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AUDITOR TYPE, FIRM OWNERSHIP AND AUDITOR REPORTING UNDER A JOINT AUDIT REQUIREMENT: EXPLORATORY EVIDENCE FROM INDIA

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AUDITOR TYPE, FIRM OWNERSHIP AND AUDITOR REPORTING UNDER A JOINT AUDIT REQUIREMENT: EXPLORATORY EVIDENCE FROM INDIA

by

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ABSTRACT

Auditor Type, Firm Ownership and Auditor Reporting Under A Joint Audit Requirement: Exploratory Evidence from India

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Master of Philosophy

India is one of the largest developing countries in the world. Although many issues and phenomena arising from its transitional economy are worthy of research from an accounting perspective, the Indian accounting market is a field that remains relatively unexplored in the extant literature. One of the institutional features of India is that while it is mandatory for public sector companies and banks to have joint auditors, their appointment is voluntary for other companies. In a thesis motivated by this and other institutional features and the absence of related accounting and auditing studies conducted in an Indian setting, I examine the relations of auditor type and firm ownership with the types of auditor opinions issued under the joint audit requirement.

Using a sample of 1,142 firm-year observations from the major Indian stock exchanges from 2006-2008, I develop an auditor opinion model to examine the relations between firm ownership, auditor type and auditor opinions under the joint-audit requirement that applies in India. Companies' self-selection bias for auditors is also considered and corrected using the Heckman 2-step method. Based on the empirical results, I report as follows. First, Big 4 auditors are more likely to issue modified opinions than local Indian auditors. Second, the Indian government assumes a supervisory role rather than a collusive role and the joint-audit requirement is associated with a higher level of auditor reporting quality. Finally, companies audited by joint auditors are more likely to receive modified opinions than companies audited by a single auditor.

The findings provide evidence of the importance of understanding the pattern of auditor opinion in India and the incentives of joint auditors, as well as the influence this pattern has on auditor reporting quality in a transitional economy.

DECLARATION

I declare that this is an original work based primarily on my own research, and I warrant that all citations of previous research, published or unpublished, have been duly acknowledged.

ZOU Ting

Date

CERTIFICATE OF APPROVAL OF THESIS

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Auditor Type, Firm Ownership and Auditor Reporting under a Joint Audit Requirement: Exploratory Evidence from India

Chapter 1 Introduction

1.1 India: a large emerging economy with many unexplored business issues

The importance of external auditing to modern corporate governance, the wider economy and capital market development is well-established in the prior literature (e.g., Watts and Zimmerman, 1983; Streim, 1994; Gul et al., 2007). However, the importance of external auditing in India, one of the largest transitional economies in the world, is a topic that is relatively under-researched. According to Perumpral et al. (2009), in a trend that is driven by globalization, the attention of the world is today centered on two emerging market economies: India and China. This is especially so in the case of India, which is regarded by many as having a more favorable macro environment and greater potential for future economic development than China due to its liberal economy, British-framed legislation, and political democracy.

India's annual economic growth since 2003-04 has been reported often at over 8 percent. More sectors have been opened to private activity; trade policy and the exchange rate regime have been further liberalized; and capital markets have been reformed, leading to an improved investment climate. Today, India has one of the fastest growing economies in the world with a compounded average growth of 5.7 percent over the last two decades. The country's total gross domestic product (GDP) at US $3 trillion makes it the fourth largest in the world in purchase price parity terms.

World Bank (WB) and the International Monetary Fund (IMF) Report on the Observance of Standards and Codes (ROSC) 2004 states that International

comparisons indicate that India has intrinsic advantages that should allow the country to emerge as a major hub for manufacturing and labor-intensive service industries --including accounting-related services. India's intrinsic advantages include one of the world's largest local markets; a large and relatively low-cost labor force and a large well-educated English-speaking population. To accelerate the development and fulfill the potential of Indian, it requires building on the existing initiatives and further strengthening of the corporate financial reporting regime and improving comparability, transparency, and accountability. Hence, a better understanding of Indian accounting and auditing is in urgent need.

1.2 India accounting: some research issues

The existing auditing research in India is focuses mainly on the audit fees (audit service pricing), Big 4 versus non-Big 4 product differentiation in audit service market, the convergence of Indian Accounting Standards (IAS) and the International Financial Reporting Standards (IFRS) (Dugar et al., 1995; Simon et al., 1986; Ahmed and Goyal, 2005 and Perumpral et al. 2009). Only one paper studies how external auditing and managerial ownership relate to firm valuation in India (Ghosh 2007). Simon et al. (1986) report that determinants of audit fees in India are similar to those of other countries; that is, audit fees are strongly related to client size, audit risk and complexity variables. Also, the existence of a premium fee paid to Big 8 auditors (at the time of the study in 1986) is found. The author argues that the premium fee result is consistent with the results of studies of several other countries, which suggests the existence of product differentiation in the market for audit services. Dugar et al. (1995) try to take a further step to examine Indian audit service market taking the public sector companies versus the private sector companies approach and find fees difference between these two sectors. Additionally, Ghosh,

(2007) reports that the number of auditors employed and firm performance are positively related in Indian companies, suggesting external monitoring enhances firm performance.

