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The impact of improved auditor independence on audit market concentration in China☆

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Abstract

In an attempt to increase credibility in its capital markets, China recently adopted new auditing standards. Consistent with increased auditor independence, we find that the frequency of modified opinions increases nine-fold subsequent to the adoption of the new standards. However, the increase in modified reports is followed by a decline in audit market share among large auditors – those with the greatest propensity to issue modified reports. We conjecture that this 'flight from audit quality' results from lack of incentives to demand independent auditors. Our findings suggest that government regulation alone is insufficient to create financial markets that foster auditor independence. © 2000 Elsevier Science B.V. All rights reserved.

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1. Introduction

China has made progress in creating a viable capital market in an economy that until very recently was governed entirely by non-market forces. For example, the government recently began phasing in a new set of accounting rules that are comparable to International Accounting Standards. But despite this progress, an impediment to further advances is the lack of a reliably independent auditing profession (Cheung and Zhang, 1996; Xiang, 1998). In an effort to increase auditor independence the Chinese government recently adopted a new set of auditing standards that are patterned after the International Standards on Auditing promulgated by the International Federation of Accountants. The purpose of this study is to analyze the effects of the new standards on auditor independence and the resultant impact on audit market concentration.

In contrast to the standards previously in effect, the new standards prescribe detailed auditing procedures. Penalties for violating auditing standards in China can be harsh, including revocation of the auditor's license to practice and even imprisonment. Thus, we expect the new standards to have the desired effect of causing auditors to act more independently. Auditors with greater independence are expected to be less willing to acquiesce to client pressure to allow substandard reporting. For example, an independent auditor is more resilient to client pressure to issue a clean audit report when a modified report is appropriate. In addition, two new reporting regulations were adopted during this time, adding to the complexity of the financial reporting environment and hence increasing the opportunity for management misreporting. Therefore, we hypothesize that the relative frequency of modified audit reports will increase subsequent to the adoption of the new auditing standards.

We also expect the new standards to impact audit market concentration. Potential penalties from the Chinese Securities Regulatory Commission (CSRC) for violating auditing regulations include revoking the auditor's license to audit listed companies and even imprisonment. Because larger auditors have more clients, they have more to lose from revocation of their licenses and hence greater incentives to act independently when compared to smaller auditors (DeAngelo, 1981). Larger auditors are also expected to make larger investments in resources that enhance audit quality such as professional education (Dopuch and Simunic, 1980). In addition, Chinese managers are expected to be particularly averse to receiving modified audit reports because they potentially draw the attention of regulators. Further, aside from government regulations that require listed companies to be audited, there are few institutional features in the Chinese capital markets that provide incentives for managers to demand independent auditors. If there is a high cost from receiving a modified report and a low benefit from receiving an independent audit, then a general increase in auditor independence will cause managers to prefer smaller, less independent auditors and avoid larger, more independent auditors. Thus, we hypothesize

that the market share of larger auditors will decline subsequent to the adoption of the new standards.

We test our hypotheses by analyzing all companies with sufficient data listed on the Shanghai and Shenzhen stock exchanges during the period 1993–1996. This 4-year period represents the 2 years prior and subsequent to the implementation of the new standards. We test our first hypothesis by performing univariate and multivariate tests comparing the relative frequency of modified audit reports during the periods before and after the implementation of the new standards. We test our second hypothesis by comparing the market share of large versus small auditors before and after the adoption of the new standards.

Consistent with our first hypothesis, we find that the average relative frequency of modified opinions increases nine-fold subsequent to the adoption of the new standards. Multivariate analysis finds that this result is robust after controlling for other factors expected to impact the issuance of modified opinions. As expected, we also find that larger auditors are more likely to issue modified reports than smaller auditors. This finding is consistent with studies using western data that suggest larger auditors are relatively more independent than smaller auditors.[1] This is particularly interesting given that there are few features in the audit environment in China to drive this increased independence other than the threat of regulatory penalties.

Consistent with our second hypothesis we find that large auditors lose market share in terms of both clients and assets audited, subsequent to 1994. Compared to their average market share prior to the adoption of the new standards, large auditors lose 22% of their share of clients subsequent to 1994. This erosion in market share is primarily explained by a decline in demand for larger auditors in the IPO market. Compared to their average IPO market share prior to the adoption of the new standards, large auditors lose more than 50% of their share of IPO clients subsequent to 1994.[2] Multivariate analysis finds that this result is robust to controls for other factors that may influence IPO auditor choice. This large decline in market share among the most independent auditors is consistent with managers avoiding auditors that are more likely to issue modified audit opinions.

We also find evidence that large auditors that are joint ventured with international CPA firms do not suffer the decline in market share experienced by other large auditors.[3] This is consistent with large joint venture auditors being

[1] For example, Francis (1984); Simunic and Stein (1987); Palmrose (1988); Beatty (1989); Teoh and Wong (1993); Francis et al. (1998); Becker et al. (1998).

[2] IPO clients may differentially benefit from less independent auditors because the government mandates that the issuance price for IPO shares is a fixed multiple of accounting earnings. Aharony et al. (1999) find evidence that suggests IPO firms manage earnings to increase the IPO issue price.

[3] There are three types of audit firms in China during the period we examine: those affiliated with government entities (such as the Ministry of Finance), those affiliated with universities, and those affiliated with international CPA firms through joint ventures.

highly independent even prior to the adoption of the new standards. Greater independence among the large joint venture auditors probably arises because they have a high proportion of clients with foreign owners. The presence of foreign shareholders provides an incentive for the international joint venture partners to act independently in order to protect their reputation in international capital markets.

Similarly, we find that IPO clients that are large and/or have foreign owners tend to choose larger auditors both before and after the adoption of the new standards. This is consistent with firm characteristics and capital structure creating a clientele that demands the services of larger auditors, irrespective of the level of auditor independence. The demand for large auditors among large IPO clients and IPO clients with foreign investors may be caused by these clients having auditing requirements that only large auditors are able to meet. For example, they are likely to be more complex and geographically dispersed.

Finally, we find that many of our results are strongest among the government-affiliated auditors. For example, the government-affiliated auditors experience the greatest increase in modified opinions after 1994, and the difference in modification frequency between large and small auditors is widest among the government-affiliated auditors. The strong influence of government-affiliated auditors on our results is partially because they dominate the market, with more than 75% of the auditors and 70% of the clients. However, the largest government-affiliated auditors are also expected to face stronger incentives to behave independently in response to the new standards. The central government wishes to increase auditor independence and is grooming the largest Chinese audit firms to someday compete with the Big 5. The high visibility of the largest government-affiliated auditors means that audit failure among this group would be particularly embarrassing to the central government and hence we expect their behavior to be more closely monitored. In addition, in the event of an audit failure, the central government is able to exert costly career-related penalties on the government agency bureaucrats that are associated with the largest government-affiliated auditors. By contrast, the small government-affiliated auditors are unlikely to face these stronger incentives for greater independence. Their small size reduces their visibility and constrained resources greatly limits the central government's ability to monitor the large number of small government-affiliated auditors.

This paper makes several contributions. Our analysis is performed in a unique experimental setting. China's newly emerging capital markets are heavily regulated and nearly void of the institutional features typically found in more market-driven economies that provide incentives for auditors to supply, and managers to demand, independent audits. Performing an archival-based analysis in such a stark setting is analogous to analytical studies and laboratory experiments that minimize the set of experimental variables in order to focus on a parsimonious set of factors. Our findings suggest that when the primary

incentive for auditors to behave independently is the threat of government penalties for violating auditing standards, auditors will be more independent than in the absence of such regulation. However, if managers do not demand independent audits, a perverse 'flight from audit quality' accompanies the increased independence. Watts and Zimmerman (1983) argue that 'the existence of the independent auditor is not the direct result of government fiat'. Our results further suggest that government fiat alone is not sufficient to create financial markets that foster auditor independence. Rather, institutional features typically found in free-market economies such as auditor litigation, majority private ownership of shares, and corporate governance mechanisms are also likely to play a crucial role in developing a successful market for independent audits.

These findings have policy implications for improving the efficiency of China's capital markets. Given that China is currently on a course to become one of the world's largest economies (Lin et al., 1996), the social welfare benefits of such a contribution are potentially large. In addition, our results also have implications for U.S. auditors. The only large auditors that do not lose market share from the increase in auditor independence are those affiliated with international CPA firms – all of which are based in the U.S. While direct competition from international auditing firms is currently prohibited in China, the government intends to gradually open up the domestic stock markets to international investors and allow competition between large Chinese auditors and the Big 5. Our results suggest that Big 5 auditors have a market advantage over local Chinese auditors among the clientele that demand high-quality audits.

Section 2 presents an overview of the Chinese audit market and our hypotheses. The data and empirical analyses are presented in Section 3. Section 4 presents the results of various robustness checks, and Section 5 summarizes our findings.

2. Background and hypothesis development

2.1. Overview of the Chinese audit market

At the turn of the century the rapid development of shareholding companies in China led to a sharp increase in the demand for external auditing. The Chinese Certified Public Accounting (CPA) profession was established in 1918 and four Chinese CPA firms, known as the Big 4, were founded in the 1920s. Many international CPA firms such as Price Waterhouse were also practicing in China and by 1947 China had 3,356 registered CPAs. Shortly after the revolution in 1949 the role of auditing in the Chinese economy diminished significantly and finally, after the economy was fully nationalized in 1962, auditing by public accountants was completely abolished (Gensler and Yang, 1996). Economic reforms in 1979 resulted in decentralization of the state-owned

enterprises and a rapid growth in foreign investment that once again created a demand for external audits for tax collection purposes. Partially in response to the renewed need for an auditing profession the Ministry of Finance created the Chinese Institute of Certified Public Accountants (CICPA) in November 1988. The CICPA is involved in standard setting and, among other things, oversees the administration of the national uniform examination for Certified Public Accountants (CPAs).

