, independent audits in China. These impediments include government shareholding, lack of corporate governance and shareholder litigation, and the limited expertise of the domestic auditing profession. Tang (1999) also pinpoints the problems and deficiencies in eight areas in the current Chinese audit profession. All these concerns center on the intervention role of government, the need-to-improve professional competence of auditors, the legal liabilities of auditors, and the deficient corporate governance mechanisms.

Reviewing the history of the Chinese auditing profession, the government has been playing an essential role. This helped the rapid development of the domestic CPA industry at the very beginning, but later became an impediment to auditor independence. Even the professional body CICPA itself cannot be independent of government. The CICPA is a quasi-official institute under the supervision of the MOF, and most of its council members are appointed by the government. They have rich experience in working for the government but don't know much about accounting. The CICPA needs independence to be a self-regulatory professional body, but it still needs government support to maintain its authority. Domestic auditors' professional ethics and competence is also a big problem. New and complicated business transactions resulting from the changing economic environment challenge Chinese CPAs to upgrade their professional knowledge and competence. "However, the syllabus of the unified CPA examinations is not keeping abreast of the new developments, and there is a lack of continuing professional education for the Chinese CPAs" (Tang, 1999, page 25).

Moreover, compared to western markets, the litigation risk for Chinese auditors is rather low, though auditors' awareness of legal liability has substantially increased with the continuing reforms such as the disaffiliation program. At present, the government and the self-regulatory professional body CICPA both monitor the CPA industry. The penalties for auditors' misconducts are quite lenient. Most of these penalties stay on the level of administrative liabilities only, such as public criticism, warning, fines, suspension of practicing license, etc. Before 1998, the

major penalties for audit firms were warnings and public criticism, and there was rarely any penalty for individual CPAs. Recently, with the exposure of "Yinguangxia" and "Maikete" events in 2001, criminal liability of CPAs began to rise.

However, the civil liability of auditors is still very weak. A major reason is that the stipulations concerning civil liabilities are too simple and not operational. Li and He (2000) argue that the existing legal standards have three problems concerning the civil liability of CPAs: inconsistent definitions or understanding of CPAs' legal liabilities in different legal standards; ambiguity in compensation procedures; and contradictions and inadequacy in regulating the level of compensation. It is not easy for minority shareholders to take listed firms to court due to limitations in the civil law and a lack of punishment spectrum under the current securities laws (Liu and Lu, 2002). Before the announcement of "*Notice on Civil Lawsuits against False Statements in the Securities Market*" by the high court on January 15, 2002 (Announcement 1-15), no court accepted any civil lawsuit associated with securities. Even after the Announcement 1-15, investors can only bring some of those punished by the CSRC to court to ask for compensation. Investors can only sue listed firms and their auditors for cheating by false statements, but cannot sue them for cheating by insider trading and market manipulation. Moreover, many individual investors in China have not realized that they have the right to ask for compensation from listed firms and related parties including auditors if they suffer loss because of cheating activities by listed firms.

Without civil liability, without shareholder lawsuits and compensation, under the present lenient punishments by the government and the CICPA, the costs of cheating or fraud are far lower than the benefits of cheating for listed firms and for their auditors. Low litigation risk encourages listed firms to manipulate earnings and can also induce their auditors to compromise their independence.

Currently, the major audit suppliers in the Chinese capital market are domestic auditors. Given the small number of listed companies relative to the number of CPA firms authorized to audit them, the Chinese audit market is highly competitive. At the end of 2000, there were 1,088 listed firms and 78 auditors with the qualifications to audit them. Each auditor on average had fewer than 14 clients. The top 10 domestic auditors (in terms of client number) together have accounted for only an average market share of around 30% for years. In contrast, in the U.S. market, before the merger of the Big 8 in 1988, 96% of listed firms in New York Exchanges were audited by the Big 8. After the merger, the market share for the Big 6 in listed firms increased to 98% in 1999 (Wolk et al., 2001). With audit fee information in 2001, Xia and Lin (2003) calculate the concentration ratio to examine the auditor concentration in China. They find that the concentration ratio for the top 4 auditors and the top 8 auditors are 30.32% and 44.7% respectively, and their estimated gross income per person in domestic audit firms is only 1/5~1/4 of that in Big 5-invested audit firms. Their results suggest that the Chinese audit market is highly competitive.

The quality of domestic auditors directly impacts the quality of accounting information in the market. Based on the above discussion, audit quality in the current Chinese market is an empirical question to be answered. In the positive view, after years' development and improvement, the audit industry in China has established an integrated system: a legislative framework at the national level, a professional body, a systematic education program, and a uniform CPA examination system operating in close concert with government agencies. The achievements in independent auditing are even remarkable if compared with the progress made in developing other corporate control mechanisms. For example, in the examined period, there was no regulation or requirement for independent external directors. In the negative view, there are still many obstacles to auditor independence in China. The highly competitive audit market and low litigation risk for auditors can adversely affect the supply of high quality audits. Moreover, without the equal development and improvement of other corporate governance mechanisms to effectively protect minority shareholders, the monitoring role of external auditors has to be discounted.

A number of studies have empirically tested audit quality in China by examining the likelihood /frequency of modified audit opinions and the market response to different types of audit opinions. Chen et al. (2001) report a significantly positive association between the probability of receiving modified audit opinions (MAOs) and reporting profits marginally above the target levels specified in stock de-listing and rights offering regulations. Although auditing is expected to limit

earnings management, it is not obvious that earnings management will typically lead to modified audit opinions (Butler, et al., 2003). A modified opinion can result from many factors other than opportunistic earnings management. Some other studies examine the market response to audit opinions in China. Chen et al. (2000) report significantly negative abnormal returns for firms receiving MAOs. They conclude that auditor reports are value relevant and that external auditing plays an important role in China. Li (1999) reports similar results in his test. However, the study by Chen (2002) finds no empirical support for the information content of audit opinions in the Chinese stock market. A study by Li and Wu (2002) finds that auditors concede to the strong earnings management motivations in listed firms by replacing qualified opinions with unqualified opinions with explanatory paragraphs. They use the term "audit opinion modification" to describe their finding. The top 10 auditors in terms of the number of listed clients show an even stronger tendency to modify audit opinions in their study.

The study of market valuation of audit opinions relies upon the underlying efficient market hypothesis, which has yet to find strong empirical support in China. Additionally, judging audit quality based on audit opinion studies can be somewhat misleading. A higher quality auditor is not necessarily an auditor that issues modified opinions more frequently. The statistics disclosed by the government show that during the period 1997-1999, the Big 5-invested auditors were less likely to issue modified opinions than domestic auditors. 10.68% of clients audited by the Big 5-invested auditors received modified opinions, lower than the average

14.46%.[7] It would be unwarranted to conclude that domestic auditors are of higher quality than the Big 5-invested auditors based on the above information. The current study of the association between audit quality and earnings management can circumvent the above limitations, providing a clearer understanding of audit quality in China.

In the current study, based on audited listed assets, the domestic auditors are classified as the top 10 auditors and the non-top 10 auditors. Domestic auditors are also classified as local auditors and non-local auditors[8]. If client and auditor locate within the same administrative region, the auditor is a local auditor. If the client and its auditor come from different administrative regions, the auditor is then a non-local auditor. As an illustration, Appendix A lists the auditor name, number of listed clients and size of listed assets, as well as the number of local clients for each auditor in 2000. In terms of audited listed assets, the top 10 domestic auditors in 2000 are Dahua, Zhongtianqin, Shenzhen Pengcheng, Shanghai Lixin Changjiang, Beijing Jingdu, Shanghai Zhonghua Huyin, Shanghai Shanghui, Zhejiang Tianjian, Shenzhen Tongren, and Sichuan Junhe. In 2000, the largest auditor Dahua had 46 listed clients, about 4.23% of the total listed firms, and its audited listed assets reached RMB¥ 2,406 billion, accounting for 11.09% of the market. The second largest domestic auditor, Zhongtianqin had 62 clients, about 5.70% of all the listed firms, and its audited listed

[7] Data source: "CPAs Say No --- Analysis of Audit Opinions in Chinese Listed Firms", published by the CSRC.

[8] Joint ventures of the Big 5 are not classified as local and non-local auditors because of their affiliation with the Big 5 and because they are seldom influenced by the regional government behaviors.

assets reached RMB¥ 1,306 billion, sharing 6.02% of the market. The tenth largest domestic auditor is Sichuan Junhe, which had 28 (2.57%) listed clients and audited listed assets of RMB¥442 billion (2.04%).

2.3 FOREIGN AUDITORS IN CHINA

Along with the great reforms of domestic auditors, the Chinese audit market began to gradually open its door to foreign auditors in the 1980's. There are several ways for a foreign auditor to get involved in the Chinese audit market, including setting up a representative office, establishing a joint venture with a Chinese partner, enrolling members or associate firms in China, acquiring a temporary practicing license, participating in Chinese CPA examinations to get a qualification certificate, and some other ways. The Chinese government set "four basic principles" to guide the opening of the audit market from the very beginning. The four principles are "domestic talents, domestic authority, international expertise, and international management". Among all the foreign auditors, the Big 5 are the most noticeable. Big 5 auditors are Peat Marwick (KPMG), Arthur Anderson (AA), Price Waterhouse Coopers (PWC), Ernst & Young (EY) and Deloitte Touche Tohmatsu (DTT).

At the beginning of the 1980's, foreign auditors were allowed to establish only one representative office in China. They were allowed to provide consulting services, but not to perform audits. The representative offices were generally located in large cities such as Beijing, Shanghai, Guangzhou and Shenzhen. Their

clients were large multinational corporations. Later in 1998, foreign auditors were allowed to have more than one representative office.

Since the 1990's, foreign auditors have been allowed to establish audit firms with Chinese domestic auditors in the form of joint ventures. Both foreign and domestic partners have to meet certain requirements for establishing joint audit firms. For example, according to the regulation by the MOF in 1996, the foreign partner must 1) have excellent reputation and expertise; 2) have an annual income of at least US$20 million; and 3) have at least 200 qualified auditors. Similarly, the domestic Chinese partner must 1) have a good reputation and an over-average expertise among domestic peers; 2) be disaffiliated from its sponsors in personnel, business and finance; 3) have gained the qualification to audit listed firms and other securities-related business; 4) have an annual income of at least RMB¥ 10 million; and 5) have at least 100 qualified auditors. These joint ventures can set up their branches all over the country if meeting certain requirements. The Big 5 now have their joint firms in China. Since the current regulation does not allow Big 5 auditors to directly set up subsidiaries in China, "Big 5" in the tests of this study means their joint ventures in the Chinese market.

More recently, foreign auditors have been allowed to recruit member firms among Chinese domestic auditors. A domestic audit firm can be formally admitted to be a global member of an international auditor if it has met the standards and has been approved by the international auditor. The current regulation allows not over

1/3 ownership by the international auditors in their member firms in the first 5 years. In the course of developing member firms, some domestic auditors can become the associate firms of international auditors before formally being admitted as members.

Compared to the structural form of member and associate firms, the formation of a joint venture asks for higher qualification requirements for both the Chinese and foreign auditors. Foreign auditors directly participate in the management and the business operation of joint ventures, and thus can to a great extent effectively control the audit quality. By contrast, the influence of foreign auditors in their member or associate firms is limited due to the investment restrictions for such firms and their loose relationships. But by recruiting members or associates, foreign auditors can save costs and quickly expand their influence in China by taking advantage of the existing client base of their members.

Appendix B lists foreign auditors' representative offices, joint ventures, member firms and associate/affiliated firms. As shown in Appendix B, 11 international or foreign accounting firms have established 17 representative offices in big cities such as Beijing, Shanghai and Shenzhen. There are 7 joint accounting firms and 33 member or affiliated firms for 14 international auditors. Appendix B also shows that Big 5 auditors prefer the form of joint venture to the form of membership or associate firm in China. As shown in Panel B and C, each of the Big 5 auditors has its joint ventures, but only PWC has one member firm and one associate firm in China. By contrast, other non-Big 5 auditors have 29 member firms

or associate firms in total, but only 2 joint ventures. The distinction suggests that the strategy for the Big 5 to enter the Chinese market is to establish joint ventures with Chinese partners first and then set up branches for business expansion. Their preference for joint ventures can be possibly explained by their concern for quality control. They can directly participate in the management and operation of joint ventures, and thus can more effectively control service quality in joint ventures than in their member or associate firms. Other foreign auditors, however, are more likely to enter the Chinese market by recruiting member firms, which speeds their entry and eases their adaptation to a new operating climate.

Overall, the market share for foreign auditors is low at present. Panel C presents the market share for the joint ventures at the end of 2000. In terms of number of clients, AA had the largest market share among the foreign auditors. It had 24 clients and accounted for 2.21% of the total market. In terms of client assets, PWC was No.1 among foreign auditors. Its audited listed assets reached RMB¥ 951 billion, accounting for 4.38% of the total market. Taking the Big 5 together, their market share is 5.06% in terms of client number or 14.1% in terms of client assets.

Currently, foreign auditors mainly provide audit services to B-share, H-Share firms and other firms issuing shares abroad. Besides traditional audits, they also provide many non-audit services such as consulting on taxation, management

and finance. In fact, audits only account for about 30% of the Big 5's total income, and more profit comes from non-audit services[9].

With the gradual opening of the domestic audit market, the A-share market of US$500 billion is very attractive to foreign auditors. The entry of foreign auditors, in particular the Big 5, can introduce advanced experience and expertise, but it also unavoidably imposes tremendous competitive pressure on domestic auditors. It no doubt will substantially impact the domestic auditing profession. In fact, to enhance the competitiveness of domestic auditors, the government encouraged those with permission to audit listed firms to merge with each other. After the mergers in 2000, the number of auditors with permission to audit listed firms shrank from 117 to 78.

With its recent entry into the WTO, China's future is closely tied to the global economy. The audit market will be fully open to foreign auditors in the near future. Domestic auditors will have to face great challenges from their western peers. A recent survey of managers' conception of audit quality by the journal "*Finance and Economics*" reveals that more confidence is put on the audit service provided by international auditors. At the end of 2000, the CSRC required the compulsory use of foreign auditors in addition to domestic auditors for firms in the financing industry. In late 2001, the CSRC further required hiring foreign auditors for "supplementary/dual audit" in A-share firms that intend to undertake an IPO or rights offering, though this regulation was subsequently suspended because of

[9] Data source: http://www.cpasz.org , Dec.15, 2001.

intense criticism, particularly from domestic auditors. The "dual audit" idea became a hot topic for both practitioners and academics. The quality of foreign auditors is widely discussed. Some express welcome attitudes to the introduction of international auditors and think of it as tremendously good news for the Chinese capital market, while some others hold doubts on the quality of international auditors because of the recent financial scandals in the U.S. Therefore, a comparison between domestic and foreign-invested auditors has important policy implications. It can help identify the quality gap between the two, and provide useful information for both regulators and domestic auditors.

□ CHAPTER 3

LITERATURE REVIEW

3.1 THE EARNINGS MANAGEMENT LITERATURE

One of the central issues in financial accounting research is the extent to which managers alter reported earnings to maximize majority shareholders' and /or managers' wealth. Academics have not achieved consensus on the definition of earnings management (see the three definitions reviewed by Beneish (2001)). Theoretically, earnings management is not necessarily a bad thing. It can be used by the management to signal their private information to public investors and thus improve earnings quality. The signaling role of earnings management is empirically supported by a number of studies (Holthausen and Leftwich, 1983; Subramanyam, 1996; Krishnan, 2003, etc.). Subramanyam (1996) demonstrates that discretionary accruals are value relevant, and Krishnan (2003) further shows that the market places a higher weight on discretionary accruals in firms audited by Big 6 auditors. In practice, existing accounting standards and principles also leave managers with some freedom in accounting choices and accounting estimates. As stated in Dechow and Skinner (2000, page. 247-48), "some earnings management is expected and should exist in capital markets. This is necessary because of the fundamental need for judgments and estimates to implement accruals accounting – the first-order effect of allowing these judgments and estimates is to produce an earnings number that provides a "better" measure of economic performance than cash flows".

However, earnings management can be used opportunistically and leads to the deterioration of reported earnings quality. The problem in practice is the difficulty in distinguishing the signaling from opportunistic earnings management.

Managers have three major motivations for earnings management: capital market motivations, contracting motivations and regulatory motivations (Healy and Wahlen, 1999). The capital-market-based incentive is created because of the persuasive use of accounting information by investors in valuing shares. Empirical tests of this motivation comprise the investigation of earnings management behavior surrounding management buyouts (MBO) (DeAngelo, 1988; Perry and Williams, 1994), surrounding fund-raising transactions such as initial public offers (IPO), seasoned equity offers (SEO) and stock-financed acquisitions (Teoh et al., 1998a; 1998b; Teoh et al., 1998; Erickson and Wang, 1999). Most of these studies support the opportunistic earnings management argument except DeAngelo (1988). There is also empirical evidence indicating that earnings are managed to meet analyst expectations, expectations of institutional shareholders, and management earnings forecasts (Payne et al, 1997; Burgstahler and Eames, 1998; Bushee, 1998; Kasznik, 1999).

Earnings can also be opportunistically managed for contracting purposes. Earnings figures and other accounting information are widely used in both "explicit" and "implicit" contracts to align the incentives of management and external stakeholders. The use of accounting data in contracts such as lending and

compensation contracts creates strong incentives for earnings management (Watts and Zimmerman, 1978). A large literature has been devoted to empirical tests of contract-induced earnings management. While little evidence of earnings management is found in firms close to their dividend covenants (Holthausen, 1981; Healy and Palepu, 1990; DeAngelo et al., 1994), some empirical studies present income-increasing patterns for avoiding technical default on lending covenants (Beneish and Press, 1993; DeFond and Jiambalvo, 1994; Sweeney, 1994). Some other studies empirically support the argument that managers "adjust" earnings to increase their current or future compensation, or to increase their job security (Healy, 1985; Dechow and Sloan, 1991; Gaver et al., 1995; Holthausen et al., 1995). The contract-based earnings management motivation is weak in the China context, because incentive-based compensation contracts are seldom used in Chinese listed firms, and managers do not face much pressure from debt covenant constraints.

Earnings management can also be induced by industry regulations and anti-trust regulations. A number of studies have examined the association between regulatory scrutiny and the likelihood of earnings management (Jones, 1991; Cahan, 1992; Key, 1997; Han and Wong, 1998). For example, Cahan (1992) documents that firms under anti-trust investigation report income-decreasing abnormal accruals in investigation years. Jones (1991) finds that firms in import-relief-seeking industries tend to defer income in the application year. However, the generalizability of these studies from certain sample firms or specific industries to a wider segment of the economy is doubtful (Healy and Wahlen, 1999). While the

capital-market-based and contract-based motivations dominate in the U.S. market, the regulation-based motivation is the most common in China. As discussed in the previous chapter, the current rights offering regulations and delisting regulation create strong earnings manipulation incentives for Chinese listed firms.

Reported earnings can be either increased or decreased through opportunistic earnings management. Much of the literature shows that income-decreasing earnings management is on a temporary basis, with the ultimate goal of increased future wealth. The accumulated evidence suggests that "income-increasing earnings management is more pervasive than income-decreasing earnings management" (paragraph 4, page 11, Beneish, 2001). Managers' income-increasing preference is in conflict with the interests of other stakeholders who prefer timely indication of potential problems. This also conflicts with external auditors' preference for income-decreasing choices out of self-protection.

In the 1970s and early 1980s, studies of earnings management mainly focused on the determinants and effects of firms' mandatory and voluntary accounting choices (see the review of these studies by Watts and Zimmerman (1986)). Since the mid-1980s, the focus of this stream of research has shifted to accruals. One common approach is to decompose total accruals into expected and unexpected portions. The expected portion results from changes in firms' economic environment and is not much up to the management's discretion. The unexpected portion is the outcome of discretionary manipulation by the management. The Jones

(1991) model is the most typical representative of this approach. With further improvements, there are several modified or sales/performance-matched versions of the Jones (1991) model (Dechow et al., 1995; Beneish, 1998; Kothari et al., 2002; etc.). Some studies evaluate and compare the test power of different specifications of the Jones model or the modified Jones model (Dechow et al., 1995; Guay et al., 1996; Bartov et al., 2000; etc.). Generally, the modified version is better than the original version and the cross-sectional version is better than the time-series version. However, some academics criticize the capability of these discretionary-accrual models to decompose aggregate accruals into discretionary and nondiscretionary components and thereby their capability to detect earnings management (McNichols and Wilson, 1988; Holthausen et al., 1995; McNichols, 2000).

An alternative approach to test for earnings management in the literature is to model a specific accrual. Examples are provision for bad debts (McNicholes and Wilson, 1998), the claim loss reserve in the insurance industry (Beaver and McNichols, 1998) and deferred tax valuation allowances (Miller and Skinner, 1998; Visvanathan 1998). Although this approach may be more accurate in distinguishing discretionary from non-discretionary accruals, its findings are difficult to generalize (McNicholes, 2000). Some others simply examine the distribution of reported earnings to detect potential earnings management. For example, Burgsthler and Dichev (1997) document a higher-than- expected frequency of firms with slightly positive earnings, but a lower-than-expected frequency of firms with slightly negative earnings. They explain their findings as evidence that firms manage

earnings to avoid losses, or earnings declines, or failing to beat market expectations. Studies by Burgstahler and Eames (1997) and Degeorge et al. (1997) also report similar evidence. This examination approach is pretty clear, simple and informative, but it cannot tell much about the form, timing and magnitude of earnings management in firms.

Besides focusing on the use of accruals to manage earnings, some researchers also pay attention to earnings management through real transactions. The studied transactions include R&D spending (Dechow and Sloan, 1991), timing of the profit on investment securities (Moyer, 1990; Collin et al., 1995; etc.), fiscal transfers (Chen et al., 2003), and related-party transactions (Chang, 2002; Jian and Wong, 2003). Compared to the studies of accrual choices, studies of earnings management through real transactions are rather limited.

In view of the earnings management motivations induced by rights offering regulations in China, studies of earnings management in seasoned equity offering (SEO) firms can provide useful references. Empirical studies have documented the unsatisfactory performance of firms conducting seasoned equity offerings in the U.S. market (Loughran and Ritter, 1995; 1997; Spiess and Affleck-Graves, 1995), in the U.K. (Levis, 1995) and in Japan (Cai, 1996; Kang et al., 1996). For example, Loughran and Ritter (1997) find that the operating performance of issue firms peaks at approximately the time of the offering. Teoh et al. (1998) and Rangan (1998) further investigate whether seasoned equity issuers increase earnings by reporting

aggressive discretionary accruals, and whether such earnings management around the time of the issue can help explain the poor post-issue performance. They find that discretionary current accruals grow before the issue, peak in the year of issue and decline thereafter. There is also a negative association between pre-issue discretionary accruals and post-issue earnings and stock returns. Based on Rangan (1998), a one-standard-deviation increase in discretionary accruals is associated with an earnings decline of about two to three cents per dollar of assets and a decline in market-adjusted stock returns of about 10%. Both studies indicate that investors naively extrapolate pre-issue earnings without fully adjusting for the potential manipulation of reported earnings. Shivakumar (2000) reexamined earnings management behavior in SEO firms. Similar to the above two studies, he documents evidence of earnings management around the time of issue. However, in contrast to the above studies, he shows that investors infer earnings management and rationally undo its effects at equity offering announcements, as evidenced by a negative relation between pre-announcement abnormal accruals and the stock price reaction to the offering announcement.

3.2 LITERATURE ON AUDIT QUALITY AND ITS RELATION WITH EARNINGS MANAGEMENT

As an external monitoring mechanism, auditing reduces information asymmetries between inside managers and outside stakeholders by lending credibility to financial statements. The effectiveness of auditing, i.e., its ability to

constrain earnings management, varies with the quality of the external auditors. Demand for quality-differentiated audits has been explained in terms of agency/contracting costs (Jensen and Meckling, 1976; Watts and Zimmerman, 1986). As agency costs increase, there is an increasing demand for high-quality audits, either voluntarily undertaken by managers as a bonding mechanism or externally imposed by outside stakeholders as a monitoring mechanism (Watts and Zimmerman, 1986). The hypothesized positive association between agency cost/conflicts and audit quality is empirically supported (DeFond, 1992; Francis and Wilson, 1988; Fan and Wong, 2002; etc.). For example, Fan and Wong (2002) in their recent paper examine the corporate governance role of external auditors in East Asian countries. Their evidence suggests that external auditors (Big 5 auditors) are employed as monitors and as bonding mechanisms to alleviate agency conflicts due to the concentration of corporate ownership in East Asian countries.

Audit quality is defined as the joint probability of detecting and reporting financial statement errors (Watts and Zimmerman, 1980; DeAngelo, 1981). Higher audit quality indicates auditor's superior capacity in detecting the misstatements, and higher chance for the auditor to report detected errors and irregularities. However, it is very expensive to observe the audit quality itself because of the difficulties in assessing auditors' independence, competence and their applied audit skills and procedures. Auditor size is widely used to proxy for audit quality in the literature. DeAngelo (1981) demonstrates analytically that ceteris paribus, the larger the size of clients audited by an auditor, the more aggregate client-specific

quasi-rents are at stake if a lack of independence or a low-quality audit becomes known; therefore, the less likely for the auditor to behave opportunistically, and thus the higher the expected audit quality. Similarly, Watts and Zimmerman (1981) argue that larger audit firms have greater incentives to detect and reveal management misreporting because partners can be more effectively monitored in larger audit firms. Dopuch and Simunic (1982) also argue that audit quality is a function of the number and extent of audit procedures performed by the auditor and that large auditors have more resources with which to conduct tests.

A common practice in the literature is to define the Big 6 as large auditors and non-Big 6 auditors as small auditors. Simon and Francis (1988) estimate a Big 8 premium of approximately 18% out of a number of studies (Francis, 1984; Barber et al., 1987; Francis and Simon, 1987, etc.). Craswell et al. (1995) attribute the observed premium to both general brand name reputations and industry specialization. In their studies, on average, industry specialist Big 8 auditors earn a 34% premium over non-specialist Big 8 auditors, and the Big 8 brand name premium over non-Big 8 auditors averages around 30%. The positive association between auditor size and auditor quality is also empirically supported by a large amount of literature. Overall, Big 6 auditors are associated with larger forecast errors between management earnings forecasts and the audited, reported earnings (Davidson and Neu, 1993), higher incidence of auditor-client disagreement over income-increasing accounting methods (DeFond and Jiambalvo, 1993), lower incidence of litigation (St. Pierre and Anderson, 1984; Palmrose, 1987), and greater

market impact as measured by higher earnings response coefficients (Teoh and Wong, 1993). Similarly, the findings in Krishnan (2003) indicate that the linkage between share returns and discretionary accruals is stronger for Big 6 clients than for non-Big 6 clients. Discretionary accruals of Big 6 clients have a greater association with future profitability than those of non-Big 6 clients. Francis and Krishnan (1999) explain the higher quality of Big 6 auditors by asserting that only Big 6 auditors show evidence of reporting conservatism.

In contrast, some others, especially regulators and small auditors, argue that audit quality is independent of auditor size because auditors of different sizes follow the same set of independent auditing standards when conducting audits and making judgments.

The empirical association between auditing and earnings management has been widely examined from various aspects by a large number of studies. These studies cover the association between earnings management and several factors: auditors' judgments of material misstatement (Hirst, 1994); auditor litigation (Lys and Watts, 1994; Heninger, 2001); auditors' industry expertise (Bedard and Biggs, 1991; Johnson, et al., 1991; Wright and Wright, 1997; Krishnan, 2003); auditor change (DeFond and Subramanyam, 1998); auditor tenure / rotation (Brody and Moscove, 1998; Ghosh and Moon, 2003; etc.); provision of non-audit services (Firth, 1997; Chung and Kallapur, 2001; Dee, et al., 2001); issue of audit opinions (Bartov

et al., 2000; Butler, et al., 2003); properties of audit committees (Klein, 2002; Williams, 2003; etc.); and others.

Among all these studies, Becker et al. (1998) directly examine the effect of auditor quality on earnings management. Following the literature, they proxy auditor quality as a dichotomous variable and assume that the Big 6 are of higher quality than non-Big 6 auditors. They use discretionary accruals estimated from a cross-sectional Jones model to measure earnings management. They find that on average the clients of non-Big 6 auditors report 1.5-2.1% of total assets higher discretionary accruals than clients of Big 6 auditors. Their results both support the conclusion that Big 6 auditors are of higher quality than non-Big 6 auditors, and indicate that higher audit quality is associated with less "accounting flexibility". In their study, mangers' auditor choice is assumed to be exogenously given. Francis et al. (1999) also document that Big 6 clients report lower discretionary accruals than non-Big 6 clients, though the former reports higher total accruals than the latter. Their results support their argument that the likelihood of using a Big 6 auditor is increasing in firms' endogenous propensity for accruals. Their finding is also consistent with the idea that Big 6 auditors constrain aggressive and potentially opportunistic reporting of accruals.

Since mangers self-select both external auditors and discretionary accruals, endogeneity is a big concern when doing research on the relations between audit quality and earnings management. Using the two stage "treatment effects" model to

effectively controlling for potential self-selection bias, Kim et al. (2003) extend the study of Becker et al. (1998) by demonstrating that only when managers have incentives to prefer income-increasing accrual choices are Big 6 auditors more effective than non-Big 6 auditors in deterring opportunistic earnings management. When both managers and auditors have incentives to prefer income-decreasing accrual choices, Big 6 auditors are not as effective as non-Big 6 auditors. They call auditors' preference for income-decreasing accounting choices "auditor conservatism". Their two stage "treatment effects" model involves estimating the inverse Mills ratio from the probit auditor choice model in the first stage and including it in the accrual choice model in the second stage.

The association between audit quality and earnings management can also be tested by examining auditors' attitudes towards their important clients. The economic theory of auditor independence (Watts and Zimmerman, 1981; DeAngelo, 1981) suggests that auditors' incentives to compromise their independence are positively related to client importance. This is termed "economic dependence" by Reynolds and Francis (2001). On the other hand, larger clients also pose higher potential audit risk in terms of greater loss in reputation and greater litigation costs. This is termed "reputation protection" in the literature (Reynolds and Francis, 2001). The reputation protection incentive will motivate self-interested auditors to behave independently.

Several studies have empirically examined the impact of client size/importance on audit independence. Watts (1994) documents a positive relation

between client size and lawsuits against auditors. They find that a lawsuit is more likely if the client represents a relatively larger proportion of the auditor's revenues. Measuring client importance as the ratio of a particular client's sales to the sales of all clients for a given auditor, Reynolds and Francis (2001) report no evidence of economic dependence, but find that Big 5 auditors report more conservatively for important clients, suggesting that reputation protection dominates auditor behavior. With the same proxy for client importance, Heninger (2001) finds that client importance is not significantly associated with the probability that the auditor is sued. Similarly, constructing client importance measures with client fees and non-audit fees, Chung and Kallapur (2003) find no evidence of an association between abnormal accruals and client importance.