1.3 Motivations of the study

India imposes a special legal requirement on its government-owned companies and banks by obliging them to employ joint auditors for their annual statutory audit. This joint audit regulatory requirement is a feature of the Indian market that is not commonly observed in other countries, only France and Denmark have similar rules.

My study is motivated by the following two factors. First, prior accounting and auditing studies carried out in India mainly focus on reviewing the general auditing service market and the audit fees issue (Simon et al., 1986; Dugar et al., 1995). However, we know little about other important accounting and auditing research issues such as the relation between the Indian government and auditors and factors influencing the types of opinions Indian auditors issue. These two questions are both investigated in this study.

Second, although the joint audit requirement provides a unique institutional setting for analysis, to the best of my knowledge, no research has been carried out in this field in India to date. Although Francis et al. (2009) examine auditor choice for listed companies in France where two (joint) auditors are required by law, the institutional environment and accounting market in India are quite different from those in France. It is not clear whether the results of Francis et al. (2009) can be generalized to a different institutional setting. This thesis takes the initiative by examining the relation between the joint audit requirement and auditor reporting quality in India.

1.4 Results of the study

Based on a sample of 1,142 firm-year observations of Indian listed companies from 2006 to 2008, I develop an auditor opinion model to examine the relations between firm ownership, auditor type, and auditor opinions under the joint audit requirement that applies in the institutional setting of India. Companies' self-selection bias for auditors is also considered and corrected using the Heckman 2-step method. The empirical results support my conjectures that Big 4 auditors provide higher quality services than their local rivals. Further, Indian government-owned companies are more likely to receive qualified opinions than non-government-owned companies. Finally, companies audited by the joint auditors are indicated to have higher reporting quality than companies audited by a single auditor.

1.5 Contributions of the study

This paper contributes to the existing auditing literature in several ways. First, my study contributes to the Indian accounting and auditing literature by providing empirical evidence on the determinants of auditor opinion issuance in India. Second, this study fills the research gap on the influence of the joint audit requirement on auditor reporting behavior in India. Finally, the Indian government's supervisory effect on local Indian auditors' issuance of opinions to government-owned companies may provide a useful reference for other transitional economies, as auditing risks and failures in transitional economies are frequently documented as being a result of auditor collusion in which local auditors issue more favorable opinions to government-owned companies.

1.6 Structure of the thesis

The remainder of this thesis proceeds as follows. Chapter 2 introduces the institutional background. Chapter 3 presents the literature review and develops the

hypotheses. Chapter 4 discusses the research design and Chapter 5 reports the empirical results. I present my conclusions in Chapter 6.

Chapter 2 Institutional background

To have a better understanding of the Indian accounting and auditing environment and to lay the ground for development of the three hypotheses examined in this study, this section discusses the institutional background to the Indian audit market by examining Indian legislation covering the accounting and auditing profession, giving an overview of the auditing and securities markets, and addressing some special issues affecting Indian government-owned companies, financial institutions, and joint auditors.

2.1 The legal framework governing the Indian accounting and auditing profession

The Companies Act (1956) sets out the basic financial reporting requirements that apply to all companies incorporated in India. The Companies Act requires that financial statements be prepared, presented, published, and disclosed and that all companies be audited by a member-in-practice certified by the Institute of Chartered Accountants of India (ICAI). Schedule VI to the Act prescribes the form, content and minimum disclosure requirements of financial statements. The accounting period (financial year) adopted in India is from April 1st of the given year to March 31st of the next year.

The Central Government enforces the Companies Act ("the Act") through the Department of Company Affairs (DCA), the Company Law Board, the regional directors, and the Registrars of Companies (ROC). Every regional director's office has a special unit for inspection of companies' accounts. While regional directors have in some cases taken action against erring auditors under the Act, they generally refer such cases to the ICAI. The ROC is expected to scrutinize the records of registered companies for compliance with provisions of the Act. This function is hampered by a severe lack of capacity in terms of trained manpower and thus

restricts the ROC's oversight of listed companies. The Company Law Board is an independent quasi-judicial body that receives petitions of complaint from the general public concerning the functioning and management of companies. The Company Law Board also receives applications for waivers from companies with regard to application of some of the provisions of the Act. Powers to implement penalties, notices, and sanctions are delegated among the DCA, the regional directors, and the ROC.

The Chartered Accountants Act (1949) governs the accountancy profession in India. The history of the Indian accounting profession began with enactment of the Indian Companies Act in 1857, a piece of legislation that first introduced the concept of preparing a company balance sheet on a voluntary basis. The Indian Companies Act of 1866 introduced legal requirements regarding the maintenance of accounts and auditors' qualifications. A system of auditor certification by the local government was initiated after a new Companies Act was passed in 1913. Following India's independence in 1947, an expert committee was formed to examine a scheme for an autonomous association of accountants in India, which led to the enactment of the Chartered Accountants Act (1949) and the establishment of the Institute of Chartered Accountants of India in the same year. The ICAI regulates the accountancy profession and, in line with India's imperial history, was initially modeled on the Institute of Chartered Accountants in England and Wales (ICAEW). The ICAI acts both as an examining body that grants chartered accountancy qualifications and licenses and as a disciplinary authority for its members. The ICAI has been a founding member of the International Federation of Accountants (IFAC) since its inception in 1977. With a reputation for excellence, the ICAI has been the institution of choice for business graduates and aspiring business advisers and now

has a highly skilled membership of over 110,000, making it one of the largest professional accountancy bodies in the world.