The government recognized the need for an external auditing profession after the establishment of stock enterprises and the opening of stock exchanges in Shanghai and Shenzhen in 1990 and 1991, respectively. As a result, the government granted permission to a select set of accounting firms to audit public companies. Due to lack of capital, the new CPA firms affiliated themselves with existing institutions and three types of auditing firms emerged: government-affiliated audit firms, university-affiliated audit firms, and audit firms that are joint ventured with an international CPA firm. The government-affiliated firms are by far the dominant group with currently over 75% of the audit market in terms of number of clients.[4] The large proportion of government-affiliated auditors may be partially due to the government's desire to maintain control of the economy (Hao, 1999).

While the government currently has a regulatory framework in place for building a credible auditing profession, there are several institutional characteristics that impede the supply of, and demand for, independent audits in China. These impediments include: (1) perverse management incentives created by government ownership of listed companies; (2) a lack of corporate governance; (3) the absence of a demand for independent auditors as a signaling device in the domestic IPO market; (4) the government ownership of both audit firms and the listed companies they audit; (5) the limited size and expertise of China's auditing profession; and (6) the absence of shareholder litigation. Each of these is discussed in turn.

2.2. Impediments to the demand for auditor independence

Perhaps the most significant impediment to the demand for auditor independence in China is that government-related entities are the controlling shareholders in virtually all listed companies. Government entities effectively own more than 50% of the stock of 85% of the listed companies.[5] Listed companies

[4] At the end of 1996, 83 of the 90 government-affiliated auditors are affiliated with agencies under the Ministry of Finance and Audit Bureau. Six firms are affiliated with state-owned enterprises such as Bank of Communication and Citic Enterprise Limited Company, and one other firm is affiliated with the Sung Qingling Foundation Fund.

[5] Of the 15% with less than 50% government ownership, 9%, 4% and 2% have government ownership of 40–49%, 30–39% 20–29%, respectively.

issue three types of shares: state shares, institutional shares and individual shares. State shares are held by the state and cannot be traded, while institutional shares are held by state-owned institutions, and can only be traded in blocks in a designated market. Only the individual shares are freely traded on the stock exchanges.

Unlike individual investors, government entities are restricted in their ability to trade their shares and their main interest is not to maximize share price. Government-entity owners are essentially unlisted parent companies that often rely on the listed companies as a source of capital. Chinese listed companies must report three consecutive years of return on equity of at least 10% per year in order to raise additional capital, and companies that report three consecutive years of losses are automatically delisted by the CSRC. In addition, their controlling ownership interest means the government-entity owners are able to directly control and monitor management behavior. Therefore, government owners have strong incentives to pressure management to report favorable earnings, but little demand for independent auditing.

Unlike the majority shareholders, minority shareholders are composed of individual investors who are likely to prefer credible financial information and thus theoretically provide the basis for a demand for independent auditing. However, there are no corporate governance mechanisms to protect minority shareholders in China. For example, audit committees are nonexistent in China and there is no requirement that independent outside members sit on boards of directors.

In the U.S., a demand for auditor independence is also generated by factors in the IPO market. While U.S. IPO firms tend to hire larger auditors to signal firm value (Beatty, 1989), this demand is generally absent in China. This is because most IPO firms are controlled by government entities after they are listed and Chinese investors perceive that the success of the IPO and the future survival of the firm are ensured by the controlling government entity, as opposed to the quality of the financial information. Controlling government entities can help boost the performance of their subsidiaries in a variety of ways, including selling them valuable assets at below market prices (*South China Morning Post*, April 17, 1997). Thus, prospective investors pay little attention to the identity of the IPO auditor. An exception, however, is IPOs to foreign investors. Their underwriters always request that they hire international auditors even though the Chinese government does not require it.[6]

[6] At the end of 1996 only 13% of Chinese listed companies were allowed to issue shares to foreign investors. These firms must produce two sets of financial statements. International auditors always audit the financial statements for foreign investors. If the Chinese auditor is a joint venture firm, the foreign statements are audited by the international joint venture partner.

2.3. Impediments to the supply of auditor indpendence

A direct threat to the supply of independent audits in China is the widespread government ownership of both clients and their auditors. Over 70% of listed company auditors are affiliated with state agencies at the end of 1996. And, as previously noted, the controlling shareholders in virtually all listed companies are government entities.[7] In addition, the CICPA is under the direction of the Ministry of Finance.

The Chinese CPA profession is also small and lacking in expertise. At the end of 1997 there were approximately 62,000 practicing CPAs with 1,000 licensed to audit listed companies. This is a small number compared to the demand for professional auditing services. Importantly, the audit firms that are allowed to audit listed companies are not chosen solely based upon their expertise. The audit firm's connection to the Ministry of Finance also plays an important role in the selection process. In addition, there are virtually no cases of shareholder litigation against Chinese auditors. Without the threat of costly shareholder litigation, auditors have less incentive to avoid audit failures, and shareholders have less incentive to discover them (Palmrose, 1988; Lys and Watts, 1994; DeFond and Subramanyam, 1998).

2.4. Changes in the auditing environment

During 1995 the Ministry of Finance adopted a new set of auditing standards that are closely modeled after the International Standards on Auditing issued by the International Federation of Accountants. Prior to the adoption of the new standards, Chinese auditors were required to follow a set of standards mandated by the CICPA. The new standards improve upon the old standards by providing auditors with detailed auditing procedures, including audit planning procedures, sampling guidelines, standards of audit evidence, and clear guidance for audit opinion formulation.

The first batch of new standards is effective for audits beginning after December 31, 1995 and affects all 1995 annual reports because all Chinese listed companies have a calendar fiscal year.[8] The new standards are partitioned into three levels: (1) The Principal Auditing Standard, (2) The Specific Auditing Standards and Practice Statements, and (3) The Professional Guidelines (Gensler and Yang, 1996). The first level provides a general framework, including an overview of the Standards of Field Work and Reporting. The second level

[7] As discussed subsequently, this conflict of interest may be substantially mitigated for the large and highly visible government-affiliated auditors because the central government is likely to more closely monitor their behavior.

[8] A second set of new standards is effective for fiscal years beginning in 1996.

consists of seven Specific Auditing Statements providing detailed guidance in implementing the Principal Auditing Standard, including a statement on Audit Reports.[9] The Practice Statements in level two are designed to give guidance for issuing specialized audit reports. The third level is designed to provide detailed practical assistance in implementing the first two levels. A major difference between the new standards and the CICPA guidelines they replace is the inclusion of the Professional Guidelines.

The Ministry of Finance first established legal penalties for violating auditing standards in 1992 and in 1993 they released the *Interim Regulations against Securities Frauds and the Company Law* that provided more rigorous regulation of listed company auditors. The criminal statutes against auditors were first exercised in 1992 when the Ministry of Finance suspended the licenses of nine auditors for signing false audit reports. Then, in 1992 and 1993, two auditors were sentenced to imprisonment for violation of the criminal statutes. Thus, during the period leading up to the issuance of the new auditing standards, government regulators demonstrated that they were able and willing to impose harsh penalties on errant auditors.

Coinciding with the adoption of the new auditing standards, the CSRC also promulgated two new reporting regulations during 1995. These consisted of new disclosure rules on the content and format of annual reports issued on December 21, 1995, and a provisional regulation on accounting for consolidations issued on February 9, 1995. Prior to this latter regulation managers had a great deal of discretion in accounting for consolidations. The adoption of the new reporting rules increases the complexity of the financial reporting environment. Greater complexity is expected to increase the likelihood of management misreporting, either through opportunistic misstatement or due to differences in interpretation of the new rules.[10]

2.5. The effect of the changes in auditing environment on auditor independence and audit market concentration

Taken together, the adoption of the new auditing standards, the government's strict enforcement of audit regulations, and the promulgation of new reporting regulations, are all expected to impact behavior in the Chinese audit markets. The new auditing standards provide auditors with detailed rules for independent behavior and the credible threat of penalties for non-compliance provides auditors with strong incentives to follow them. Thus, we expect audit firms to

[9] The Chinese auditing standards allow for the issuance of unqualified, qualified, disclaimer and adverse opinions.

[10] Consistent with the new accounting rules increasing the probability of misreporting, at least eight modified audit reports were issued relating to these new reporting regulations during 1995.

respond to the new standards by becoming more independent, where independence can be defined as '… taking an *unbiased viewpoint* in the performance of audit tests, the evaluation of the results, and the issuance of the audit report' (Arens and Loebecke, 1997). An increase in auditor independence is also consistent with increased audit 'quality', where audit quality is defined as the probability of *both* detecting and reporting a breach in the financial statements (Watts and Zimmerman, 1986). This implies that if the new standards increase independence, auditors will be less likely to succumb to management pressure to inappropriately issue clean opinions when modified opinions are appropriate. In addition, the new accounting rules promulgated during 1995 provide greater complexity in the reporting environment and hence a greater probability of management misreporting. Thus, we expect an increase in the relative frequency of modified opinions issued after 1994. Therefore, our first (alternative) hypothesis is:

Hypothesis 1: The relative frequency of modified opinions will increase subsequent to 1994.