The current study of the association between audit quality and earnings management in China can enrich the existing literature. The Chinese audit market provides a useful setting to investigate auditor behavior in an economic environment substantially different from the U.S. The study of audit quality in an audit market not dominated by Big 5 auditors is useful to test the auditor size argument. Without the Big 5 and their huge brand names, the comparison among other auditors of different sizes can further clarify the association between auditor size and auditor quality. The study of the government's intervening role in auditor behavior is interesting since it presents a complicated situation in which auditors not only deal with managers and investors, but also deal with the central government and the regional governments. The study of the impact of government behavior on audit

quality is also important because of its generalizability to many developing markets like China. Moreover, auditors' behavior in a competitive market with a lenient litigation environment can help identify auditors' struggle between their dual roles as both the "safeguard of the public interest" and self-interested economic entities. The results obtained in the current study can be extended to other emerging markets, and can also serve as an "out-of-sample" analysis of the accumulated evidence obtained in other developed markets.

CHAPTER 4

AUDIT QUALITY AND EARNINGS MANAGEMENT

This chapter empirically examines the corporate governance role of external auditors in China by investigating auditors' effectiveness in deterring earnings management. Since audit quality is multidimensional and inherently unobservable, I use auditor size, auditor location, auditors' attitudes towards important clients, and auditors' affiliation with the Big 5 to proxy for audit quality. I adopt two earnings management measures appropriate for the China context. The first is discretionary accruals estimated from the performance-matched modified Jones model constructed by Kothari et al. (2003). A second earnings management measure is non-core profits adjusted by the industry median, i.e., abnormal non-core earnings. Figure 1 presents the research framework for the current study.

Four hypotheses are developed to test the association between audit quality and earnings management. First, following the literature, I examine whether large auditors, defined as the top 10 domestic auditors in terms of client assets, are more effective in limiting earnings management than small auditors (non-top 10 domestic auditors). Secondly, auditor location is used as a unique proxy for audit quality in China. In view of the rampant protectionism from regional governments, I predict that local auditors give their clients more flexibility in aggressive financial reporting

than non-local auditors. Thirdly, I argue that economic dependence on important clients dominates the reputation protection incentive in the highly competitive but low litigation risk Chinese audit market. The domestic auditor's quality is then investigated by examining auditors' attitudes towards their important clients. Finally, I make a comparison of the ability to curb earnings management between the top 10 domestic auditors and the Big 5 to identify their quality difference.

The structure of this chapter is as follows. Section 4.1 develops the testable hypotheses. The sample, variables and models are described in section 4.2. Empirical results are discussed in detail in section 4.3. Finally, section 4.4 gives a summary of the chapter.

4.1 HYPOTHESIS DEVELOPMENT

My first hypothesis is about the effect of auditor size on earnings management. As a valuable mechanism used to reduce agency costs, the monitoring role of auditing varies with the quality of auditors. Auditor size is widely used to proxy for audit quality in the literature. DeAngelo (1981) demonstrates analytically that ceteris paribus, the larger the client size audited by an auditor, the more aggregate client-specific quasi-rents are at stake if a lack of independence or a low-quality audit becomes known; therefore, the less likely the auditor will behave opportunistically and thus the higher the expected audit quality. Watts and Zimmerman (1981) and Dopuch and Simunic (1982) also support the validity of

auditor size as a proxy for audit quality. In the literature, a common practice is to take the Big 6 as large auditors because of their huge international client bases and great world-wide reputations. Using the Big 6 as a proxy for high quality auditors, a number of studies report a negative association between audit quality and earnings management as measured by discretionary accruals in the U.S. market (Becker et al., 1998; Francis et al., 1999; Kim et al., 2003).

Currently, the Chinese audit market is not fully open to foreign auditors. The major audit suppliers in the market are domestic auditors. Although the size of domestic auditors is not comparable to that of the Big 6 with international client bases, the size difference among domestic auditors is still noticeable. For example, in 2000, the largest domestic auditor "Dahua" had 46 listed clients with total client assets beyond RMB¥2,400 billion, accounting for 11.09% of the whole market. By contrast, the smallest auditor "Shandong Tianhengxin" had only 1 listed client and its audited assets were only 1‰ of those of "Dahua". The substantial difference in the client number and in the client assets can create substantial differences in auditor behavior. The larger the auditor, the more resources that the auditor can employ such as talent, expertise, experience, etc. in conducting audits, and thus the more capable the auditor is of detecting material misstatements. Following the argument of DeAngelo (1981), the larger the client size of an auditor, the less likely the auditor is to compromise its independence, since the auditor will incur a greater loss in case of an audit failure. Large auditors are then expected to have a higher likelihood of reporting detected misstatements than small auditors. Higher

capability of detecting material misstatements and higher likelihood of reporting detected misstatements lead to higher audit quality.

Therefore, I argue that auditor size should be a valid proxy for auditor quality in China, and I expect that large auditors can more effectively curb managers' earnings management than small auditors. I define the top 10 domestic auditors in terms of client assets as large auditors and the non-top 10 domestic auditors as small auditors. I do not include the joint ventures of the Big 5 because my focus here is on the quality of domestic auditors. The predicted negative relation between auditor size and earnings management leads to the first hypothesis (stated in the alternative form):

H1: (The Auditor Size Argument) Ceteris paribus, clients audited by the top 10 domestic auditors report lower discretionary accruals / abnormal non-core earnings than clients audited by other domestic auditors.

My second hypothesis examines the association between auditor location and earnings management. If the auditor and its client locate in the same administrative province or metropolitan city, I define the auditor as a local auditor. If the auditor and its client are from different administrative regions, then the auditor is coded as a non-local auditor. The use of auditor location to proxy for audit quality is special to China. Generally speaking, auditing conducted by a local auditor can produce economic efficiency because of the savings in travel costs and a

better knowledge of and more convenient communications with clients within the same area. However, in China, the significance of auditor location goes far beyond superficial geographic distance.

In China, the audit quality difference between local and non-local auditors stems from protectionism by regional governments. Regional governments are substantial shareholders in many listed firms, since most of these firms were transformed from traditional SOEs. The close ties between regional governments and firms established under the old planned economy still linger. Listed firms are usually the largest companies in their locales and are very influential in the regional economy. Their financial and operational performance can directly affect the regional governor's political future. Obtaining the highly-sought quota to get listed or to raise additional capital by rights offering is often viewed as a sign of political clout and superb performance for both regional governors and SOE managers. These economic and political considerations create strong incentives for regional governments to "protect" the listed firms within their jurisdictions. Such protectionism can explain why regional governments collude with managers to dance the "Chinese Tango" (Chen et al., 2003). That is, regional governments assist listed firms in earnings management in order to meet the profitability requirement set by the central government. The traditional two-person earnings management game (firm vs. government or manager vs. shareholders) becomes instead a three-person game in China: managers and regional governments vs. the central government.

In addition to providing direct help through taxation privileges and fiscal transfers, regional governments can also indirectly assist listed firms by "asking for cooperation" from auditors in the locale, since the first obstacle to earnings management is external auditors. Local auditors are operated under the administrative power of local governments. If they do not "cooperate", they could face difficulties in the future. High pressure from regional governments can make local auditors concede and keep "one eye open, one eye shut" regarding aggressive earnings management. Moreover, most local auditors were originally affiliated with the local government. Historically close ties facilitate "cooperation" between regional governments and auditors within their jurisdictions, particularly in the relationship-based Chinese culture.

In view of the rampant protectionism in China, I argue that local auditors are less independent than non-local auditors due to the pressure from regional governments, and thus are less effective than non-local auditors in limiting managers' aggressive earnings management. This leads to the second hypothesis (stated in the alternative form):

H2: (The Auditor Location Argument) Ceteris paribus, clients audited by local auditors report higher discretionary accruals / abnormal non-core earnings than clients audited by non-local auditors.

Audit quality is also measured by auditors' attitudes towards important clients in the current study. My third hypothesis tests the association between client importance and earnings management. Following Reynolds and Francis (2001), my client importance measure for a given auditor is calculated as the ratio of a particular client's sales to the sales of all clients.

In theory, in compliance with the same auditing standards and following the same auditing procedures, auditors should treat each of their clients equally. But auditors are also self-interested economic agents. They are always seeking a balance between benefits and costs to maximize their own interests. Important clients produce dual effects on auditors. As argued in Reynolds and Francis (2001), faced with the threat of the loss of clients, auditors have incentives to compromise their independence to report favorably for their larger clients. This incentive to be less independent vis-à-vis larger clients is called "economic dependence". On the other hand, larger clients also subject auditors to higher potential audit risk. In case of an audit failure, an auditor is likely to suffer a greater loss in reputation and to bear higher litigation costs (Lys and Watts, 1994; Bonner et al., 1998) for larger clients than would be the case for smaller clients. The collapse of Arther Anderson after the Enron debacle in the U.S. and the collapse of "Zhongtianqin" after the "Yinguangxia" event are prominent examples. As a natural response, self-interested auditors have incentive to be more conservative or more independent in auditing larger clients. Reynolds and Francis (2001) call this incentive "reputation protection". Studies by Chung and Kallapur (2003) report no significant statistical

association between earnings management and their proxies for client importance based on audit fees and non-audit fee information. Reynolds and Francis (2001) find that the Big 5 are more conservative when dealing with larger clients. Both of their studies suggest that reputation protection dominates auditor behavior in the U.S.

In the China context, I argue that economic dependence likely dominates reputation protection. First, it is not easy for an auditor to win or to retain a client in the highly competitive Chinese audit market. As mentioned before, even the top 10 domestic auditors taken together only account for about 30% of the market. The examination of the auditor concentration by Xia and Lin (2003) also suggest that the Chinese audit market is highly competitive. Larger clients generate higher income for their auditors and directly affect the profitability of their auditors. If the auditor wants to be more independent, it has to face a greater risk of losing clients. The dilemma has been described in the study of DeFond et al. (2000). Their study documents that improved auditor independence in China is followed by a decline in audit market share among large auditors. Second, due to the insufficient protections for minority shareholders in current China, the litigation risk for domestic auditors is much lower than that for their foreign peers. In the examined period, once misconduct is exposed, auditors only pay trivial fines or receive minor penalties from the government. These penalties for auditors mainly stay on the level of administrative liabilities and rarely go to the level of criminal or civil liabilities.

The highly competitive market pressures auditors to compromise independence to retain important clients; the lenient litigation environment encourages such behavior. Therefore, I predict that Chinese auditors will give more accounting flexibilities to their important clients. That is the third hypothesis in the study (stated in the alternative form):

H3: (The Client Importance Argument) Ceteris paribus, an auditor's important clients report higher discretionary accruals / abnormal non-core earnings than its unimportant clients.

My final hypothesis compares the quality of domestic auditors with auditors affiliated with the Big 5. This comparison is important since China's recent entry into WTO means that domestic auditors will have to face great challenges from the Big 5 and other foreign auditors in the near future. This comparison is also meaningful in view of the most recent controversial regulation of "dual /supplementary audit". The "dual/supplementary audit" regulation was announced by the CSRC in 2001, requiring the use of foreign auditors for supplementary audits in IPO firms and intended rights offering firms. Before that, the CSRC already required the compulsory use of foreign auditors in addition to domestic auditors for firms in the financing industry. The announcement of this regulation brought about strong reactions from society, with the audit quality comparison of domestic and foreign auditors one of the hottest topics.

As discussed before, the current regulation does not allow the Big 5 to directly set up subsidiaries in China. They have to enter the Chinese market through some other ways, such as establishing representative offices or joint ventures, or recruiting members and associates. The representative offices can only provide consulting services, not audits, and the links among the Big 5 and their members or associates are quite loose. However, in the joint ventures, the Big 5 can actively participate in operations and management. In fact, as shown in Appendix B, each of the Big 5 has a joint venture in China, but only PWC has one associate and one member. Therefore, in the current study, when talking about the Big 5 or the Big 5-affiliated auditors in China, I always mean their joint ventures in China.

The Big 5 are much larger than domestic auditors due to their large client number and client size all over the world. Though the market share of the Big 5 in China is not high (4.72% in terms of client number and 13.75% in terms of client assets, as presented in Table 4-1), the Big 5's global-based profit-sharing package makes their world-wide subsidiaries or entities closely tied together. One audit failure in a specific market can lead to a potential disaster for other entities all over the world. For example, the Enron debacle in the U.S. led to the global collapse of Arther Anderson. Compared to domestic auditors, the Big 5 in China have stronger resources in talent, expertise and experience since their operations resemble the Big 5 elsewhere, they thus should be more capable of detecting opportunistic earnings management. They also have greater reputations to protect because their global brand names are their huge intangible assets. In case of an audit failure, they would

face much greater loss than domestic auditors. Therefore, the Big 5 have more incentive to be independent in reporting detected misstatements. The Big 5 should be of higher quality than domestic auditors. Moreover, the Big 5 don't have many problems such as close ties with regional governments inherited from the old planned economy as domestic auditors do. They are less influenced by the behavior of regional governments.

However, some others argue that as self-interested economic agents, the Big 5 may adjust their behaviors to adapt to the environment in China. Faced with the poor corporate governance to protect minority shareholders and strong earnings management motivations in Chinese listed firms, if the Big 5 want to maintain high-quality audits, they may either lose their clients or incur additional costs (Liu and Xu, 2002). In fact, some statistics show that during the period 1997-1999, the Big 5 were less likely to issue modified opinions than domestic auditors (see the footnote 6).

To provide some empirical evidence on the audit quality of the Big 5 in China, I develop the following hypothesis (stated in the alternative form):

H4: (The Big 5 Affiliation Argument) Ceteris paribus, clients audited by the Big 5 report lower discretionary accruals/ abnormal non-core earnings than clients audited by the top 10 domestic auditors.

4.2 SAMPLE, VARIABLES AND MODELS

4.2.1 SAMPLE DESCRIPTION

The sample period in this chapter is from 1996 to 2000. The auditor information is manually collected from "*Who Audits China*" published by the CSRC. Financial information is obtained from the Chinese Stock Market & Accounting Research Database (CSMAR) compiled by the Hong Kong Polytechnic University and the Shenzhen GTA Information Technology Limited Co. Firms without enough information to calculate accruals or non-core earnings are left out. The final sample includes 3,275 firm-year observations. Among them, 154 are audited by the Big 5 in China, 1,102 are audited by the top 10 domestic auditors, and the remaining 2,019 are audited by the non-top 10 domestic auditors. Panel A in Table 4-1 describes the sample selection steps. The tests of the first three hypotheses are based on the 3,121 firm-year observations of domestic auditors, excluding the Big 5 observations. The sample used to test the fourth hypothesis includes 1,102 observations of the top 10 domestic auditors and 154 observations of the Big 5, a total of 1,256 firm-year observations.

Panel B in Table 4-1 presents the market shares of the top 10 auditors, the Big 5 auditors and the local auditors in the sample period. In section A, the calculation of market share is based on the client number. On average, the Big 5 can only share less than 5% in the market. Excluding the Big 5, even the top 10 auditors taken together can only seize around 1/3 of the market. The market share of

the top 10 domestic auditors is on average 35.42% over the sample period. It was the highest in 1996 (51.57%), and then declined slowly in the following three years (39.21% in 1997, 32.06% in 1998, 30.92% in 1999), and began to revert a little in 2000 (34.71%). The explanation advanced in DeFond et al. (2000) can be applied to interpret the observed market share changes in the sample period. They argue in their study that the improved auditor independence due to the promulgation of independent auditor standards in 1995 had an adverse impact on market concentration by "forcing" clients to avoid large auditors. By the same token, the continuous reforms in the audit profession within the sample period help enhance audit quality in the market, but further motivate clients to look for less independent small auditors. The relatively more independent large auditors may lose their market share as a result of improved auditor independence. Another possible explanation is that the detachment program started in 1997 striped the auditors of the shelter from their sponsors, and thus makes them lose lots of clients originally obtained through the relationship with their sponsors. The slight rise of the top 10 auditors' market share in 2000 can be ascribed to the mergers among large auditors encouraged by the government in that year. Meanwhile, section A also shows that nearly 80% clients are audited by auditors from the same regions, though the local auditors' market share gradually declines over the sample years.

In section B, auditors' market share is calculated based on their client assets. In the sample period, the top 10 auditors taken together have an average market share of 39.20%, and the Big 5's market share is 13.75%. The mean market share

for the local auditors is 73.21%. The market share distribution over the sample years in section B tells a very similar story as that in section A.

4.2.2 EARNINGS MANAGEMENT MEASURES AND AUDIT QUALITY MEASURES

Discretionary Accruals (DAR)

The first measure for earnings management in the study is discretionary accruals. I estimate discretionary accruals from a cross-sectional performance matched modified Jones model constructed by Kothari et al (2003). In the first step, I compute the total accruals. In China, the Cash Flow Statement has been required since 1998. Thus, starting from 1998, the cash flow approach is used to calculate total accruals. Total accruals (ACCR) is defined as the difference between operating income (EARN) and operating cash flows (CFO). That is, for firm j in year t,

$$ACCR_{jt} = EARN_{jt} - CFO_{jt}.$$

Before 1998 when the Cash Flow Statement was not available, I compute total accruals using the balance sheet approach. That is, for firm j in year t,

$$ACCR_{jt} = (\Delta CA_{jt} - \Delta CASH_{jt}) - (\Delta CL_{jt} - \Delta STD_{jt} - \Delta TAX_{jt}) - DEP_{jt}$$

where ΔCA = change in current assets between the current and last year;

$\Delta CASH$ = change in monetary funds between the current and last year;

ΔCL = change in current liabilities between the current and last year;

ΔSTD = change in 1-year maturity debts;

ΔTAX = change in taxes payable between the current and last year;

DEP = depreciation expenses in the current year.

Operating cash flow (CFO) is then the difference between the operating income (EARN) and the total accruals (ACCR). In the above calculations, operating income (EARN), total accruals (ACCR) and operating cash flows (CFO) are all deflated by the year-beginning total assets.

In the second step, the performance-matched modified Jones model (Kothari et al., 2003) is run cross-sectionally based on the industry-year combinations to estimate normal /non-discretionary (NAR) and abnormal /discretionary accruals (DAR). I make the industry classification according to the 13-industry codes promulgated by the CSRC in 2001.

$$ACCR_{jt} / TA_{jt-1} = \mathbf{a}_0 + a_1 (1/ TA_{jt-1}) + a_2 (\Delta SALE_{jt} - \Delta AR_{jt} / TA_{jt-1}) + a_3 (PPE_{jt} / TA_{jt-1}) + a_4 \mathbf{ROA}_{jt} + e_{jt}$$

where for firm j in year t, ΔSALE is the change in net sales, ΔAR is the change in accounts receivables, and PPE is the gross properties, plants and equipments, and ROA is the return on assets. TA represents total assets. In China, there is no explicit disclosure of PPE in the reported financial statements, and the gross value of fixed assets is used instead. Compared to traditional modified Jones models, the above performance-matched version exhibits two distinctions: one is the introduction of the intercept $\mathbf{a}_0$, and the other is the inclusion of the performance variable $\mathbf{ROA}_{jt}$. The predicted values of the above model are non-discretionary accruals (NAR), and the unexplained residuals are the first measure of earnings management in the study, discretionary accruals (DAR).

The use of discretionary accruals to measure earnings management is widespread in the literature. Unfortunately, as Fields et al. (2001) note, accurate estimation of discretionary accruals does not appear to be accomplished using existing models. Some studies examine the specification and power of the commonly used Jones model and the modified Jones model. They find that the modified Jones model is better than the Jones model, and the cross-sectional version is better than the time-series version (Dechow et al. 1995; Bartov et al. 2000; etc.). Kothari et al. (2003) further state that the existing discretionary model would be better improved if matched on performance (ROA) and if introducing a constant into the model. Kothari et al. (2003) demonstrate in their study that their performance-matched discretionary accrual model exhibits a far smaller degree of mis-specification than the traditional Jones and the modified Jones models.

Abnormal non-core earnings (ANCE)

A second measure for earnings management in the study is the abnormal non-core earnings (ANCE). The use of discretionary accruals can only capture the earnings management through operating items, which is not enough in the China context. A significant portion of real-transaction-based earnings management is reflected in the non-core business section in the financial statement, such as related-party assets sales and fiscal transfers from regional governments. As stated by Chen and Yuan (2001), non-core business is a convenient means for Chinese listed firms to manipulate earnings.

Following their study, non-core earnings are also used to measure earnings management. The core earnings (CE) are defined as sales minus the costs of goods sold, operating expenses, administrative expenses and financial charges. The non-core earnings (NCE) are then the difference between the pre-tax earnings (EBT) and core earnings (CE), including earnings from non-major business and earnings from extraordinary transactions. Thus, the non-core earnings in China comprise items reported both above and below the line in a typical U.S. financial statement. If expressed as formulas, the calculation of core earnings (CE) and non-core earnings (NCE) in firm j in year t is,

$$CE_{jt} = (SALE_{jt} - COST_{jt} - EXP_{jt})/ TA_{jt-1}$$

$$NCE_{jt} = (EBT_{jt} - CE_{jt})/ TA_{jt-1}$$

where for firm j in year t,

CE = core earnings, earnings from core business;

SALE = net sales;

COST = cost of goods sold;

EXP = expenses in the income statement, including selling expenses, financial expenses and administrative expenses;

NCE = non-core earnings, earnings from non-core business;

EBT = earnings before income taxes.

Since not all non-core business transactions are opportunistic in nature, one deficiency in Chen and Yuan (2001) is that they do not distinguish between normal and abnormal non-core earnings. Just like the difficulties in disentangling

discretionary from non-discretionary accruals, it is rather hard to discriminate abnormal from normal non-core business transactions. In this study, I adopt a simple industry adjustment approach. The industry average is taken as the benchmark, and the industry median non-core earnings are assumed to be the normal. Abnormal non-core earnings (ANCE) are defined as the difference between a firm's NCE and the median NCE of the industry to which the firm belongs. That is, for firm j in year t, the abnormal non-core earnings are,

$$ANCE_{jt} = NCE_{jt} - \text{Median}\ (\text{NCE}_{it})$$

where i stands for the industry to which firm j belongs. I make the industry classification based on the 13-industry codes promulgated by the CSRC in 2001. The industry-median-adjusted approach may not be sufficient but it can to some extent strengthen the power of ANCE as a measure of earnings management in China.

Auditor Size (TOP10)

Auditor size is the first proxy for audit quality in the current study. A dummy variable TOP10 is constructed to indicate auditor size (excluding the Big 5). It equals 1 for an auditor with its client assets among the top 10 in a certain sample year, and 0 otherwise.

Auditor Location (LOCAL)

Auditor location is a second proxy for audit quality in the study. If a client and its auditor locate within the same administrative region (province or

metropolitan city), the auditor is a local auditor for the client. If a client and auditor come from different administrative regions, the auditor is a non-local auditor for the client. A dummy LOCAL equals 1 for a local auditor and 0 for a non-local auditor.

Affiliation with Big 5 (BIG5)

I define the joint ventures of the Big 5 as auditors affiliated the Big 5. A dummy BIG5 equals 1 for each of the Big 5's joint ventures in China, and 0 otherwise.

Client Importance (CLTIMP)

Auditors' attitudes towards important clients are also used to proxy for audit quality in the study. Client importance (CLTIMP) is measured as the ratio of a particular client's sales to the sales of all clients for a given auditor [10]. Mathematically, the importance of client j to its auditor i in year t is computed as,

$$CLTIMP_{jt} = SALE_{jt} / \sum_{i} SALE_{jt}.$$

Some other studies construct the client importance proxy using audit fee and non-audit fee information (Chung and Kallapur, 2003). The use of fee information can produce a more accurate measure since it directly captures auditors' income associated with each specific client. Chinese listed firms have been required to disclose audit fee since 2001. No audit fee information is available in the current sample period.

[10] A positive association between audit fee and client sales is assumed.

A dummy RINF equals 1 if a firm's client importance measure CLTIMP is above the sample median in a certain sample year (important clients), and 0 otherwise (unimportant clients).

Most control factors in the study follow prior work. Table 4-2 covers the definitions and measures of variables in the chapter. For detailed variable information, please refer to Table 4-2. The correlation among earnings management variables, audit quality proxies and the control variables is reported in Table 4-3.

4.2.3 MAJOR EMPIRICAL MODELS

Test of H1: Auditor Size and Earnings Management

Managers not only make the earnings management choice but also have discretion in auditor choice. This leads to a potential self-selection bias in the test for the association between audit quality and earnings management. To address this endogeneity issue, I follow the methodology in Kim et al. (2003) and adopt a two-stage "treatment effects" model (Maddala, 1983; Greene, 1997; etc.).

In the first stage, a probit auditor choice model is estimated. The dependent variable Pr (TOP10) is the probability that the manager choose a top 10 auditor.

$$Pr\,(TOP10)_{jt} = \alpha + \gamma_0 * CYCLE_{jt} + \gamma_1 * CAPINT_{jt} + \gamma_2 * |NCE|_{jt} + \gamma_3 * SIZE_{jt} + \gamma_4 * LEV_{jt} + \gamma_5 * M/B_{jt} + \gamma_6 * SHRINCR_{jt} + \gamma_7 * LOSS_{jt} + \varepsilon_{jt} \quad (1)$$

where, for firm j in year t:

CYCLE	=	operating cycle in months (days' sales in inventory and receivables, divided by 30);
CAPINT	=	capital intensity, measured by gross fixed assets scaled by net sales;
| NCE |	=	the absolute value of non-core earnings deflated by year-beginning total assets;
SIZE	=	firm size measured as the natural log of total assets;
LEV	=	financial leverage measured as total debts to total assets;
M/B	=	market-to-book ratio, measured as total market value of equity divided by total assets. It is used to proxy for growth prospects;
SHRINCR	=	a dummy for share-increasing transactions, equal to 1 if the number of shares outstanding increases by more than 10% during the current year, and 0 otherwise;
LOSS	=	a dummy for financial distress, equal to 1 if the current year's net income is negative and the absolute value of changes in net income is greater than 10%, and 0 otherwise; and
ε	=	unspecified random factors.

Most of the selected independent variables in model (1) are the same as those in Francis et al. (1999), except for the introduction of the absolute value of non-core earnings (|NCE|). As argued in Francis et al. (1999), high-accrual firms have greater scope for aggressive and/or opportunistic earnings management and

therefore have an incentive to hire a higher quality auditor to provide assurance that their reported earnings are credible. They use capital intensity (CAPINT) and operating cycle (CYCLE) to measure a firm's propensity to generate accruals. As discussed before, Chinese listed firms frequently manage earnings through non-core business. Consistent with the argument of Francis et al. (1999), firms with higher non-core earnings should also have incentives to hire higher quality auditors to signal their credible reporting of earnings. Hence I add the absolute value of non-core earnings (|NCE|) into the model as a potential determinant of auditor choice. Based on previous findings, I predict positive signs for CAPINT, CYCLE, SIZE, SHRINCR and M/B, and negative signs for LOSS and LEV. In the current study, market-to-book ratio, instead of price-to-earnings ratio is used to proxy for growth opportunities so that firms suffering continual losses can also be included in the sample.

In the second stage, the two earnings management measures, discretionary accruals and abnormal non-core earnings, are regressed on auditor size and other firm-specific variables, with the inclusion of the inverse Mills ratio estimated from model (1):

$$DAR_{jt} = \alpha + \beta_0 TOP10_{jt} + \beta_1 SIZE_{jt} + \beta_2 LEV_{jt} + \beta_3 CFO_{jt} + \beta_4 SHRINCR_{jt} + \beta_5 NEWAUD_{jt} + \beta_6 OLDAUD_{jt} + \beta_7 LAMDA_{jt} + v_{jt} \quad (2)$$

$$ANCE_{jt} = \alpha + \beta_0 TOP10_{jt} + \beta_1 CTRHOLD_{jt} + \beta_2 GOVHOLD_{jt} + \beta_3 SIZE + \beta_4 LEV_{jt} + \beta_5 SHRINCR_{jt} + \beta_6 NEWAUD_{jt} + \beta_7 OLDAUD_{jt} + \beta_8 LAMDA_{jt} + v_{jt} \quad (3)$$

where, for firm j in year t (all other variables are the same as previously defined),

DAR	=	discretionary accruals estimated from the performance-matched modified Jones model;
ANCE	=	abnormal non-core earnings, measured as the industry median adjusted non-core earnings;
TOP10	=	a dummy equal to 1 for the top 10 auditors in terms of client assets, and 0 for other domestic auditors;
CTRHOLD	=	holding percentage by the largest shareholder;
GOVHOLD	=	holding percentage by the government;
CFO	=	operating cash flows scaled by total assets;
NEWAUD	=	a dummy equal to 1 if the sample year is the first year with a new auditor, and 0 otherwise;
OLDAUD	=	a dummy equal to 1 if the sample year is the last year with an incumbent auditor, and 0 otherwise;
LAMDA	=	inverse Mills ratios obtained from the estimation of the probit model (1); and
v	=	unspecified random factors.

Model (2) examines the relation between auditor size and discretionary accruals, and model (3) links abnormal non-core earnings to auditor size. The inclusion of LAMDA in both model (2) and (3) is to control for potential self-selection bias. Model (2) is similar to the accrual choice model in Kim et al. (2003) except for the omission of the share-decreasing dummy and last year's discretionary

accruals. In China's stock market, share-decreasing transactions rarely happen. Additionally, Becker et al. (1998) find that the inclusion or exclusion of variables indicating share decreases does not change their test results. The shares decrease factor is thus omitted. Past accrual choices may affect the extent of earnings management in the current period (Stein, 1989; DeFond and Park, 1997; etc.). However, the inclusion of last year's discretionary accruals may result in a sharp reduction in the sample size. Therefore, I do not control for last year's discretionary accruals in model (2)[11].

Following the discussion in previous chapters, earnings management in many Chinese listed firms is through transactions with their parent company and other group members, or through fiscal transfers from regional governments. Therefore, I predict that the higher the percentage a firm is held by the largest shareholder, the higher the likelihood that the firm will have abnormal related-party transactions. Similarly, I also predict that the higher the percentage of a firm held by the regional government, the higher the possibility that the firm will get "assistance" from the government. Consequently, I include the percentage held by the largest shareholder (CTRHOLD) and the shareholding by the government (GOVHOLD) as two control factors in model (3). Due to data limitations, it is hard to tell which sample firms are held by the central government and which sample firms are held by regional governments. The failure to disentangle regional government shareholding

[11] There is no qualitative change in test results with the inclusion of last years' discretionary accruals.

from central government shareholding may cause confusion and reduce the test power.

Some other control factors are included in the two models. Firm size (SIZE) and financial leverage (LEV) are controlled based on previous studies (DeFond and Park, 1997; Becker et al, 1998). Past literature shows that managers have incentive to boost earnings in share-increasing transactions such as seasoned equity offering (Rangan, 1998; Teoh et al., 1998). Previous research also reports that firms that change auditors are likely to have negative discretionary accruals during the last year with the old auditors and the first year with the new auditors (DeFond and Subramanyam, 1998). As a result, SHRINCR, NEWAUD and OLDAUD are included in the models to control for the effects of share-increasing transactions and auditor changes. Following the literature, operating cash flow (CFO) is also included in model (2) as a control for possible effects of its mechanical correlation with accrual measures.