2.2 Auditing market overview

Small audit firms dominate the Indian auditing marketplace, even though the Indian affiliates of large international firm networks (such as the Big 4 audit firms of Deloitte, Ernst & Young, Price Waterhouse, and KPMG) audit approximately 47 percent of the top 100 listed companies.[1] The ICAI reports that about 53,245 audit firms operate in India, including members/affiliates of most of the international networks of accounting firms. In addition, about 1,000 firms audit at least one economically significant enterprise and about 15 of the largest firms audit more than 70 percent of the top 100 listed companies. Government-owned companies, unlisted companies, public sector banks, and insurance companies are generally audited by small- and medium-size local firms. According to Report on the observance of standards and codes (ROSC 2004), this is due to the unremunerative fee scales prescribed for these engagements. In most cases, the regulator or the Office of the Comptroller and Auditor General of India mandates joint auditors for state-owned enterprises, public sector banks, and insurance companies.

Members of the ICAI are required to follow a detailed code of ethics prescribed under the Chartered Accountants Act. The ICAI Council is entrusted with disciplinary powers that are exercised through its Disciplinary Committee. In matters concerning the public interest, penalty awards require confirmation by a High Court. Professional indemnity insurance is not compulsory and the ICAI does not specifically require or recommend that auditors take out such insurance.

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1 Local affiliates of large international networks audit 11 out of the top 50 Indian companies and jointly audit 6 other companies in the top 50 with another medium-size firm (for 34 percent of the top 50). They also audit 25 out of the 51st-100th ranked companies and jointly audit 5 other companies in that bracket with another medium-size firm (for 60 percent of companies in that bracket).

The Accounting Standards Board (ASB) and the Auditing and Assurance Standards Board (AASB) are responsible for assisting the ICAI in setting standards. Due process is followed in promulgating both accounting standards and auditing and assurance standards (AAS). Based on draft regulations prepared by the ASB and the AASB, the ICAI Council approves and issues new standards under its authority and prescribes deadlines for their adoption.

2.3 Securities market overview

There are two main pieces of legislation governing the Indian securities market. The Securities Contracts (Regulation) Act of 1956 provides for regulation of transactions in securities and aims to prevent undesirable transactions in securities. The other main piece of legislation, the Securities and Exchange Board of India (SEBI) Act of 1992, is aimed at protecting investors and developing and regulating the securities market. Listed companies in India are required to comply with SEBI requirements as outlined in the SEBI Act and the Securities Contracts (Regulation) Act. To protect investor interests, SEBI-issued listing requirements specify disclosures applicable to listed companies in addition to other applicable auditing and accounting requirements. The SEBI uses listing agreements to require compliance with ICAI-issued accounting standards.

India has three stock exchanges: the Bombay Stock Exchange (BSE), the National Stock Exchange of India (NSE), and the Calcutta Stock Exchange (CSE). According to its official Website, the BSE is the world's number one exchange in terms of the number of listed companies and the world's fifth ranking exchange according to the number of transactions handled by its electronic trading system.[2] The Website also reports that companies listed on the BSE in July 2009 had a total

[2] Official BSE Website: http://www.bseindia.com/about/introbse.asp

market capitalization of USD 1.06 trillion. The BSE has a presence in over 400 cities and towns nationwide and has around 4,937 listed companies, with over 7,745 scripts being traded on 31st July 2009.

The Bombay and National Stock Exchanges rely on external auditors to monitor compliance with the accounting and disclosure requirements. Listed companies are required to submit their financial statements to the Stock Exchange. The Stock Exchanges closely monitor compliance with requirements of their Listing Agreement and promptly act on publishing of any information that could mislead investors. The Stock Exchanges in India are generally satisfied if a publicly traded company issues audited financial statements on a timely basis, and such statements are accompanied by an unqualified audit opinion. The Corporate Relations Department of the Stock Exchange pursues any qualification by the auditors with the company and requires corrections by the following year-end. The Stock Exchanges lack sufficient number of qualified professionals and financial resources to systematically carry out monitoring of compliance with accounting and financial reporting requirements.

In addition, the BSE SENSEX and the BSE 100 index are popular and well-known indices both domestically and globally. The BSE SENSEX, India's first and most popular stock market benchmark index, comprises 30 stocks representing 12 major sectors and is tracked worldwide.

2.4 Special issues in India

2.4.1 Government-owned companies

Chapter 617 of the Companies Act (1956) defines a government company as one in which 51 percent of the paid-up share capital is held by a state government, the central government, or some combination of the state and central governments. Subsidiaries of such entities are also deemed to be government companies.