When compared to smaller auditors, we expect larger Chinese auditors to have greater incentives to act independently. Because a potential penalty for violating auditing regulations is loss of the auditor's license to practice, auditors with more clients suffer larger losses if they are discovered to lack independence (DeAngelo, 1981). In addition, larger auditors are likely to make bigger investments in resources that enhance auditor independence (Dopuch and Simunic, 1980). For example, they typically devote more resources to professional education and are able to hire from the best universities. Thus, larger Chinese auditors are expected to be relatively more independent than their smaller counterparts.

It is also likely that Chinese managers have incentives to prefer clean audit opinions. This is because modified opinions can alert the CSRC to the presence of earnings management and lead to the imposition of costly penalties. Companies with modified reports must explain the nature and underlying reasons for the receipt of a modified report directly to the CSRC (Chen et al., 1998), and such disclosure can result in sanctions. For example, the receipt of a modified report by Jiangsu Shansan in 1997 for improper revenue recognition resulted in an earnings restatement imposed by the CSRC and subsequent delisting.[11] Short of delisting, modifications may also result in less severe penalties such as earnings restatements that threaten the ability to subsequently raise capital. There may also be political costs imposed such as closer future monitoring by the CSRC, the inability to list foreign shares in the future, and career limitations

[11] Additional examples are presented in Appendix A.

for the manager. The costliness of modified opinions is also consistent with Chen et al. (1998) who find that modified opinions are associated with stock price declines.[12]

If managers prefer clean audit opinions and lack incentives to demand independent auditors, then an increase in independence among larger auditors will cause managers to prefer smaller, less independent auditors. Thus, we expect larger auditors to lose market share subsequent to the adoption of the new standards. Formally, our second (alternative) hypothesis is:

Hypothesis 2: The relative market share of larger auditors will decrease subsequent to 1994.

3. Analysis

3.1. Data

We collect financial information on the population of companies listed on the Shanghai and Shenzhen stock exchanges from the Taiwan Economic Journal electronic database. Auditor identity and opinion type are collected from searching the *Shanghai Securities News, Securities Times* and *China Securities*. All listed companies must file their annual audit reports and selected financial data with two of these three periodicals. Information on audit firm characteristics is obtained from the CSRC, with the information confirmed through phone conversations with the auditors where possible. To be retained in our sample, firms must have complete financial and audit information to test our hypotheses. Panel A of Table 1 reports that out of the 1,327 firm years that comprise the population of Chinese listed companies over the period 1993–1996, our sample consists of 1,286 firm year observations.

Panel B of Table 1 presents descriptive statistics on the types of modified audit opinions in our sample. As in prior research examining modified opinions (Dopuch et al., 1987; Krishnan, 1994), our analysis attempts to focus on the opinions that are expected to reflect negatively upon the firm or management. In the case of Chinese firms, these are opinions that are likely to draw the attention of regulators. Therefore, we exclude 16 modified opinions that are expected to be neutral – 14 related to scope limitations and two related to post fiscal-year-end events. Twelve reports regarding scope limitations are retained in the sample, as

[12] In 1998 the stock exchanges began affixing the letters 'ST' (for special treatment) to the ticker symbols of firms deemed to be extraordinarily risky and 10 of the 27 ST firms as of June 1998 were identified due to modified reports that caught the attention of the CSRC. ST firms must have their interim statements audited and have 'circuit breakers' that halt trading when share prices move by more than 5%.

Table 1
Descriptive information on sample selection, audit opinions, number of audit firms and number of clients

Panel A: Sample selection and attrition:[a]

	Year of analysis				
	1993	1994	1995	1996	Total
Population of Chinese listed companies on the Shenzhen and Shanghai stock exchanges	183	291	323	530	1327
Less: missing data	1	8	16	16	41
Sample firms	182	283	307	514	1286

Panel B: Types of audit opinions, by year:[b]

	93	94	95	96	Total	Relative frequency (%)
Change in accounting estimates				2	2	2.6
Scope limitation	1	1	7	3	12	15.6
Related-party transactions				3	3	3.9
Material uncertainties			2	3	5	6.5
Litigation and tax claims		1		6	7	9.0
Asset realization		1	4	7	12	15.6
GAAP violation	1	1	10	5	17	22.1
Multiple modifications			9	10	19	24.7
Total	2	4	32	39	77	100

Panel C: Number of audit firms and clients by year, auditor size and affiliation

	Number of audit firms				Number of clients			
	1993	1994	1995	1996	1993	1994	1995	1996
All auditors								
Joint venture	6	7	7	7	12	25	27	31
University	6	6	6	6	43	57	60	83
Government	39	48	50	69	127	201	220	400
Total	51	61	63	82	182	283	307	514
Top 10 auditors:								
Joint venture	2	3	3	2	4	13	13	9
University	3	2	2	2	37	38	38	51
Government	5	5	5	6	52	84	86	114
Total	10	10	10	10	93	135	137	174
Non-top 10 auditors:								
Joint venture	4	4	4	5	8	12	14	22
University	3	4	4	4	6	19	22	32
Government	34	43	45	63	75	117	134	286
Total	41	51	53	72	89	148	170	340

[a]Financial information on the population of companies listed on the Shanghai and Shenzhen stock exchanges is obtained from the Taiwan Economic Journal electronic database. Auditor information is collected from searching the *Shanghai Securities News, Securities Times* and *China Securities*. To be retained in our sample, firms must have complete financial and audit information to test our hypotheses.

[b]We exclude 16 modified opinions issued over the period of our analysis that are expected to be neutral – 14 related to scope limitations and two related to post fiscal-year-end events.

they appear to suggest earnings management. Twenty-five percent of the modifications involve multiple issues, while the most frequent single issue is a GAAP violation. Asset realization and scope limitations are other issues frequently raised in the modified reports. The scope limitation modifications included in the sample usually involve management preventing the auditor access to material accounts of the auditee. Related-party transaction issues typically involve questions regarding the appropriateness of booking revenues involving affiliated companies.

Panel C reports descriptive statistics on the number of auditors and their clients partitioned on auditor size and affiliation. Auditor size is based upon whether the auditor is among the 10 largest auditors in terms of assets audited. The top 10 auditors are examined separately because the Ministry of Finance is considering splitting off the largest Chinese audit firms to directly compete with Big 5 international audit firms once the Chinese capital markets are fully opened to international investors. The auditors included in panel C all have at least one listed client and the government-affiliated auditors dominate the market, with more than 75% of the audit firms and more than 70% of the clients. The total number of auditors licensed to audit listed companies is 62, 79, 85 and 105 at the end of 1993, 1994, 1995 and 1996, respectively. Licensed auditors without clients are often located in remote provinces. The number of audit firms with at least one client increases from 51 to 82, and the number of public clients increases from 182 to 514, over this period. Thus, this represents a period of substantial growth in the Chinese capital markets. Appendix B presents the names and affiliations of the top-10 auditors in our sample, along with their ranking each year.

3.2. Univariate audit opinion analysis

Panel A of Table 2 presents a univariate test of our first hypothesis by comparing the relative frequency of modified opinions before and after the adoption of the new standards. The analysis indicates that an average of 1% of the listed companies receive modified opinions prior to the adoption of the new standards, and 9% afterward. This represents a nine-fold increase and is significant at the 1% level. Thus, univariate tests support our first hypothesis. In addition, panel A indicates there is a jump in modified opinions from 1% in 1993 and 1994, to 10% in 1995, and then a slight decline to 8% in 1996. As we will see in further analysis, the decline in 1996 may be explained by a shift in concentration of lower quality clients to less independent auditors during 1996.

Panel B of Table 2 compares the propensity of large and small auditors to issue modified opinions. The average relative frequency of modifications is 7% and 5% among top 10 and non-top 10 auditors, respectively, with the difference significant at the 10% level. In addition, the relative frequency of modified reports is consistently higher among the larger auditors in each year examined.

These results are consistent with our expectation that larger auditors are relatively more independent than smaller auditors.

Panel C of Table 2 presents a descriptive analysis of modifications by auditor size, affiliation and year. The analysis of 'All auditors' in the top rows of panel C suggests that the significant increase in modified opinions after 1994 is driven by the large proportion of government-affiliated auditors in the Chinese economy. The joint venture auditors show only a small increase and, while the university-affiliated auditors also show a large increase, the large number of government auditors gives them the greatest weight in the total increase. The small increase in joint venture modifications results from a lack of increase in

Table 2
Audit opinions partitioned on year, auditor size and auditor affiliation[a]

Panel A: Number and relative frequency of modified opinions, by year

Year	Number of modified opinions	Relative frequency of modified opinions (%)
1993	2	1
1994	4	1
Average for 1993 and 1994	3	1
1995	32	10
1996	39	8
Average for 1995 and 1996	36	9
Difference (1995/1996 minus 1993/1994)	+ 33	+ 8[b]

Panel B: Number and relative frequency of modified opinions by auditor type and year[c]

Auditor type and year	Number of modified opinions	Relative frequency of modified opinions (%)
Top 10 auditors		
1993	2	2
1994	3	2
1995	16	12
1996	18	10
Average for 1993–1996	10	7
Non-top 10 auditors		
1993	0	0
1994	1	1
1995	16	9
1996	21	6
Average for 1993–1996	10	5
Difference: (Top 10–non-top 10)	0	+ 2[d]

Table 2 (continued)