The association between auditor size and earnings management is captured by the coefficient on TOP10, β_0, in the two models. If H1 is supported, then β_0 will be significantly negative in model (2) and model (3).

Test of H2: Auditor Location and Earnings Management

In the test for the auditor location argument, a similar two-stage "treatment effects" model is adopted. In the first stage, a probit auditor choice model is estimated,

$$Pr\,(LOCAL)_{jt} = \alpha + \gamma_0 * CYCLE_{jt} + \gamma_1 * CAPINT_{jt} + \gamma_2 * |NCE|_{jt} + \gamma_3 * SIZE_{jt}$$
$$+ \gamma_4 * LEV_{jt} + \gamma_5 * M/B_{jt} + \gamma_6 * SHRINCR_{jt} + \gamma_7 * LOSS_{jt} + \varepsilon_{jt} \qquad (4)$$

The dependent variable Pr (LOCAL) is the probability that a local auditor is chosen. All the independent variables follow the definitions given in model (1). Since local auditors are predicted to be associated with lower audit quality, the predicted signs for all explanatory variables in model (4) are contrary to those predicted in model (1).

In the second stage, two earnings management models are estimated with the inclusion of the inverse Mills ratio estimated from model (4):

$$DAR_{jt} = \alpha + \beta_0 LOCAL_{jt} + \beta_1 SIZE_{jt} + \beta_2 LEV_{jt} + \beta_3 CFO_{jt} + \beta_4 SHRINCR_{jt}$$
$$+ \beta_5 NEWAUD_{jt} + \beta_6 OLDAUD_{jt} + \beta_7 LAMDA_{jt} + v_{jt} \qquad (5)$$

$$ANCE_{jt} = \alpha + \beta_0 LOCAL_{jt} + \beta_1 CTRHOLD_{jt} + \beta_2 GOVHOLD_{jt} + \beta_3 SIZE_{jt}$$
$$+ \beta_4 LEV_{jt} + \beta_5 SHRINCR_{jt} + \beta_6 NEWAUD_{jt} + \beta_7 OLDAUD_{jt}$$
$$+ \beta_8 LAMDA_{jt} + v_{jt} \qquad (6)$$

All variables in the two models follow the same definitions as previously given. The relation between auditor location and earnings management is captured by the coefficients on the dummy LOCAL, β_0. If H2 is supported, then β_0 will be significantly positive in both models.

Joint Test of H1 and H2

Previous tests of the first two hypotheses are done separately. That is, when testing the auditor size argument, I do not consider the location of a top 10 or non-top 10 auditor. And when testing the auditor location argument, I do not take into account the size of a local or non-local auditor. That could cause potential inadequate control in the models. To address this issue, I further test the two hypotheses by considering auditor size and auditor location simultaneously. Following the predictions in H1 and H2, I predict that a non-local top 10 auditor is the most effective and a local non-top 10 auditor is the least effective in constraining earnings management. Like in the test for H1 and H2, the potential self-selection bias needs to be controlled. I estimate inverse Mills ratios from the following probit auditor choice model in the first stage:

$$Pr\,(TOPNLAL)_{jt} = \alpha + \gamma_0 * CYCLE_{jt} + \gamma_1 * CAPINT_{jt} + \gamma_2 * |NCE|_{jt} + \gamma_3 * SIZE_{jt} + \gamma_4 * LEV_{jt} + \gamma_5 * M/B_{jt} + \gamma_6 * SHRINCR_{jt} + \gamma_7 * LOSS_{jt} + \varepsilon_{jt} \quad (7)$$

where, for firm j in year t (all other variables are the same as previously defined),

TOPNLAL = a dummy equal to 1 if the auditor is both a top 10 auditor and a non-local auditor, and 0 otherwise.

In the second stage, model (8) and (9) are run with the inclusion of the inverse Mills ratio estimated from model (7).

$$DAR_{jt} = \alpha + \beta_0 TOPNLAL_{jt} + \beta_1 NTOPLAL_{jt} + \beta_2 SIZE_{jt} + \beta_3 LEV_{jt} + \beta_4 CFO_{jt} + \beta_5 SHRINCR_{jt} + \beta_6 NEWAUD_{jt} + \beta_7 OLDAUD_{jt} + \beta_8 LAMDA_{jt} + v_{jt} \quad (8)$$

$$ANCE_{jt} = \alpha + \beta_0 TOPNLAL_{jt} + \beta_1 NTOPLAL_{jt} + \beta_2 CTRHOLD_{jt} + \beta_3 GOVHOLD_{jt} + \beta_4 SIZE_{jt} + \beta_5 LEV_{jt} + \beta_6 SHRINCR_{jt}$$

$$+ \beta_7 NEWAUD_{jt} + \beta_8 OLDAUD_{jt} + \beta_9 LAMDA_{jt} + v_{jt} \quad (9)$$

where, for firm j in year t (all other variables are the same as previously defined),

NTOPLAL = a dummy equal to 1 if an auditor is both a local auditor and a non-top 10 auditor, and 0 otherwise.

Following the predictions in the first two hypotheses, the non-local top 10 auditors should be the most effective and the local non-top 10 auditors should be the least effective in limiting managers' aggressive financial reporting. Hence, the coefficients on TOPNLAL, β_0, are predicted to be significantly negative in models (8) and (9), and the coefficients on NTOPLAL, β_1, are predicted to be significantly positive in models (8) and (9).

Test of H3: Client Importance and Earnings Management

The following two models are used to test the client size argument.

$$DAR_{jt} = \alpha + \beta_0 CLTIMP_{jt} + \beta_1 SIZE_{jt} + \beta_2 LEV_{jt} + \beta_3 CFO_{jt} + \beta_4 SHRINCR_{jt} + \beta_5 NEWAUD_{jt} + \beta_6 OLDAUD_{jt} + v_{jt} \quad (10)$$

$$ANCE_{jt} = \alpha + \beta_0 CLTIMP_{jt} + \beta_1 CTRHOLD_{jt} + \beta_2 GOVHOLD_{jt} + \beta_3 SIZE_{jt} + \beta_4 LEV_{jt} + \beta_5 SHRINCR_{jt} + \beta_6 NEWAUD_{jt} + \beta_7 OLDAUD_{jt} + v_{jt} \quad (11)$$

where, for firm j in year t (all other variables are the same as previously defined),

CLTIMP = Client importance. The importance of client j to auditor i is measured as client j's sales divided by total sales of all clients of the auditor i, that is,

$CLTIMP_{jt} = SALE_{jt} / \sum_{i} SALE_{jt}$.

Clients do not clearly realize by themselves how important they are to their auditors. So the potential self-selection bias in testing the first two hypotheses does not exist in the test of H3. If H3 is empirically supported, then the coefficients on CLTIMP, β_0, will be significantly positive in both models.

Test of H4: The Big 5 Affiliation and Earnings Management

The sample for the fourth hypothesis is confined to the clients of the Big 5 and clients of the top 10 auditors. Since the selection of a top 10 auditor vs. a Big 5 auditor is to some extent up to the manager, the potential self-selection bias also needs to be controlled. Therefore, an auditor choice model is run in the first stage.

$$Pr\,(BIG5)_{jt} = \alpha + \gamma_0 * CYCLE_{jt} + \gamma_1 * CAPINT_{jt} + \gamma_2 * |NCE|_{jt} + \gamma_3 * DUAL_{jt} + \gamma_4 * SIZE_{jt} + \gamma_5 * LEV_{jt} + \gamma_6 * M/B_{jt} + \gamma_7 * SHRINCR_{jt} + \gamma_8 * LOSS_{jt} + \varepsilon_{jt} \qquad (11)$$

where, for firm j in year t (all other variables are the same as previously defined),

BIG5 = a dummy equal to 1 for the joint ventures of the Big 5 in China and 0 otherwise; and

DUAL = a dummy equal to1 if a firm issues both domestic (A-shares) and foreign shares (B- or/and H-shares), and 0 otherwise.

The dependent variable Pr (BIG5) is the probability that a Big 5 instead of a top 10 auditor is hired. In compliance with the existing regulations, firms issuing foreign shares have to hire international auditors to audit their international

accounting standard (IAS) based financial reports. Though listed firms are not required to hire international auditors for their domestic accounting standards (DAS) based financial reports, the employment of two different auditors can impose additional costs on firms. Therefore, it is reasonable and very likely for firms with foreign shares to hire the same foreign-affiliated auditors to audit both IAS- and DAS-based financial statements. Consequently, I add variables indicating a firm's dual-listing status (DUAL) as additional control in model (11). All other explanatory variables are the same as previously defined.

In the second stage, the following two models are run,

$$DAR_{jt} = \alpha + \beta_0 BIG5_{jt} + \beta_1 SIZE_{jt} + \beta_2 LEV_{jt} + \beta_3 CFO_{jt} + \beta_4 SHRINCR_{jt} + \beta_5 NEWAUD_{jt} + \beta_6 OLDAUD_{jt} + \beta_7 LAMDA_{jt} + v_{jt} \qquad (12)$$

$$ANCE_{jt} = \alpha + \beta_0 BIG5_{jt} + \beta_1 CTRHOLD_{jt} + \beta_2 GOVHOLD_{jt} + \beta_3 SIZE_{jt} + \beta_4 LEV_{jt} + \beta_5 SHRINCR_{jt} + \beta_6 NEWAUD_{jt} + \beta_7 OLDAUD_{jt} + \beta_8 LAMDA_{jt} + v_{jt} \qquad (13)$$

All variables in model (12) and (13) follow the previous definitions. If the Big 5 are of higher quality than the top 10 auditors, then the coefficients on BIG5, β_0 will be significantly negative in both model (12) and (13).

4.3 EMPIRICAL RESULTS

H1 --- Auditor Size and Earnings Management

Table 4-4 presents the empirical results of the auditor size argument. Panel A reports the descriptive statistics. Sections A and B list the mean, median, and the standard deviation for the top 10 and the non-top 10 groups. Section C reports the parametric *t*-test and the nonparametric Wilconxon z-test comparing the two groups.

As shown in Panel A, top 10 clients are significantly larger than non-top 10 clients, measured by the natural log of total assets (SIZE). Top 10 clients are also more highly leveraged than non-top 10 clients. The mean (median) leverage measured as total debts to total assets is 0.482 (0.480) for the top 10 group and 0.434 (0.421) for the non-top 10 group. Their differences in both the mean and the median are significant at the 1% level. The difference in mean operating cash flow between the two groups is not statistically significant, though the median CFO of the top 10 group is a little bit higher than that of the non-top 10 group. Not much difference is found between the two groups in terms of the percentage held by the largest shareholders and by the government. On average, 38.5% top 10 clients and 40% non-top 10 clients conduct share-increasing transactions. This is consistent with the fact that Chinese listed firms always obtain additional external financing by rights offering in the sample period. Descriptive statistics on the two dummies, NEWAUD and OLDAUD, suggest that the non-top 10 clients more frequently switch auditors than the top 10 clients.

The descriptive statistics of the two earnings management measures show that, both the mean and the median discretionary accruals are significantly lower in

the top 10 group than in the non-top 10 group. The mean (median) DAR is -0.6% (-0.5%) of total assets for the top 10 group, and 0.4% (0.3%) of total assets for the non-top 10 group. However, there is no substantial difference between them in the absolute value of discretionary accruals. This finding may imply that auditors are more concerned with the direction rather than the magnitude of earnings management. Another earnings management measure adopted in the current study is abnormal non-core earnings ANCE. The top 10 clients report relatively lower ANCE than the non-top 10 clients. The mean (median) ANCE is 2.7% (-0.8%) of total assets in the top 10 group and 4.9% (0.9%) of total assets in the non-top 10 group. However, the mean difference in the absolute value of abnormal non-core earnings |ANCE| is not significant, though the median |ANCE| is higher in the top 10 group. It conveys the same message that auditors care more about the direction than the magnitude of earnings management.

As explained before, I apply a two-stage estimation procedure for the multivariate tests. Panel B in Table 4-4 presents the results of the auditor choice model (1) in the first stage. Some results are consistent with, while some are different from, the findings in previous literature. Francis et al. (1999) report significant positive signs for both operating cycle (CYCLE) and capital intensity (CAPINT), while my analysis finds neither of them significant[12]. Consistent with my prediction, the absolute value of non-core earnings (|NCE|) is positively

[12] Similar results are obtained when using the absolute value of long-term (LAR) and short-term accruals (SAR) to replace capital intensity (CAPINT) and operating cycle (CYCLE).

associated with the choice of a top-10 auditor (0.240 with $p = 0.01$). Like previous studies, the choice of a larger auditor, a top-10 auditor in the current study, is positively related to firm size (SIZE) (0.463 with $p<0.00$) and firms' growth opportunities (M/B) (0.095 with $p<0.00$). Inconsistently, financial leverage (LEV) found to be negative in previous studies turns out to be positive here (0.925 with $p<0.00$). A possible explanation might be that the lending banks or other creditors require the use of larger auditors for higher leveraged firms out of self-protection. Francis et al. (1999) predict that the use of the Big 6 is positively associated with new equity financing (SHRINCR) and negatively associated with financial distress (LOSS). However, neither of them is significant in the current study. The high likelihood ratio statistic (LR = 121.42 with $p<0.00$) indicates the significant explanatory power of model (1).

In the second stage, the association between auditor size and earnings management is tested by models (2) and (3). Panel C and D in Table 4-4 report the effects of auditor size on discretionary accruals and abnormal non-core earnings, respectively. In both panel C and D, section A reports the result for the full sample, and sections B and C report the findings for the income-increasing and income-decreasing sub-samples.

In panel C, the full-sample results of model (2) show that the coefficient on the auditor size dummy TOP10 is significantly negative as predicted (-0.144 with t = -10.50). That is, the top 10 clients on average report 14.4% of total assets lower

DAR than the non-top 10 clients. It suggests that the top 10 auditors are more effective than the non-top 10 auditors in limiting managers' accrual choices. As for the control variables, consistent with the finding in Kim et al. (2003), firm size (SIZE) is significantly positive. Both financial leverage (LEV) and operating cash flows (CFO) are negatively associated with DAR and their coefficients are highly significant at the 1% level. The share-increasing dummy (SHRINCR) is significantly positive (0.026 with t =11.34), suggesting that firms with share-increasing transactions are likely to manipulate earnings upward. The coefficients on both OLDAUD and NEWAUD are negative as predicted but insignificant. The significance of LAMDA (-0.077 with t = -9.91) supports the importance of controlling for the self-selection bias.

As argued in Kim et al. (2003), Big 6 auditors are more effective than non-Big 6 auditors in monitoring earnings management only when managers prefer income-increasing choices. They demonstrate in their study that the Big 6 are even less effective than the non-Big 6 when both managers and auditors have incentives to prefer income-increasing choices. To test whether their asymmetric monitoring argument also holds in the China context, model (2) is run separately for the income-increasing sample (obs. = 1,563) and income-decreasing sample (obs. = 1,541). The results for the income-increasing sample are basically the same as those reported for the full sample. As shown in section B, the coefficient on TOP10 is significantly negative (-0.141 with t = -8.87), suggesting that the top 10 auditors are more effective than the non-top 10 auditors in constraining managers' ability to

overstate earnings. If the top 10 auditors are still more effective than the non-top 10 auditors in limiting managers' income-decreasing behaviors, then the coefficient on TOP10 in the income-decreasing sample should be significantly positive. However, as shown in section C, the coefficient on TOP10 is significantly negative (-0.062 with t = -3.42), implying that the top 10 auditors allow managers to have more flexibility in income-decreasing accrual choices than non-top 10 auditors. All other control variables in section B and C exhibit similar patterns as those reported in section A.

Panel D tests the role of large auditors in constraining earnings management through non-core business transactions. The full-sample regression of model (3) in section A reveals that just as their roles in limiting discretionary accruals, the top 10 auditors are more effective than the non-top 10 auditors in monitoring abnormal non-core earnings. The coefficient on TOP10 is -1.351 and it is highly significant with a t-value of -23.66. Among control variables, the percentage held by the largest shareholder (CTRHOLD) is positively related to ANCE (0.001 with t =1.94), which suggests the possibility that earnings are manipulated through related-party transactions between the listed firm and its controlling shareholder. However, the government shareholding (GOVHOLD) is insignificant in the regression. Its insignificance can be due to the failure to disentangle regional government shareholding from central government shareholding in the sample firms.

Sections B and C in panel D present the regression results for the income-increasing (obs.=1,768) and income-decreasing (obs.=1,343) groups. The coefficients on TOP10 are significantly negative in both groups. It again provides supports to the asymmetric monitoring argument in that the top 10 auditors are more effective than the non-top 10 auditors in deterring income-increasing choices, but less effective than the non-top 10 auditors in limiting income-decreasing choices. The results here support the findings in Kim et al. (2003) that the conflict or convergence between managers and auditors is an important factor determining audit effectiveness.

For the control factors, larger firms and higher leveraged firms report significantly lower ANCE. The signs of SHRINCR, NEWAUD and OLDAUD are inconsistent between income-increasing and income-decreasing groups. Firms with share-increasing transactions seem to be equally active in manipulating non-core earnings either upward or downward. One possible explanation is that some share-increasing firms boost current earnings with the incentive to retain an "excellent" image or to prepare for a second share-increasing transaction, while some share-increasing firms transfer back resources to their controlling shareholder through related-party transactions that may leads to a decrease in non-operating earnings. Coefficients on NEWAUD and OLDAUD indicate that the new auditors are more conservative than their predecessors in limiting firms' non-operating income manipulation. That raises the puzzle why the incumbent auditor will be replaced.

Possibly, auditor-switching firms are not as financially healthy as other firms and their financial weakness alerts the new auditors to be conservative.

In summary, results presented in Table 4-4 strongly support the auditor size argument by showing that both discretionary accruals and abnormal non-core earnings are negatively associated with auditor size. The results also suggest that the top 10 auditors are more effective than the non-top 10 auditors only when managers boost earnings. When managers make income-decreasing choices, the top 10 auditors are even less effective than the non-top 10 auditors. This is consistent with the auditor conservatism argument in the literature, that is, auditors have a preference for income-decreasing accounting choices.

H2 --- Auditor Location and Earnings Management

The empirical results for the auditor location argument are given in Table 4-5. Panel A presents the descriptive statistics for non-local auditors (obs. = 623) and local auditors (obs. = 2,488). Nearly 80% clients locate in the same administrative regions as their auditors. Compared to non-local clients, local clients are on average larger and are more closely held by the largest shareholder and the government. Non-local clients yield higher operating cash flows than local clients. There is no substantial difference in financial leverage or the frequency of share-increasing transactions between local and non-local clients. The means and the medians on the auditor switching dummies, NEWAUD and OLDAUD, indicate that non-local

clients change auditors more frequently than local clients. That's understandable based on the hypothesized higher independence of non-local auditors.

Panel A also shows that non-local clients report lower DAR than local clients. The mean (median) DAR is -3.1% (-0.9%) of total assets for the non-local clients, and 0.9% (0.1%) of total assets for the local clients. But non-local clients report much higher |DAR| than local clients. However, no significant differences are observed between them in the direction or the magnitude of abnormal non-core earnings. The statistics shown in panel A are univariate in nature. Multivariate tests controlling for other potential confounding factors need to be done.

Like the test for the auditor size argument, a similar two-stage approach is used for the test of H2. In the first stage, the managers' choice of a local or non-local auditor is examined by model (4). Panel B in Table 4-5 reports the logit regression results. The choice of a local auditor is positively associated with firm size (SIZE) but negatively related to financial leverage (LEV) and market-to-book ratio (M/B). The refusal of a lower quality auditor (a local auditor here) in higher leveraged firms may result from the compulsory requirements from their creditors. Firms with higher M/B hire high quality auditors (non-local auditors here) to signal their good growth prospects. Large firms' preference for local auditors may be explained by pressure from regional governments. The government shareholding of

local clients is higher than that of non-local clients, as already shown in panel A[13]. The likelihood ratio for model (4) is 63.86 (p<0.00), indicating the adequate explanatory power of model (4).

In the second stage, the relation between auditor location and firms' earnings management choices are examined. In panel C, the effect of auditor location on managers' accrual choices is tested by model (5). The full-sample results in section A show that, in contrast with the univariate analysis in panel A, after controlling potential confounding factors, non-local auditors are no more effective than local auditors in deterring managers' discretionary accrual choices. The coefficient on LOCAL is positive as predicted but not statistically significant (0.002 with t = 0.11). It is also insignificant for both income-increasing (-0.030 with t = -1.02 in section B) and income-decreasing group (0.025 with t = 1.08 in section C). Panel C also shows that DAR is positively related to share-increasing transaction (SHRINCR), and negatively related to leverage (LEV) and operating cash flows (CFO). Overall, the explanatory power of model (5) is very high. The adjusted R-square is 0.640 for the full sample, 0.418 for the income-increasing group and 0.583 for the income-decreasing group.

[13] The inclusion of GOVHOLD in model (4) reveals that the coefficient on GOVHOLD is positive but insignificant. A failure to clearly identify regional governmental shareholding may be responsible for the statistical insignificance.

Panel D reports the regression results of model (6) that links auditor location to abnormal non-core earnings. The coefficients on LOCAL in both the full sample (0.918 with t = 10.18 in section A) and the income-increasing group (1.957 with t = 13.65 in section B) are significantly positive. That is, local clients report much higher income-increasing ANCE than non-local clients. In the income-decreasing group, the coefficient on LOCAL becomes significantly negative (-0.210 and t = -3.64 in section C). That is, local clients report lower income-decreasing ANCE than non-local clients. Overall, local auditors give their clients more flexibility in both income-increasing and income-decreasing choices than non-local auditors. The explanatory power of model (6) measured by the adjusted R-square is 0.047 in the full sample, 0.121 in the income-increasing group and 0.064 in the income-decreasing group.

In panel D, ANCE is positively associated with the percentage held by the largest shareholder (CTRHOLD) (e.g. 0.001 and t =2.84 in section A), suggesting that abnormal related-party transactions between listed firms and their parents are used to manipulate earnings. Governmental shareholding (GOVHOLD) is insignificant in model (6), which might be ascribed to the failure to accurately measure shareholding by regional governments. The statistical significance of the inverse Mills ratio (LMADA) in model (6) indicates that the failure to explicitly control for potential self-selection biases may lead to erroneous conclusions.

Empirical results presented in Table 4-5 shed lights on the behavior of local auditors in China and provide some empirical support to the auditor location argument. Overall, there is no significant difference in the auditing of discretionary accruals between local and non-local auditors. But local auditors are less conservative than non-local auditors in the auditing of non-core business transactions. Local clients report both higher income-increasing and lower income-decreasing non-core earnings than non-local clients. The insignificance of discretionary accruals but significance of non-core earnings can be due to the government-assisted earnings management. The government directly-assisted earnings management mainly takes the form of fiscal transfers that are reflected in the non-core business section of financial statements without affecting accruals. In conclusion, the difference between local and non-local auditors in China is not only a simple location difference, but a difference in auditor independence.

Joint Test of H1 and H2

Table 4-6 presents the results for the joint tests of H1 and H2. Based on the interactions between the two audit quality dummies TOP10 and LOCAL, the full sample is divided into four cells: local top-10 auditors (TOP10 = 1, LOCAL = 1), local non-top 10 auditors (TOP10 = 0, LOCAL = 1), non-local top-10 auditors (TOP10 = 1, LOCAL = 0) and non-local non-top-10 auditors (TOP10 = 0, LOCAL = 0). According to the predictions in the first two hypotheses, clients of the non-local top-10 auditors should report the lowest and the clients of the local non-top 10 auditors should report the highest earnings management measures.

Panel A in Table 4-6 presents the descriptive statistics for the four cells. In the sample, there are 898 local top10 auditors, 1,590 local non-top 10 auditors, 419 non-local non-top 10 auditors and 204 non-local top-10 auditors. Consistent with the predictions, clients of non-local top10 auditors report the lowest DAR and the clients of local non-top 10 auditors report the highest DAR. The mean (median) DAR is -0.041 (-0.015) for the non-local top 10 auditor group, and 0.012 (0.005) for the local non-top 10 auditor group. The local non-top 10 auditor group also reports the highest abnormal non-core earnings as predicted. Its mean (median) ANCE is 5.3% (1.0%) of total assets. However, inconsistent with the prediction, the local top 10 clients even report a little bit lower ANCE than the non-local top 10 clients. The mean (median) ANCE is 0.026 (-0.008) for the former and 0.028 (-0.006) for the latter. This finding may imply that as large auditors, the top 10 auditors can to some extent resist the pressure from regional governments. Lower independence of local auditors is offset by higher independence of large auditors. The non-top 10 auditors are more adversely affected than the top 10 auditors by the regional government behavior.

Panel B reports the results of the probit auditor choice model (7). In the model, managers are assumed to consider both auditor size (the top 10 vs. the non-top 10) and location (local vs. non-local) in the auditor selection. However, the assumption may not strictly hold in real life since either of the two factors can dominate in managers' auditor selection. The dependent variable in model (7), Pr

(TOPNLAL), is the probability that a non-local top 10 auditor is chosen. The regression results show that only financial leverage (LEV) and growth opportunities (M/B) are significant in explaining a firms' choice of a non-local top 10 auditor. The adoption of high quality auditors in higher leveraged firms may be a response to their creditors' requirements, and firms with higher market-to book ratio may need high quality auditors to signal their promising growth prospects. The explanatory power of model (7) is acceptable from the view of statistics. Its likelihood ratio statistic is 16.70, significant at the 5% level.

Panel C and D present the results of models (8) and (9). In both models, consistent with the prediction, the coefficients on the dummy for local non-top auditors (NTOPLAL) are significantly positive. Specifically, ceteris paribus, clients of local non-top 10 auditors on average report 1.1% of total assets higher DAR and 2.1% of total assets higher ANCE than clients of other auditors. The findings suggest that the local non-top 10 auditors are the least effective among all auditors in curbing earnings management. However, inconsistent with the prediction, the coefficients on the dummy for non-local top-10 auditors (TOPNLAL) are insignificant in both models, despite having the predicted negative sign.

H3 — Client Importance and Earnings Management

Table 4-7 presents the empirical results for the client importance argument. Based on the dummy RINF, the full sample is divided into two groups: the

"important clients" group (Obs. = 1,491) and the "unimportant clients" group (Obs. = 1,620). The comparison of the descriptive statistics in panel A shows that, important clients are on average larger than unimportant clients, and are more closely held by their largest shareholder (CTRHOLD) and by the government (GOVHOLD). Compared to unimportant clients, they also produce more operating cash flows (CFO), more frequently conduct share-increasing transactions (SHRINCR), and switch auditors less frequently.

Panel A also shows that important clients report significantly higher discretionary accruals and abnormal non-core earnings than unimportant clients. The mean (median) DAR is 0.5% (0.3%) of total assets for important clients, and is -0.3% (-0.2%) of total assets for unimportant clients. The mean (median) ANCE is 7.8% (0.8%) of total assets for important clients and 0.8% (0.1%) for unimportant clients. The mean and median differences in both DAR and ANCE are statistically significant. As for the magnitudes of earnings management, important clients report significantly higher |ANCE| than unimportant clients, but |DAR| is not much different between the two groups.

Panel B and C present the regression results of model (10) and (11), respectively. Model (10) links the client importance to discretionary accruals. In panel B, the coefficient on CLTIMP is significantly positive (0.025 and $t = 3.38$). It indicates that ceteris paribus, more important clients report 2.5% of total assets higher DAR than less important clients. Model (11) links client importance to

abnormal non-core earnings. In panel C, the coefficient on CLTIMP is significantly positive as predicted (0.377 and t = 12.16). That is, more important clients report much higher abnormal non-core earnings than less important clients. The results in model (10) and (11) suggest that auditors always treat their important clients favorably. Most of the control variables in the two models exhibit the expected signs. The adjusted R-square is 64.1% in model (10) and is 6% in model (11).

I further investigate different auditors' responses to important clients. First, the attitudes towards important clients by auditors of different size are examined. Model (10) and model (11) are developed into model $(10)^{+}$ and model $(11)^{+}$ respectively by including the auditor size dummy TOP10, the interaction term of client importance and auditor size, CLTIMP * NTOP (NTOP is a dummy equal to 1 for a non-top 10 auditor and 0 for a top 10 auditor), and the inverse Mills ratio estimated from model (1). The interaction term CLTIMP*NTOP captures a non-top 10 auditor's attitude towards its important clients. If there is any substantial difference in treating important clients between the top 10 auditors and the non-top 10 auditors, its coefficient will be statistically significant.

Panel D reports the results of model $(10)^{+}$ and model $(11)^{+}$. There is no significant difference in limiting important clients' accrual choices between the top 10 and the non-top 10 auditors. The coefficient on the interaction term CLTIMP * NTOP in model $(10)^{+}$ is -0.009 with a t-value of -0.27. However, the coefficient on CLTIMP * NTOP in the model $(11)^{+}$ turns out to be significantly negative (-

0.657 with t = -5.36). It implies that the top 10 auditors are even less conservative with their important clients than the non-top 10 auditors, and they give their important clients more flexibility in non-core business than the non-top 10 auditors do.

Second, I test whether there is any difference in treating important clients between local and non-local auditors. Model (10) and (11) are developed into model (10) $^{++}$ and (11) $^{++}$ by including the auditor location dummy LOCAL, the interaction term CLTIMP * LOCAL, and the inverse Mills ratio obtained from the auditor choice probit model (4). The interaction term CLTIMP * LOCAL measures a local auditor's attitudes towards its important clients. If there is any substantial difference in the attitudes towards important clients between local and non-local auditors, its coefficient will be statistically significant.

Panel E reports the test results. No significant difference is observed between local and non-local auditors in limiting their important clients' accrual choices. The coefficient on CLTIMP * LOCAL (0.026 with t = 1.26) in model (10) $^{++}$ is statistically insignificant. But the results of model (11) $^{+++}$ tell a different story. The coefficient on the interaction term CLTIMP * LOCAL in model (11) $^{++}$ is significantly positive (0.252 with t = 2.94). That is, important clients of local auditors report much higher ANCE than those of non-local auditors. It suggests that local auditors are less effective than non-local auditors in constraining their important clients' opportunistic non-core business transactions.

In summary, results in Table 4-7 support the client importance argument in the study. Overall, important clients report both higher discretionary accruals and abnormal non-core earnings than unimportant clients. That means, in the China context, economic dependence on important clients dominates auditor behavior. The incentive to attract or to retain valuable clients overwhelms reputation protection incentive, and thus leads auditors to compromise their independence and report favorably for their important clients. Results in the current study are contrary to the findings in the U.S. market (Reynolds and Francis, 2001; Chung and Kallapur, 2003). The different findings in the two markets imply that market environment and corporate governance can influence auditor behavior and auditor independence. Further examination of different auditors' attitudes towards important clients suggests that local auditors are less effective than non-local auditors in constraining their important clients' earnings management through non-core business transactions, but the top 10 auditors surprisingly give their important clients more flexibility in the aggressive reporting of abnormal non-core earnings than the non-top 10 auditors do.