Under Chapter 619 of the Companies Act (1956), auditors of corporatized state-owned enterprises are appointed and re-appointed by the Comptroller and Auditor General of India (CAG). The CAG maintains and updates a panel of private sector firms qualified to undertake annual audits of state-owned enterprises.[3] The allocation of audit work among these audit firms is based on a points system that gives credit based on information disclosed by the audit firms themselves, including the number of partners in the firm, the number of employees and trainees, the experience of the firm, and the number of years for which the partners have been associated with the firm. These audit firms have to provide the required information outlined above in standard questionnaires that are reviewed by the Office of the Comptroller and Auditor General of India. The boards of directors of state-owned enterprises determine the professional fees paid to their auditors on the basis of guidelines issued by the CAG and such fees are subsequently approved by shareholders of the company. The CAG conducts a supplementary test audit of all such companies on a regular basis. Depending upon the audit arrangements, as specified by these rules, the audit may be performed by either a private sector auditor or a state-appointed auditor, which may include the Office of the Comptroller and Auditor General of India or its appointee.

2.4.2 Financial institutions

The Banking Regulation Act (1949) empowers the Reserve Bank of India (RBI) to regulate financial reporting among financial sector participants including banks and financial institutions.[4] The Third Schedule to the Banking Regulation Act prescribes formats for general purpose financial statements (balance sheet and profit

[3] Corporatized state-owned enterprises include about 1,400 public commercial and non-commercial enterprises controlled by unions and state governments.

[4] There are approximately 60 Indian banks including 27 state-owned banks (19 nationalized banks and the State Bank of India and its 7 subsidiaries) and over 30 private banks.

and loss account) and sets out other disclosure requirements. Banking companies are also required to comply with Companies Act requirements that are consistent with the Banking Regulation Act. The RBI has issued circulars requiring compliance with the ICAI-issued accounting standards. All banks must publish audited financial statements within three months of the financial year-end. Since 2002-03, all banks have been required to prepare consolidated financial statements; during 2001-02, consolidation was mandatory for listed banks only. Private sector firms and foreign banks are required to seek prior approval from the RBI before appointing their auditors. The public sector banks appoint their statutory auditors (principal auditors and branch auditors) on the basis of recommendations made by the RBI (other than in the case of the State Bank of India, for which the principal auditors are appointed directly by the RBI pursuant to the State Bank of India Act); these recommendations are made from a list of RBI-empanelled auditors. Statutory principal auditors rely on branch auditors' reports in issuing audit opinions on the bank's annual financial statements. The list of RBI-empanelled auditors is compiled from self-disclosure forms completed annually by interested auditors. The appointment, re-appointment, or removal of a bank statutory auditor requires RBI approval. All state-owned banks must have a minimum of four (joint) statutory auditors and bank auditors must be replaced at least once every four years. No audit firm is allowed to audit more than four private sector banks and one state-owned bank during any single year.

2.4.3 The joint audit requirement

Joint audits are required in countries such as India, France, and Denmark (Francis et al., 2009; Thinggaard and Kiertzner, 2008). A joint audit is an audit carried out on a legal entity (the auditee) by two or more auditors who produce a single audit report and thereby share responsibility for the audit. The auditors are

typically audit firms rather than individuals. In a typical joint audit, audit planning is performed jointly and fieldwork is allocated to each of the auditors. This work allocation may be rotated after a set number of years to mitigate the risk of over-familiarity. The work performed by each auditor is reviewed by the other, in most cases by exchanging audit summary reports. The critical issues at group level, including group consolidation, are reviewed jointly and there is joint reporting to the legal entity's management, its audit committee, a government entity, or the general public.

According to SA 299 (Standards on Auditing, formerly known as Auditing and Accounting Standards 12 (AAS 12)), "All the joint auditors are jointly and severally responsible in respect of the audit work which is not divided amongst them. On the other hand, all the joint auditors are jointly and severally responsible for examining that the financial statements of the entity comply with the disclosure requirements of the relevant statute and for ensuring that the audit report complies with the requirements of the relevant statute and in respect of matters which are brought to the notice of the joint auditors by any one of them and on which there is an agreement among the joint auditors. Each joint auditor is entitled to assume that the other joint auditors have carried out their part of the audit work in accordance with the generally accepted audit procedures. Normally, the joint auditors are able to arrive at an agreed report. However, where the joint auditors are in disagreement with regard to any matters to be covered by the report, each one of them should express their own opinion through a separate report." In addition, a joint audit is different from a dual audit in that the latter is performed by two independent auditors who issue their own separate reports before another auditor uses these reports to compile the final report on the entity as a whole.

Chapter 3 Literature review and hypothesis development

Based on previous related research and features of the Indian institutional setting as summarized earlier, I develop three hypotheses to examine the determinants of auditor reporting quality in India, which is measured by the probability of receiving a modified auditor opinion (MAO). The first hypothesis examines the relation between reporting quality and the choice of two kinds of auditors: Big 4 and local Indian auditors. The second hypothesis examines how firm ownership affects auditor's reporting behavior, and the third hypothesis examines the influence of the joint audit requirement on audit quality in India.

3.1 Auditor types

Firms of chartered accountants in India may be broadly classified into three groups: (1) local firms serving clients in one city or region only – these are small firms; (2) regional firms that have offices in major locations where their clients operate or that have formed affiliations with prominent local accounting firms to serve client offices in remote geographical areas – these firms are generally somewhat larger; and (3) very large national firms that have offices in most major industrial and commercial centers – represented by the Big 4 accounting firms (Simon et al., 1986; Marmousez, 2008). The dichotomy between Big 4 auditors (international auditors) and non-Big 4 auditors (local Indian auditors) is also used in this study, to examine whether there is a significant difference in auditor reporting quality in terms of the frequency of qualified opinions issued by these two groups of auditors.