Panel C: Number and relative frequency of audit opinion modifications by auditor size, affiliation and year

	1993		1994		1995		1996		1993–1996 Combined	
	Number of modified reports	% of auditors' total clients	Number of modified reports	% of auditors' total clients	Number of modified reports	% of auditors' total clients	Number of modified reports	% of auditors' total clients	Number of modified reports	% of auditors' total clients
All auditors										
Joint Venture	1	8.3	1	4.0	2	7.4	3	9.7	7	7.4
University	0	0.0	0	0.0	6	10.0	4	4.8	10	4.1
Government	1	0.8	3	1.5	24	10.9	32	8.0	60	6.3
Total	2	0.1	4	0.8	32	10.4	39	7.6	77	6.6
Top 10 auditors										
Joint venture	1	25.0	1	7.7	1	7.7	0	0.0	3	7.7
University	0	0.0	0	0.0	4	10.5	3	5.9	7	4.2
Government	1	1.9	2	2.4	11	12.8	15	13.2	29	8.6
Total	2	2.2	3	2.2	16	11.7	18	10.3	39	7.2
Non-top 10 auditors										
Joint venture	0	0.0	0	0.0	1	7.1	3	13.6	4	7.1
University	0	0.0	0	0.0	2	9.1	1	3.1	3	3.8
Government	0	0.0	1	0.9	13	9.7	17	5.9	31	5.1
Total	0	0.0	1	0.7	16	9.4	21	6.2	38	5.0

[a]Auditor identity and opinion type is collected from searching the *Shanghai Securities News, Securities Times* and *China Securities*. Information on audit firm characteristics is obtained from the Chinese Securities Regulatory Commission, with the information confirmed through phone conversations with the auditors where possible. Relative frequency refers to the number of modified opinions scaled by the referenced number of clients (either total population or top 10 auditors' clients, or non-top 10 auditors' clients).

[b]Two-tailed statistical significance level at 1% for a t-test of differences in means.

[c]Two-tailed statistical significance level at 5% for a t-test of differences in means.

[d]Two-tailed statistical significance level at 10% for a t-test of differences in means.

modifications among their top 10 auditors and is consistent with top 10 joint venture auditors being highly independent even prior to the new standards.

Panel C also indicates that the government-affiliated auditors have the widest gap between the proportion of modifications reported by their top 10 versus non-top 10 auditors. The '1993–1996 Combined' columns show that the 'modification gap' between joint venture auditors is 7.7% versus 7.1%, and between university auditors is 4.2% versus 3.8%. However, the modification gap between government auditors is 8.6% versus 5.1%. Finding a larger modification gap between government auditors is consistent with greater political cost incentives for independence among top 10 government auditors. While central government officials wish to increase auditor independence, the bureaucrats in charge of the individual government agencies have incentives to reduce auditor independence in order to increase wealth in their regions or industries. Whereas the agency bureaucrats may generally succeed in reducing independence among the numerous low-profile small government-affiliated auditors, this is likely to be more difficult among the highly visible top 10 auditors. The large auditors are being groomed to eventually compete with the Big 5 and audit failures among this group are likely to embarrass the central government. Greater visibility effectively results in higher costs of audit failure among the large government auditors and thus is likely to result in greater central government scrutiny. When compared to their university-affiliated counterparts, government agency bureaucrats are also expected to be more vulnerable to career-related penalties imposed by the central government in the event of an audit failure.

In addition, the relative modification frequencies observed in Table 2 may be influenced by differences in client and audit firm characteristics. Thus, the next section performs multivariate tests of our first hypothesis in an attempt to control for these potentially omitted correlated variables.

3.3. Multivariate audit opinion analysis

Panel A of Table 3 reports descriptive statistics on several client firm characteristics expected to be associated with modified opinions. The first 6 variables are financial health variables identified in Dopuch et al. (1987) to be associated with modifications. The seventh variable, clients with foreign owners, may impact modifications for the reasons discussed in the previous section, and because clients issuing foreign shares tend to be of higher quality. The eighth variable, clients that are greater than or equal to three years old, is included because older clients are more likely to have exhausted the capital raised in their IPO and are therefore more susceptible to financial distress. In addition, older clients are more likely to be audited by larger auditors because the larger auditors entered the market earlier than the smaller auditors. Thus, client

Table 3
Client and auditor characteristics of clients receiving clean versus modified opinions[a]

Panel A: Client firm characteristics

		Clean ($n = 1208$)	Modified ($n = 75$)	Difference (Clean-modified)	p-value
1. Total assets (millions)	Mean	1142	1044	98	0.425
	Median	*597*	*742*	*− 145*	*0.039*[c]
2. Return on equity	Mean	0.117	− 0.024	0.141	0.030[c]
	Median	*0.116*	*0.059*	*0.057*	*0.000*[b]
3. Current assets/ current liabilities	Mean	1.976	1.316	0.660	0.000[b]
	Median	*1.471*	*1.224*	*0.247*	*0.000*[b]
4. Total long term debt/total equity	Mean	0.139	0.148	− 0.009	0.804
	Median	*0.045*	*0.030*	*0.015*	*0.686*
5. Receivable/total assets	Mean	0.118	0.112	0.006	0.619
	Median	*0.092*	*0.088*	*0.004*	*0.550*
6. Inventory/total assets	Mean	0.172	0.182	− 0.010	0.576
	Median	*0.145*	*0.160*	*− 0.015*	*0.785*
7. Clients with foreign owners	Mean	0.183	0.160	0.023	0.604
8. Clients ≥ 3 years old	Mean	0.180	0.507	− 0.327	0.000[b]

Panel B: auditor characteristics

		Clean ($n = 1208$)	Modified ($n = 75$)	Difference (Clean-modified)	p-value
1. Top 10 auditors (based on client's total assets)	Mean	0.413	0.520	− 0.107	0.077[d]
2. Auditors with $\geq 5\%$ of market (based on client's total assets)	Mean	0.284	0.413	− 0.129	0.030[c]
3. Joint venture auditor	Mean	0.073	0.093	− 0.020	0.556
4. University-affiliated auditor	Mean	0.192	0.133	0.059	0.157
5. Government-affiliated auditor	Mean	0.726	0.774	− 0.048	0.350

[a]Total Assets are natural logarithm of year-end total assets.

Return on equity is net income over year-end total owners' equity.

Current asset/current liabilities is year-end total current assets divided by year-end total current liabilities.

Total long-term debt/total equity is year-end total long-term debt divided by year-end total shareholders' equity.

Receivable/total assets is year-end accounts receivables divided by year-end total assets.

Table 3 (notes continued)

Inventory/total assets is year-end inventory divided by year-end total assets.

Clients with foreign owners is a dummy equal to 1 if the firm has foreign-owned shares outstanding.

Clients $\geq$ 3 years old is a dummy equal to 1 if the firm has been listed for 3 years or more.

Top 10 auditors (based on client's total assets) is a dummy equal to 1 if the auditor is a top 10 auditor based on combined client total assets that year, and zero otherwise.

Auditors with $\geq$ 5% of Market is a dummy variable equal to 1 if the auditor has 5% or more of market share based on client's total assets, and zero otherwise.

Joint venture auditor is a dummy equal to 1 if the audit firm is a joint venture with a Big 5 auditor or other international auditor, and zero otherwise.

University-affiliated auditor is a dummy and is equal to 1 if the audit firm is affiliated with a university or research institute, and zero otherwise.

Government-affiliated auditor is a dummy and is equal to 1 if the audit firm is affiliated with a government agency, and zero otherwise.

p-values are from *t*-tests for means, and Wilcoxon sign-ranked tests for medians.

[b]Two-tailed significance at the 5% level.

[c]Two-tailed significance at the 1% level.

[d]Two-tailed significance at the 10% level.

age may explain why larger auditors issue a higher proportion of modifications.[13]

Panel A reports that clients receiving modified reports tend to be larger, less profitable, have lower current ratios, and are older. This is not surprising since companies in poor health are more likely to merit modified reports. In addition, because larger companies are more visible to regulators, auditors are likely to be more careful about correctly issuing modified reports to those companies. The higher modification rate among older firms is consistent with these firms being in relatively poorer financial health.

Panel B of Table 3 presents the auditor characteristics included in our multivariate analysis. The first two rows consider different measures of auditor size: the top 10 largest auditors in terms of assets audited, and auditors that audit at least 5% of the market in terms of assets. Both measures indicate that larger auditors tend to report a significantly higher proportion of modified opinions. Panel B also reports that the proportion of modified versus clean opinions is not significantly different among any of the auditor affiliations.

Table 4 presents two logit regressions testing our first hypothesis. The dependent variable is coded one if the firm receives a modified opinion and zero otherwise. The independent variables include a dummy indicating whether the audit opinion is issued after 1994 and a positive coefficient on this dummy is

[13] We dichotomize the age variable because the distribution of modifications across age is non-linear. Greater than or equal to three years is chosen because the frequency of modifications jumps from 6% to 15% at this cut-off.

consistent with our first hypothesis. Each regression employs a different measure of auditor size.

The results find that the coefficient on the 'after 1994' dummy is significantly positive at the 1% level in each regression. This indicates that there are significantly more modified opinions issued subsequent to 1994, even after controlling for other factors that may lead to modifications. The coefficients on both auditor size variables are also positive and significant at the 5% level or less, indicating that large auditors issue significantly more modifications. The coefficients on the auditor affiliation variables suggest that, relative to government-affiliated auditors, joint venture auditors tend to issue more modified opinions, and that university-affiliated auditors (weakly) tend to issue fewer modified opinions. The statistical significance of the coefficients on 'Clients ≥ 3 Years Old,' 'Return on Equity' and 'Current Assets/Current Liabilities' is consistent with the univariate results in Table 3.