H4: The Big 5 Affiliation and Earnings Management

Table 4-8 presents the test results for the Big 5 affiliation argument in the study. Panel A presents the descriptive statistics for the Big 5 and the top 10 groups. The Big 5 clients are on average larger and lower leveraged than the top 10 clients. The Big 5 clients generate more operating cash flows (CFO), and are more closely

held by their largest shareholder and by the government. Many Big 5 clients issue both domestic and foreign shares. The mean (median) value of DUAL is 0.773 (1.000) for the Big 5 clients and 0.212 (0.000) for the top 10 clients. The Big 5 clients less frequently involve in share-increasing transactions than the top 10 clients. There is no difference between them in the auditor-switching dummies, NEWAUD and OLDAUD. As for the earnings management variables, the mean (median) DAR is -0.016 (-0.011) for the Big 5 clients and -0.006 (-0.005) for the top 10 clients. The mean (median) ANCE is 0.008 (-0.005) for the Big 5 clients and 0.027 (-0.008) for the top 10 clients. But both the parametric t-test for the mean and the nonparametric Wilcoxon z-test for the median fail to reject equality between them.

Panel B in Table 4-8 presents the results of the auditor choice model (12). The dependent variable Pr (BIG5) is the probability that a Big 5 auditor instead of a top 10 auditor is selected. Overall, model (12) has very high explanatory power and its likelihood ratio statistic is 318.39 with a p-value less than 0.00. The logit regression results demonstrate that larger firms, lower leveraged firms, firms of higher capital intensity and firms of shorter operating cycles are more likely to choose a Big 5 auditor. As predicted, the use of a Big 5 auditor is positively related to the dual-listing dummy DUAL (2.224 with $p<0.00$). The significantly negative coefficient on SHRINCR (-0.918 with $p = 0.00$) implies that firms conducting share-increasing transactions have a tendency to avoid Big 5 auditors. But it remains puzzling why financially distressed firms also tend to choose a Big 5 auditor rather

than a top 10 auditor, as the coefficient on LOSS is significantly positive (0.746 with $p = 0.04$).

With inverse Mills ratios estimated from model (12), panel C reports the regression results of model (13). No significant difference is found in discretionary accruals between the top 10 clients and the Big 5 clients. The estimate of BIG5 in the full-sample is -0.002 with a t-value equal to -0.26. Similar findings appear for the income-increasing and income-decreasing groups in section B and C respectively. The control variables in panel C exhibit the same patterns as those in previous tables.

Panel D reports the results of model (14). In the full sample, the coefficient on BIG5 is negative but statistically insignificant (-0.024 with $t = -0.79$ in section A). However, when dividing the full sample into the income-increasing and the income-decreasing groups, there are some interesting findings. In the income-increasing group, the estimate of BIG5 is significantly negative at the 1% level (-0.167 with $t = -2.74$ in section B). It suggests that the Big 5 are more effective than the top-10 auditors in monitoring managers' income-increasing choices through non-core business. In the income-decreasing group, however, the coefficient on BIG5 turns out to be insignificant (0.022 with $t = 1.25$ in section C), which implies that Big 5 auditors are not superior to top 10 auditors in deterring firm's downward earnings adjustment through non-core business transactions. This finding is consistent with the auditor conservatism argument in the literature. That is, only when managers

have incentives to prefer income-increasing accrual choices are Big 6 auditors more effective than non-Big 6 auditors in deterring opportunistic earnings management.

The audit effectiveness of the Big 5 and the top 10 auditors can also be compared by examining their different attitudes towards important clients. For test purposes, models (10) and (11) are further developed into model $(10)^{+++}$ and $(11)^{+++}$ by adding the dummy BIG5, the interaction term CLTIMP * NBIG5 (NBIG5 is a dummy equal to 1 for a non-Big 5 auditor and 0 otherwise), and the inverse Mills ratio obtained from the probit model (12). The interaction term CLTIMP * NBIG5 measures a top 10 auditor's attitudes towards its important clients. If the Big 5 treat their important clients differently from the top 10 auditors, then its coefficients will be statistically significant. Panel E reports the comparison results. Their important clients' discretionary accruals are not significantly different. The estimate of CLTIMP * NBIG5 in model $(10)^{+++}$ is 0.020 with a *t*-value of 0.48. However, the regression results of model $(11)^{+++}$ show that important clients of the top 10 auditors report significantly higher ANCE than important clients of the Big 5. The coefficient on CLTIMP * NBIG5 in model $(11)^{+++}$ is 0.816 and the corresponding *t*-value is 5.20.

In summary, empirical results in Table 4-8 to some extent support the Big 5 affiliation argument. Results suggest that the Big 5 are more effective than the top 10 auditors in limiting clients' income-increasing choices through non-core business, but the Big 5 are no more effective than the top 10 auditors when managers adjust

earnings downward through non-core business transactions. This asymmetric monitoring role of the Big 5 is consistent with the finding in the U.S. and corroborates the previous studies on auditor conservatism. Further analysis also suggests that the Big 5 are more conservative when dealing with their important clients than the top 10 auditors are.

4.4 SUMMARY OF THE CHAPTER

Auditors have dual roles. They are regarded as safeguards of the public interest in the society. They are supposed to be independent from their clients and work on behalf of the shareholders. Yet auditors are self-interested economic agents at the same time. They always need to balance their benefits and costs. Their major benefits include increases in income, in market share and in reputation. Costs include potential litigation risk, loss of clients and damage to reputation. With effective corporate governance to protect public shareholders in such markets as the U.S., auditors rarely have motivation to compromise independence due to the high costs of a potential audit failure. Thus the auditor's role as the public interest safeguard is more pronounced. However, in many emerging markets such as China, protection for public shareholders is not adequate, and the benefit of an intentional audit failure can possibly exceed the costs of the audit failure. Auditors can be induced to compromise their independence. The auditor's identity as a self-interested economic agent may become more evident. Thus the study of audit quality in different markets can help to clarify the role of auditors.

In the chapter, I empirically examine the audit quality in the emerging Chinese capital market by investigating auditors' monitoring role in deterring opportunistic earnings management behavior. Since audit quality is multidimensional and inherently unobservable, I use auditor size, location, and attitudes towards important clients, and the Big 5 affiliation to proxy for audit quality in the China context. There are two earnings management measures in the chapter. The first is discretionary accruals (DAR) estimated from the performance-matched modified Jones model constructed by Kothari et al. (2003). Another is non-core earnings adjusted by the industry median (ANCE).

In the current chapter, the association between audit quality and earnings management is tested through four hypotheses. I argue that the top 10 auditors are more effective than the non-top 10 auditors (auditor size argument), and non-local auditors are more effective than local auditors (auditor location argument) in constraining earnings management. I also predict that economic dependence on important clients dominates the reputation protection incentive and thus auditors treat their important clients favorably (client importance argument). Furthermore, I argue that the Big 5 are of higher quality than the top 10 auditors in China (the Big 5 affiliation argument).

The empirical results lend some support to the hypotheses. Among domestic auditors, clients of the top 10 auditors report both lower DAR and ANCE than

clients of other auditors. Local clients report higher ANCE than non-local clients. Also, compared to unimportant clients, important clients are given more flexibility in the reporting of DAR and ANCE. The comparison between the joint ventures of the Big 5 and the top 10 auditors suggests that the Big 5 are more effective than the top 10 in constraining the inflated reporting of ANCE.

The current chapter also provides empirical support to the auditor conservatism argument in the literature. The results suggest that the top 10 auditors are more effective than non-top 10 auditors in limiting income-increasing choices, but less effective than non-top 10 auditors in limiting income-decreasing choices. Similarly, the Big 5 are more effective than top 10 auditors only when managers choose to report income-increasing non-core earnings, but not when managers report income-decreasing non-core earnings.

CHAPTER 5

EARNINGS MANAGEMENT AND AUDITOR BEHAVIOR IN RIGHTS OFFERING FIRMS

In this chapter, I focus on rights offering firms. First, I examine whether rights offering firms manipulate earnings in response to the profitability requirements. I compare discretionary accruals (DAR) and abnormal non-core earnings (ANCE) between the offering period and the post-offering period. Second, I investigate the auditor behavior in rights offering firms by re-examining the association between audit quality and earnings management.

I focus on rights offering firms because such firms create the most intense conflict for auditors. In the examined period, rights offering is the most important way for Chinese listed firms to obtain equity financing. The central government sets specific profitability requirements such as 10% or 6% ROE level on firms that intend to conduct rights offerings. The importance of rights offering and the strict rights offering regulations create strong earnings management incentives in the Chinese market. "Meeting the required profit level has become the primary task for managers because raising additional capital through the stock market is regarded as their most important objective (*Shanghai Securities News* 1998)" (para.2, page 10, Chen et al., 2001). It is not hard to imagine that in the potential rights offering firms,

auditors are faced with tremendous pressure from managers, or even from regional governments. The pressure for auditors in the rights offering firm is much higher than in other firms in normal situations. If auditors refuse to provide "cooperation", they will potentially be replaced by the management or be badly treated by regional governments.

However, the profitability requirements for rights offering are ex ante publicly known. Once a firm's reported earnings are close to the specified threshold, it will attract close attention from all parties, particularly investors and regulators. Investors' attention and regulators' scrutiny will motivate auditors to behave more conservatively in these firms than in other firms. Auditors are thus caught in the middle in rights offering firms. Therefore, by focusing on such firms, a better insight into audit quality in the Chinese market can be achieved. The analysis in the chapter can serve as a robustness check for the main results obtained in the previous chapter.

As an illustration, Appendix C lists the profitability regulation for rights offering and its changes over time in the Chinese stock market. For the current study, the rights offering regulations in 1996 and 1999 are the most relevant. For brevity, they are called the 1996 regulation and the 1999 regulation, respectively.

The structure of this chapter is as follows. Section 5.1 describes the sample information. Section 5.2 examines the earnings management in rights offering firms.

Section 5.3 investigates the association between audit quality and earnings management in rights offering firms. Finally, section 5.4 concludes the chapter.

5.1 THE SAMPLE INFORMATION

The capital distributions file in the CSMAR database provides rights offering information. To be included in the sample, a firm has to meet the following criteria: 1) the year of rights offering falls within the sample period 1996-2000; 2) there is information available to calculate the two earnings management measures, DAR and ANCE; 3) only one rights offering was undertaken in the sample period; and 4) the firm is from the non-financing industry. Finally, 370 rights offering firms are selected. Table 5-1 describes the yearly and industrial distribution of the rights offering sample.

To get a first glance at the earnings management to meet the profitability requirements for rights offering, the distribution of return on equity (ROE) and operating return on equity (OPROE) in the sample period is examined. With the 3,265 firm-year observations in chapter 4, Table 5-2 reports the distribution of ROE and OPROE. The 1996 regulation is applied to 1996 and 1997, and the 1999 regulation is applied to 1998 to 2000. Panel A and B report the results in 1996-1997 and 1998-2000, respectively.

The ROE distribution exhibits some pronounced patterns. In 1996 and 1997, among 816 firms, 250 firms (30.64%) report ROE within [10%, 12%). The highest

percentage of ROE within [10%, 12%) is consistent with the 10% ROE requirement in the 1996 regulation. The new 1999 regulation decreased the annual ROE threshold from 10% to 6%. Consequently, in the period 1998-2000, 211 firms (8.62%) report ROE within [6%, 7%). By contrast, there are only 16 (1.96%) firms with reported ROE within [6%, 7%) before 1998, as presented in panel A. Since the 1999 regulation also required a three-year average ROE above 10%, a concentration of ROE within [10%, 12%) can still be observed in the period 1998-2000. Nearly 22% firms report ROE within the range between 10% and 12% in panel B.

Besides the evident ROE concentration around 10% and 6%, Table 5-2 also exhibits a pronounced 0% pattern. That is, in order to avoid special treatment or delisting fate, firms manage earnings to avoid losses. Both panel A and panel B demonstrate that a substantial number of firms report slightly positive profits. In the period 1996-1997, about 12% of firms report ROE within [0%, 2%), and in the period 1998-2000, 8.79% of firms report ROE within [0%, 2%).

More meaningful information can be obtained by referring to the distribution of OPROE. For example in the period 1996-1997, 30.64% firms report ROE within [10%, 12%), but only 10.54% firms report OPROE within the same interval. The big gap could imply that firms manipulate non-operating items to boost earnings. Moreover, 12.37% firms report OPROE within [7%, 10%), but only 6.74% firms report ROE within the same interval. That suggests that, in order to comply with the

10% rule, some firms whose ROE should have been less than 10% boost earnings through non-operating items, so that ROE is adjusted to be slightly higher than 10%.

Similar findings hold for the period 1998-2000. For example, in panel B, only 4.49% firms report OPROE within [6%, 7%), but 8.62% firms report ROE within the same interval. That may also indicate potential earnings management through non-operating items. Additionally, 14.74% firms report OPROE within [2%, 6%), but the number of firms with ROE in the same interval decreases to 10.17%. That suggests that by manipulating non-operating items, some firms that should have reported ROE less than 6% are able to hit the 6% threshold specified in the 1999 regulation.

The examination of the distribution of ROE and OPROE can reveal some useful information on the profit-regulation-induced earnings management behavior in China. More detailed analysis on earnings management and auditor behavior in rights offering firms are given in later parts. Unless explicitly noted otherwise, all variables in the chapter follow the definitions given in chapter 4. Some variables specific to the current chapter are summarized and described in Table 5-3.

5.2 EARNINGS MANAGEMENT IN RIGHTS OFFERING FIRMS

In the sample period, in order to meet the profitability requirements for rights offering, listed firms have to maintain their ROE at the 10% or 6% level for

three consecutive years before the rights offering. This creates incentives for firms to begin their earnings management long before the year of rights offering. But earnings cannot be manipulated over a long horizon, and managers usually manage earnings by transferring earnings among different accounting periods. Depending on different situations, they may defer or save part of current earnings for future use, or they may borrow future earnings for the current use. Because the current rights offering regulation does not explicitly set requirements on the post-offering performance, managers are "encouraged" to borrow earnings from the post-offering years for the use in the offering period. Therefore, I expect that firms report much higher discretionary accruals (DAR) and abnormal non-core earnings (ANCE) in the offering period than in the post-offering period.

The examination of earnings management behavior in rights offering firms starts from 3 years before the offering (year -3) to 3 years after the offering (year +3). The sample period 1996-2000 cannot cover the total 6 years for all the 370 rights offering firms. For example, firms conducting rights offering in 1996 have no information for year -3 to year -1. In the end, 1,310 observations are included. The descriptive statistics of operating performance, stock performance and earnings management measures are reported in Table 5-4. A firm's operating performance is measured by its return on equity (ROE) and earnings per share (EPS), and a firm's stock performance is measured by the size-adjusted annual return (RETN). The size portfolio is formed based on the quartile of the year-beginning market value of equity. Panel A and B in Table 5-4 report the unadjusted raw measures and industry

median adjusted measures, respectively[14]. The industry classification is based on the newest 13 industry codes announced by the CSRC in 2001.

The unadjusted ROE and EPS in panel A indicate improving pre-offering performance but deteriorating post-offering operating performance. The median ROE grows from 10.8% in year -3 to a peak of 12.1% in year -1, then gradually declines to 6.2% by year +3. The corresponding means are 12.7% in year -3, 14.3% in year -1 and 4.3% in year +3. Similarly, the median EPS has the highest value of 0.322 in year -1 and then gradually drops to the lowest value of 0.118 by year +3. The industry median adjusted EPS and ROE in panel B indicate a similar profile of pre-offering improvement but post-offering decline. The mean (median) industry-adjusted ROE grows from 3.2% (0.90%) in year -3 to 4.5% (2.6%) in year -1, and then declines to -4.3% (-2.6%) in year +3. The operating performance difference implies the potential borrowing of post-offering earnings for the use in pre-offering years. The market performance measured by the size-adjusted annual return RETN shows that shareholders can earn positive abnormal returns in the offering period. For example, the median value of industry-adjusted RETN is 0.019 in year -2, 0.054 in year -1 and 0.015 in year 0. The equivalent mean of industry-adjusted RETN is 0.161 in year -2, 0.138 in year -1, and 0.091 in year 0. In the post-offering years, the stock performance of rights offering firms is no longer different from their peers. The median (mean) value of industry-adjusted RETN is -0.064 (0.012) in year +1, -

[14] 370 non-issuers are selected to be the control group matched by industry (6-category classification) and size. Measures adjusted by non-issuers' bases produce qualitatively the same results.

0.032 (-0.007) in year 2 and -0.018 (0.053) in year 3, and most of them are statistically insignificant.

The descriptive statistics of earnings management measures suggest that rights offering firms are more likely to manipulate earnings through non-core business than through discretionary accruals. In panel A, considering the years in which ANCE is statistically different from zero, the median (mean) unadjusted ANCE is 0.018 (0.141) in year -2, and then declines to 0.003 (0.018) in year 1. The industry-adjusted ANCE reported in panel B displays a similar profile. The median (mean) industry-adjusted ANCE is 0.018 (0.141) in year -2, 0.009 (0.118) in year -1, and 0.006 (0.049) in year 0. The industry-adjusted ANCE in year +1 to +3 are not significantly different from zero. That is, after the offering, rights offering firms report no higher ANCE than their peers. The ANCE difference between pre-offering and post-offering years suggests that firms manipulate earnings through non-core business to meet the profitability requirements for rights offering. The reason for the earnings management in the offering year (year 0) is that if a firm's profitability decreases sharply immediately after the rights offering, it will attract close attention from regulators and public investors. Hence managers still have motivation to manage earnings in year 0 to maintain a "good" image.

Descriptive statistics on DAR indicate that rights offering firms use discretionary accruals to manipulate earnings in the offering year only. In panel A, DAR is only statistically significant in year -1 and 0. The mean (median) unadjusted

DAR in year -1 and 0 is -0.011 (-0.007) and 0.040 (0.025) respectively. In panel B, the industry-adjusted DAR is marginally significant in year -1 and highly significant in year 0. It has a mean (median) of -0.013 (-0.012) in year -1 and 0.042 (0.026) in year 0. Except in year 0 and 1, earnings management through discretionary accruals in other years is not evident. While it is hard to explain the income-decreasing DAR in year -1, the reason for the income-increasing DAR in year 0 is the same as explained before. Firms try to avoid regulators' attention to the sudden earnings decrease immediately after the rights offering, though there is no explicit profitability requirement for the offering year.

A further comparison is made between the offering and the post-offering period in Table 5-5. Year -3 to 0 is defined as the offering period, and year +1 to +3 is defined as the post-offering period. Panel A reports descriptive statistics for the unadjusted raw measures. Overall, the operating performance and the stock performance are much better in the offering period than in the post-offering period. In panel A, the mean (median) ROE is 0.104 (0.108) in the offering period and 0.043 (0.081) in the post-offering period, and their difference in both the median and the mean is significant at the 1% level. Similarly, the mean (median) EPS is 0.317 (0.283) in the offering period and 0.145 (0.202) in the post-offering period, and their difference in both the mean and the median is significant at the 1% level. The market performance measured by RETN also shows that shareholders can on average earn a mean (median) abnormal returns of 11.9% (2%) in the offering period but only a mean (median) of 3.6% (-3.1%) in the post-offering period, and

the difference between the two periods is statistically significant. Very similar results are found in the industry-adjusted measures in panel B.

The earnings management measures are also different between the two periods. In panel A, the mean (median) unadjusted DAR is 0.013 (0.007) in the offering period and 0.003 (0.000) in the post-offering period. Their difference is significant at the 10% level. The abnormal non-core earnings are also significantly higher in the offering period than in the post-offering period. The mean (median) unadjusted ANCE is 0.087 (0.012) in the offering period and 0.012 (0.003) in the post-offering period. Similar patterns are observed in the industry-adjusted DAR and ANCE in panel B.

Setting the dummy OFFER to be 1 for the offering period and 0 for the post-offering period, panel C runs regression analysis for models (A) and (B). Model (A) uses discretionary accruals DAR as the dependent variable, i.e., unadjusted DAR in model (A1) and industry-adjusted DAR in model (A2). In model (B), the dependent variable is abnormal non-core earnings ANCE, i.e., unadjusted ANCE in model (B1) and industry-adjusted ANCE in model (B2). The major examined explanatory variable in the two models is the dummy OFFER. If rights offering firms do increase income through DAR and ANCE to meet the profitability requirements, the expected coefficient on OFFER will be significantly positive. The control factors included in the models are similar to those in chapter 4, including firm size (SIZE), leverage (LEV), auditor-switching dummies (NEWAUD and OLDAUD), as well as

the shareholding by the largest shareholder (CTRHOLD) and by the government (GOVHOLD).

Just as expected, ceteris paribus, rights offering firms report significantly higher discretionary accruals and abnormal non-core earnings in the offering period than in the post-offering period. The estimate of OFFER is 0.018 with a *t*-value of 5.19 in model (A1), and 0.014 with a *t*-value of 4.00 in model (A2). According to the annual analysis in Table 5-4, the significantly positive coefficient on OFFER in model (A) seems due to the income-increasing DAR in year 0. The regression results of model (B) reinforce previous findings on abnormal non-core earnings. The estimate of OFFER is 0.074 ($t = 4.56$) in model (B1) and 0.081 ($t = 4.83$) in model (B2). It indicates that rights offering firms utilize non-core business transactions to manipulate earnings in the offering period.

In summary, the empirical evidence supports the prediction that rights offering firms manage earnings to achieve the required profitability levels. Compared to discretionary accruals, non-core business transactions are more frequently used by rights offering firms. Studies in the U.S. market also document evidence of earnings management in firms conducting seasoned equity offering (SEO) (Rangan, 1998; Teoh et al., 2000; Shivakumar, 2000). However, while earnings management in SEO firms in the U.S. market is capital market induced, the earnings management in rights offering firms in China is mainly regulation induced.

American SEO firms primarily manipulate earnings through accrual choices, but Chinese rights offering firms manipulate earnings mainly through non-core business.

5.3 EARNINGS MANAGEMENT AND AUDIT QUALITY IN RIGHTS OFFERING FIRMS

Faced with pervasive earnings management in rights offering firms, the role of external auditors is important in enhancing the quality of accounting earnings. Following the methodology in chapter 4, the relation between audit quality and earnings management is re-examined in the rights offering firms.

The Auditor Size Argument and the Big 5 Affiliation Argument

First, the auditor size argument and the Big 5 affiliation argument are empirically tested. Table 5-6 reports the test results. Panel A presents the descriptive statistics of earnings management measures for the top-10 group, the non-top 10 group and the Big 5 group. On average, top 10 clients report a mean (median) unadjusted DAR of 0.010 (0.000) and a mean (median) unadjusted ANCE of 0.040 (-0.004). Non-top 10 clients report a mean (median) unadjusted DAR of 0.009 (0.006) and a mean (median) unadjusted ANCE of 0.068 (0.010). The ANCE difference between the top 10 and non-top 10 groups is very significant, as judged by the parametric *t*-test for the mean and the non-parametric Wilcoxon *z*-test for the median. But their difference in DAR is not statistically significant. The Big 5 clients report the lowest DAR and ANCE among the three groups. The median

unadjusted DAR and ANCE for the Big 5 group is -0.014 and -0.005, respectively. The equivalent means are 0.004 and 0.017. The parametric *t*-test for the mean and the non-parametric Wilcoxon *z*-test for the median diagnose significant differences in ANCE between the top 10 clients and the Big 5 clients. However, no significant difference is observed in DAR between them. Industry-adjusted earnings management measures also display a similar profile.

Panels B to E report the regression results. For simplicity, the presented results are based on the unadjusted earnings management measures only; results based on industry-adjusted measures are qualitatively the same and are omitted. Following the methodology in the previous chapter, a two-stage "treatment effects" approach is adopted in order to control for potential self-selection bias. For brevity, I present the results of the earnings management models in the second stage, but leave out the probit auditor choice model in the first stage.

Panel B reports the regression results of model (C). In model (C), DAR is the dependent variable and the explanatory variable is the dummy forauditor size TOP10. All other control factors in model (C) follow those in model (2) in the previous chapter, except for the exclusion of the share-increasing dummy SHRINCR. The full-period results in section A suggest that the top 10 auditors are more effective in limiting rights offering firms' accrual choices than the non-top 10 auditors. The estimate of TOP10 is -0.083 with a *t*-value of -5.20, significant at the 1% level. In sections B and C, model (C) is run for the offering and post-offering

periods, respectively. In both the offering and post-offering periods the top 10 clients report lower discretionary accruals than the non-top clients. The coefficient on TOP 10 is -0.017 (t = -2.59) in section B and -0.071 (t = -3.86) in section C. The estimates of other control variables are similar to those in the previous chapter. The statistical significance of LMADA in model (C) supports the necessity of controlling for endogeneity.

Panel C in Table 5-6 presents the regression results of model (D). Model (D) links auditor size to abnormal non-core earnings in rights offering firms. The full-period result reports a significantly negative coefficient on TOP10 (-0.53 with t = -7.25 in section A). It means that among rights offering firms, the top 10 clients report lower ANCE than the non-top 10 clients. Separate examinations in the offering and post-offering periods suggest that the difference in audit effectiveness between the top 10 and the non-top 10 auditors is only significant in the offering period. The estimate of TOP10 in the offering period is -0.083 with a t-value of -2.33 (in section B), but it turns out to be insignificant in the post-offering period despite having the expected sign (-0.047 with t = -1.30 in section C). This finding can be explained as follows. As documented in section 5.2, the abnormal non-core earnings measure (ANCE) is significantly higher in the offering period than in the post-offering period. In the face of active income-increasing earnings management in the offering period, the larger top 10 auditors are much more conservative because of their greater potential loss in case of an audit failure, while the smaller non-top 10 auditors are more likely to compromise their independence under

pressure from the management or regional governments. The difference in audit effectiveness between the top 10 and the non-top 10 auditors is therefore very significant in the offering period. In the post-offering period, however, when rights offering firms exhibit no more income-increasing earnings management than other firms, the top 10 auditors are no more conservative than non-top 10 auditors are. The difference between the top 10 and the non-top 10 auditors is not so pronounced then. This is consistent with the auditor conservatism argument in the literature.

Panel D and E report the empirical results on the audit quality of the Big 5 in rights offering firms. In panel D, the monitoring roles in discretionary accruals are compared between the Big 5 and the top 10 auditors by model (E). The estimates of the dummy BIG5 are -0.057 (t = -1.48) for the full-period sample (section A), -0.027 (t = -0.58) in the offering period (section B) and -0.047 (t = -0.77) in the post-offering period (section C). All three coefficients are not statistically significant. That suggests that the Big 5 are no more effective than the top 10 auditors in limiting rights offering firms' accrual choices. However, the results of model (F) in panel E find that among rights offering firms, the Big 5 clients report much lower abnormal non-core earnings than the top 10 clients. The estimate of BIG5 for the full-period sample is -0.354 with a t-value of -4.67 (section A). Separate analysis in the offering and post-offering periods suggests that the Big 5 are more effective than the top 10 auditors only in the offering period. The estimate of BIG5 in the offering period is -0.399 with a t-value of -3.47, as presented in section B. In the post-offering period as presented in section C, the estimate of BIG5 is -0.035, but its t-

value (t = -0.74) is rather small and is not statistically significant. Again, the statistical significance of BIG5 in the offering period but insignificance in the post-offering period can be explained by the auditor conservatism argument in the literature. Compared to the post-offering period, more earnings management in the offering period encourages high-quality auditors to be more conservative but low-quality auditors to be more likely to compromise their independence, and thus their quality differentiation is more pronounced.

Auditor Location Argument

Second, the association between auditor location and earnings management is re-examined in rights offering firms. Table 5-7 reports the test results. The descriptive statistics in panel A show that local clients report higher discretionary accruals than non-local clients, but there is no significant difference in abnormal non-core earnings between them. Take the unadjusted DAR and ANCE as an illustration. On average, local clients report a mean (median) DAR of 0.016 (0.006), while non-local clients report a lower mean (median) DAR of -0.020 (-0.006). The difference in the mean and the median is significant at the 1% level (t = 4.42) and the 10% level (z = 1.49), respectively. The mean (median) ANCE for the local auditor group is 0.057 (0.008) and the corresponding mean (median) ANCE reported by the non-local clients is 0.063 (0.005). But their difference in ANCE is not statistically significant.

Further regression results are presented in panel B and C. To be concise, only the results based on unadjusted DAR and ANCE are given; tests based on industry-adjusted DAR and ANCE yield similar results and are omitted. Like the previous chapter, a two-stage "treatment effects" model is used to control for potential self-selection bias. For simplicity, I only report the results of the earnings management models in the second stage and omit the results of the probit auditor choice model in the first stage.

Panel B reports the regression results of model (G). In model (G), the dependent variable is DAR, and the explanatory variable is the dummy for auditor location LOCAL. All other control variables follow the definitions in chapter 4. The full-period results in section A indicate no significant difference in audit effectiveness between local and non-local auditors in rights offering firms. The coefficient of LOCAL is -0.002 with a *t*-value of -0.10. Likewise, in the offering period, DAR is insensitive to auditor location. In section B, the estimate of LOCAL (0.037 and $t = 1.34$) is positive as predicted, but the corresponding *t*-value is not significant at any conventional level. In the post-offering period, local auditors are surprisingly even stricter with their clients than non-local auditors. The coefficient on LOCAL in section C is significantly negative (-0.070 with $t = -2.63$). Unfortunately, I cannot come up with a satisfactory answer as to why LOCAL has a negative coefficient in the post-offering period.

Panel C reports the regression results of model (H) which tests the effect of auditor location on earnings management through non-core business. The full-period analysis reports an expected positive coefficient on the dummy LOCAL (0.289 with t = 2.73 in section A). It suggests that in rights offering firms, local auditors allow more flexibility in the opportunistic use of non-core business than non-local auditors do. In the offering period, as presented in section B, LOCAL has an estimate of 0.307 with a t-value of 2.04, significant at the 5% level. In the post-offering period, however, the estimate of LOCAL is no longer significant despite having the predicted sign (0.053 with t = 1.00 in section C). The lower independence of local auditors in the offering period is due to the high pressure from the local governments. In the post-offering period, pressure from local governments alleviates with the reduced earnings management motivation, and thus local auditors behave not much different from non-local auditors.

Client Importance Argument

Finally, the impact of client importance on earnings management is re-investigated in the rights offering sample. Table 5-8 reports the test results. Panel A compares the mean and the median of the two earnings management measures between important (RINF = 1) and unimportant (RINF = 0) clients. Unimportant clients report a mean (median) unadjusted DAR of 0.011 (0.006), and important clients report a mean (median) unadjusted DAR of 0.002. Their difference in mean (median) is statistically insignificant, judged by the t-value of 0.74 (z-value of 0.83). As for abnormal non-core earnings, important clients report a mean (median) ANCE

of 0.089 (0.006) and unimportant clients report a mean (median) ANCE of 0.027 (0.006). Their mean difference is highly significant (t = 3.94), though their median difference is not so pronounced (z = 1.27). The industry-adjusted DAR and ANCE display a quite similar profile as the unadjusted measures.