Following DeAngelo (1981), who argues that large audit firms are more likely to provide a higher quality audit than non-Big 4 audit firms, prior research suggests that Big 4 auditors provide higher quality audits to protect the firm's brand name

reputation and to avoid costly litigation (Craswell et al., 1995). Chan and Wu (2011) find that audit firms with more quasi-rent at stake provide higher quality audits in China's context. The quasi-rents at stake are based mainly on audits of listed companies.

Based on the Indian audit market and related literature, for audits on Indian listed companies, I hypothesize as follows:

H1: Indian companies are more likely to receive qualified opinions from Big 4 auditors than from local Indian auditors.

3.2 Firm ownerships

With its deregulated domestic market and British-framed legal system, India is widely regarded as a more liberal and market-oriented country than China, another globally important transitional economy, both economically and politically (Banerjee, 2002; Ahmed and Goyal, 2005; Ren, 2009). Recent research supports the view that common law countries such as India have stronger investor protection laws and more developed financial markets than civil law countries such as China (La Porta et al., 1997, 1998; Francis, et al., 2001). Moreover, the CAG conducts a supplementary test audit of all government-owned companies on a regular basis that functions as a review supporting better auditor independence in Indian government-owned companies.

While evidence of auditor collusion has been found and reported in the Chinese setting (Chan et al., 2006), the Chinese institutional setting is uniquely responsible for such collusion. The history of government-sponsored CPA firms and local government ownership of the great majority of listed companies do not apply to India.

Hence, I predict that the Indian government has more of a supervisory rather than a collusive influence on auditor reporting behavior in government-owned companies. Therefore, my second hypothesis is as follows:

H2: Government-owned companies are more likely to receive qualified opinions than non-government-owned companies in India.

3.3 The joint audit requirement

In India, it is mandatory for public sector companies and banks to have joint auditors, whereas other listed companies may choose between appointing joint auditors or retaining a single auditor. The joint audit requirement applicable to public sector firms provides an ideal setting for studying the role it plays in auditor reporting quality. This study takes the initiative by exploring the joint audit regulatory feature of India, an area in which little prior research has been conducted.

To the best of my knowledge, Indian listed companies that choose to appoint joint auditors on a voluntary basis do so for the following reasons. First, the appointment of joint auditors is usually regarded as a means of providing the public with a higher level of assurance of auditor reporting quality according to social business reporting practices in India. Hence, some companies may choose to retain joint auditors to gain an advantage in the public sphere and improve their public image. Second, companies that are too big to be audited by one audit firm — typically public utilities and banks — often hire two or three firms that combine their resources to audit the company.

Research on the joint audit requirement has been carried out in France, a country where all its listed companies are required to employ two audit firms to

conduct a joint audit. (The term "joint auditors" is synonymous with "joint auditorship," "joint audit" or "joint auditing" in the literature.) Francis et al. (2009) find that French firms are valued more highly than neighboring firms in Belgium, which has a kindred legal and regulatory system. This finding suggests that investors may perceive two auditors to be better than one. However, comparing the audit quality between two countries involves many confounding factors such as the differences in auditing standards and audit markets. In my case, I investigate the impact of joint audit requirement on audit quality within a single country setting. Finally, Piot and Janin (2005) also argue that the joint audit requirement is perceived to have two advantages: on one hand, it offers a reciprocal check of each auditor's diligence, and on the other hand, it reinforces each auditor's independence. Consequently, joint audits should improve audit quality.

Consequently, the following hypothesis is proposed regarding the relationship between joint auditors and auditor reporting quality as proxied by the probability of receiving a MAO.

H3: Companies audited by joint auditors are more likely to receive qualified opinions than companies audited by a single auditor.

Chapter 4 Research design

4.1 Data collection and sample statistics

The data employed for this study are cross-sectional data for the 2006-2008 period extracted from the Prowess database (Release 3.1) generated and maintained by the Centre for Monitoring Indian Economy (CMIE), a leading private think tank in India. The data set includes 1,142 firm-year observations from the 2006-2008 period for listed companies that were either members of the Bombay Stock Exchange A group (referred to as BSE-A 200 companies in this paper; see Appendix 1 for BSE company group classifications) or were BSE-B group companies audited by the Big 4 auditors (Deloitte, ERNST & YOUNG, KPMG and PRICE WATERHOUSE; names of the Indian Big 4 affiliates are provided in Appendix 2). The top 100 BSE companies represent nearly 86 percent of BSE market capitalization and State-owned enterprises account for approximately 32 percent of BSE market capitalization. (The World Bank and the International Monetary Fund, 2004). I combine the samples of the companies of BSE-B group that audited by Big 4 auditors with the data set of BSE-A group 200 companies for the reason that these companies represent the first-tier or higher quality listed firms in terms of financial situation and asset quality in India. The descriptive statistics based on this 1,142-observation sample and the definitions of each variable used in this study are reported in Panel A and Panel B of Table 1, respectively.