Table 4
Logistic regression of audit opinions on firm characteristics[a]

Independent variables	Expected sign	Coeff.	*t*-stat	Coeff.	*t*-stat
Intercept	?	− 15.0	− 0.1	− 15.1	− 0.1
After 1994 (dummy)	+	1.5	3.3[b]	1.6	3.5[b]
Auditor size variables:					
Top 10 auditors (based on client's total assets)	+	0.5	1.7[c]		
Auditors with $\geq 5\%$ of market (based on client's total assets)	+			0.9	3.2[b]
Auditor affiliation control variables:					
Joint venture-affiliated auditor	?	0.7	1.4[d]	0.8	1.5[d]
University-affiliated auditor	?	− 0.5	− 1.3[d]	− 0.5	− 1.2
Client characteristic control variables:					
Clients ≥ 3 years old (dummy)	+	1.1	3.9[b]	1.0	3.6[b]
Clients with foreign owners (dummy)	?	− 0.5	− 1.2	− 0.5	− 1.3[d]
Log of client assets	−	− 0.1	− 0.6	− 0.1	− 0.5
Return on equity	−	− 3.2	− 3.1[b]	− 3.6	− 3.5[b]
Total long term debt/total equity	+	0.0	0.1	0.0	0.0
Current assets/current liabilities	−	− 0.3	− 1.8[c]	− 0.3	− 1.9[c]
Receivables/total assets	+	0.3	0.2	0.2	0.1
Inventory/total assets	+	0.1	0.1	0.0	0.0
15 industry dummies (not reported)	?	—			—

Table 4 (continued)

N	1283	1283
Pseudo-R^2	20.2%	21.5%
Chi square	115.6	123.0
Degrees of freedom	27	27
P-value	0.0001	0.0001

[a]The dependent variable equals 1 if the audit opinion is modified and 0 otherwise.

Independent variables are defined as follows:

After 1994 is a year dummy equal to 1 if the fiscal year ends subsequent to 1994.

Top 10 auditors (based on client's total assets) is a dummy equal to 1 if the auditor is a top 10 auditor based on combined client total assets that year, and zero otherwise.

Auditors with $\geq 5\%$ of Market is a dummy variable equal to 1 if the auditor has 5% or more of market share based on client's total assets, and zero otherwise.

Joint venture auditor is a dummy equal to 1 if the audit firm is a joint venture with a Big 5 auditor or other international auditor, and zero otherwise.

University-affiliated auditor is an affiliation dummy and is equal to 1 if the audit firm affiliated with a university or research institute, and zero otherwise.

Clients with foreign owners is a dummy equal to 1 if the firm has foreign-owned shares outstanding.

Clients ≥ 3 years old is a dummy equal to 1 if the firm has been listed for 3 years or more.

Log of client assets equals the natural logarithm of year-end total assets.

Return on equity is net income divided by year-end stockholders' equity.

Total long-term debt/total equity is year-end total long-term debt divided by year-end total shareholders' equity.

Current asset/current liabilities is year-end total current assets divided by year-end total current liabilities.

Receivable/total assets is year-end accounts receivables divided by year-end total assets.

Inventory/total assets is year-end inventory divided by year-end total assets.

A complete set of fifteen industry dummies are included but not reported.

[b]One-tailed statistical significance level at 1%.

[c]One-tailed statistical significance level at 5%.

[d]One-tailed statistical significance level at 10%.

3.4. Analysis of market concentration

Panel A of Table 5 presents univariate tests of our second hypothesis by comparing the audit market share of top 10 auditors before and after the adoption of the new auditing standards. Market share is measured as a percentage of total assets and total clients. The percentage of assets partially captures the costs or benefits to the auditor of a change in market share since audit fees are expected to be correlated with total assets (Simunic, 1980). The percentage of assets also provides a measure of the impact on investors to the degree that assets capture the extent of ownership. The percentage of clients gives equal weight to each client, and thus captures client preferences independent of size. It also provides a measure of the impact on investors by capturing the pervasiveness of a change in market share. Thus, the two measures capture different aspects of the economic effects of a change in market share.

Table 5
Market share of top 10 auditors, by year and by auditor size and affiliation[a]

Panel A: Market share of top 10 auditors for all clients, after excluding switches to new entrant auditors, and after excluding clients with foreign owners

	Market share of top 10 auditors					
	All clients		After excluding switches to new entrant auditors		After excluding clients with foreign owners	
Year	% of total assets	% of total clients	% of total assets	% of total clients	% of total assets	% of total clients
1993	67	51	67	51	58	46
1994	61	48	65	50	49	42
Average for 1993 and 1994	64	49	65	50	52	43
1995	60	44	63	47	52	40
1996	52	35	54	35	38	29
Average for 1995 and 1996	56	38	58	39	43	33
Difference (1995/1996 minus 1993/1994)	− 8	− 11[b]	− 7	− 11[b]	− 9	− 10[b]

Panel B: Audit market share based on number of clients, by auditor size and auditor affiliation, excluding switches to new entrant auditors[c]

Affiliation	1993 % of total clients	1994 % of total clients	1995 % of total clients	1996 % of total clients[d]
Top 10 auditors:				
Joint venture	2	5	4	2
University	20	14	13	10
Government	29	31	30	23
Total	51	50	47	35
Non-top 10 auditors:				
Joint venture	4	4	4	4
University	4	7	8	7
Government	41	39	41	54
Total	49	50	53	65

[a]Information to compute audit market share is obtained from the Taiwan Economic Journal electronic database. Auditor information on number of clients and audit firm affiliation is collected from searching the *Shanghai Securities News, Securities Times* and *China Securities*.

% of total Assets equals the total assets of the clients of the respective auditor group, divided by the total assets of all listed companies.

% of total Clients equals the total number of clients of the respective auditor group, divided by the total number of listed companies.

The average number of clients is computed on a pooled basis and therefore does not always equal a simple average over the number of pooled periods.

[b]Two-tailed, statistical significance level at 1% for a *t*-test of differences in means.

[c]Two-tailed, statistical significance level at 5% for a *t*-test of differences in means.

[d]Two-tailed, statistical significance level at 10% for a *t*-test of differences in means.

Three tests are presented in panel A. The first test employs the entire sample of top 10 clients, the second test excludes all clients that switch to a newly entering auditor during the period analyzed, and the third test excludes all clients with foreign owned shares. Clients switching to new entrant auditors are dropped because the government often induces these switches. Each year the government grants licenses that allow existing audit firms to audit listed companies. These licenses are often granted to small auditors whose clientele includes firms that are subcontracted from top 10 auditors.[14] When the small subcontractors are granted licenses, they typically inherit their subcontracted clients. Thus, granting new licenses can induce involuntary auditor switches from top 10 to non-top 10 auditors. Because this potentially confounds our results, we analyze the data after excluding all clients that switch to new entrant auditors for the 1993–1996 period.[15]

We test the change in market share after excluding clients with foreign owners because Chen et al. (1999) report that the relative frequency of firms issuing B-shares declines subsequent to 1994. Because companies issuing B-shares tend to choose larger auditors – particularly joint-venture auditors – the decline in B-share issues may be correlated with the decline in market share of top 10 auditors.

Panel A indicates that the market share of the top 10 auditors, based on both assets and clients, is lower in the post-1994 period in all three samples.[16] While we cannot compute a test statistic for the decline in total assets, the decline in clients is significant at the 1% level in each test. This is consistent with our second hypothesis that predicts large auditors will lose market share subsequent to 1994. The decline in clients of 11% of the total market in the first two tests and 10% in the third test represents a loss of 22% or more of the pre-1995 average client base of 49%, 50% and 43%, for each of the respective samples.

Panel A also reports that the majority of the loss in market share occurs during 1996 in all three tests, with declines in assets ranging from 8% to 14% and declines in clients ranging from 9% to 12%. The large decline in 1996 may result from clients learning the effects of the new standards on auditor behavior during 1995. This is consistent with the univariate analysis in Table 2, panel A, that reports an increase in modified opinions from 1% to 10% during 1995, but

[14] When subcontracting auditors act as representatives of top 10 auditors, the top 10 auditors sign the audit opinions. Thus, we expect controls within the top 10 auditors to be sufficient to ensure that the subcontractors exhibit a high level of independence. However, when the subcontractors receive their own licenses, they do not have the same incentives to maintain a high level of independence.

[15] This results in dropping 13 clients from our analysis. While the affected clients could immediately switch back to a top 10 auditor after the new license is granted, voluntary auditor switches are expected to be especially costly in China. This is because relationships (*quanxi*) are very important in effectively transacting business, particularly regarding something as sensitive as the client's financial condition.

[16] The average number of clients computed over time is calculated on a pooled basis and therefore does not always equal a simple average over the number of pooled periods.

a decline from 10% to 8% during 1996. Clients may observe that the new standards cause larger auditors to become more independent during 1995 and then avoid the top 10 auditors during 1996.