In panel B, model (I) links client importance (CLTIMP) to discretionary accruals (DAR). The regression is separately run for the full period, the offering and the post-offering periods. Across all periods, client importance does not matter at all. The coefficients on CLTIMP are 0.016, 0.013 and 0.009 respectively in section A, B and C. None of them are statistically significant. That is to say, compared to unimportant or smaller clients, important or larger clients have no special privileges in accrual choices. However, the results of model (J) in panel C tell a different story. In model (J), the dependent variable is abnormal non-core earnings ANCE. The estimate of CLTIMP is 0.392 with a t-value of 8.11 in the full period in section A. The equivalent estimates in the offering and the post-offering periods are 0.513 (t = 7.13 in section B) and 0.055 (t = 1.68 in section C); the former is significant at the 1% level, and the latter estimate is significant at the 10% level. That is, no matter whether in the offering period or the post-offering period, important clients report higher abnormal non-core earnings than unimportant clients do. This result suggests that auditors always treat their important clients favorably.

The above regression results are based on the unadjusted raw measures of earnings management. The left-out results based on industry-adjusted measures provide quite similar evidence.

5.4 SUMMARY OF THE CHAPTER

The current chapter empirically tests earnings management behavior and the association between audit quality and earnings management in rights offering firms. Rights offering firms create a more conflicting situation for auditors than other firms. Compared to other firms, stronger earnings management motivation in rights offering firms pressures auditors to concede, but the ex ante publicly-known profitability requirements make the earnings management in rights offering firms more likely to be detected by regulators and investors and thus force auditors to behave conservatively. The study of earnings management behavior in rights offering firms can provide further empirical evidence on regulation-induced earnings management. The auditor behavior examination in rights offering firms can provide a better understanding of audit quality in the current Chinese market, and can also serve as a robustness check for the findings in the previous chapter.

The findings in this chapter are as follows. First, firms do manipulate earnings to meet the profitability requirements for rights offering. It seems that non-core business transactions are more frequently used than discretionary accruals, though both of them are significantly higher in the offering period than in the post-offering period. Second, the documented association between audit quality and

earnings management in Chapter 4 also holds in the rights offering sample. Specifically, the top 10 clients report both lower discretionary accruals and lower abnormal non-core earnings than the non-top 10 auditors, and the Big 5 clients report lower abnormal non-core earnings than the top 10 auditors. Local clients report higher abnormal non-core earnings than non-local clients, and important clients report higher abnormal non-core earnings than unimportant clients. Most of the above findings hold in the offering period, but not in the post-offering period.

□ CHAPTER 6

ADDITIONAL TESTS

In this chapter, I add some additional tests as the robustness check. These sensitivity tests include the use of alternative accrual model to calculate discretionary accruals, alternative proxy for abnormal non-core earnings, the annual regression analysis, and the retest of the sample excluding auditor-switching firms.

6.1 ALTERNATIVE ACCRUAL MODEL

The measure of discretionary accruals (DAR) in the main tests is estimated from a performance-matched modified Jones model. There are different versions of accrual models and each of them has its advantages and disadvantages. To further show that the results obtained in the previous chapters are not sensitive to the choice of different accrual models, a traditional modified Jones model is used in this part to estimate the discretionary accruals. The traditional modified Jones model is specified by the following model,

$$ACCR_{jt} / TA_{jt-1} = a_1 (1/ TA_{jt-1}) + a_2 (\Delta SALE_{jt} - \Delta AR_{jt} / TA_{jt-1}) + a_3 (PPE_{jt} / TA_{jt-1}) + e_{jt}$$

That is, compared to the performance-matched version, there is no intercept in the model and the performance variable is also omitted from the model. The model is run cross-sectionally based on an industry-year combination. Again, I make the industry classification according to the 13-industry codes promulgated by

the CSRC in 2001. The predicted values of the above model are non-discretionary accruals (NAR), and the unexplained residuals are then discretionary accruals (DAR).

Table 6-1 report the test results based on the new DAR measure. Panel A, B, D and E show the regression results for the auditor size argument, the auditor location argument, the Big 5 affiliation argument and the client importance argument respectively. Panel C reports the joint retest of the first two hypotheses. For convenient presentation, the results of the probit auditor choice models involved in the first stage are omitted from the table. In the panels, section A displays the full-sample results, and section B and C report the results based on income-increasing DAR and income-decreasing DAR respectively.

The results found in Table 6-1 are qualitatively similar to (or even statistically better in some parts than) those previously reported in the main tests. Overall, top 10 auditors are more (less) effective than non-top 10 auditors in limiting their clients' income-increasing (income-decreasing) DAR choices. It seems that auditor location does not matter much in limiting opportunistic reporting of DAR. Local auditors behave no more differently than non-local auditors. Like the findings in chapter 4, important clients are treated favorably by allowing them more flexibility in DAR reporting. The joint test of H1 and H2 shows that the regression based on DAR estimated from the traditional modified Jones model yields more favorable results than that based on the DAR estimated from the

performance-matched version. In chapter 4 when performance-matched DAR is used as the dependent variable, I find that the clients of local non-top 10 auditors report the highest DAR as predicted, but against the prediction, the clients of non-local top 10 auditors do not report the statistically lowest DAR. In the current part where DAR is estimated by a traditional modified Jones model, the results of the joint test of H1 and H2 more favorably support my predictions. Not only local non-top 10 auditors are least efficient, but also non-local top 10 auditors are most efficient in limiting firms' opportunistic DAR reporting, as seen from panel C. Similarly, while the test in chapter 4 reports no statistical difference between Big 5 auditors and top 10 auditors, the Big 5 affiliation argument is more favorably supported here when DAR is estimated from the traditional modified Jones model. As shown in panel D, Big 5 auditors are more (less) effective than top 10 auditors in limiting income-increasing (income-decreasing) DAR choices.

The above sensitivity test shows that the use of different versions of accrual models to estimate DAR will not affect the main results reported in Chapter 4.

6.2 ALTERNATIVE PROXY FOR ABNORMAL NON-CORE EARNINGS (ANCE)

In the tests of previous chapters, I use the industry median as the benchmark to calculate abnormal non-core earnings. This industry-adjustment approach may not be adequate or accurate. Alternatively, in this part, I use another approach to

calculate abnormal non-core earnings. As argued in previous chapters, the abnormal non-core earnings very likely frequently happen between listed firms and their controlling firms. Therefore, an alternative adjustment approach is based on the shareholding of the largest shareholder. Based on the shareholding of the largest shareholder at year beginning, the total sample is divided into deciles each year. A firm's ANCE is then defined as the firm's actual non-core earnings minus the median non-core earnings of the decile to which the firm belongs.

Table 6-2 reports the regression results when ANCE is adjusted based on the largest shareholder's holding percentage. Panel A, B, D and E report the sensitivity test results for the auditor size argument, the auditor location argument, the Big 5 affiliation argument and the client importance argument. Panel C describes the regression results for the joint test of H1 and H2. In the panels, section A reports the full-sample results, and section B and C report the results for the income-increasing and income-decreasing subsamples respectively. For brevity, the results of the probit auditor choice models in the first stage are omitted from the table.

The results shown in Table 6-2 are qualitatively the same as those reported in chapter 4. Compared to non-top 10 auditors, top 10 auditors are more effective in limiting income-increasing ANCE but less effective in limiting income-decreasing ANCE. The auditor location argument is also supported in that local auditors give their clients more flexibility in both income-increasing and income-decreasing ANCE reporting than non-local auditors. Likewise, important clients are

found to be associated with higher ANCE. Big 5 auditors are more effective than top 10 auditors only when managers choose income-increasing ANCE. However, the joint test of H1 and H2 reports no significant results, as shown in panel C.

Overall, the above sensitivity test demonstrates that the analysis in the current study is robust no matter which adjustment approach is used in the calculation of abnormal non-core earnings. There are some other alternative ways to adjusting non-core earnings, such as the difference between current NCE and a 3-year or 5-year average. However, the multi-year average adjustment approach is at the cost of reduction in sample size.

6.3 YEAR-BY-YEAR RESULTS

The analysis in the previous chapter is conducted on data pooled over the 5-year sample period. To provide more detailed information, I redo the main tests year by year. Table 6-3 reports the corresponding results of the annual analysis.

Panel A in Table 6-3 describes the distribution of sample firms in each year. The number of sample firms increasing over years. It is 307 in 1996, 509 in 1997, 714 in 1998, 819 in 1999 and 916 in 2000. Panel B reports the yearly regression results for models with DAR being the dependent variable, and panel C reports the results of models with ANCE being the dependent variable. For simplicity, the results of the involved probit auditor choice models are left out from the table. The results of the DAR model before 1998 (in 1996 and 1997) are rarely significant or

bearing the contrary sign as predicted. This can be possibly due to the different approach used to calculate accruals before and since 1998. Before 1998, the balance sheet approach is used to calculate total accruals, but since 1998, total accruals is simply the difference between operating income and the operating cash flow listed in the cash flow statement. The balance sheet approach to measuring accruals introduces significant measurement error into accrual estimates and can contaminate lots of accrual-based researches (Collins and Hribar, 1999). Compared to the DAR model, the ANCE model produces more consistent results over the sample years, as shown in panel C.

Overall, the year-by-year results are not contradictory to what have been found in the pooled sample.

6.4 SENSITIVITY TEST BY EXCLUDING AUDITOR-SWITCHING FIRMS

Finally in this part, I do a sensitivity test by focusing on firms without switching auditors in the sample period. In the regression models, two dummies, NEWAUD and OLDAUD, have been added to control for the effect of auditor change on earnings management choices. As an alternative control, I exclude from the sample those switching auditors.

Table 6-4 reports the corresponding results. The four hypotheses are re-tested and the results are summarized in panel A to D respectively. Again, the

results of the probit auditor choice models are left out for brevity. Not surprisingly, the results are quite similar to those based on the original sample. Top 10 are more effective than non-top 10 auditors in limiting both the DAR and the ANCE choices. Local auditors give their clients more flexibility in ANCE, but not in DAR, than non-local auditors. Important clients are treated more favorably and they report both higher DAR and higher ANCE than unimportant clients. The full-sample analysis shows no difference between Big 5 and Top 10 auditors.

In summary, the additional tests in the current chapter demonstrate that the reported results in the thesis are not sensitive to either the choice of accrual models in computing DAR or the adjustment approach to calculating ANCE. Additionally, the yearly analysis and the analysis of non-auditor-switching firms yield consistent results as the main tests in Chapter 4.

CHAPTER 7

CONCLUSIONS

Motivated by the different features of earnings management and the audit market in China, this study extends the literature investigating the association between audit quality and earnings management from the U.S. market into the emerging Chinese market. I measure audit quality by auditor size, location, and attitude towards important clients, and the affiliation with the Big 5 in the China context. I adopt two earnings management measures in the study. The first is discretionary accruals estimated from the performance-matched modified Jones model (Kothari et al., 2003), and a second measure for earnings management is abnormal non-core earnings, i.e., non-core earnings adjusted by the industry median.

I develop four hypotheses to test the auditor size argument, the auditor location argument, the client importance argument and the Big 5 affiliation argument in China. I argue that in deterring firms' earnings management, larger auditors are more effective than smaller auditors, non-local auditors are more effective than local auditors, and the Big 5 are more effective than domestic auditors. I also argue that auditors' economic dependence on important clients dominates the reputation protection incentive in China. With a total of 3,265 firm-year observations in the period 1996-2000, empirical results support my hypotheses. Overall, clients of larger auditors (the top 10 domestic auditors in terms of client

assets) report both lower discretionary accruals and lower abnormal non-core earnings than the clients of smaller auditors (non-top 10 auditors). Local clients report higher abnormal non-core earnings than non-local clients. Important or larger clients report both higher discretionary accruals and higher abnormal non-core earnings than unimportant or smaller clients. A comparison between the Big 5 and top 10 auditors shows that the Big 5 clients report lower income-increasing abnormal non-core earnings than the top 10 clients.

Tests confined to a rights offering sample find similar results. Auditors are more likely to be caught in the middle in rights offering firms because of the higher pressure from firms or even regional governments and the closer scrutiny from investors and regulators. Rights offering firms create a more conflicting situation for their auditors than other firms. Empirical tests find that rights offering firms do manipulate earnings, mainly through non-core business, to meet the profitability requirements. Most of the difference in audit effectiveness among auditors of different quality is significant only in the offering period, but not in the post-offering period. Some other additional analyses also support the robustness of the obtained major results in the current study.

Empirical results in the study also lend some support to the auditor conservatism argument in the literature, that is, auditors prefer income-decreasing choices and thus behave more conservatively when managers choose to boost earnings. Results in the study suggest that the top 10 auditors are more effective

than the non-top 10 auditors only when managers report income-increasing discretionary accruals and abnormal non-core earnings; if mangers choose to depress earnings, the top 10 auditors are even less effective than the non-top 10 auditors. Similarly, Big 5 auditors are no more effective than the top 10 auditors when firms report income-decreasing abnormal non-core earnings.

In the methodology, I use a two-stage "treatment effects" model (Kim et al., 2003) to control for potential self-selection bias since managers make decisions regarding both the auditor choice and the earnings management choice. In the first stage, a probit auditor choice model is run to estimate inverse Mills ratios, and in the second stage, discretionary accruals and abnormal non-core earnings are linked to different proxies for audit quality with the inclusion of the inverse Mills ratio.

This study provides empirical evidence on audit quality in China by investigating auditors' effectiveness in limiting earnings management. While auditor size and auditor's affiliation with the Big 5 are positively related to audit quality, local auditors and client importance are negatively related to audit quality. This study also contributes to the literature by concentrating on a non-U.S. market. First, the study of audit quality under different corporate governance condition can help clarify how auditors balance between their dual roles as both safeguards of the public interest and self-interested economic agents. Second, the non-Big 5-dominated Chinese market provides a different and useful setting to re-examine the auditor size argument. Third, the adverse impact of protectionism on audit quality

documented in the current study is meaningful to other developing markets, since government intervention is common in many emerging economies. Moreover, the comparison between the Big 5 and domestic auditors in the study can provide useful references to Chinese regulators and domestic auditors.

This study can be further extended. First, the current study does not take into account audit fees and non-audit services. With further information on audit fee and non-audit service, auditors' economic incentives can be better analyzed. It will be clearer why auditors behave differently among each other. A better measure for client importance can also be constructed. Second, the earnings management measures can be further refined. Non-core earnings in the study are adjusted by the industry benchmark, but the industry adjustment approach may not be sufficient to accurately disentangle the "abnormal" from the "normal" non-core earnings. Furthermore, the use of abnormal real transactions to directly measure earnings management can enhance the test power. Third, various reforms in the auditing industry in the examined period can produce great effects on audit quality. After reforms, the difference in limiting opportunistic earnings management among auditors of different quality can become either more significant (i.e., the reforms help more clearly distinguish high-quality from low-quality auditors) or less significant (i.e., the reforms reduce the gap between high-quality and low-quality auditors). The current study does not examine the time-series changes of audit quality in China, and does not focus on any specific reform. I leave these to my future research.

□ APPENDIX A: AUDITORS IN 2000 [1]

Auditor Name (Chinese)	Auditor Name (English)	# of Clients	%	Client Assets[a]	%	# of Local Clients (%)
安达信华强 [2]	ANDAXIN HUAQIANG (AA)	24	2.21	586	2.70	---
安徽华普	ANHUI HUAPU	12	1.10	156	0.72	11 (91.67)
安永华明 [2]	ANYONG HUAMING (E & Y)	6	0.55	836	3.85	---
北京京都 [3]	BEIJING JINGDU	29	2.67	666	3.07	19 (65.52)
北京兴华	BEIJING XINGHUA	21	1.93	328	1.51	10 (47.62)
北京永拓	BEIJING YONGTUO	4	0.37	44	0.20	0 (0)
北京中天华正	BEIJING ZHONGTIAN HUAZHENG	13	1.19	186	0.86	12 (92.31)
北京中天信	BEIJING ZHONGTIANXIN	11	1.01	209	0.96	3 (27.27)
北京中兴宇	BEIJING ZHONGXINGYU	13	1.19	152	0.70	1 (7.69)
北京中洲光华	BEIJING ZHONGZHOU GUANGHUA	6	0.55	151	0.69	2 (33.33)
毕马威华振 [2]	BIMAWEI HUAZHEN (KPMG)	6	0.55	500	2.30	---
重庆天健	CHONGQING TIANJIAN	21	1.93	193	0.89	18 (85.71)
大华 [3]	DAHUA	46	4.23	2,406	11.0	33 (71.74)
大连华连	DALIAN HUALIAN	16	1.47	191	0.88	13 (81.25)
福建华兴	DALIAN HUAXING	17	1.56	231	1.07	17 (100)
福建闽都	FUJIAN MINDU	5	0.46	37	0.17	4 (80)
广东恒信德律	GUANGDONG HENGXIN DELUE	10	0.92	93	0.43	10 (100)
广东康元	GUANGDONG KANGYUAN	6	0.55	225	1.04	6 (100)
广东正中珠江	GUANGDONG ZHENGZHONG	15	1.38	209	0.96	12 (80)
海南从信	HAINAN CONGXIN	11	1.01	141	0.65	9 (81.82)
河北华安	HEBEI HUAAN	15	1.38	407	1.88	15 (100)
华伦	HUALUN	22	2.02	393	1.81	20 (90.91)
华寅	HUAYIN	2	0.18	15	0.07	2 (100)
华证	HUAZHENG	6	0.55	92	0.42	4 (66.67)
湖北大信发展	HUBEI DAXIN FAZHAN	29	2.67	296	1.36	14 (48.28)
湖北中正	HUBEI ZHONGZHENG	4	0.37	35	0.16	3 (75)
沪江德勤 [2]	HUJIANG DEQIN (DTT)	8	0.74	190	0.87	---
湖南开元	HUNAN KAIYUAN	27	2.48	412	1.90	26 (96.30)
湖南天职孜信	HUNAN TIANZHI ZIXIN	3	0.28	20	0.09	3 (100)
江苏公证	JIANGSU GONGZHENG	12	1.10	136	0.63	12 (100)
江苏苏亚精诚	JIANGSU SUYA JINGCHENG	1	0.09	10	0.05	1 (100)
江苏天衡	JIANGSU TIANHENG	20	1.84	359	1.65	19 (95)
利安达信隆	LIANDA XINLONG	14	1.29	189	0.87	11 (78.57)
辽宁天健	LIAONING TIANJIAN	13	1.19	278	1.28	12 (92.31)
南京永华	NANJING YONGHUA	11	1.01	125	0.58	11 (100)
普华永道中天 [2]	PUHUA YONGDAO ZHONGTIAN	11	1.01	951	4.38	---
山东汇德	SHANDONG HUIDE	7	0.64	124	0.57	7 (100)
山东乾聚	SHANDONG QIANJU	13	1.19	212	0.98	10 (76.92)
山东天恒信	SHANDONG TIANHENGXIN	1	0.09	2	0.01	1 (100)
山东正源和信	SHANDONG ZHENGYUAN HEXIN	13	1.19	260	1.20	13 (100)
上海东华	SHANGHAI DONGHUA	8	0.74	112	0.51	8 (100)

□ APPENDIX A: (Continued)

Auditor Name (Chinese)	Auditor Name (English)	# of Clients	%	Client Assets	%	# of Local Clients (%)
上海立信长江	SHANGHAI LIXIN CHANGJIANG	37	3.40	705	3.25	32 (86.49)
上海上会 [3]	SHANGHAI SHANGHUI	30	2.76	594	2.74	28 (93.33)
上海众华沪银	SHANGHAI ZHONGHUA HUYIN	23	2.11	601	2.77	18 (78.26)
山西天元	SHANXI TIANYUAN	11	1.01	246	1.13	11 (100)
深圳大华天诚	SHENZHEN DAHUA	16	1.47	199	0.92	10 (62.50)
深圳华鹏	SHENZHEN HUAPENG	25	2.30	291	1.34	16 (64)
深圳南方民和	SHENZHEN NANFANG MINHE	2	0.18	88	0.41	2 (100)
深圳鹏城 [3]	SHENZHEN PENGCHENG	9	0.83	755	3.48	3 (33.33)
深圳同人 [3]	SHENZHEN TONGREN	31	2.85	493	2.27	12 (38.71)
石家庄金石	SHIJIAZHUANG JINSHI	3	0.28	31	0.14	2 (66.67)
四川华信	SICHUAN HUAXIN	16	1.47	157	0.72	13 (81.25)
四川君和 [3]	SICHUAN JUNHE	28	2.57	442	2.04	24 (85.71)
天健	TIANJIAN	8	0.74	100	0.46	2 (25)
天健信德	TIANJIAN XINDE	14	1.29	253	1.17	10 (71.43)
天一	TIANYI	18	1.65	199	0.92	18 (100)
武汉众环	WUHAN ZHONGHUAN	19	1.75	219	1.01	15 (78.95)
五联联合	WULIAN LIANHE	29	2.67	309	1.43	25 (86.21)
五洲联合	WUZHOU LIANHE	22	2.02	248	1.14	22 (100)
厦门天健华天	XIAMEN TIANJIAN HUATIAN	31	2.85	217	1.00	13 (92.86)
西安希格玛	XI'AN XIGEMA	6	0.55	43	0.20	6 (100)
信永中和	XINYONG ZHONGHE	6	0.55	259	1.20	1 (16.67)
羊城	YANGCHENG	12	1.10	239	1.10	11 (91.67)
岳华	YUEHUA	21	1.93	258	1.19	15 (71.43)
亚太（集团）	YATAI	6	0.55	103	0.47	6 (100)
云南亚太	YUNNAN YATAI	10	0.92	121	0.56	10 (100)
浙江东方	ZHEJIANG DONGFANG	1	0.09	7	0.03	1 (100)
浙江天健 [3]	ZHEJIANG TIANJIAN	35	3.22	550	2.53	33 (94.29)
中鸿信建元	ZHONGHONG XINJIANYUAN	10	0.92	181	0.83	10 (100)
中京富	ZHONGJINGFU	2	0.18	23	0.10	2 (100)
中磊	ZHONGLEI	3	0.28	59	0.27	3 (100)
中联信	ZHONGLIANXIN	1	0.09	13	0.06	0 (0)
中勤万信	ZHONGQIN WANXIN	7	0.64	95	0.44	6 (85.71)
中瑞华	ZHONGRUIHUA	5	0.46	24	0.11	1 (20)
中审	ZHONGSHEN	11	1.01	110	0.51	9 (81.82)
中天勤 [3]	ZHONGTIANQIN	62	5.70	1,306	6.02	35 (56.45)
中喜	ZHONGXI	1	0.09	10	0.04	0 (0)
Special Reason:	**Deferment of Reporting**	2	0.18	---	---	---

[a] *The monetary unit is billions (000,000,000's).*
[1] *Data source: "Who Audits China? (2000)", published by the CSRC.*
[2] *Joint ventures of the Big 5 in China.*
[3] *The top 10 auditors in terms of client assets (excluding joint ventures of the Big 5 in China).*

□ APPENDIX B FOREIGN AUDITORS IN CHINA

A. Representative Offices (RO)*[1]

BIG 5	# of RO	Location
PWC	3	Shanghai, Beijing, Dalian
DTT	3	Dalian, Tianjin, Nanjing
KPMG	2	Guangzhou, Shenzhen
EY	2	Shenzhen, Guangzhou
RP	1	Shanghai
M.W. (Japan)	1	Beijing
BDO	1	Xiamen
M & G	1	Beijing
LIPSHER	1	Guangzhou
JOSEPH NG & Co.	1	Guangzhou
HO & HO Co.	1	Shenzhen
Total	17	

* Data source: the website of the CICPA, http://www.cicpa.org.cn . The table data is current as of Sept.9, 2002.
[1] Representative offices are allowed to provide non-audit services, but not to perform audits in China.

B. Joint Ventures (JV) *

Foreign Party	JV	Location	Audit listed firms [a]
KPMG	BIMAWEI HUAZHEN	Beijing (HO)[1], Shanghai, Guangzhou	√
EY	ANYONG HUAMING	Beijing (HO), Shanghai	√
	ANYONG DAHUA	Shanghai (HO)	√
PWC	PUHUA YONGDAO ZHONGTIAN	Shanghai (HO), Shenzhen, Guangzhou, Dalian, Chongqing, Tianjin, Beijing	√
DTT	DEQIN HUJIANG	Shanghai (HO), Beijing, Guangzhou, Shenzhen, Dalian, Nanjing, Tianjing	√
GTI	ZHONGJINGFU	Beijing (HO), Haerbin, Shanghai	√
S.R.	S.R. ZHONGRUI	Beijing	

* *Data source: the website of the CICPA, http://www.cicpa.org.cn . The table data is current as of Sept.11, 2003.*
[1] *HO stands for Head Office.*
[a] *The qualification to audit listed firms is based on the most updated list obtained from the website of the Hong Kong Society of Accountants (HKSA), http://www.hksa.org.hk.*

C: Market Share of Joint Ventures --- Year 2000*

JV	Foreign Party	# of Clients	%	Client Assets[1]	%
ANDAXIN HUAQIANG	AA	24	2.21	586	2.70
PUHUA YONGDAO ZHONGTIAN	PWC	11	1.01	951	4.38
HUJIANG DEQIN	KPMG	8	0.74	190	0.87
ANYONG HUAMING	E & Y	6	0.55	836	3.85
BIMAWEI HUAZHEN	KPMG	6	0.55	500	2.30
SUBTOTAL FOR BIG 5		55	5.06	3,063	14.1
ZHONGJINGFU	GTI	2	0.18	23	0.10

* *Data source: Who Audits China? (2000)", published by the CSRC.*
[1] *The monetary unit is billions (000,000,000's).*

D. Member Firms (MEM) and Associate Firms (ASS) *

Foreign Party	Auditor Name	Form	Location	Audit Listed Firms [a]
PWC	ZHANGCHEN	MEM	Beijing	
	YANGGCHENG	ASS	Guangzhou	√
GTI	FUJIAN CHENGXIN LIANHE	ASS	Fuzhou	
	SHANGHAI CHANGXIN	ASS	Shanghai	
NEXIA	BEIJING XINGYE	ASS	Beijing	
	SHANGHAI XINZHONGCHUANG	ASS	Shanghai	
HORWATH	BEIJING JINGDU	MEM	Beijing	√
	SHANDONG HUIDE	MEM	Qingdao	√
	SHANGHAI LIXIN CHANGJIANG	MEM	Shanghai	√
	NANJING YONGHUA	MEM	Nanjing	√
	HUBEI DAXIN	MEM	Wuhan	√
	DALIAN LIANXIN	MEM	Dalian	
MR	SHANDONG HUAMAO	MEM	Yantai	
HLB	BEIJING YONGTUO	MEM	Beijing	√
	SHANGHAI DONGHUA	MEM	Shanghai	
MOR	YUNAN YATAI	MEM	Kunming	√
	HAINAN CONGXIN	MEM	Haikou	√
	HUNAN CHANGCHENG	MEM	Changsha	
	SHANGHAI GONGXIN	MEM	Shanghai	
	ZHONGNAN			
	XIAN HUALIXIN	MEM	Xi'an	
M.S.	BEIJING XINGHUA	MEM	Beijing	√
	SHENZHEN NANFANG MINHE	MEM	Shenzhen	√
	QINGDAO ZHENQING	MEM	Qingdao	
	SHANGHAI GONGZHENG	MEM	Shanghai	
	LIAONING ZHENGDA	MEM	Shenyang	
APACT	NINGBO KEXIN	MEM	Ningbo	
BDO	SHANGHAI ZHONGHUA HUYIN	MEM	Shanghai	√
	LIANDAXINLONG	MEM	Beijing	√
SUMMIT	HUAANDE	MEM	Beijing	
BKR	SHANGHAI JIAHUA	MEM	Shanghai	
KRESTON	NANJING GONGZHENG	MEM	Nanjing	
	SHANGHAI JINMAO	MEM	Shanghai	
Y.L. NGAN & Co.	HUAIHUA LIHUA	MEM	Huaihua	

* *Data source: the website of the CICPA, http://www.cicpa.org.cn . The table data for member firms is current as of Feb. 12, 2003, and the table data for associate/affiliate firms is current as of Dec.12, 2001.*

[a] *The qualification to audit listed firm is based on the most updated list obtained from the website of the Hong Kong Society of Accountants (HKSA), http://www.hksa.org.hk.*

KPMG:	*Peat Marwick*	*EY:*	*Ernst & Young*
PWC:	*Price Waterhouse Coopers*	*DTT:*	*Deloitte Touche Tohmatsu*
GTI:	*Grant Thornton International*	*M.S.:*	*Moore Stephens*
Horwath:	*Horwath International*	*S.R.:*	*Salustro Reydel*
R.P.:	*Rodel & Partner*	*HLB:*	*HLB International*
BDO:	*BDO International*	*MOR:*	*Morison International*
Lipher:	*Lipsher Accountancy Corporation*	*NEXIA:*	*NEXIA International*
M.R.:	*Moores Rowland*		

□ APPENDIX C: PROFITABILITY REQUIREMENTS FOR RIGHTS OFFERING TRANSACTIONS

Date of Guideline	Profitability Requirement
Dec. 1993	**Two years' continual profits**
Dec. 1994	**Three years' continual profits and a three-year average ROE above 10%**
Oct. 1996	**Three years' continual profits and a ROE above 10% in each of the three years** [a]
Mar. 1999	**Three years' continual profits and a three-year average ROE above 10%, and a ROE above 6% in each of the three years** [b]
Mar. 2001	**Three years' continual profits and a three-year average ROE above 6%**

[a] *For firms in the energy, raw materials and infrastructure sectors, ROE is reduced to 9% in each of the previous three years.*
[b] *For firms in the energy, raw materials and infrastructure sectors, the three-year average ROE is reduced to 9%.*