The 1,142 firm-year observations are selected via a three-step process. First, I extract 2006-2008 financial data on all BSE-A 200 companies from the Prowess database, obtaining 600 observations in total (200 firm-year observations annually over a three-year observation period). Second, I manually screen for companies in the BSE-B group that are audited by Big 4 auditors, yielding 164 firm-year

observations in 2006, 224 firm-year observations in 2007, and 162 firm-year observations in 2008. This step yields an additional 550 (164 + 224 + 162) firm-year observations to add to the 600 identified in step 1, giving a sample size of 1,150 firm-year observations. Third, I delete eight cases with incomplete data manually and obtain the final sample of 1,142 firm-year observations.

Table 2 shows the descriptive statistics grouped by the auditor opinion type (unqualified opinion or qualified opinion) that the company received during the sample period. In Panel B of Table 2, the paired T-test reveals a statistically significant difference between the means of Ownership, Own*Type, MS, MS*Big4, and Auditors_fees at the 1% significance level. The differences in the means of Ownership, MS, and Auditors_fees (between firms grouped by unqualified opinion and qualified opinion) are worth noting and suggest that these variables should be included and examined further in Model (2) to identify the determinants of auditor opinion issuance.

Table 1: Variable definitions
Panel A: Descriptive statistics

	Mean	***Std. Dev.***	***Minimum***	***Maximum***
Financial variables:				
Assets	3.137	0.875	0.556	5.753
Inventories	0.119	0.127	0.000	0.834
Receivables	0.184	0.142	0.000	0.731
Current_ratio	1.995	6.904	0.000	221.670
D/E_ratio	0.894	3.407	-79.460	43.210
ROE	2.209	6.469	-169.627	95.643
Other variables:				
Opinion	0.261	0.439	0.000	1.000
Ownership	0.103	0.305	0.000	1.000
Type	0.374	0.484	0.000	1.000
*Own*Type*	0.098	0.298	0.000	1.000
MS	0.853	0.354	0.000	1.000
*MS*Big4*	0.968	0.175	0.000	1.000
Auditors_Fees	1.140	3.635	0.000	62.280
Age	11.448	6.252	0.000	18.000

Panel B: Variable definitions

Variable	***Definition***
Financial variables:	
Assets	Common log of total assets at the end of the fiscal year (Mar 31st).
Inventory	The ratio of inventory to total assets at the end of the fiscal year.
Receivables	The ratio of receivables to total assets at the end of the fiscal year.
Current_Ratio	The ratio of current assets to current liabilities at the end of the fiscal year.
D/E_ ratio	The ratio of long-term debt to shareholders' equity at the end of the fiscal year.
ROE	The ratio of net income to shareholders' equity at the end of the fiscal year.

Panel B: Variable definitions

Other variables:	
Opinion	The Opinion variable is equal to 1 if the auditor opinion is qualified and 0 if the auditor opinion is clean.
Ownership	The Opinion variable is equal to 1 if the company is state / central government-owned and 0 if it is non-government owned.
Type	The Type variable is equal to 1 if the company's auditors are all local Indian auditors and 0 if it is audited by at least one international auditor.
*Own*Type*	The Own*Type variable is equal to 1 if the company is owned by the government and its auditors are all local auditors and 0 if otherwise.
MS	The MS variable is equal to 1 if the company is audited by a single auditor and 0 if it is audited by more than one auditor.
*MS*Big4*	The MS*Big4 variable is equal to 0 if the company is audited by joint auditors including at least one of Big 4 auditors and 1 if otherwise.
Auditors_Fees	The total amount of auditor(s) fees that the company paid to its auditor(s) in the observed year.
Age	The number of years for which the company has been listed in the observed year.
Imills	The inverse Mills ratio in the Heckman two-step logit regression.

Table 2: The independent sample test, grouped by auditor opinions (N = 1,142)

Panel A: Opinion group statistics

	Opinion	N	%	Mean	Std.Deviation
Ownership	0	844	73.91	0.077	0.267
	1	298	26.09	0.178	0.383
Type	0	844	73.91	0.370	0.483
	1	298	26.09	0.386	0.488
Own*Type	0	844	73.91	0.073	0.261
	1	298	26.09	0.168	0.374
MS	0	834	73.81	0.881	0.324
	1	296	26.19	0.774	0.419
MS*Big4	0	837	73.81	0.968	0.177
	1	297	26.19	0.970	0.172
Assets	0	844	73.91	3.089	0.818
	1	298	26.09	3.271	1.008
Inventories	0	844	73.91	0.121	0.129
	1	298	26.09	0.111	0.121
Receivables	0	844	73.91	0.185	0.136
	1	298	26.09	0.182	0.157
Current ratio	0	844	73.91	1.971	7.708
	1	298	26.09	2.062	3.803
Debt equity ratio	0	844	73.91	0.960	2.709
	1	298	26.09	0.705	4.868
ROE	0	844	73.91	2.328	4.206
	1	298	26.09	1.872	10.506
Auditors_Fees	0	838	73.77	0.622	1.231
	1	298	26.23	2.596	6.584
Age	0	838	73.77	11.636	6.347
	1	298	26.23	10.919	5.955

Panel B: Paired t-test between opinion types

	t	Sig.	Mean Difference
Ownership	-4.199	0.000**	-0.101
Type	-0.498	0.619	-0.016
Own*Type	-4.019	0.000**	-0.094
MS	4.014	0.000**	0.108
MS*Big4	-0.165	0.869	-0.002
Assets	-2.810	0.005**	-0.182
Inventories	1.203	0.229	0.010
Receivables	0.210	0.834	0.002
Current ratio	-0.197	0.844	-0.092
Debt equity ratio	1.113	0.266	0.256
ROE	1.046	0.296	0.456
Auditors_Fees	-5.142	0.000**	-1.973
Age	1.701	0.089	0.717

Notes: ** Represents significance at the 1% level.
All variables are as defined in Table 1.