Panel B of Table 5 analyzes market share (based on total clients) partitioned on auditor size and affiliation. Due to the potential problems created by switches to new entrant auditors, only the sample excluding the switches to new entrants is analyzed. Panel B shows that the market share of the joint venture top 10 auditors is relatively constant across the periods analyzed, with 2% of the market in both 1993 and 1996.[17] By contrast, both the government and university-affiliated top 10 auditors lose market share over the period 1993–1996. Thus, the joint venture auditors are the only top 10 affiliation to maintain their market share over this period. This is consistent with the large joint venture auditors providing a high level of independence even prior to the adoption of the new standards. This is likely due to the incentives provided by the large proportion of their clients with foreign ownership. At the end of 1996, 96% of the assets audited by the top 10 joint venture auditors belong to clients with foreign owners. This compares with a range of 9–41% among the other auditor size/affiliation categories. This large concentration of ownership by international investors provides an incentive for international joint venture partners to be independent in order to protect their reputation in the international capital markets.

Panel B also shows that the greatest beneficiaries of the decline in top 10 market share are the non-top 10 government-affiliated auditors. Their market share grows from 41% in 1993 to 54% in 1996. The increased market share among these auditors may be due to client beliefs that their government affiliation and small size makes these auditors more susceptible to pressures to compromise their independence. That is, because most client firms are majority owned by government entities, their government connections may give them a differential advantage in reducing the independence of the small government-affiliated auditors. In addition, their close connections with local officials means that small government auditors are less likely to be pursued in court, which also reduces their incentives to act independently.

3.5. Analysis of auditor choice in the IPO market

The decline in market share among the large auditors could potentially be due to IPO clients choosing a higher proportion of smaller auditors, or to seasoned clients switching to smaller auditors. However, we only find a net of seven and two auditor switches between top 10 and non-top 10 auditors during 1995 and

[17] Reference to panel C of Table 1 indicates that the transient increase in market share among the top 10 joint venture auditors during 1994 and 1995 is explained by the inclusion of a third joint venture auditor among the top 10 during those years.

1996, respectively. Thus, auditor switches do not appear to explain the large decline in market share subsequent to 1994. This may be because switching costs in China are prohibitively high given the large investment required in establishing the auditor–client relationship. Specifically, relationships (or *guanxi*) are particularly important in doing business in China and financial information is considered especially sensitive.

Table 6
IPO market share of top 10 and non-top 10 audit firms[a]

Panel A: IPO market share of top 10 auditors, by year

	IPO market share of top 10 auditors			
	All clients		After excluding clients with foreign owners	
Year	% of total assets	% of total clients	% of total assets	% of total clients
	IPO market share of top 10 auditors			
1993	59	39	51	36
1994	57	44	42	40
Average for 1993 and 1994	58	41	47	38
1995	58	29	21	20
1996	33	17	21	15
Average for 1995 and 1996	39	18	21	15
Difference (1995/1996 minus 1993/1994)	− 19	− 23[b]	− 26	− 23[b]

Panel B: IPO market share of non-top 10 auditors after excluding new entrant non-top 10 auditors, for all non-top 10 auditors and after excluding clients with foreign owners[c]

	IPO market share of non-top 10 auditors after excluding new entrant non-top 10 auditors[d]			
	All clients		After excluding clients with foreign owners	
Year	% of total assets	% of total clients	% of total assets	% of total clients
1993	41	61	49	64
1994	33	47	43	49
Average for 1993 and 1994	37	55	47	57
1995	41	67	77	75
1996	57	66	66	68
Average for 1995 and 1996	54	66	68	68
Difference (1995/1996 minus 1993/1994)	+ 17	+ 11[b]	+ 21	+ 11[b]

Table 6 (continued)
Panel C: IPO market share of top 10 auditors by client asset ranges

Total client assets (in millions)	1993 (%)	1994 (%)	1995 (%)	1996 (%)
RMB 1–250	34	51	0	9
RMB 250–500	26	34	20	10
RMB 500–750	48	32	0	17
RMB 750–1,000	42	52	47	8
RMB over 1000	71	68	65	57
RMB over 2000	75	64	70	69
RMB over 5000	90	100	88	100

[a]Information relating to IPO data is obtained from the Taiwan Economic Journal electronic database.

% of total Assets equals the total assets of the clients of the respective auditor group, divided by the total assets of all listed companies.

% of total Clients equals the total number of clients of the respective auditor group, divided by the total number of listed companies

[b]Two-tailed statistical significance level at 1% for a *t*-test of differences in means.

[c]Two-tailed statistical significance level at 5% for a *t*-test of differences in means.

[d]Two-tailed statistical significance level at 10% for a *t*-test of differences in means.

In contrast to auditor switches, there are many IPOs over the period analyzed. Panel A of Table 6 investigates changes in IPO client preferences by comparing the IPO market share of top 10 auditors before and after the adoption of the new standards.[18] Two analyses are performed, one with the entire sample and one after excluding clients with foreign owners. As with the analysis in Table 5, we exclude clients with foreign owners because Chen et al. (1999) find that there is a decline in new B-share issues after 1994 and B-share issues may be related to the demand for top 10 auditors. Panel A indicates that the top 10 auditors' market share drops in terms of both assets and clients subsequent to 1994 in both samples. While we cannot compute a test statistic for the decline in total assets, the decline in clients is significant at the 1% level in each test. The 23% decline in clients in each sample represents a loss of over 50% of the pre-1995 average IPO client share of 41% and 38%, respectively in each sample. The incentives for IPO clients to reduce independence may be greater than for seasoned clients because the issuance price of IPO shares is a fixed multiple of accounting earnings.

Panel C of Table 1 reports that the number of non-top 10 auditors grows from 41 to 72 over the period 1993–1996. Thus, a potential explanation for the increase in IPO market share among the non-top 10 auditors is that newly entering non-top 10 auditors are capturing the majority of the IPO client

[18] 462 IPOs are analyzed, consisting of 130, 101, 24, and 207 IPOs during 1993, 1994, 1995, and 1996, respectively.

market. Panel B of Table 6 explores this possibility by reporting the IPO market share of the non-top 10 auditors after excluding these new entrant auditors. As with panel A, this analysis is also performed after excluding clients with foreign owners. Panel B reports that the continuing non-top 10 auditors capture an additional 17% of the IPO assets, and an additional 11% of the IPO clients after 1994. Excluding clients with foreign owners increases the proportion of assets to 21%, but does not affect the proportion of clients. The increase in clients is significant at the 1% level in both samples. Panel B suggests that the continuing non-top 10 auditors capture most of the increase in non-top 10 market share in terms of assets – 17% and 21% of the 19% and 26% reported in the respective samples in panel A. However, they capture slightly less than half of the market share increase in terms of clients – 11% of the 23% reported in panel A for both samples. The larger share of assets compared to clients suggests that the continuing non-top 10 auditors capture relatively larger IPO clients and is consistent with them being relatively larger than the new entrant auditors. In conclusion, it does not appear that the decline in market share among the top 10 auditors is due primarily to new entrant non-top 10 auditors capturing IPO market share.[19]

Panel C of Table 6 reports the top 10 auditors' share of the IPO market partitioned on total client assets. This panel reports that the top 10 auditors have maintained their market share among the very largest clients (those over RMB5000 million) but have lost market share in each of the other categories. Further, the smaller the client, generally speaking, the more precipitous the loss of market share. This is consistent with the largest clients continuing to choose top 10 auditors because smaller auditors are unable to service them.

Another potential explanation for new IPO clients selecting smaller auditors subsequent to 1994 is that the characteristics of IPO clients during those years are such that smaller auditors better suit their needs.[20] A univariate comparison (not reported in a table) finds that most variables expected to affect the choice of an IPO auditor, such as size and profitability, are insignificantly different across the two groups of IPO clients. The current ratio and the ratios of inventory and accounts receivable to total assets are the only financial variables found to be significantly different across the two groups. Consistent with Chen et al. (1999), we also find that the frequency of B-share IPOs is significantly lower after 1994.

[19] However, even if the new entrant auditors were entirely responsible for capturing the increase in IPO market share, this is still consistent with a flight to lower quality auditors because the new entrant auditors are non-top 10.

[20] It is also possible that the shift in audit market concentration is due to institutional features in China such as cronyism and *guanxi*. However, we have no reason to believe that these potential explanations are spuriously correlated with our hypotheses.