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□ FIGURES AND TABLES

Figure 1: Research Framework

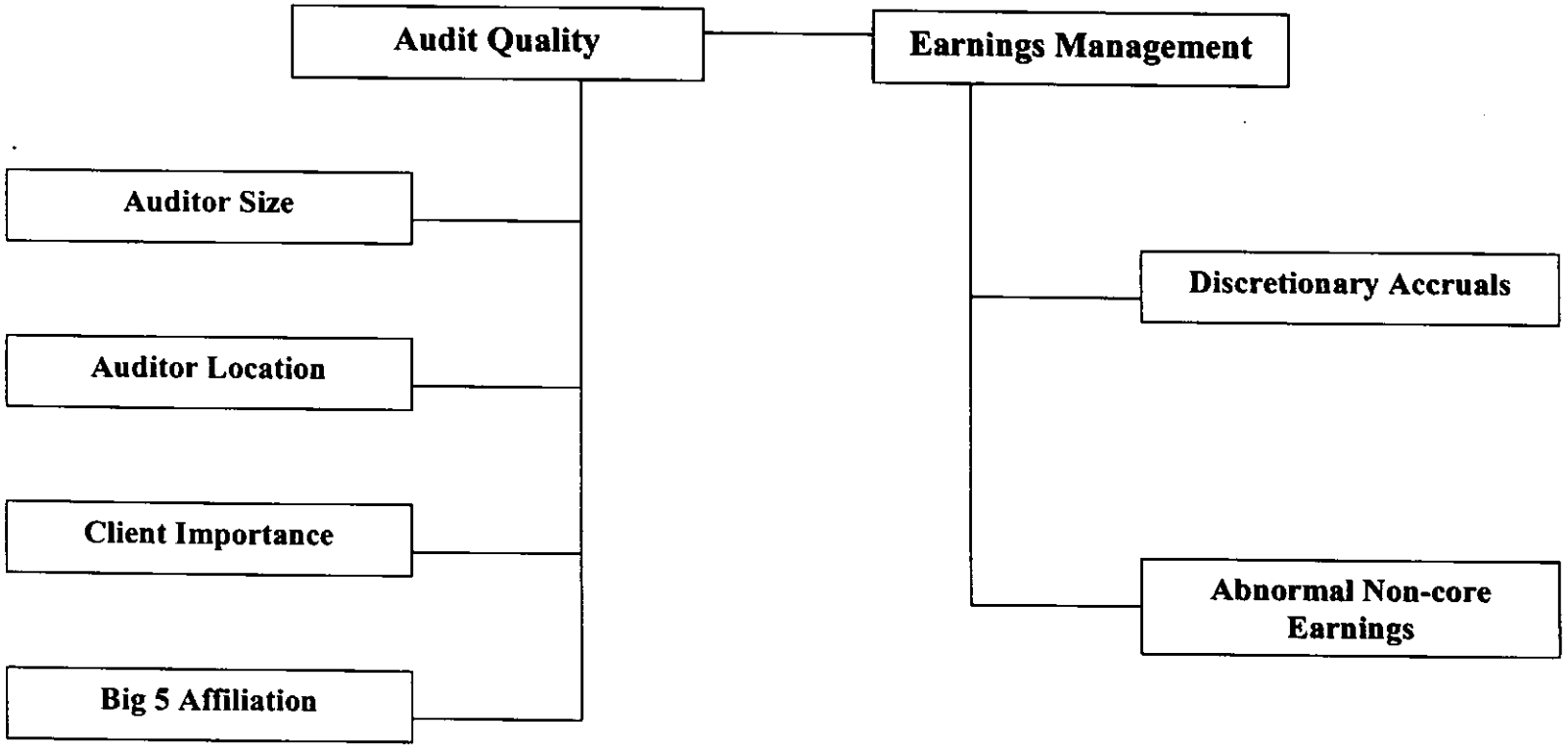

Table 4-1: Sample Information

Panel A: Sample Selection

	Obs.	%
Firms with Auditor Information	4,206	100
Less: Firms without Enough Information about Discretionary Accruals or Abnormal Non-core Earnings	(941)	(22.37)
Final Sample	3,265	77.63
Total Sample	3,265	100
Big 5 in China	154	4.72
Domestic Auditors	3,111	95.28
The Top 10 Domestic Auditors	1,102	33.75
The Non-top 10 Domestic Auditors	2,009	61.53
Test of H1, H2 and H3	3,111	
Test of H4	1,256	

Panel B: Market Share of the Top 10 Auditors, the Big 5 and the Local Auditors

Section A: in terms of the client number			
%	**Top 10 Auditors [a b]**	**Big 5 Auditors**	**Local Auditors [a]**
1996	51.57	6.51	87.11
1997	39.21	5.29	81.12
1998	32.06	4.34	80.53
1999	30.92	4.03	79.52
2000	34.71	4.69	76.98
1996-2000	35.42	4.72	79.97
Section B: in terms of the client assets			
%	**Top 10 Auditors [a b]**	**Big 5 Auditors**	**Local Auditors [a]**
1996	50.70	18.52	72.98
1997	44.20	17.40	72.22
1998	38.72	13.54	73.97
1999	35.20	12.40	74.21
2000	37.47	12.16	72.45
1996-2000	39.20	13.75	73.21

[a] *Excluding the joint ventures of the Big 5.*

[b] *The top 10 auditor is defined based on client assets.*

Table 4-2: Variable Definitions

ACCR:	Total Accruals scaled by year-beginning total assets. Before 1998, ACCR is calculated by the balance sheet approach. $ACCR_{jt} = [(\Delta CA_{jt} - \Delta CASH_{jt}) - (\Delta CL_{jt} - \Delta STD_{jt} - \Delta TAX_{jt} - DEP_{jt})] / TA_{jt-1}$. ΔCA is the change in current assets; $\Delta CASH$ is the change in monetary funds; ΔCL is the change in current liabilities; ΔSTD is the change in 1-year maturity debts; ΔTAX is the change in tax payable; and DEP is the depreciation and amortization expenses. TA refers to the total assets. Since 1998, ACCR is calculated by the cash flow approach, which is simply the difference between operating income (EARN) and operating cash flow (CFO), i.e. $ACCR_{jt} = EARN_{jt} - CFO_{jt}$.
DAR:	Discretionary accruals. It is the residual term in a performance-matched version of the Modified Jones 1991 model (Kothari et al., 2003). The model is, $ACCR_{jt} = a_0 + a_1 [1/TA_{jt-1}] + a_2 [\Delta SALES_{jt} - \Delta AR_{it} / TA_{jt-1}] + a_3 [PPE_{jt} / TA_{jt-1}] + a_4 ROA_{jt} + e_{jt}$. TA_{jt-1} stands for the total assets at the beginning of year t, $\Delta SALES_{jt}$ is the change in sales revenues, and ΔAR_{it} is the change in accounts receivables, and PPE_t is the gross property, plant and equipment (the gross fixed assets in China), and ROA_{jt} is the return on total assets. e_{jt} represents unspecified random factors. The model is estimated cross-sectionallly for each year and industry (based on 13-industrial codes by the CSRC in 2001) combination.
| DAR |:	The absolute value of discretionary accruals.
NCE:	Non-core earnings. It is calculated as $NCE_{j,t} = EBT_{j,t} - CE_{j,t}$. EBT stands for earnings before income tax. CE refers to a firm's core earnings. CE is the difference between net sales and cost of goods sold, selling expenses, administrative expenses and financial charges.
| NCE |	The absolute value of non-core earnings.
ANCE:	Abnormal non-core earnings. It is defined as the industry-median adjusted non-core earnings. The industry category follows the 13-industrial codes announced by the CSRC in 2001.
| ANCE |	The absolute value of abnormal non-core earnings.
CFO:	Operating cash flows scaled by year-beginning total assets. Before 1998, CFO is defined as the difference between operating income (EARN) and total accruals (ACCR), i.e. $CFO_{jt} = EARN_{jt} - ACCR_{jt}$. Since 1998, CFO is the net operating cash flow reported in the cash flow statement.
TOP10:	A dummy for auditor size, 1 for a top 10 domestic auditor in terms of audited listed assets in each year, and 0 otherwise.
NTOP:	A dummy for auditor size, 1 for a non-top 10 domestic auditor in terms of audited listed assets in each year, and 0 otherwise.
BIG5:	A dummy equal to 1 for Big 5 and 0 otherwise.
NBIG5:	A dummy equal to 1 for non-Big 5 and 0 otherwise.

Table 4-2: (Continued)

LOCAL:	A dummy for auditor location, 1 for a local auditor (the client and its auditor locate within the same administrative province or metropolitan city) and 0 otherwise.
CLTIMP:	Client importance measure. The importance of client j to the audit firm is measured as client i's sales divided by total sales of all clients of an auditor, i.e. $CLTIMP_{jt} = SALES_{jt} / \Sigma SALES_{jt}$.
RINF:	A dummy equal to 1 if the client importance measure CLTIMP is above the sample median in a certain year, and 0 otherwise.
SIZE:	The natural log of total assets.
LEV:	Leverage, measured as total liabilities divided by total assets.
NEWAUD:	A dummy equal to 1 if a sample year is the first year in which a new auditor starts auditing a new client firm, and 0 otherwise.
OLDAUD:	A dummy equal to 1 if a sample year is the last year in which an incumbent auditor finishes auditing an old client firm, and 0 otherwise.
M/B:	Market to book ratio, measured as total market value of equity divided by total assets.
SHRINCR:	A dummy for share-increasing transactions, 1 if the number of shares outstanding increases by more than 10% during the current year, and 0 otherwise.
LOSS:	A dummy for financial distress, 1 if net income is negative and the absolute value of change in net income are greater than 10% during the current year, and 0 otherwise.
CTRHOLD:	Ownership percentage by the largest shareholder;
GOVHOLD:	Ownership percentage by the government;
TOPNLAL:	A dummy equal to 1 if an auditor is both a top-10 auditor and a non-local auditor, and 0 otherwise;
NTOPLAL:	A dummy equal to 1 if an auditor is both a non-top 10 auditor and a local auditor, and 0 otherwise;
DUAL:	A dummy equal to 1 if a firm issues both foreign and domestic shares, and 0 if a firm issues domestic shares only.
LMADA:	Inverse Mill's ratios estimated from the probit auditor choice model.

Table 4-3: Correlation Matrix *

	TOP10	LOCAL	CLTINF	BIG4	DAR	ANCE	SIZE	LEV	CFO	CTRHOLD	GOVHOLD	SHRINCR	NEWAUD	OLDAU
TOP10	1	0.027	-0.270[a]	--	-0.048[a]	-0.041[b]	0.157[a]	0.104[a]	0.086[a]	0.005	0.012	-0.015	-0.057[a]	-0.026
LOCAL		1	0.089[a]	--	-0.031[c]	0.046[c]	0.11 1[a]	0.057[a]	0.021	0.035[b]	0.021	-0.015	-0.147[a]	-0.064[a]
CLTINF			1		0.009	0.218[a]	0.275[a]	-0.002	0.233[a]	0.042[b]	-0.006	0.073[a]	0.004	-0.023
BIG4			0.423[a]	1	-0.030	-0.026	0.291[a]	-0.131[a]	0.049[c]	0.113[a]	0.048[c]	-0.134[a]	-0.025	0.018
DAR					1	-0.055[b]	0.025	-0.057[a]	-0.381[a]	-0.014	-0.009	0.116[a]	0.009	0.041
ANCE						1	0.029	-0.014	-0.029	0.044[b]	-0.002	0.115[a]	-0.037[b]	-0.032[c]
SIZE							1	0.125[a]	0.433[a]	0.182[a]	0.106[a]	0.027	-0.063[a]	-0.077[a]
LEV								1	-0.046[b]	-0.101[a]	0.021	-0.151[a]	0.045[b]	0.001
CFO									1	0.171[a]	0.033	-0.043[b]	-0.024	-0.041[b]
CTRHOLD										1	0.457[a]	-0.055	-0.044	-0.023
GOVHOLD											1	-0.043[b]	-0.022	-0.030[c]
SHRINCR												1	-0.060[a]	-0.019
NEWAUD													1	0.027

a b c stands for statistical significance at the 1%, 5% and 10% level respectively.

* *The correlation among TOP10, LOCAL, CLTINF and other variables are based on the sample for the first three hypotheses, i.e., 3,111 observations. The correlation among BIG5 and other variables are based on the sample for the fourth hypothesis, i.e, 1,256 observations.*

Table 4-4: Auditor Size and Earnings Management --- Test of H1

Panel A: Descriptive Statistics: the Top 10 vs. the Non-top 10

	Section A: Top 10 (Obs. = 1,102)			Section B: Non-top 10 (Obs. = 2,009)			Test of null (A=B)	
	Mean	*Median*	σ	*Mean*	*Median*	σ	*T*	*z*
SIZE	20.842	20.761	0.907	20.569	20.553	0.766	8.48[a]	5.26 [a]
LEV	0.482	0.480	0.214	0.434	0.421	0.217	5.85[a]	6.53 [a]
CFO	0.047	0.040	0.129	0.048	0.035	0.119	-0.15	1.44 [c]
CTRHOLD	43.746	43.650	18.303	43.584	41.690	17.415	0.24	1.44 [c]
GOVHOLD	29.343	29.683	27.144	28.709	29.194	25.394	0.64	0.46
SHRINCR	0.385	0.000	0.487	0.400	0.000	0.490	-0.84	-0.84
NEWAUD	0.056	0.000	0.231	0.088	0.000	0.284	-3.39[a]	-3.19[a]
OLDAUD	0.053	0.000	0.223	0.066	0.000	0.248	-1.50	-1.46[c]
DAR	-0.006	-0.005	0.111	0.004	0.003	0.100	-2.59 [a]	-3.51[a]
| DAR |	0.070	0.047	0.086	0.069	0.048	0.073	0.36	-0.14
ANCE	0.027	-0.008	0.233	0.049	0.009	0.281	-2.40[b]	-9.88[a]
| ANCE |	0.103	0.028	0.211	0.106	0.020	0.265	-0.29	4.44 [a]

Panel B: Auditor Choice Model

$$Pr\,(TOP10)_{jt} = \alpha + \gamma_0 * CYCLE_{jt} + \gamma_1 * CAPINT_{jt} + \gamma_2 * |\,NCE\,|_{jt} + \gamma_3 * SIZE_{jt} + \gamma_4 * LEV_{jt} + \gamma_5 * M/B_{jt} + \gamma_6 * SHRINCR_{jt} + \gamma_7 * LOSS_{jt} + \varepsilon_{jt} \quad (1)$$

	CYCLE	CAPINT	|NCE|	SIZE	LEV	M/B	SHRINCR	LOSS
Coefficients	0.000	-0.011	0.240	0.463	0.925	0.095	-0.070	0.012
χ^2	1.77	1.16	6.02	78.73	20.32	14.19	0.73	0.01
***p*-value**	0.18	0.28	0.01	<0.00	<0.00	0.00	0.39	0.94

LR statistic = 121.42 (<0.00) **Obs.** = 3,111

Table 4-4: (Continued)

Panel C: Regression Analysis --- Auditor Size and Discretionary Accruals

$$DAR_{jt} = \alpha + \beta_0 TOP10_{jt} + \beta_1 SIZE_{jt} + \beta_2 LEV_{jt} + \beta_3 CFO_{jt} + \beta_4 SHRINCR_{jt} + \beta_5 NEWAUD_{jt} + \beta_6 OLDAUD_{jt} + \beta_7 LMADA_{jt} + v_{jt} \quad (2)$$

	Section A: Full Sample (Obs. =3,111)		Section B: DAR>0 (Obs.=1,563)		Section C: DAR<0 (Obs.= 1,541)	
	Estimate	*t-value*	*Estimate*	*t-value*	*Estimate*	*t-value*
TOP10	-0.144	*-10.50* ***	-0.141	*-8.87* ***	-0.062	*-3.42* ***
SIZE	-0.010	*-4.50* ***	-0.017	*-6.09* ***	0.003	*1.00*
LEV	-0.102	*-15.14* ***	-0.078	*-9.05* ***	-0.072	*-8.94* ***
CFO	-0.691	*-75.21* ***	-0.532	*-37.50* ***	-0.544	*-44.71* ***
SHRINCR	0.026	*11.34* ***	0.024	*8.58* ***	0.011	*3.96* ***
NEWAUD	-0.002	*-0.43*	0.004	*0.87*	-0.006	*-1.24*
OLDAUD	-0.000	*-0.09*	0.001	*0.24*	-0.001	*-0.11*
LMADA	-0.077	*-9.91* ***	-0.079	*-8.80* ***	-0.0030	*-3.00* ***
Adj. R^2	0.653		0.494		0.579	

Panel D: Regression Analysis ---Auditor Size and Abnormal Non-core Earnings

$$ANCE_{jt} = \alpha + \beta_0 TOP10_{jt} + \beta_1 CTRHOLD_{jt} + \beta_2 GOVHOLD_{jt} + \beta_3 SIZE_{jt} + \beta_4 LEV_{jt} + \beta_5 SHRINCR_{jt} + \beta_6 NEWAUD_{jt} + \beta_7 OLDAUD_{jt} + \beta_8 LMADA_{jt} + v_{jt} \quad (3)$$

	Section A: Full Sample (Obs. =3,111)		Section B: ANCE>0 (Obs.=1,768)		Section C:ANCE<0 (Obs.= 1,343)	
	Estimate	*t-value*	*Estimate*	*t-value*	*Estimate*	*t-value*
TOP10	-1.351	*-23.66* ***	-2.174	*-24.81* ***	-0.110	*-2.75* ***
CTRHOLD	0.001	*1.94***	0.001	*1.32*	0.000	*2.06***
GOVHOLD	-0.000	*-0.37*	0.000	*0.23*	-0.000	*-1.24*
SIZE	-0.180	*-18.70* ***	-0.328	*-21.79* ***	0.003	*0.53*
LEV	-0.398	*-14.64* ***	-0.505	*-11.29* ***	-0.074	*-4.14* ***
SHRINCR	0.074	*8.17* ***	0.108	*8.54* ***	-0.015	*-2.25* **
NEWAUD	-0.029	*-1.75* *	-0.061	*-2.42* **	0.037	*3.29***
OLDAUD	-0.011	*-0.60*	0.055	*1.95* *	-0.047	*-3.86* ***
LMADA	-0.767	*-23.53* ***	-1.269	*-25.48* ***	-0.069	*-3.03* ***
Adj. R^2	0.167		0.290		0.060	

[a b c] represent statistical significance at the 1%, 5% and 10% levels, using t-tests for the mean and Wilcoxon p-value for the median.

****, ** and * indicate statistical significance at the 1%, 5% and 10% level.*

Table 4-5: Auditor Location and Earnings Management --- Test of H2

Panel A: Descriptive Statistics: Non-Local vs. Local Auditors

	Section A: Non-Local Auditors (Obs. = 623)			Section B: Local Auditors (Obs. = 2,488)			Test of null (A=B)	
	Mean	***Median***	σ	***Mean***	***Median***	σ	t	z
SIZE	20.459	20.419	0.773	20.717	20.673	0.834	-7.34[a]	-5.77[a]
LEV	0.460	0.433	0.279	0.449	0.443	0.199	0.93	0.93
CFO	0.086	0.045	0.165	0.038	0.035	0.107	6.89[a]	1.67[b]
CTRHOLD	41.986	40.140	17.273	44.056	42.925	17.806	-2.65[a]	-2.46[a]
GOVHOLD	27.415	26.647	25.534	29.314	29.683	26.138	-1.65[c]	-1.47[c]
SHRINCR	0.393	0.000	0.489	0.395	0.000	0.489	-0.08	-0.08
NEWAUD	0.152	0.000	0.360	0.058	0.000	0.234	6.24[a]	7.93[a]
OLDAUD	0.087	0.000	0.282	0.055	0.000	0.227	2.63[a]	2.98[a]
DAR	-0.031	-0.009	0.139	0.009	0.001	0.091	-6.68[a]	-2.01[a]
| DAR |	0.090	0.059	0.110	0.064	0.045	0.066	5.74[a]	4.71[a]
ANCE	0.034	0.004	0.291	0.043	0.005	0.258	-0.71	0.66
| ANCE |	0.111	0.025	0.271	0.103	0.023	0.240	0.65	1.13

Panel B: Auditor Choice Model

$$Pr\,(LOCAL)_{jt} = \alpha + \gamma_0 * CYCLE_{jt} + \gamma_1 * CAPINT_{jt} + \gamma_2 * |NCE|_{jt} + \gamma_3 * SIZE_{jt} + \gamma_4 * LEV_{jt} + \gamma_5 * M/B_{jt} + \gamma_6 * SHRINCR_{jt} + \gamma_7 * LOSS_{jt} + \varepsilon_{jt} \quad (4)$$

	CYCLE	CAPINT	|NCE|	SIZE	LEV	M/B	SHRINCR	LOSS
Coefficients	0.000	0.004	0.187	0.374	-0.578	-0.064	-0.058	0.115
χ^2	0.17	0.31	2.13	33.31	6.63	5.40	0.36	0.46
***p*-value**	0.68	0.58	0.14	<0.00	0.01	0.02	0.55	0.50

LR statistic = 63.86 (<0.00) **Obs.** = 3,111

Table 4-5: (Continued)

Panel C: Regression Analysis --- Auditor Location and Discretionary Accruals

$$DAR_{jt} = \alpha + \beta_0 LOCAL_{jt} + \beta_1 SIZE_{jt} + \beta_2 LEV_{jt} + \beta_3 CFO_{jt} + \beta_4 SHRINCR_{jt} + \beta_5 NEWAUD_{jt} + \beta_6 OLDAUD_{jt} + \beta_7 LMADA_{jt} + \nu_{it} \quad (5)$$

	Section A: Full Sample (Obs. =3,111)		Section B: DAR>0 (Obs.=1,563)		Section C: DAR<0 (Obs.= 1,541)	
	Estimate	*t-value*	*Estimate*	*t-value*	*Estimate*	*t-value*
LOCAL	0.002	*0.11*	-0.030	*-1.02*	0.025	*1.08*
SIZE	0.007	*3.51* **	0.004	*1.58*	0.008	*3.33* ***
LEV	-0.067	*-10.82* ***	-0.035	*-4.64***	-0.054	*-8.49* ***
CFO	-0.678	*-71.81* ***	-0.518	*-35.75* ***	-0.515	*-42.30* ***
SHRINCR	0.026	*10.63* ***	0.022	*7.73* ***	0.011	*3.69* ***
NEWAUD	-0.002	*-0.05*	0.004	*0.77*	-0.002	*-0.36*
OLDAUD	-0.003	*-0.21*	0.001	*0.15*	0.002	*0.30*
LMADA	0.001	*0.09*	0.014	*0.97*	-0.003	*-0.26*
Adj. R^2	0.640		0.418		0.583	

Panel D: Regression Analysis ---- Auditor Location and Abnormal Non-core Earnings

$$ANCE_{jt} = \alpha + \beta_0 LOCAL_{jt} + \beta_1 CTRHOLD_{jt} + \beta_2 GOVHOLD_{jt} + \beta_3 SIZE_{jt} + \beta_4 LEV_{jt} + \beta_5 CFO_{jt} + \beta_6 SHRINCR_{jt} + \beta_7 NEWAUD_{jt} + \beta_8 OLDAUD_{jt} + \beta_9 LMADA_{jt} + \nu_{it} \quad (6)$$

	Section A: Full Sample (Obs. =3,111)		Section B: ANCE>0 (Obs.=1,768)		Section C: ANCE<0 (Obs.= 1,343)	
	Estimate	*t-value*	*Estimate*	*t-value*	*Estimate*	*t-value*
LOCAL	0.918	*10.18****	1.957	*13.65* ***	-0.210	*-3.64****
CTRHOLD	0.001	*2.84* ***	0.001	*1.59*	0.000	*2.19***
GOVHOLD	-0.000	*-1.29*	-0.000	*-1.11*	-0.000	*-1.44*
SIZE	-0.062	*-7.13* ***	-0.147	*-10.70* ***	0.036	*6.52****
LEV	0.099	*4.20* ***	0.312	*7.48* ***	-0.058	*-4.09* ***
SHRINCR	0.069	*7.10* ***	0.093	*6.61* ***	-0.020	*-2.95****
NEWAUD	-0.015	*-0.82*	-0.030	*-1.06*	0.035	*3.15* ***
OLDAUD	-0.037	*-1.88* *	0.015	*0.48*	-0.048	*-3.96* ***
LMADA	-0.457	*-10.23****	-0.983	*-13.82* ***	0.111	*3.89* ***
Adj. R^2	0.047		0.121		0.064	

[a b c] represent statistical significance at the 1%, 5% and 10% levels, using t-tests for the mean and Wilcoxon p-value for the median.

****, ** and * indicate statistical significance at the 1%, 5% and 10% level.*

Table 4-6: Joint Tests of H1 and H2

Panel A: Descriptive Statistics

	TOP10 = 1	TOP10 = 0
LOCAL=1	*DAR =0.002[b] (-0.004[b])[1]* *ANCE = 0.026[a] (-0.008[b])* *N = 898*	*DAR = 0.012[a] (0.005[a])* *ANCE = 0.053[a] (0.010[a])* *N = 1,590*
LOCAL=0	*DAR = -0.041[a] (-0.015[a])* *ANCE = 0.028[C] (-0.006)* *N = 204*	*DAR = -0.025[a] (-0.006[b])* *ANCE = 0.037[a] (0.008[a])* *N = 419*

[a b c] represent statistical significance at the 1%, 5% and 10% levels, using t-tests for the mean and signed rank tests for the median.

[1] The value in parentheses is the median.

Panel B: Auditor Choice Model

$$Pr\,(TOPNLAL)_{jt} = \alpha + \gamma_0 * CYCLE_{jt} + \gamma_1 * CAPINT_{jt} + \gamma_2 * |NCE|_{jt} + \gamma_3 * SIZE_{jt} + \gamma_4 * LEV_{jt} + \gamma_5 * M/B_{jt} + \gamma_6 * SHRINCR_{jt} + \gamma_7 * LOSS_{jt} + \varepsilon_{jt} \quad (7)$$

	CYCLE	CAPINT	|NCE|	SIZE	LEV	M/B	SHRINCR	LOSS
Coefficients	-0.002	-0.002	-0.023	-0.103	0.740	0.108	0.228	-0.119
χ^2	0.73	0.01	0.01	1.05	4.47	7.50	2.21	0.18
***p*-value**	0.39	0.92	0.90	0.31	0.03	0.01	0.14	0.67

LR statistic = 16.70 (p = 0.03) **Obs.** = 3,111

Table 4-6: (Continued)

Panel C: Regression Analysis --- Discretionary Accruals

$$DAR_{jt} = \alpha + \beta_0 TOPNLAL_{jt} + \beta_1 NTOPLAL_{jt} + \beta_2 SIZE_{jt} + \beta_3 LEV_{jt} + \beta_4 CFO_{jt} + \beta_5 SHRINCR_{jt} + \beta_6 NEWAUD_{jt} + \beta_7 OLDAUD_{jt} + \beta_8 LAMDA_{jt} + \nu_{jt} \quad (8)$$

	Coefficient	*t* -value	Adj. R^2
TOPNLAL	-0.002	*-0.36*	
NTOPLAL	0.011	*4.73* ***	
SIZE	0.008	*5.79* ***	0.642
LEV	-0.059	*-11.19***	
CFO	-0.673	*-72.55* ***	Observation
SHRINCR	0.024	*10.30* ***	
NEWAUD	-0.000	*-0.06*	3,111
OLDAUD	-0.001	*-0.10*	
LAMDA	-0002	*-0.99*	

Panel D: Regression Analysis --- Abnormal Non-core Earnings

$$ANCE_{jt} = \alpha + \beta_0 TOPNLAL_{jt} + \beta_1 NTOPLAL_{jt\ jt} + \beta_2 CTRHOLD_{jt} + \beta_3 GOVHOLD_{jt} + \beta_4 SIZE_{jt} + \beta_5 LEV_{jt} + \beta_6 SHRINCR_{jt} + \beta_7 NEWAUD_{jt} + \beta_8 OLDAUD_{jt} + \beta_9 LAMDA_{jt} + \nu_{jt} \quad (9)$$

	Coefficient	*t* - value	Adj. R^2
TOPNLAL	-0.020	*-0.71*	
NTOPLAL	0.021	*2.11***	
CTRHOLD	0.001	*2.84* ***	0.017
GOVHOLD	-0.000	*-1.31*	
SIZE	0.005	*0.90*	Observation
LEV	0.015	*0.68*	
SHRINCR	0.061	*6.17* ***	3,111
NEWAUD	-0.025	*-1.41*	
OLDAUD	-0.028	*-1.44*	
LAMDA	-0.006	*-0.85*	

****, ** and * indicate statistical significance at the 1%, 5% and 10% level.*

Table 4-7: Client Importance and Earnings Management --- Test of H3

Panel A: Descriptive Statistics: Important vs. Unimportant Clients

	Section A: Unimportant Clients (Obs. = 1,620)			Section B: Important Clients (Obs. = 1,491)			Test of null (A=B)	
	Mean	***Median***	σ	***Mean***	***Median***	σ	*t*	*z*
SIZE	20.333	20.304	0.706	21.026	20.949	0.802	-25.48[a]	-20.43[a]
LEV	0.452	0.426	0.247	0.450	0.455	0.180	0.18	-3.14[a]
CFO	0.039	0.028	0.123	0.057	0.047	0.121	-4.08[a]	-5.73[a]
CTRHOLD	42.338	41.020	17.565	45.058	44.230	17.810	-4.29[a]	-3.14[a]
GOVHOLD	27.210	26.659	26.062	30.806	31.033	25.864	-3.86[a]	-3.99[a]
SHRINCR	0.364	0.000	0.481	0.429	0.000	0.495	-3.71[a]	-3.70[a]
NEWAUD	0.081	0.000	0.273	0.072	0.000	0.259	0.88	0.88
OLDAUD	0.075	0.000	0.263	0.046	0.000	0.210	3.34[a]	3.31[a]
DAR	-0.003	-0.002	0.107	0.005	0.003	0.100	-2.07[b]	-2.13[b]
| DAR |	0.069	0.048	0.082	0.069	0.047	0.073	0.12	0.09
ANCE	0.008	0.001	0.187	0.078	0.008	0.326	-7.30[a]	-3.93[a]
| ANCE |	0.088	0.019	0.165	0.123	0.027	0.311	-3.86[a]	-5.54[a]

Panel B: Regression Analysis --- Discretionary Accruals

$$DAR_{jt} = \alpha + \beta_0 CLTIMP_{jt} + \beta_1 SIZE_{jt} + \beta_2 LEV_{jt} + \beta_3 CFO_{jt} + \beta_4 SHRINCR_{jt} + \beta_5 NEWAUD_{jt} + \beta_6 OLDAUD_{jt} + \nu_{jt} \quad (10)$$

	Coefficient	*t* - value	Adj. R^2
CLTIMP	0.025	*3.38* ***	
SIZE	0.006	*4.28***	0.641
LEV	-0.061	*-11.59***	
CFO	-0.677	*-73.47* ***	Observation
SHRINCR	0.024	*10.42* ***	
NEWAUD	-0.002	*-0.36*	3,111
OLDAUD	-0.001	*-0.31*	

Panel C: Regression Analysis --- Abnormal Non-core Earnings

$$ANCE_{jt} = \alpha + \beta_0 CLTIMP_{jt} + \beta_1 CTRHOLD_{jt} + \beta_2 GOVHOLD_{jt} + \beta_3 SIZE_{jt} + \beta_4 LEV_{jt} + \beta_5 SHRINCR_{jt} + \beta_6 NEWAUD_{jt} + \beta_7 OLDAUD_{jt} + \nu_{jt} \quad (11)$$

	Coefficient	*t* - value	Adj. R^2
CLTIMP	0.377	*12.16* ***	
CTRHOLD	0.001	*2.87* ***	0.060
GOVHOLD	-0.000	*-0.96*	
SIZE	-0.016	*-2.64* ***	Observation
LEV	0.019	*0.88*	
SHRINCR	0.056	*5.78* ***	3,111
NEWAUD	-0.033	*-1.87* *	
OLDAUD	-0.030	*-1.53*	

Table 4-7: (Continued)

Panel D: Difference between Top 10 and Non-top 10 in Treating Their Important Clients

	DAR: Model (10) [+]		ANCE: Model (11) [+]	
	Coefficient	*t* – value	Coefficient	*t* – value
CLTIMP	0.017	*0.54*	0.942	*7.73* ***
TOP10	-0.139	*-9.24* ***	-1.290	*-22.52* ***
CLTIMP* NTOP	-0.009	*-0.27*	-0.657	*-5.36* ***
CTRHOLD			0.001	*1.79* *
GOVHOLD			0.000	*0.20*
SIZE	-0.011	*-4.16* ***	-0.202	*-20.69* ***
LEV	-0.101	*-14.43* ***	-0.383	*-14.34* ***
CFO	-0.689	*-74.83* ***		
SHRINCR	0.026	*11.15* ***	0.068	*7.60* ***
NEWAUD	-0.002	*-0.52*	-0.030	*-1.88* *
OLDAUD	-0.000	*-0.04*	-0.013	*-0.70*
LAMDA	-0.075	*-8.86* ***	-0.736	*-22.84* ***
Adj. R^2	*0.651 (Obs.=3,111)*		*0.199 (Obs.=3,111)*	

*Model (10)[+] and model (11)[+] are based on model (10) and model (11), but with the inclusion of the dummy TOP10, the interaction item CLTIMP*NTOP, and the lamda (inverse Mills ratio) obtained from Model (1).*

Panel E: Difference between Local and Non-Local Auditors in Treating Their Important Clients

	DAR: Model (10) [++]		ANCE: Model (11) [++]	
	Coefficient	*t* – value	Coefficient	*t* – value
CLTIMP	0.002	*0.12*	0.143	*1.79* *
LOCAL	0.004	*0.18*	0.908	*9.99* ***
CLTIMP*LOCAL	0.026	*1.26*	0.252	*2.94* ***
CTRHOLD			0.001	*3.02* ***
GOVHOLD			-0.000	*-1.04*
SIZE	0.006	*2.73* ***	-0.081	*-9.24* ***
LEV	-0.061	*-10.63* ***	0.108	*4.64* ***
CFO	-0.674	*-71.89* ***		
SHRINCR	0.024	*10.42* ***	0.062	*6.52* ***
NEWAUD	-0.000	*-0.07*	-0.018	*-1.01*
OLDAUD	-0.001	*-0.25*	-0.038	*-1.97* **
LAMDA	-0.001	*-0.10*	-0.465	*-10.12* ***
Adj. R^2	*0.641 (Obs.=3,111)*		*0.090 (Obs.=3,111)*	

*Model (10)[++] and model (11)[++] are based on model (10) and model (11), but with the inclusion of the dummy LOCAL, the interaction item CLTIMP*LOCAL, and the lamda (inverse Mills ratio) obtained from Model (4).*

[abc] represent statistical significance at the 1%, 5% and 10% levels, using t-tests for the mean and Wilcoxon p-value for the median.