As shown in Table 3, I then run the paired correlations test using the 1,142-observation data set and obtain the Pearson's correlation coefficients. The coefficient on Ownership is positive and significant, providing further support for my argument in Hypothesis 2 that the likelihood of receiving a qualified auditor opinion is greater for Indian government-owned companies than it is for non-government-owned companies. In addition, the coefficient on MS is negative and significant, providing further support for the argument of Hypothesis 3 that joint auditors are associated with higher audit reporting quality.

Table 3: Pearson Correlation Matrix (N =1142)

	Opinion	*Ownership*	*Type*	*Own*Type*	*MS*	*MS*Big4*
Opinion	1					
Ownership	0.1455**	1				
Type	0.0147	0.3976**	1			
*Own*Type*	0.1393**	0.9617**	0.4267**	1		
MS	-0.1337**	-0.3242**	-0.3524**	-0.3308**	1	
*MS*Big4*	0.0049	0.0452	0.1402**	0.0599*	0.4371**	1
Assets	0.0915**	0.3484**	0.5998**	0.3593**	-0.421**	-0.054
Inventories	-0.0356	-0.0465	-0.1054**	-0.0435	0.092**	-0.0222
Receivables	-0.0066	-0.137**	-0.2169**	-0.1288**	0.1742**	-0.0158
Current_ratio	0.0058	-0.0053	-0.0022	-0.0034	-0.0025	0.0106
D/E_ratio	-0.033	0.0012	0.0499	0.0023	-0.0086	-0.0097
ROE	-0.031	0.0264	-0.009	0.0295	0.0207	0.006
F_dummy	0.032	0.0916**	0.1381**	0.1006**	-0.0686*	0.0702*
	Assets	*Inventories*	*Receivables*	*Current_ratio*	*D/E_ratio*	*ROE*
Assets	1					
Inventories	-0.1663**	1				
Receivables	-0.3154**	0.1905**	1			
Current_ratio	0.0269	-0.0566	-0.0558	1		
D/E_ratio	0.1127**	0.0336	-0.0531	-0.0161	1	
ROE	-0.0324	0.1495**	0.1424**	-0.0256	0.8034**	1
F_dummy	0.2247**	-0.1627	-0.273**	0.006**	0.0415	-0.1196**

Notes: ** Represents significance at the 1% level.
* Represents significance at the 5% level.
All variables are as defined in Table 1.

4.2 Regression analysis

My sample data show that Indian government-owned companies are inclined to choose Indian local auditors, about 94%, and non-government-owned companies are inclined to choose international auditors such as Big 4, about 69%. The reasons that Indian government-owned companies and non-government-owned companies have different auditor selection inclinations can be partially explained as follows. First, as noted in Chapter 2, the CAG encourages Indian government-owned companies to employ local audit firms. Second, as Indian government-owned companies generally have a good public reputation and a comparatively good financial status, they do not need the Big 4 audits to enhance public trust, especially given the joint audit requirement. Third, in comparison with public sector companies, non-government-owned companies cannot rely to any great extent on the Indian government's reputation to back them up; therefore, non-government-owned companies are inclined to choose international Big 4 auditors to enhance their financial credibility in the capital market.

Considering the reasons outlined above for the different auditor selection inclinations of public and private sector companies, I use the Heckman two-step method to control for self-selection effects. Heckman (1979) derived this two-step method to correct for selectivity bias in linear regression models with normal errors. Dubin and Rivers (1989) applied the same basic conceptual framework to logit and probit models and developed a two-stage binary probit method to control for self-selection bias in discrete-choice models. Following prior studies, I first estimate a probit auditor selection model and use the results to generate the inverse Mills ratios, which are denoted as Imills in this study. Next, I include the inverse Mills ratios in audit opinion issuance models for the clients of Big 4 and local Indian

auditors to correct for selectivity bias. The estimated coefficients of the audit opinion issuance models will be biased if the inverse Mills ratios are omitted from the regression. The self-selection model is given as follows.