Table 7
Logistic regression of auditor choice on IPO client characteristics[a]

Dependent variables		Full sample				Excluding clients with foreign owners			
		Top 10 auditors		Auditors with ≥ 5% of market (based on client's total assets)		Top 10 auditors		Auditors with ≥ 5% of market (based on client's total assets)	
Independent variables	Expected sign	Coeff.	*t*-stat.	Coeff.	*t*-stat.	Coeff.	*t*-stat.	Coeff.	*t*-stat.
Intercept	?	− 7.3	− 3.5[b]	− 7.2	− 3.0[b]	− 7.3	− 3.1[b]	− 14.4	0.1
After 1994 (dummy)	−	− 1.0	− 4.1[b]	− 1.3	− 4.4[b]	− 1.1	− 4.1[b]	− 1.5	− 4.4[b]
Clients with foreign owners (dummy)	+	1.1	2.7[b]	1.3	3.2[b]				
Log of client assets	+	0.4	2.7[b]	0.4	2.1[c]	0.4	2.3[c]	0.1	0.7
ROE	+	0.8	0.5	0.7	0.4	− 0.2	− 0.1	0.3	0.1
Total long term debt/total equity	+	0.6	1.0	− 0.3	− 0.6	0.9	1.4[d]	− 0.4	− 0.6
Current assets/current liabilities	+	0.0	− 0.5	0.0	0.0	0.0	0.0	0.0	0.0
Receivables/total assets	+	0.7	0.6	− 0.7	− 0.5	1.5	1.1	0.6	0.4
Inventory/total assets	+	0.6	0.6	0.5	0.5	0.5	0.5	0.5	0.4
15 Industry dummies (not reported)	?	–		–		–		–	
N			459		459		413		413
Pseudo-R^2			16.5%		21.2%		14.0%		19.1%
Chi square			92.1		101.5		66.1		74.2
Degrees of freedom			23		23		22		22
P-value			0.0001		0.0001		0.0001		0.0001

Table 7 (continued)

[a]The dependent variable equals 1 if the auditor is one of the top 10 largest in terms of assets audited and 0 otherwise. The auditors with $\geq 5\%$ of market dependent variable equals 1 if the auditor has a $\geq 5\%$ market share based on client's total assets audited and 0 otherwise.
Independent variables are defined as follows:
After 1994 is a year dummy equal to 1 if the fiscal year ends subsequent to 1994.
Clients with foreign owners is a dummy equal to 1 if the firm has foreign-owned shares outstanding.
Log of client assets equals the natural logarithm of year-end total assets.
Return on equity is net income divided by year-end stockholders' equity.
Total long-term debt/total equity is year-end total long-term debt divided by year-end total shareholders' equity.
Current asset/current liabilities is year-end total current assets divided by year-end total current liabilities.
Receivable/total assets is year-end accounts receivables divided by year-end total assets.
Inventory/total assets is year-end inventory divided by year-end total assets.
A complete set of fifteen industry dummies are included but not reported.
[b]One-tailed statistical significance level at 1%.
[c]One-tailed statistical significance level at 5%.
[d]One-tailed statistical significance level at 10%.

To formally test whether differences in IPO characteristics are associated with the choice of auditor, Table 7 presents four logit models using the pooled data of all IPOs from 1994–1996. Our test examines all IPOs with sufficient data and consists of 230 IPOs issued during 1993 and 1994, and 229 IPOs issued during 1995 and 1996. Two of the models employ the full sample and two exclude clients with foreign owners. Within each of the two samples, the dependent variable is a dummy that captures auditor size by either membership among the largest 10 auditors or by market share of at least 5% of client assets. The independent variables consist of a dummy indicating whether the IPO occurs after 1994 and several control variables expected to be associated with auditor choice.[21]

Table 7 reports that the coefficient on the post 1994 dummy is significantly negative at the 1% level or less in each regression. This indicates that IPO clients are less likely to choose larger auditors subsequent to 1994, even after controlling for other factors expected to influence auditor choice. The results in the full sample regressions also report a significant coefficient on the foreign ownership dummy, and three of the four regressions report a significant coefficient on log of client assets. This is consistent with larger clients and clients

[21] While audit fees may also impact auditor choice, audit fees are not publicly available.

with foreign owners having auditing needs that can only be met by larger auditors.[22]

4. Robustness checks

4.1. Inclusion of scope limitation modifications

As explained in Section 3.1, the sample firms classified as receiving modified audit reports omit 16 firms that are expected to be neutral. Since judgement is used in making this classification, we rerun our tests of hypothesis one after including these firms. The results are insensitive to using the full sample of modified opinions. Specifically, replication of Table 2, panel A finds that the frequency of modified opinions increases subsequent to 1994 (significant at the 1% level) and replication of Table 4 finds that the coefficients on the 'after 1994' and auditor size variables continue to be positive and significant at the 1% level.

4.2. First time modifications

Prior researchers often limit their analysis of audit opinion modifications to first time modifications (Dopuch et al., 1987). Therefore, we rerun our multivariate analysis in Table 4 after dropping 12 observations that are not first time modifications. The 'after 1994' dummy remains significant at the 1% level and the top 10 largest auditors and auditors with at least 5% market share, are significant at the 11% and 1% levels, respectively.

4.3. Capital market variables

To control for potentially omitted correlated variables, we rerun our multivariate analysis in Table 4 after including annual share price variability, Scholes and Williams betas, and cumulative stock returns in the regression. While we lose 20% of the observations due to data limitation, the coefficient on the 'after 1994' dummy remains significant at the 1% level, and none of these additional

[22] Large auditors becoming more selective in accepting new clients could also potentially explain the 'flight from quality'. However, several factors make this possibility less appealing than our hypothesized reasons. First, the incentive for U.S. auditors to be selective in accepting (or retaining) clients is litigation concerns because issuing a modified opinion does not protect auditors from litigation (Lys and Watts, 1994). In China, the auditor can easily protect him/her self from regulatory scrutiny simply by issuing modified reports to riskier clients. In addition, the magnitude of the drop in IPO market share of over 50% seems too high to be explained by auditors becoming more selective in accepting clients.

variables are statistically significant. The two auditor size variables, the top 10 largest auditors and auditors with at least 5% market share, are significant at the 13% and 1% levels, respectively.

4.4. Alternative age measures

Our measure of client age in Table 4 is a dummy for clients that are three or more years old. As a robustness check, we replicate Table 4 analysis measuring age as two or more years, four or more years, and as a continuous variable. The results indicate that the coefficients on the age dummy and the 'after 1994' variable continue to be positive and significant at the 1% level in each regression. The coefficient on auditor size measured as at least 5% of market share also remains positive and significant at the 1% level in all three regressions. The coefficient on auditor size measured as top 10 is positive and significant at the 5% level using the dummy variables and at the 12% level using the continuous variable.

4.5. Interaction terms

We find that larger Chinese auditors are relatively more independent than smaller auditors, and that the new auditing standards increase the frequency of modified opinions. However, the new standards may have had a differential effect on larger auditors compared to smaller auditors. We explore this by rerunning the regression in Table 4 after including a variable that interacts the auditor size and 'after 1994' variables. The results find that the interaction term is not significant at conventional levels in either regression. Further, while the coefficients on the 'after 1994' variable continues to be significant at the 5% level, the coefficient on auditor size – when measured as 5% or more of market share – is no longer significant at conventional levels. The coefficient on auditor size measured as a top 10 auditor remains significant at the 10% level. The lack of significance of the interaction term suggests that the relation between auditor size and modifications is not statistically different across the pre- and post-1994 time periods. In other words, the statistical relation shifted after 1994, but did not 'pivot'. However, this finding is not problematic because we do not hypothesize a differential reaction and such a difference is not necessary in formulating our hypotheses. The lack of significance of one of our size variables may be due to the high Spearman correlation between size and the interaction term of 0.65.

4.6. Alternative measures of auditor size

Because our analysis spans four years, our measure of top 10 auditors does not include the same 10 auditors each year. Therefore, we rerun our tests with

large auditors defined as the seven auditors that are consistently among the top 10 in each year of our analysis. The results indicate our conclusions are insensitive to this alternative definition. Specifically, replication of the analysis in Table 5, panel A indicates that the decline in client market share subsequent to 1994 is significant at the 2% level or less in each test. In addition, replication of Table 4 indicates the 'after 1994' variable remains significant at the 1% level and this alternative auditor size variable is significant at the 1% level.

In addition, while our univariate tests (in Tables 2, 5 and 6) define auditor size as the largest 10 auditors, our multivariate tests (Tables 4 and 7) also include size defined as auditors with at least a 5% market share. Therefore, we replicate our univariate analyses using this alternative measure. The results indicate our conclusions are invariant to our auditor size measure. Specifically, replication of Table 2, panel B finds larger auditors issue an average of 3% more modifications (significant at the 5% level). Replication of Table 5, panel A indicates that large auditors lose 14–17% market share of total clients after 1994 (significant at the 1% level). Replication of Table 6, panel A finds that large auditors lose 22–23% of the IPO market share of total clients subsequent to 1994 (significant at the 1% level). Replication of Table 6, panel B indicates that small auditors gain 12–13% of the IPO market share of total clients subsequent to 1994 (significant at the 1% level).

4.7. Geographic location of IPO clients

A potentially confounding factor in our auditor concentration analysis is that some IPOs could possibly occur in cities where clients do not have a choice between top 10 and non-top 10 auditors. This could result in auditor choice being dominated by the additional audit costs associated with using the services of a non-local auditor. We investigate this issue by rerunning our IPO analysis after including only clients that are headquartered in Beijing, Shanghai or Shenzhen. These locales are chosen because they are large metropolitan areas where clients can clearly choose between top 10 and non-top 10 auditors. Replicating our Table 6 analysis using this reduced sample finds that the average market share of clients by top 10 auditors during 1993 and 1994 is 78%, and declines to 48% during 1995 and 1996. The 30% difference is significant at the 2% level. Replicating the analysis in Table 7 using this reduced sample finds that the 'after 1994' dummy remains significant in both regressions at the 10% level or less. Thus, it does not appear that the geographic location of the IPO clients confound our results.

4.8. Joint venture auditors

The analyses in Tables 5 and 6 are performed after dropping clients with foreign owners. This is done because Chen et al. (1999) report a

decline in B-share IPOs subsequent to 1994 and the demand for B-share auditors may impact the market share of large auditors. Since joint venture auditors audit most B-share financial reports, we also replicate the analysis in Tables 5 and 6 after dropping all joint venture auditors from the sample. The results indicate our conclusions are unaffected by dropping the joint venture auditors. Specifically, the replicated results in Table 5, panel A indicate that top 10 auditors lose 11–12% of the market share of total clients (significant at the 1% level) subsequent to 1994. The replicated results in Table 6, panel A indicate that top 10 auditors lose 24% of the IPO market share of total clients (significant at the 1% level) subsequent to 1994. The replicated results in Table 6, panel B indicate that non-top 10 auditors gain 12% of the IPO market share of total clients (significant at the 1% level) subsequent to 1994.