****, ** and * indicate statistical significance at the 1%, 5% and 10% level.*

Table 4-8: The Big 5 Affiliation and Earnings Management --- Test of H4

Panel A: Descriptive Statistics: Big 5 vs. the Top 10 Auditors

	Section A: Big 5 Auditors (Obs. = 154)			Section B: Top 10 Auditors (Obs. = 1,102)			Test of null (A=B)	
	Mean	*Median*	σ	*Mean*	*Median*	σ	t	z
SIZE	21.693	21.497	1.005	20.842	20.761	0.907	9.97[a]	8.08[a]
LEV	0.398	0.388	0.173	0.482	0.480	0.214	-5.48[a]	5.50[a]
CFO	0.066	0.057	0.088	0.047	0.040	0.129	2.29[b]	2.06[a]
CTRHOLD	49.979	50.890	17.565	43.745	43.650	18.302	4.55[a]	3.44[a]
GOVHOLD	33.318	41.793	27.917	29.343	29.683	27.144	1.66[c]	2.58[a]
SHRINCR	0.188	0.000	0.392	0.385	0.000	0.487	-5.64[a]	-4.75[a]
NEWAUD	0.039	0.000	0.194	0.056	0.000	0.231	-1.01	0.89
OLDAUD	0.065	0.000	0.247	0.053	0.000	0.223	-0.59	-0.63
DUAL	0.773	1.000	0.420	0.212	0.000	0.309	15.87[a]	14.49[a]
DAR	-0.016	-0.011	0.094	-0.006	-0.005	0.111	-1.22	-1.03
| DAR |	0.060	0.045	0.074	0.070	0.047	0.086	-1.53	-1.03
ANCE	0.008	-0.005	0.199	0.027	-0.008	0.233	-1.05	0.69
| ANCE |	0.096	0.026	0.174	0.103	0.028	0.211	-0.44	-0.17

Panel B: Auditor Choice Model

$$Pr\,(BIG5)_{jt} = \alpha + \gamma_0 * CYCLE_{jt} + \gamma_1 * CAPINT_{jt} + \gamma_2 * |NCE|_{jt} + \gamma_3 * DUAL_{jt} + \gamma_4 * SIZE_{jt} + \gamma_5 * LEV_{jt} + \gamma_6 * M/B_{jt} + \gamma_7 * SHRINCR_{jt} + \gamma_8 * LOSS_{jt} + \varepsilon_{jt} \quad (12)$$

	CYCLE	CAPINT	|NCE|	DUAL	SIZE	LEV	M/B	SHRINCR	LOSS
Coefficients	-0.019	0.147	0.236	2.224	0.720	-4.88	-0.127	-0.918	0.746
χ^2	13.31	7.20	0.48	91.36	32.62	49.38	2.25	12.88	4.36
p-value	<0.00	0.01	0.49	<0.00	<0.00	<0.00	0.13	0.00	0.04

LR Statistic = 318.39 (<0.00) **Obs.** = 1,256

Table 4-8: (Continued)

Panel C: Regression Analysis --- Discretionary Accruals

$$DAR_{jt} = \alpha + \beta_0 BIG5_{jt} + \beta_1 SIZE_{jt} + \beta_2 LEV_{jt} + \beta_3 CFO_{jt} + \beta_4 SHRINCR_{jt} + \beta_5 NEWAUD_{jt} + \beta_6 OLDAUD_{jt} + \beta_7 LMADA_{jt} + \nu_{jt} \quad (13)$$

	Section A: Full Sample (Obs. =1,256)		Section B: DAR>0 (Obs.=575)		Section C: DAR<0 (Obs.= 681)	
	Estimate	*t-value*	*Estimate*	*t-value*	*Estimate*	*t-value*
BIG5	-0.002	*-0.26*	0.004	*0.33*	-0.003	*-0.35*
SIZE	0.004	*1.89* *	0.001	*0.52*	0.006	*2.49* **
LEV	-0.055	*-6.46* ***	-0.032	*-2.77***	-0.054	*-5.57* ***
CFO	-0.731	*-53.84* ***	-0.597	*-29.07* ***	-0.621	*-34.41* ***
SHRINCR	0.020	*5.61* ***	0.015	*3.25* ***	0.010	*2.16* **
NEWAUD	0.011	*1.52*	0.011	*1.13*	0.011	*1.20*
OLDAUD	0.005	*0.70*	0.004	*0.42*	0.002	*0.24*
LMADA	0.001	*0.37*	-0.001	*-0.11*	0.000	*0.04*
Adj. R^2	0.702		0.603		0.640	

Panel D: Regression Analysis ---- Abnormal Non-core Earnings

$$ANCE_{jt} = \alpha + \beta_0 BIG5_{jt} + \beta_1 CTRHOLD_{jt} + \beta_2 GOVHOLD_{jt} + \beta_3 SIZE_{jt} + \beta_4 LEV_{jt} + \beta_5 CFO_{jt} + \beta_6 SHRINCR_{jt} + \beta_7 NEWAUD_{jt} + \beta_8 OLDAUD_{jt} + \beta_9 LMADA_{jt} + \nu_{jt} \quad (14)$$

	Section A: Full Sample (Obs. =1,256)		Section B: ANCE>0 (Obs.=532)		Section C: ANCE<0 (Obs.= 724)	
	Estimate	*t-value*	*Estimate*	*t-value*	*Estimate*	*t-value*
BIG5	-0.024	*-0.79*	-0.167	*-2.74* ***	0.022	*1.25*
CTRHOLD	0.001	*3.39* ***	0.003	*2.95* ***	0.001	*2.41* **
GOVHOLD	-0.001	*-3.36* ***	-0.002	*-4.02* ***	-0.000	*-1.60*
SIZE	0.005	*0.53*	-0.020	*-1.03* ***	0.023	*4.28***
LEV	0.009	*0.21*	0.329	*3.57* ***	-0.102	*-4.55* ***
SHRINCR	0.038	*2.49* **	0.081	*2.83* ***	-0.027	*-2.96***
NEWAUD	-0.004	*-0.14*	-0.005	*-0.08*	0.022	*1.39*
OLDAUD	-0.033	*-1.16*	0.074	*1.25*	-0.063	*-3.95* ***
LMADA	-0.001	*-0.14*	-0.039	*-2.71* ***	0.016	*4.38* ***
Adj. R^2	0.013		0.044		0.071	

Table 4-8: (Continued)

Panel E: Difference in Treating Their Important Clients between BIG5 and the Top 10 auditors

	DAR: Model (10) $^{+++}$		ANCE: Model (11) $^{+++}$	
	Coefficient	*t* – value	Coefficient	*t* – value
CLTIMP	0.077	*2.63***	0.123	*7.18* ***
BIG5	-0.010	*-0.94*	0.040	*1.12*
CLTIMP*NBIG5	0.020	*0.48*	0.816	*5.20* ***
CTRHOLD			0.001	*2.75* ***
GOVHOLD			-0.001	*-2.55* ***
SIZE	-0.001	*-0.35*	-0.028	*-2.61* ***
LEV	-0.055	*-6.55* ***	-0.018	*-0.43*
CFO	-0.734	*-54.10* ***		
SHRINCR	0.019	*5.31* ***	0.026	*1.74* *
NEWAUD	0.011	*1.53*	-0.003	*-0.12*
OLDAUD	0.005	*0.70*	-0.036	*-1.29*
LAMDA	0.003	*0.80*	0.004	*0.61*
Adj. R^2	*0.705 (Obs.=1,256)*		*0.050 (Obs.=1,256)*	

*Model (10)$^{+++}$ and model (11)$^{+++}$ are based on model (10) and model (11), but with the inclusion of the dummy BIG5, the interaction term CLTIMP*NBIG5, and the lamda (the inverse Mills ratio) obtained from Model (12).*

^{abc} represent statistical significance at the 1%, 5% and 10% levels, using t-tests for the mean and Wilcoxon p-value for the median.

****, ** and * indicate statistic significance at the 1%, 5% and 10% level.*

Table 5-1: Yearly Distribution and Industry Distribution of Rights Offering Firms in the Period 1996-2000

	1996	1997	1998	1999	2000	Total
# of RO Firms	18	65	82	94	111	370
	0002	0003	0004	0005	0006	Total
	Utilities	Properties	Conglomerates	Industrial	Commerce	
# of RO Firms	30	12	59	226	43	370

Table 5-2: Distribution of Return on Equity (ROE) and Operating Return on Equity (OPROE) in the Sample Period 1996-2000

Panel A: Distribution of ROE and OPROE (1996 and 1997)

ROE	≤-20%	-20 - 0%	0 -2%	2-6%	6-7%	7 - 10%	10-12%	12-20%	≥20%	Total
# of Firms	37	33	98	100	16	55	250	166	61	816
%	4.53	4.04	12.01	12.25	1.96	6.74	30.64	20.34	7.48	100
OPROE	*≤-20%*	*-20 - 0%*	*0 -2%*	*2-6%*	*6-7%*	*7 - 10%*	*10-12%*	*12-20%*	*≥20%*	*Total*
# of Firms	35	125	59	136	38	101	86	159	77	816
%	4.29	15.32	7.22	16.67	4.66	12.37	10.54	19.49	9.44	100

Panel B: Distribution of ROE and OPROE (1998-2000)

ROE	≤-20%	-20 - 0%	0 -2%	2-6%	6-7%	7 - 10%	10-12%	12-20%	≥20%	Total
# of Firms	135	96	215	249	211	401	532	448	162	2449
%	5.51	3.92	8.79	10.17	8.62	16.37	21.72	18.29	6.61	100
OPROE	*≤-20%*	*-20 - 0%*	*0 -2%*	*2-6%*	*6-7%*	*7 - 10%*	*10-12%*	*12-20%*	*≥20%*	*Total*
# of Firms	149	292	162	361	110	386	288	516	185	2449
%	6.08	11.92	6.61	14.74	4.49	15.88	11.76	21.06	7.55	100

Table 5-3: Variable Definitions

ROE:	Return on equity. It is calculated as the net income divided by shareholders' equity at year end.
OPROE:	Operating return on equity. It is calculated as the operating income divided by shareholders' equity at year end.
EPS:	Earnings per share. It is calculated as the net income divided by the outstanding shares at year end.
RETN:	Size-adjusted annual return. It is a firm's annual (based on calendar year) buy-hold return adjusted by the annual return on a size-matched portfolio. The size matching is based on the quartile of the year-beginning market value of equity.
OFFER:	A dummy equal to 1 for the rights offering period, i.e., year -3 to 0, and 0 for the post-offering period (year +1 to +3).

Table 5-4: Rights Offering Firms: Year -3 to Year +3

Panel A: Unadjusted Measures

		-3	-2	-1	0	+1	+2	+3
				Operating Performance and Stock Performance				
ROE	*Mean*	0.127[a]	0.136[a]	0.143[a]	0.060[b]	0.060[a]	0.019	0.043
	Median	0.108[a]	0.114[a]	0.121[a]	0.091[a]	0.093[a]	0.069[a]	0.062[a]
EPS	*Mean*	0.294[a]	0.351[a]	0.370[a]	0.266[a]	0.192[a]	0.099[a]	0.088[b]
	Median	0.249[a]	0.289[a]	0.322[a]	0.254[a]	0.238[a]	0.167[a]	0.118[a]
RETN	*Mean*	-0.040	0.211[a]	0.122[a]	0.103[a]	0.041[c]	0.012	0.068[c]
	Median	-0.099	0.075[a]	0.019[a]	0.017[a]	-0.030	-0.053	0.008
				Earnings Management				
DAR	*Mean*	0.000	-0.012	-0.011[b]	0.040[a]	0.007	0.003	-0.009
	Median	-0.000	-0.008	-0.007[b]	0.025[a]	0.002	-0.003	-0.002
ANCE	*Mean*	0.129	0.141[a]	0.111[a]	0.049[a]	0.018[b]	0.007	0.006
	Median	-0.042	0.018[a]	0.013[a]	0.009[a]	0.003[a]	0.003	-0.000
	N	27	101	305	370	259	165	83

Panel B: Industry Median Adjusted Measures

		-3	-2	-1	0	+1	+2	+3
				Operating Performance and Stock Performance				
ROE	*Mean*	0.032[a]	0.037[a]	0.045[a]	-0.035	-0.034[b]	-0.071[b]	-0.043
	Median	0.009[a]	0.016[a]	0.026[a]	-0.002[b]	-0.006[b]	-0.014[a]	-0.026[a]
EPS	*Mean*	0.077[a]	0.136[a]	0.157[a]	0.045[a]	-0.029	-0.115[a]	-0.121[a]
	Median	0.070[a]	0.082[a]	0.114[a]	0.038[a]	0.014	-0.052[a]	-0.089[a]
RETN	*Mean*	0.018	0.161[a]	0.138[a]	0.091[a]	0.012	-0.007	0.053
	Median	-0.072	0.019[c]	0.054[a]	0.015[b]	-0.064	-0.032[a]	-0.018
				Earnings Management				
DAR	*Mean*	-0.005	-0.012	-0.013[c]	0.042[a]	0.012[c]	0.009	-0.007
	Median	0.004	-0.008	-0.012[c]	0.026[a]	0.004[b]	0.004	-0.001
ANCE	*Mean*	0.164	0.141[a]	0.118[a]	0.049[a]	0.013	0.004	0.004
	Median	-0.012	0.018[a]	0.009[a]	0.006[a]	-0.001	-0.001	-0.004
	N	27	101	305	370	259	165	83

[a b c] represent statistical significance at the 1%, 5% and 10% levels, respectively, using t-tests for the means and signed rank tests for the medians.

Table 5-5: Rights Offering Firms: Offering and Post-offering Periods

Panel A: Unadjusted Measures

	Section A: Offering Period (Obs. = 803)			Section B: Post-offering Period (Obs. = 507)			Test of null (A=B)	
	Mean	***Median***	σ	***Mean***	***Median***	σ	t	z
	Operating Performance and Stock Performance							
ROE	0.104[a]	0.108[a]	0.414	0.043[a]	0.081[a]	0.259	3.21[a]	8.38[a]
EPS	0.317[a]	0.283[a]	0.221	0.145[a]	0.202[a]	0.407	8.77[a]	8.22[a]
RETN	0.119[a]	0.020[a]	0.440	0.036[b]	-0.031	0.341	3.82[a]	2.10[b]
	Earnings Management							
DAR	0.013[a]	0.007[a]	0.111	0.003	0.000	0.085	1.79[c]	1.64[c]
ANCE	0.087[a]	0.012[a]	0.345	0.012[a]	0.003[a]	0.106	5.70[a]	5.16[a]

[a b c] represent statistical significance at the 1%, 5% and 10% levels, using t-tests for the means and signed rank tests for the medians.

Panel B: Industry Median Adjusted Measures

	Section A: Offering Period (Obs. = 803)			Section B: Post-offering Period (Obs. = 507)			Test of null (A=B)	
	Mean	***Median***	σ	***Mean***	***Median***	σ	t	z
	Operating Performance and Stock Performance							
ROE	0.007	0.010	0.416	-0.047	-0.010	0.259	2.88[a]	7.53[a]
EPS	0.100	0.071	0.228	-0.072	-0.018	0.408	8.69[a]	8.44[a]
RETN	0.115	0.029	0.441	0.013	-0.039	0.342	4.71[a]	3.90[a]
	Earnings Management							
DAR	0.014	0.011	0.116	0.008	0.004	0.086	1.08	1.40[c]
ANCE	0.090	0.008	0.357	0.008	-0.001	0.113	6.04[a]	4.92[a]

[a b c] represent statistical significance at the 1%, 5% and 10% levels, using t-tests for the means and signed rank tests for the medians.

Panel C: Regression Analysis

$$DAR_{jt} = \alpha + \beta_0 OFFER_{jt} + \beta_1 SIZE_{jt} + \beta_2 LEV_{jt} + \beta_3 CFO_{jt} + \beta_4 NEWAUD_{jt} + \beta_5 OLDAUD_{jt} + v_{jt} \quad (A)$$

		OFFER	SIZE	LEV	CFO	NEWAUD	OLDAUD	Adj. R^2
Model (A1)	**DAR** [(1)]	0.018	0.003	-0.042	-0.652	-0.009	-0.001	0.657
	t-value	*5.19*[***]	*1.35*	*-4.69*[***]	*-49.85*[***]	*-1.41*	*-0.13*	(N = 1,310)
Model (A2)	**DAR** [(2)]	0.014	0.003	-0.042	-0.669	-0.011	-0.001	0.650
	t-value	*4.00*[***]	*1.20*	*-4.49*[***]	*-49.08*[***]	*-1.66*[*]	*-0.13*	(N = 1,310)

$$ANCE_{jt} = \alpha + \beta_0 OFFER_{jt} + \beta_1 CTRHOLD_{jt} + \beta_2 GOVHOLD_{jt} + \beta_3 SIZE_{jt} + \beta_4 LEV_{jt} + \beta_5 NEWAUD_{jt} + \beta_6 OLDAUD_{jt} + v_{jt} \quad (B)$$

		OFFER	CTRHOLD	GOVHOLD	SIZE	LEV	NEWAUD	OLDAUD	Adj. R^2
Model (B1)	**ANCE** [(1)]	0.074	0.000	0.000	-0.002	0.070	-0.029	0.016	0.015
	t-value	*4.56*[***]	*0.66*	*0.15*	*-0.21*	*1.61*	*-0.95*	*0.45*	(N = 1,310)
Model (B2)	**ANCE** [(2)]	0.081	0.000	0.000	-0.006	0.074	-0.033	-0.000	0.017
	t-value	*4.83*[***]	*0.25*	*0.35*	*-0.56*	*1.67*[*]	*-1.03*	*-0.01*	(N = 1,310)

[***] [**] and [*] indicate two-tailed significance at the 1%, 5% and 10% level, respectively.
[(1)] stands for unadjusted measures, and [(2)] stands for industry median adjusted measures.

Table 5-6: The Auditor Size Argument and The Big 5 Affiliation Argument

Panel A: Descriptive Statistics: Top 10, Non-top 10 and Big 5 Auditors

	Unadjusted DAR	Industry-adjusted DAR	Unadjusted ANCE	Industry-adjusted ANCE
Section A: Top 10 Auditors (n = 378)				
Mean	0.010	0.013	0.040	0.040
Median	0.000	0.004	-0.004	-0.006
Section B: Non-top 10 Auditors (n = 907)				
Mean	0.009	0.012	0.068	0.068
Median	0.006	0.010	0.010	0.008
Section C: Big 5 Auditors (n = 25)				
Mean	0.004	0.002	0.017	-0.008
Median	-0.014	-0.006	-0.005	-0.001
Test of Null (A = B)				
t	0.20	0.11	-1.76[c]	-1.76[c]
z	-0.96	-1.22	-5.73[a]	-5.63[a]
Test of Null (A = C)				
t	0.32	0.43	2.16[a]	1.74[c]
z	0.61	0.61	-0.19	0.63

[a b c] represent statistical significance at the 1%, 5% and 10% levels, using t-tests for the mean and Wilcoxon p-values for the median.

Panel B: Auditor Size and Discretionary Accruals

$$DAR_{jt} = \alpha + \beta_0 TOP10_{jt} + \beta_1 SIZE_{jt} + \beta_2 LEV_{jt} + \beta_3 CFO_{jt} + \beta_4 NEWAUD_{jt} + \beta_5 OLDAUD_{jt} + \beta_6 LMADA_{jt} + \nu_{jt} \quad (C)$$

	Section A: Full Period (Obs. =1,285)		Section B: Offering Period (Obs.=792)		Section C: Post-offering Period (Obs.= 493)	
	Estimate	*t-value*	*Estimate*	*t-value*	*Estimate*	*t-value*
TOP10	-0.083	*-5.20*[***]	-0.017	*-2.59*[***]	-0.071	*-3.86*[***]
SIZE	-0.007	*-2.53*[**]	0.003	*0.86*	-0.004	*-1.11*
LEV	-0.063	*-6.47*[***]	-0.059	*-3.88*[***]	-0.043	*-4.04*[***]
CFO	-0.657	*-49.32*[***]	-0.635	*-40.28*[***]	-0.739	*-28.94*[***]
NEWAUD	-0.011	*-1.67*[*]	-0.008	*-0.78*	-0.011	*-1.31*
OLDAUD	0.003	*0.42*	0.011	*1.06*	-0.017	*-1.41*
LMADA[(1)]	-0.042	*-4.93*[***]	-0.006	*-2.96*[***]	-0.032	*-3.46*[***]
Adj. R^2	0.655		0.674		0.629	

(1)LMADA is obtained from the auditor choice probit model (1) in chapter 4: Pr (TOP10)jt = $\alpha + \gamma_0 * CYCLE_{jt} + \gamma_1 * CAPINT_{jt} + \gamma_2 * |NCE|_{jt} + \gamma_3 * SIZE_{jt} + \gamma_4 * LEV_{jt} + \gamma_5 * M/B_{jt} + \gamma_6 * SHRINCR_{jt} + \gamma_7 * LOSS_{jt} + \varepsilon_{jt}$.

Table 5-6 (Continued)

Panel C: Auditor Size and Abnormal Non-core Earnings

$$ANCE_{jt} = \alpha + \beta_0 TOP10_{jt} + \beta_1 CTRHOLD_{jt} + \beta_2 GOVHOLD_{jt} + \beta_3 SIZE_{jt} + \beta_4 LEV_{jt} + \beta_5 NEWAUD_{jt} + \beta_6 OLDAUD_{jt} + \beta_7 LMADA_{jt} + \nu_{jt} \quad (D)$$

	Section A: Full Period (Obs. =1,285)		Section B: Offering Period (Obs.=792)		Section C: Post-offering Period (Obs.= 493)	
	Estimate	*t-value*	*Estimate*	*t-value*	*Estimate*	*t-value*
TOP10	-0.530	*-7.25****	-0.083	*-2.33***	-0.047	*-1.30*
CTRHOLD	0.000	*0.99*	0.001	*1.31*	-0.001	*-2.40***
GOVHOLD	0.000	*0.34*	-0.000	*-0.13*	0.000	*0.72*
SIZE	-0.067	*-4.98****	-0.011	*-0.69*	-0.001	*-0.09*
LEV	-0.044	*-0.98*	0.277	*3.29****	-0.079	*-3.71****
NEWAUD	-0.037	*-1.18*	-0.034	*-0.60*	-0.016	*-1.00*
OLDAUD	0.034	*0.94*	0.010	*0.18*	0.046	*1.95**
LMADA[(2)]	-0.275	*-7.05****	-0.022	*-1.98***	-0.017	*-0.91*
Adj. R^2	0.038		0.012		0.031	

[(2)] *LMADA is obtained from the auditor choice probit model (1) in chapter 4: Pr* $(TOP10)_{jt} = \alpha + \gamma_0 * CYCLE_{jt} + \gamma_1 * CAPINT_{jt} + \gamma_2 * |NCE|_{jt} + \gamma_3 * SIZE_{jt} + \gamma_4 * LEV_{jt} + \gamma_5 * M/B_{jt} + \gamma_6 * SHRINCR_{jt} + \gamma_7 * LOSS_{jt} + \varepsilon_{jt}$

Panel D: Audit Quality of the Big 5 in China --- Discretionary Accruals

$$DAR_{jt} = \alpha + \beta_0 BIG5_{jt} + \beta_1 SIZE_{jt} + \beta_2 LEV_{jt} + \beta_3 CFO_{jt} + \beta_4 NEWAUD_{jt} + \beta_5 OLDAUD_{jt} + \beta_6 LMADA_{jt} + \nu_{jt} \quad (E)$$

	Section A: Full Period (Obs. =403)		Section B: Offering Period (Obs.=236)		Section C: Post-offering Period (Obs.= 167)	
	Estimate	*t-value*	*Estimate*	*t-value*	*Estimate*	*t-value*
BIG5	-0.057	*-1.48*	-0.027	*-0.58*	-0.047	*-0.77*
SIZE	-0.004	*-1.03*	0.001	*0.22*	-0.006	*-1.18*
LEV	-0.025	*-1.52*	-0.041	*-1.50*	-0.005	*-0.26*
CFO	-0.714	*-32.76****	-0.714	*-27.24****	-0.708	*-16.74****
NEWAUD	-0.015	*-1.19*	-0.009	*-0.51*	-0.026	*-1.57*
OLDAUD	0.003	*0.26*	0.016	*0.97*	-0.022	*-1.30*
LMADA[(3)]	0.021	*1.54*	0.009	*0.54*	0.023	*0.97*
Adj. R^2	0.728		0.762		0.637	

[(3)] *LMADA is obtained from the auditor choice probit model (12) in chapter 4: Pr* $(BIG5)_{jt} = \alpha + \gamma_0 * CYCLE_{jt} + \gamma_1 * CAPINT_{jt} + \gamma_2 * |NCE|_{jt} + \gamma_3 * SIZE_{jt} + \gamma_4 * LEV_{jt} + \gamma_5 * M/B_{jt} + \gamma_6 * SHRINCR_{jt} + \gamma_7 * LOSS_{jt} + \varepsilon_{jt}$

Table 5-6: (Continued)

Panel E: Audit Quality of the Big 5 in China --- Abnormal Non-core Earnings

$$ANCE_{jt} = \alpha + \beta_0 BIG5_{jt} + \beta_1 CTRHOLD_{jt} + \beta_2 GOVHOLD_{jt} + \beta_3 SIZE_{jt} + \beta_4 LEV_{jt} + \beta_5 NEWAUD_{jt} + \beta_6 OLDAUD_{jt} + \beta_7 LMADA_{jt} + \nu_{jt} \quad (F)$$

	Section A: Full Period (Obs. =403)		Section B: Offering Period (Obs.=236)		Section C: Post-Offering Period (Obs.= 167)	
	Estimate	*t-value*	*Estimate*	*t-value*	*Estimate*	*t-value*
BIG5	-0.354	*-4.67****	-0.399	*-3.47****	-0.035	*-0.74*
CTRHOLD	0.003	*3.32****	0.004	*3.13****	-0.000	*-0.85*
GOVHOLD	-0.001	*-2.71****	-0.002	*-2.41***	-0.000	*-1.22*
SIZE	-0.060	*-3.47****	-0.083	*-2.92****	-0.002	*-0.15*
LEV	0.320	*3.59****	0.401	*2.93****	-0.060	*-1.08*
NEWAUD	0.042	*0.87*	0.085	*1.08*	0.018	*0.60*
OLDAUD	-0.018	*-0.38*	-0.017	*-0.23*	-0.008	*-0.26*
LMADA[4]	-0.088	*-4.84****	-0.083	*-4.71****	-0.003	*-0.22*
Adj. R^2	0.062		0.094		0.008	

[4] *LMADA is obtained from the auditor choice probit model (12) in chapter 4: Pr* $(BIG5)_{jt} = \alpha + \gamma_0 * CYCLE_{jt} + \gamma_1 * CAPINT_{jt} + \gamma_2 * |NCE|_{jt} + \gamma_3 * SIZE_{jt} + \gamma_4 * LEV_{jt} + \gamma_5 * M/B_{jt} + \gamma_6 * SHRINCR_{jt} + \gamma_7 * LOSS_{jt} + \varepsilon_{jt}$.

***, ** *and* * *indicate two-tailed significance at the 1%, 5% and 10% level, respectively.*

Table 5-7: The Auditor Location Argument

Panel A: Descriptive Statistics: Local vs. Non-local Auditors

	Unadjusted DAR	Industry-adjusted DAR	Unadjusted ANCE	Industry-adjusted ANCE
Section A: Local Auditors (n = 1,067)				
Mean	0.016	0.019	0.057	0.057
Median	0.006	0.009	0.008	0.004
Section B: Non-local Auditors (n = 243)				
Mean	-0.020	-0.018	0.063	0.066
Median	-0.006	-0.005	0.005	0.002
Test of Null (A = B)				
t	4.42[a]	4.36[a]	-0.25	-0.38
z	1.49[c]	1.41[c]	1.21	0.56

[a b c] represent statistical significance at the 1%, 5% and 10% levels, using t-tests for the mean and Wilcoxon p-values for the median.