5. Conclusions

This paper analyzes the effects of implementing rigorous new auditing standards in China. We hypothesize that the adoption of the new auditing standards, in the presence of costly penalties for non-compliance, provide an incentive for auditors to become more independent. Our surrogate for independence is the relative frequency with which auditors issue modified audit reports. We also believe that the increased complexity in the reporting environment due to the promulgation of new reporting regulations increase the probability of misreporting and hence modified opinions. Since larger auditors have more to lose if they are found to be in violation of auditing standards, we expect larger auditors to be relatively more independent than smaller auditors. In addition, we note that there are few institutional features in the Chinese economy that provide incentives for management to demand independent auditors, and strong incentives to avoid the receipt of modified opinions. Thus, we also hypothesize that managers will tend to choose smaller auditors subsequent to the adoption of the new standards in order to reduce their chances of receiving a modified audit report.

Our results support our predictions. We find that the relative frequency of modified audit reports increases from an average of 1% prior to the adoption of the new standards, to 9% subsequent to the adoption of the new standards. This result is supported in both univariate tests and in multivariate tests that control for other factors that may impact the auditor's decision to modify. We also find that larger auditors lose market share subsequent to the adoption of the new auditing standards. Further analysis indicates that this decline is explained by a decline in the market share of IPO clients. Thus, our results suggest that there is a 'flight from quality' in the Chinese audit market in response to the adoption of the new auditing standards.

Appendix A. Examples of modified audit reports that suggest management may be engaged in manipulating earnings

A.1. Changes in accounting estimates

Company: Guangdong Shaoneng
Auditor: Guangzhou, top 10 auditor in 1996
Stock exchange: Shenzhen
Audit opinion for 1996: qualified with explanatory paragraph

Guangdong Shaoneng was listed in Shenzhen in August 1996. On June 1, 1996, the Shaoneng changed the useful lives of several of its categories of depreciable assets. Office buildings were changed from 20 to 40 years, factory buildings were changed from 20 to 30 years, machinery was changed from 10 to 20 years, and transportation equipment was changed from 5 to 10 years. These changes in estimates increased the 1996 net income of Shaoneng by RMB 10.7 million. Without this increase, the ROE for 1996 would have been 9.12%, just below the 10% cutoff requirement for issuing additional shares. The change in estimates increased its ROE to 10.70%, allowing the firm to have rights issue if it continues to maintain a 10% ROE for the next two years.

A.2. Scope limitation

Company: Huanghe Machinery
Auditor: Xian
Stock exchange: Shanghai
Audit opinion for 1995 and 1996: qualified opinion with explanatory paragraph

In 1995 Huanghe sold its products across 24 regions in China. Due to the vast distance and its audit firm's limited resources, it's audit firm did not properly audit the company's RMB 75 million of inventory and RMB 31.44 million of trade receivables. The 1996 scope limitation was related to the above two items plus the following the fact that the company failed to provide relevant information to allow the auditors to audit a RMB 21million long-term investment.

A.3. Related party transactions

Company: Shanghai Shenhua
Auditor: Dahua, top 10 auditor in 93–96
Stock exchange: Shanghai
Audit opinion for 1995: qualified opinion with explanatory paragraph

In 1995, Shenhua sold three million shares of Dazhong Taxi at RMB 3.354 million (1.118 yuan a share) to Shanghai Jianguo Charitable Trust Fund with recourse. The sales agreement stipulated that if the institutional shares were not listed in the stock exchange within two years, Shenhua would buy back all the shares at the same price plus 15% interest. Without recognizing this sale of RMB 3.354 million yuan, Shenhua's ROE would have dropped below 10%. Shenhua's auditor, Dahua, argued that this transaction should not have been recognized as a sale, but rather a loan. The Shanghai Jianguo Charitable Trust Fund was named after Shenhua's CEO Jianguo Qu and this should have been considered a related-party transaction. The government later ruled that no institutional shares were allowed to be listed in the stock exchanges. Also, Shenhua enjoyed a below market interest rate of 15% over two years, while the market rate for a comparable bank loan was 13% a year.

Appendix B

Market share of each top 10 auditor is given in Table 8.

Table 8
Market share of each top 10 auditor

Name	Affiliation	1993		1994		1995		1996	
		Ranking	Market share[a]	Ranking	Market share	Ranking	Market share	Ranking	Market share
Dahua	Shanghai Univ of Finance and Economics	2	10%	2	10%	3	9%	1	8%
Huaming	Ernst and Young	20	1%	4	6%	6	5%	4	6%
Huazhen	KPMG	3	9%	6	6%	2	9%	3	6%
Guangzhou	Dept of Finance	13	2%	11	3%	9	3%	9	4%
Lixin	Lixin Accounting School	5	6%	7	5%	7	5%	7	4%
Shanghai	Bank of Communication	1	13%	1	11%	1	9%	2	7%
Shekou Xinda	BDO	8	4%	10	3%	10	3%	17	2%
Shekou Zhonghua	Ministry of Transportation	4	8%	3	7%	4	7%	8	4%
Shenyang	Bureau of Finance	10	4%	15	2%	15	2%	12	2%
Shenzhen Zhonghua	Ministry of Electronics	6	6%	5	6%	5	5%	5	6%
Shenzhenshi	Bureau of Audit	9	4%	9	3%	11	3%	10	4%
Sichuan	Dept of Finance	14	2%	8	4%	8	4%	6	5%
Zhonghua Sheke	Shanghai Academy of Social Science	7	5%	15	2%	13	3%	13	2%

[a]The market share of each audit firm is defined as the combined client total assets of the audit firm divided by the combined total assets of all listed companies in the market. The top 10 auditors are in bold print.

References

Aharony, J., Lee, J., Wong, T.J., 1999. Financial packaging of IPO firms in China. Journal of Accounting Research, forthcoming.

Arens, A., Loebecke, J., 1997. Auditing: An Integrated Approach, 6th ed. Prentice-Hall, Englewood Cliffs, NJ.

Beatty, R., 1989. Auditor reputation and the pricing of initial public offerings. The Accounting Review 64, 693–709.

Becker, C., DeFond, M., Jiambalvo, J., Subramanyam, K.R., 1998. The effect of audit quality on earnings management. Contemporary Accounting Research 15, 1–24.

Chen, J., Chen, S., Su, X., 1999. Is accounting information value relevant in the emerging Chinese stock market. Working paper, City University, Hong Kong.

Chen, J., Su, X., Zhou, R., 1998. Market reaction to initial qualified audit opinions in an emerging market: evidence from the Shanghai stock exchange. Working paper, City University, Hong Kong

Cheung, L., Zhang, W., 1996. Contemporary Accounting Issues in China: An Analytical Approach. Prentice Hall, Englewood Cliffs, NJ.

DeAngelo, L., 1981. Auditor size and audit quality. Journal of Accounting and Economics, 183–199.

DeFond, M., Subramanyam, K.R., 1998. Auditor changes and discretionary accruals. Journal of Accounting and Economics 25, 35–68.

Dopuch, N., Holthausen, R., Leftwich, R., 1987. Predicting audit qualifications with financial and market variables. The Accounting Review 62, 431–454.

Dopuch, N., Simunic, D., 1980. The nature of competition in the auditing profession: a descriptive and normative view. The Illinois Auditing Symposium.

Francis, J., 1984. The effect of audit firm size on audit prices: a study of the Australian market. Journal of Accounting and Economics, 133–151.

Francis J., Maydew, E.L., Sparks, H.C., 1998. Earnings management opportunities, auditor quality, and external monitoring. Auditing: A Journal of Practice and Theory, forthcoming.

Gensler, H., J. Yang, 1996, Auditing Standards of the People's Republic of China. FT Law & Tax Asia Pacific.

Hao, Z.P., 1999. Regulation and organization of accountants in China. Accounting, Auditing and Accountability Journal 12, 286–302.

Krishnan, J., 1994. Auditor switching and conservatism. The Accounting Review 69, 200–216.

Lin, J.Y., Cai, F., Li, Z., 1996. The China Miracle: Development Strategy and Economic Reform. The Chinese University Press.

Lys, T., Watts, R.L., 1994. Lawsuits against auditors. Journal of Accounting Research 32, 65–102.

Palmrose, Z., 1988. An analysis of auditor litigation and audit service quality. The Accounting Review 63, 55–73.

Simunic, D., 1980. The pricing of audit services: theory and evidence. Journal of Accounting Research 18, 161–190.

Simunic, D., Stein, M., 1987. Product differentiation in auditing: auditor choice in the market for unseasoned new issues. Monograph prepared for the Canadian Certified General Accountant Research Foundation.

South China Morning Post. Regulators Reach Red-chip Consensus. April 17, 1997.

Teoh, S.H., Wong, T.J., 1993. Perceived auditor quality and the earnings response coefficient. The Accounting Review 68, 346–367.

Watts, R.L., Zimmerman, J.L., 1983. Agency problems, auditing, and the theory of the firm: some evidence. Journal of Law and Economics, 613–633.

Watts, R.L., Zimmerman, J.L., 1986. Positive Accounting Theory. Prentice Hall, Englewood Cliffs, NJ.

Xiang, B., 1998. Institutional factors influencing China's accounting reforms and standards. Accounting Horizons 12, 105–119.