Panel B: Auditor Location and Discretionary Accruals

$$DAR_{jt} = \alpha + \beta_0 LOCAL_{jt} + \beta_1 SIZE_{jt} + \beta_2 LEV_{jt} + \beta_3 CFO_{jt} + \beta_4 NEWAUD_{jt} + \beta_5 OLDAUD_{jt} + \beta_6 LMADA_{jt} + \nu_{jt} \quad (G)$$

	Section A: Full Period (Obs. =1,310)		Section B: Offering Period (Obs.=803)		Section C: Post-offering Period (Obs.= 507)	
	Estimate	*t-value*	*Estimate*	*t-value*	*Estimate*	*t-value*
LOCAL	-0.002	*-0.10*	0.037	*1.34*	-0.070	*-2.63***
SIZE	0.001	*0.55*	0.002	*0.60*	0.006	*1.88**
LEV	-0.046	*-4.97****	-0.061	*-4.03****	-0.046	*-4.09****
CFO	-0.646	*-48.55****	-0.628	*-39.99****	-0.725	*-28.43****
NEWAUD	-0.011	*-1.61*	-0.005	*-0.50*	-0.011	*-1.46*
OLDAUD	0.001	*0.12*	0.012	*1.20*	-0.020	*-1.79**
LMADA[(1)]	0.006	*0.52*	-0.010	*-0.77*	0.034	*2.66****
Adj. R^2	0.651		0.676		0.621	

[(1)] LMADA is obtained from the auditor choice probit model (4) in chapter 4: $Pr(LOCAL)_{jt} = \alpha + \gamma_0 * CYCLE_{jt} + \gamma_1 * CAPINT_{jt} + \gamma_2 * |NCE|_{jt} + \gamma_3 * SIZE_{jt} + \gamma_4 * LEV_{jt} + \gamma_5 * M/B_{jt} + \gamma_6 * SHRINCR_{jt} + \gamma_7 * LOSS_{jt} + \varepsilon_{jt}$

Panel C: Auditor Location and Abnormal Non-core Earnings

$$ANCE_{jt} = \alpha + \beta_0 LOCAL_{jt} + \beta_1 CTRHOLD_{jt} + \beta_2 GOVHOLD_{jt} + \beta_3 SIZE_{jt} + \beta_4 LEV_{jt} + \beta_5 NEWAUD_{jt} + \beta_6 OLDAUD_{jt} + \beta_7 LMADA_{jt} + \nu_{jt} \quad (H)$$

	Section A: Full Period (Obs. =1,310)		Section B: Offering Period (Obs.=803)		Section C: Post-offering Period (Obs.= 507)	
	Estimate	*t-value*	*Estimate*	*t-value*	*Estimate*	*t-value*
LOCAL	0.289	*2.73****	0.307	*2.04***	0.053	*1.00*
CTRHOLD	0.001	*1.06*	0.001	*1.43*	-0.001	*-2.52***
GOVHOLD	0.000	*0.32*	-0.000	*-0.10*	0.000	*0.53*
SIZE	-0.024	*-2.07***	-0.026	*-1.42*	0.001	*0.14*
LEV	0.082	*1.88**	0.259	*3.09****	-0.072	*-3.20****
NEWAUD	-0.042	*-1.36*	-0.041	*-0.73*	-0.012	*-0.74*
OLDAUD	0.015	*0.44*	-0.002	*-0.04*	0.041	*1.88**
LMADA[(2)]	-0.146	*-2.84****	-0.167	*-2.26***	-0.017	*-0.64*
Adj. R^2	0.004		0.013		0.034	

[(2)] LMADA is obtained from the auditor choice probit model (4) in chapter 4: $Pr(LOCAL)_{jt} = \alpha + \gamma_0 * CYCLE_{jt} + \gamma_1 * CAPINT_{jt} + \gamma_2 * |NCE|_{jt} + \gamma_3 * SIZE_{jt} + \gamma_4 * LEV_{jt} + \gamma_5 * M/B_{jt} + \gamma_6 * SHRINCR_{jt} + \gamma_7 * LOSS_{jt} + \varepsilon_{jt}$

****, ** and * indicate two-tailed significance at the 1%, 5% and 10% level, respectively.*

Table 5-8: The Client Importance Argument

Panel A: Descriptive Statistics: Important vs. Unimportant Clients

	Unadjusted DAR	Industry-adjusted DAR	Unadjusted ANCE	Industry-adjusted ANCE
Section A: Unimportant Clients (n = 623)				
Mean	0.011	0.014	0.027	0.025
Median	0.006	0.008	0.006	0.002
Section B: Important Clients (n = 687)				
Mean	0.007	0.010	0.086	0.089
Median	0.002	0.007	0.009	0.006
Test of Null (A = B)				
t	0.74	0.81	-3.94 [a]	-4.08 [a]
z	0.83	0.19	-1.27	-1.58 [c]

[a b c] represent statistical significance at the 1%, 5% and 10% levels, using t-tests for the mean and Wilcoxon p-values for the median.

Panel B: Client Importance and Discretionary Accruals

$$DAR_{jt} = \alpha + \beta_0 CLTIMP_{jt} + \beta_1 SIZE_{jt} + \beta_2 LEV_{jt} + \beta_3 CFO_{jt} + \beta_4 NEWAUD_{jt} + \beta_5 OLDAUD_{jt} + \beta_6 LMADA_{jt} + v_{jt} \quad (I)$$

	Section A: Full Period (Obs. =1,310)		Section B: Offering Period (Obs.=803)		Section C: Post-offering Period (Obs.= 507)	
	Estimate	*t-value*	*Estimate*	*t-value*	*Estimate*	*t-value*
CLTIMP	0.016	*1.50*	0.013	*0.93*	0.009	*0.52*
SIZE	0.000	*0.12*	0.003	*0.87*	0.003	*1.01*
LEV	-0.046	*-5.06****	-0.060	*-3.96****	-0.035	*-3.33****
CFO	-0.651	*-49.08****	-0.635	*-40.32****	-0.724	*-28.45****
NEWAUD	-0.013	*-1.91**	-0.009	*-0.84*	-0.012	*-1.53*
OLDAUD	-0.000	*-0.06*	0.009	*0.89*	-0.021	*-1.85**
Adj. R^2	0.650		0.674		0.616	

Panel C: Client Importance and Abnormal Non-core Earnings

$$ANCE_{jt} = \alpha + \beta_0 CLTIMP_{jt} + \beta_1 CTRHOLD_{jt} + \beta_2 GOVHOLD_{jt} + \beta_3 SIZE_{jt} + \beta_4 LEV_{jt} + \beta_5 NEWAUD_{jt} + \beta_6 OLDAUD_{jt} + \beta_7 LMADA_{jt} + v_{jt} \quad (J)$$

	Section A: Full Period (Obs. =1,310)		Section B: Offering Period (Obs.=803)		Section C: Post-offering Period (Obs.= 507)	
	Estimate	*t-value*	*Estimate*	*t-value*	*Estimate*	*t-value*
CLTIMP	0.392	*8.11****	0.513	*7.13****	0.055	*1.68**
CTRHOLD	0.000	*0.84*	0.001	*1.10*	-0.001	*-2.54***
GOVHOLD	0.000	*0.70*	0.000	*0.36*	0.000	*0.63*
SIZE	-0.032	*-3.00****	-0.041	*-2.40***	-0.001	*-0.08*
LEV	0.048	*1.14*	0.239	*2.95****	-0.079	*-3.81****
NEWAUD	-0.050	*-1.65**	-0.042	*-0.77*	-0.017	*-1.06*
OLDAUD	0.023	*0.65*	0.006	*0.12*	0.042	*1.92**
Adj. R^2	0.047		0.066		0.035	

[***], [**] and [*] indicate two-tailed significance at the 1%, 5% and 10% level, respectively.

Table 6-1: Sensitivity Test: DAR Estimated from a Cross-sectional Modified Jones Model

Panel A: Auditor Size and Discretionary Accruals

$$DAR_{jt} = \alpha + \beta_0 TOP10_{jt} + \beta_1 SIZE_{jt} + \beta_2 LEV_{jt} + \beta_3 CFO_{jt} + \beta_4 SHRINCR_{jt} + \beta_5 NEWAUD_{jt} + \beta_6 OLDAUD_{jt} + \beta_7 LMADA_{jt} + \nu_{jt} \quad (2)$$

	Section A: Full Sample (Obs. =3,111)		Section B: DAR>0 (Obs.=1,572)		Section C: DAR<0 (Obs.= 1,533)	
	Estimate	*t-value*	*Estimate*	*t-value*	*Estimate*	*t-value*
TOP10	-0.1193	*-11.52* ***	-0.240	*-11.59* ***	-0.035	*-1.70* *
SIZE	-0.011	*-3.92* ***	-0.027	*-7.91* ***	0.012	*3.58***
LEV	-0.234	*-29.48* ***	-0.152	*-13.45* ***	-0.157	*-16.95* ***
CFO	-0.711	*-67.50* ***	-0.576	*-39.52* ***	-0.523	*-36.87* ***
SHRINCR	0.040	*15.26* ***	0.030	*10.35* ***	0.019	*5.40* ***
NEWAUD	-0.010	*-2.00* **	-0.002	*-0.41*	-0.015	*-2.53***
OLDAUD	-0.006	*-1.24*	0.001	*0.24*	-0.011	*-1.58*
LMADA	-0.108	*-11.24* ***	-0.137	*-11.64* ***	-0.017	*-1.49*
Adj. R^2	0.637		0.520		0.526	

Panel B: Auditor Location and Discretionary Accruals

$$DAR_{jt} = \alpha + \beta_0 LOCAL_{jt} + \beta_1 SIZE_{jt} + \beta_2 LEV_{jt} + \beta_3 CFO_{jt} + \beta_4 SHRINCR_{jt} + \beta_5 NEWAUD_{jt} + \beta_6 OLDAUD_{jt} + \beta_7 LMADA_{jt} + \nu_{jt} \quad (5)$$

	Section A: Full Sample (Obs. =3,111)		Section B: DAR>0 (Obs.=1,572)		Section C: DAR<0 (Obs.= 1,533)	
	Estimate	*t-value*	*Estimate*	*t-value*	*Estimate*	*t-value*
LOCAL	-0.028	*-1.13*	-0.039	*-1.13*	-0.017	*-0.63*
SIZE	0.017	*7.00* ***	0.009	*2.89***	0.017	*6.38* ***
LEV	-0.180	*-27.53* ***	-0.084	*-8.27***	-0.148	*-21.23* ***
CFO	-0.686	*-63.65* ***	-0.543	*-36.41* ***	-0.488	*-34.19* ***
SHRINCR	0.038	*14.27* ***	0.027	*9.12* ***	0.018	*5.12* ***
NEWAUD	-0.007	*-1.48*	0.000	*0.01*	-0.009	*-1.56*
OLDAUD	-0.007	*-1.37*	0.002	*0.24*	-0.007	*-1.03*
LMADA	0.019	*1.52*	0.019	*1.11*	0.023	*1.72**
Adj. R^2	0.622		0.478		0.542	

Panel C: Joint Test of H1 and H2

$$DAR_{jt} = \alpha + \beta_0 TOPNLAL_{jt} + \beta_1 NTOPLAL_{jt} + \beta_2 SIZE_{jt} + \beta_3 LEV_{jt} + \beta_4 CFO_{jt} + \beta_5 SHRINCR_{jt} + \beta_6 NEWAUD_{jt} + \beta_7 OLDAUD_{jt} + \beta_8 LAMDA_{jt} + v_{jt} \quad (8)$$

	Coefficient	*t*-value	Adj. R^2
TOPNLAL	-0.025	*-3.33* ***	
NTOPLAL	0.011	*3.99* ***	
SIZE	0.016	*10.00* ***	0.626
LEV	-0.176	*-28.90* ***	
CFO	-0.691	*-64.82* ***	Observation
SHRINCR	0.036	*13.42* ***	
NEWAUD	-0.008	*-1.69* *	3,111
OLDAUD	-0.007	*-1.33*	
LAMDA	-0.008	*-4.74***	

Panel D: Affiliation with Big 5 and Discretionary Accruals

$$DAR_{jt} = \alpha + \beta_0 BIG5_{jt} + \beta_1 SIZE_{jt} + \beta_2 LEV_{jt} + \beta_3 CFO_{jt} + \beta_4 SHRINCR_{jt} + \beta_5 NEWAUD_{jt} + \beta_6 OLDAUD_{jt} + \beta_7 LMADA_{jt} + v_{jt} \quad (13)$$

	Section A: Full Sample (Obs. =1,256)		**Section B: DAR>0 (Obs.=565)**		**Section C: DAR<0 (Obs.= 684)**	
	Estimate	*t-value*	*Estimate*	*t-value*	*Estimate*	*t-value*
BIG5	-0.046	*-4.54****	-0.027	*-1.96* *	-0.043	*-3.70* ***
SIZE	0.015	*6.61****	0.009	*2.97****	0.014	*5.08* ***
LEV	-0.176	*-17.51* ***	-0.098	*-5.85****	-0.152	*-14.36* ***
CFO	-0.749	*-46.44* ***	-0.640	*-27.91* ***	-0.585	*-27.76* ***
SHRINCR	0.031	*7.15* ***	0.018	*3.50****	0.019	*3.45* ***
NEWAUD	0.005	*0.55*	0.005	*0.45*	0.002	*0.22*
OLDAUD	0.007	*0.79*	0.004	*0.39*	-0.012	*-0.99*
LMADA	0.017	*3.69* ***	-0.014	*2.18***	0.016	*3.07****
Adj. R^2	0.663		0.597		0.566	

Panel E: Client Importance and Discretionary Accruals

$$DAR_{jt} = \alpha + \beta_0 CLTIMP_{jt} + \beta_1 SIZE_{jt} + \beta_2 LEV_{jt} + \beta_3 CFO_{jt} + \beta_4 SHRINCR_{jt} + \beta_5 NEWAUD_{jt} + \beta_6 OLDAUD_{jt} + v_{jt} \quad (10)$$

	Coefficient	*t* - value	Adj. R^2
CLTIMP	0.029	*3.3* ***	
SIZE	0.013	*7.97****	0.622
LEV	-0.176	*-29.02****	
CFO	-0.694	*-65.38* ***	Observation
SHRINCR	0.038	*14.11* ***	
NEWAUD	-0.009	*-1.90**	3,111
OLDAUD	-0.009	*-1.58*	

For brevity, the probit auditor choice model in the first stage was omitted from panel A to D.

Table 6-2: Sensitivity Test: ANCE Adjusted by the Portfolio Matched on the Deciles of the Holding by Largest Shareholder

Panel A: Auditor Size and Abnormal Non-core Earnings

$$ANCE_{jt} = \alpha + \beta_0 TOP10_{jt} + \beta_1 CTRHOLD_{jt} + \beta_2 GOVHOLD_{jt} + \beta_3 SIZE_{jt} + \beta_4 LEV_{jt} + \beta_5 SHRINCR_{jt} + \beta_6 NEWAUD_{jt} + \beta_7 OLDAUD_{jt} + \beta_8 LMADA_{jt} + v_{jt} \quad (3)$$

	Section A: Full Sample (Obs. =3,111)		Section B: ANCE>0 (Obs.=1,562)		Section C:ANCE<0 (Obs.= 1,515)	
	Estimate	*t-value*	*Estimate*	*t-value*	*Estimate*	*t-value*
TOP10	-1.343	*-23.55 ****	-2.174	*-24.23 ****	-0.124	*-3.26 ****
CTRHOLD	0.001	*1.87**	0.001	*1.36*	0.000	*2.15***
GOVHOLD	-0.000	*-0.41*	0.000	*0.39*	-0.000	*-1.424*
SIZE	-0.181	*-18.85****	-0.319	*-20.11 ****	0.008	*1.293*
LEV	-0.401	*-14.80 ****	-0.472	*-9.66 ****	-0.069	*-4.014 ****
SHRINCR	0.075	*8.31 ****	0.112	*7.94 ****	-0.013	*-2.08 ***
NEWAUD	-0.029	*-1.75 **	-0.069	*-2.47 ***	0.026	*2.48***
OLDAUD	-0.012	*-0.63*	0.054	*1.71 **	-0.050	*-4.37 ****
LMADA	-0.773	*-23.74 ****	-1.301	*-24.27 ****	-0.062	*-2.86 ****
Adj. R^2	0.170		0.300		0.069	

Panel B: Auditor Location and Abnormal Non-core Earnings

$$ANCE_{jt} = \alpha + \beta_0 LOCAL_{jt} + \beta_1 CTRHOLD_{jt} + \beta_2 GOVHOLD_{jt} + \beta_3 SIZE_{jt} + \beta_4 LEV_{jt} + \beta_5 CFO_{jt} + \beta_6 SHRINCR_{jt} + \beta_7 NEWAUD_{jt} + \beta_8 OLDAUD_{jt} + \beta_9 LMADA_{jt} + v_{jt} \quad (6)$$

	Section A: Full Sample (Obs. =3,111)		Section B: ANCE>0 (Obs.=1,562)		Section C: ANCE<0 (Obs.= 1,515)	
	Estimate	*t-value*	*Estimate*	*t-value*	*Estimate*	*t-value*
LOCAL	0.908	*10.09****	2.111	*13.71 ****	-0.185	*-3.36****
CTRHOLD	0.001	*2.76 ****	0.001	*1.76 **	0.000	*2.30***
GOVHOLD	-0.000	*-1.33*	-0.000	*-1.31*	-0.000	*-1.61*
SIZE	-0.059	*-6.85 ****	-0.152	*-10.44 ****	0.036	*6.81****
LEV	0.101	*4.28 ****	0.323	*6.98 ****	-0.059	*-4.35 ****
SHRINCR	0.069	*7.11 ****	0.098	*6.28 ****	-0.017	*-2.69****
NEWAUD	-0.017	*-0.95*	-0.036	*-1.17*	0.028	*2.63 ****
OLDAUD	-0.038	*-1.94***	0.025	*0.70*	-0.049	*-4.32 ****
LMADA	-0.452	*-10.14****	-1.062	*-13.86 ****	0.098	*3.62 ****
Adj. R^2	0.050		0.140		0.070	

Panel C: Joint Test of H1 and H2

$$ANCE_{jt} = \alpha + \beta_0 TOPNLAL_{jt} + \beta_1 NTOPLAL_{jt\ jt} + \beta_2 CTRHOLD_{jt} + \beta_3 GOVHOLD_{jt} + \beta_4 SIZE_{jt} + \beta_5 LEV_{jt} + \beta_6 SHRINCR_{jt} + \beta_7 NEWAUD_{jt} + \beta_8 OLDAUD_{jt} + \beta_9 LAMDA_{jt} + v_{jt} \quad (9)$$

	Coefficient	*t* - value	Adj. R^2
TOPNLAL	-0.012	*-0.42*	
NTOPLAL	0.008	*0.85*	
CTRHOLD	0.001	*2.79* ***	0.019
GOVHOLD	-0.000	*-1.35*	
SIZE	0.007	*1.14*	Observation
LEV	0.015	*0.67*	
SHRINCR	0.061	*6.18* ***	3,111
NEWAUD	-0.028	*-1.59*	
OLDAUD	-0.030	*-1.53*	
LAMDA	-0.006	*-0.83*	

Panel D: Affiliation with BIG 5 and Abnormal Non-core Earnings

$$ANCE_{jt} = \alpha + \beta_0 BIG5_{jt} + \beta_1 CTRHOLD_{jt} + \beta_2 GOVHOLD_{jt} + \beta_3 SIZE_{jt} + \beta_4 LEV_{jt} + \beta_5 CFO_{jt} + \beta_6 SHRINCR_{jt} + \beta_7 NEWAUD_{jt} + \beta_8 OLDAUD_{jt} + \beta_9 LMADA_{jt} + v_{jt} \quad (14)$$

	Section A: Full Sample (Obs. =1,255)		**Section B: ANCE>0 (Obs.=533)**		**Section C: ANCE<0 (Obs.= 720)**	
	Estimate	*t-value*	*Estimate*	*t-value*	*Estimate*	*t-value*
BIG5	-0.022	*-0.74*	-0.162	*-2.64* ***	0.018	*1.02*
CTRHOLD	0.001	*3.25* ***	0.002	*2.90* ***	0.001	*2.08* **
GOVHOLD	-0.001	*-3.30* ***	-0.002	*-3.81* ***	-0.000	*-1.85**
SIZE	0.005	*0.50*	-0.021	*-1.10*	0.023	*4.14****
LEV	0.008	*0.17*	0.331	*3.55* ***	-0.106	*-4.55* ***
SHRINCR	0.039	*2.52* **	0.083	*2.88* ***	-0.026	*-2.78****
NEWAUD	-0.006	*-0.20*	-0.009	*-0.16*	0.021	*1.28*
OLDAUD	-0.035	*-1.22*	0.076	*1.28*	-0.066	*-3.99* ***
LMADA	-0.001	*-0.20*	-0.040	*-2.79* ***	0.016	*4.18* ***
Adj. R^2	0.019		0.058		0.080	

Panel E: Client Importance and Abnormal Non-core Earnings

$$ANCE_{jt} = \alpha + \beta_0 CLTIMP_{jt} + \beta_1 CTRHOLD_{jt} + \beta_2 GOVHOLD_{jt} + \beta_3 SIZE_{jt} + \beta_4 LEV_{jt} + \beta_5 SHRINCR_{jt} + \beta_6 NEWAUD_{jt} + \beta_7 OLDAUD_{jt} + v_{jt} \quad (11)$$

	Coefficient	*t* - value	Adj. R^2
CLTIMP	0.357	*11.50****	
CTRHOLD	0.001	*2.79* ***	0.059
GOVHOLD	-0.000	*-1.02*	
SIZE	-0.013	*-2.16***	Observation
LEV	0.022	*0.98*	
SHRINCR	0.056	*5.82* ***	3,111
NEWAUD	-0.034	*-1.96***	
OLDAUD	-0.031	*-1.59*	

For brevity, the results of the probit auditor choice model in the first stage were omitted from panel A to D.

Table 6-3: Yearly Analysis

Panel A: Sample Firms across Years

	96	97	98	99	00	Total Observation
Sample Firms	307	509	714	819	916	3,265

Panel B: Annual Regression Analysis --- DAR

		X	SIZE	LEV	CFO	SHRINCR	LMADA	Obs.	Adj. R^2
H1 (X = TOP10)	96	0.027	-0.015 ***	-0.064 **	-0.617 ***	0.017 ***	0.017 **	287	0.631
	97	0.013	-0.006	-0.107 ***	-0.692 ***	0.025 ***	0.020 ***	481	0.703
	98	-0.006 *	-0.012 ***	-0.062 ***	-0.747 ***	0.016 ***	0.004	683	0.681
	99	-0.077 ***	0.002	-0.076 ***	-0.680 ***	0.028 ***	-0.036 ***	786	0.631
	00	-0.067 ***	-0.008 **	-0.063 ***	-0.704 ***	0.028 ***	-0.033 ***	873	0.652
H2 (X = LOCAL)	96	-0.004	0.012 ***	-0.085 ***	-0.607 ***	0.015 **	0.003	287	0.625
	97	-0.170 ***	0.007	-0.120 ***	-0.683 ***	0.020 **	0.087 ***	481	0.693
	98	-0.030	0.012 ***	-0.069 ***	-0.743 ***	0.019 ***	0.018	683	0.674
	99	0.068 **	0.00	-0.059 ***	-0.668 ***	0.035 ***	-0.034 ***	786	0.621
	00	0.032	0.011 ***	-0.045 ***	-0.697 ***	0.025 ***	-0.015	873	0.642
H3 (X = CLTINF)	96	0.011	0.011 **	-0.084 ***	-0.610 ***	0.014 **	---	287	0.619
	97	0.085 ***	-0.001 ***	-0.112 ***	-0.688 ***	0.023 ***	---	481	0.693
	98	-0.012	0.010 ***	-0.066 ***	-0.745 ***	0.017 ***	---	683	0.674
	99	0.031 **	0.008 ***	-0.061 ***	-0.673 ***	0.029 ***	---	786	0.621
	00	0.043 **	0.012 ***	-0.049 ***	-0.701 ***	0.025 ***	---	873	0.643
H4 (X = BIG5)	96	0.019	0.006	-0.059 *	-0.582 ***	0.020 **	-0.013	168	0.513
	97	0.030	-0.009	-0.114 ***	-0.781 ***	0.023 **	-0.014	216	0.781
	98	-0.035 **	0.010 ***	-0.062 ***	-0.761 ***	0.011 *	0.009	250	0.671
	99	-0.003	0.005	-0.062 ***	-0.773 ***	0.016 **	0.004	276	0.697
	00	-0.006	0.006	-0.036 **	-0.716 ***	0.030 ***	0.005	346	0.717

Panel C: Annual Regression Analysis --- ANCE

		X	CTRHOLD	GOVHOLD	SIZE	LEV	SHRINCR	LMADA	Obs	Adj. R
H1 (X = TOP10)	96	-1.276 ***	0.008 ***	-0.004 ***	0.179 ***	0.553 ***	0.293 ***	0.768 ***	287	0.304
	97	-1.850 ***	0.004 ***	-0.001	-0.424 ***	-0.713 ***	0.115 ***	-1.067 ***	481	0.264
	98	-0.972 ***	0.001 **	-0.000	-0.148 ***	0.284 ***	-0.079 ***	0.544 ***	683	0.279
	99	-0.120 ***	-0.000	0.000	-0.018 ***	-0.008	0.002	-0.063 ***	786	0.018
	00	-0.014	-0.000 **	0.000	0.000	-0.032 **	0.006 *	0.004	873	0.066
H2 (X = LOCAL)	96	-0.022	0.008 ***	-0.004 ***	0.038	-0.087	0.214 ***	-0.037	287	0.105
	97	0.575 ***	0.003*	-0.001	-0.166 ***	0.085	0.109 **	-0.271 ***	481	0.063
	98	0.961 ***	0.000	0.000	-0.148 ***	0.127 ***	0.090 ***	0.481 ***	683	0.341
	99	0.316 ***	-0.000	0.000	0.064 ***	-0.051***	-0.057 ***	-0.157 ***	786	0.052
	00	0.123 ***	-0.000 **	0.000	0.017 ***	-0.049 ***	0.008 **	0.060 ***	873	0.125
H3 (X = CLTINF)	96	0.607 ***	0.009 ***	-0.004 **	0.009	-0.111	0.194 ***	---	287	0.187
	97	1.291 ***	0.004 **	-0.001	-0.030	0.172	0.122 ***	---	481	0.171
	98	0.143 ***	0.001	-0.000	-0.018 **	0.046	0.010	---	683	0.015
	99	0.002	-0.000	0.000	0.004	-0.031 *	0.002	---	786	0.005
	00	-0.040 ***	-0.000 **	0.000	0.001	-0.035 ***	0.006 **	---	873	0.061
H4 (X = BIG5)	96	-0.234*	0.007 ***	-0.005 ***	-0.013	0.191	0.101 *	-0.037	161	0.054
	97	0.099	0.005 **	-0.003 **	0.091 **	-0.199	-0.008	0.073 ***	216	0.090
	98	-0.002	0.000	0.001 *	-0.001	0.036	0.035 **	-0.007	250	0.009
	99	0.017	0.001	-0.000	0.001	-0.030	-0.009	-0.015 **	275	0.052
	00	-0.016 *	-0.000	0.000	-0.001	-0.033 **	0.007	-0.002	346	0.045

For brevity, the results of probit auditor choice model in the first stage was omitted in H1, H2 and H4.

Table 6-4: Sensitivity Test: Excluding the Auditor-switching Firms

Panel A: Auditor Size and Earnings Management Measures

	DAR Model		ANCE Model	
	Estimate	*t-value*	*Estimate*	*t-value*
TOP10	-0.126	-8.82 ***	-1.187	-20.27 ***
CTRHOLD	---	---	0.001	2.25 **
GOVHOLD	---	---	-0.000	-0.51
SIZE	-0.008	-3.36 ***	-0.156	-15.41 ***
LEV	-0.110	-14.16 ***	-0.413	-12.92 ***
CFO	-0.689	-72.98 ***	---	---
SHRINCR	0.026	10.84 ***	0.083	8.45 ***
LAMDA	-0.066	-8.17 ***	-0.668	-20.07 ***
Adj. R^2	0.657 (n = 2,873)		0.140 (n = 2,873)	

Panel B: Auditor Location and Earnings Management Measures

	DAR Model		ANCE Model	
	Estimate	*t-value*	*Estimate*	*t-value*
LOCAL	0.004	0.16	0.926	8.43 ***
CTRHOLD	---	---	0.001	3.21 ***
GOVHOLD	---	---	-0.000	-1.24
SIZE	0.007	3.31 ***	-0.050	-5.52 ***
LEV	-0.068	-11.43 ***	0.098	3.80 ***
CFO	-0.673	-70.08 ***	---	---
SHRINCR	0.024	9.80 ***	0.096	8.91 ***
LAMDA	0.001	0.11	-0.445	-8.42 ***
Adj. R^2	0.647 (n = 2,873)		0.040 (n = 2,873)	

Panel C: Client Importance and Earnings Management Measures

	DAR Model		ANCE Model	
	Estimate	*t-value*	*Estimate*	*t-value*
CLTIMP	0.023	2.94 ***	0.415	12.42 ***
CTRHOLD	---	---	0.001	3.08 ***
GOVHOLD	---	---	-0.000	-0.94
SIZE	0.006	4.04 ***	-0.016	-2.45**
LEV	-0.068	-12.11 ***	0.035	1.48
CFO	-0.678	-71.68 ***	---	---
SHRINCR	0.024	10.00 ***	0.063	6.19 ***
Adj. R^2	0.647 (n = 2,873)		0.040 (n = 2,873)	

Panel D: Big 5 Affiliation and Earnings Management Measures

	DAR Model		ANCE Model	
	Estimate	*t-value*	*Estimate*	*t-value*
BIG5	-0.003	-0.30	-0.023	-0.76
CTRHOLD	---	---	0.001	3.19 ***
GOVHOLD	---	---	-0.001	-3.00 ***
SIZE	0.004	1.91 *	0.006	0.63
LEV	-0.060	-7.03 ***	0.025	0.59
CFO	-0.744	-54.38 ***	---	---
SHRINCR	0.020	5.43 ***	0.045	2.83 ***
LAMDA	0.002	0.43	-0.002	-0.22
Adj. R^2	0.716 (n = 1,188)		0.013 (n = 1,188)	

For brevity, the results of the probit auditor choice model in the first stage were omitted from panel A, B and D.