Step one: Auditor choice

$$\text{Probit(Type)} = \beta_0 + \beta_1\text{Ownership} + \beta_2\text{MS} + \sum_{k=1}^{6}\beta_k\text{Financial\_Variables}_k + \text{Auditors\_fees} + \text{Age} + \varepsilon \quad (1)$$

Step two: Auditor opinion issuance

$$\begin{aligned}\text{Logit(Opinion)} = {} & \beta_0 + \beta_1\text{Ownership} + \beta_2\text{Type} + \beta_3\text{Own*Type} + \beta_4\text{MS} \\ & + \beta_5\text{MS*Big4} + \beta_6\text{F\_dummy} + \beta_7\text{Imills} \\ & + \sum_{k=1}^{6}\beta_k\text{Financial\_Variables}_k + \sum_{m=1}^{2}\beta_m\text{Year\_dummy}_m \\ & + \sum_{n=1}^{2}\beta_n\text{Indu\_dummy}_n + \varepsilon \end{aligned} \quad (2)$$

The definitions of the variables given above are presented in Panel B of Table 1 and the descriptive statistics for these variables are presented in Tables 1-4. Type, Own*Type, and MS*Big4 are excluded from Model (1) to avoid collinearity. Specifically, Type and Own*Type (the interactive term of auditor type combined with firm ownership) are employed mainly to capture the influence of auditor type on auditor reporting. Ownership and Own*Type are used to examine the influence of the Indian government on auditor reporting behavior. The coefficient of Type is predicted to be negative and the coefficient of Ownership is expected to be positive, while the direction of Own*Type needs to be empirically examined. Further, MS and MS*Big4 are included to test whether the joint audit requirement improves auditor reporting quality. MS is predicted to have a negative coefficient and as in the case of Own*Type, the direction of MS*Big4 needs to be empirically examined.

Auditor reporting quality is measured by the frequency of modified audit opinion (MAO) rendered by an auditor. The higher the frequency, the higher the

audit quality. This is because lower quality auditors tend to give clean opinion to retain audit clients, but auditors will not render a qualified opinion unnecessarily. This MAO measurement has been used by Reynolds and Francis (2001), Chan et al. (2006) and Wang et al. (2008). An opinion is considered to be modified in this study if it is unqualified but with emphasis of matter, a qualified opinion, a disclaimer opinion (the sample includes only one such case) or an adverse opinion (the sample does not include any such case). Opinions that are clean are considered to be unqualified in this study. According to Auditing and Assurance Standard (AAS) 28 -- The Auditor's Report on Financial Statements, "the opinion with emphasis of matter is issued, in certain circumstances, an auditor's report may be modified by adding an emphasis of matter paragraph to highlight a matter affecting the financial statements which is included in a note to the financial statements that more extensively discusses the matter. The addition of such an emphasis of matter paragraph does not affect the auditor's opinion. The paragraph would preferably be included preceding the opinion paragraph and would ordinarily refer to the fact that the auditor's opinion is not qualified in this respect." The auditor should modify the auditor's report by adding a paragraph to highlight a material matter regarding a going concern problem where the going concern question is not resolved and adequate disclosures have not been made in the financial statements, or if there is a significant uncertainty (other than going concern problem), the resolution of which is dependent upon future events and which may affect the financial statements. Also according to AAS 28, a qualified opinion should be expressed when the auditor concludes that an unqualified opinion cannot be expressed but that the effect of any disagreement with management is not so material and pervasive as to require an adverse opinion, or limitation on scope is not so material and pervasive as to require a disclaimer of

opinion. A disclaimer of opinion should be expressed when the possible effect of a limitation on scope is so material and pervasive that the auditor has not been able to obtain sufficient appropriate audit evidence and is, accordingly, unable to express an opinion on the financial statements. An adverse opinion should be expressed when the effect of a disagreement is so material and pervasive to the financial statements that the auditor concludes that a qualification of the report is not adequate to disclose the misleading or incomplete nature of the financial statements.

Chapter 617 of the Companies Act (1956) defines a government company as one in which 51% of the paid-up share capital is held by a state government, the central government, or some combination of the state and the central governments. The term "government-owned companies in India" used in this study is consistent with the definition given above. Subsidiaries of such entities are also deemed to be government-owned companies.

In addition, if a company has joint auditors and at least one of these joint auditors is linked to a Big 4 accounting firm, then this company observation is categorized as Type = 0 (audited by Big 4). I also include three sets of dummy variables to distinguish between financial companies and non-financial companies, between observations for each of the three years in the 2006-2008 period, and between companies according to industry type (manufacturing, mining, electricity, non-financial services, and construction).

4.2.1 Financial variables

I include as control variables in the model a number of client characteristic variables, which are examined in prior studies (e.g., DeFond et al., 2000) that may affect the likelihood of receiving a modified opinion.

I use Assets to proxy for client size by taking the logarithm of the client's

year-end total assets. As companies with greater assets are regarded as financially more healthy and reliable (Schwartz and Menon, 1985), I expect the Assets variable negatively correlated with the frequency of receiving a modified opinion. The ROE variable is also included in the audit opinion model and is expected to be negatively linked to the issuance of modified opinions.

To control for the financial liquidity of companies, I use the current ratio (Current_ratio) and the debt to equity ratio (D/E_ratio) and expect the coefficient of Current_ratio to be negative and that of D/E_ratio to be positive. The ratios of inventory and accounts receivable to total client assets — Inventory and Receivables — are included to control for audit risk and complexity. These two variables are expected to be positively associated with the issuance of modified opinions.

4.2.2 Year dummy variables

To examine whether there is any special year effect in the 1,142 cross-sectional observations from 2006-2008, I employ two year dummy variables: Year_dummy_1 and Year_dummy_2. The empirical results suggest that there is no special year effect related to the frequency of a modified opinion being issued. These two year dummy variables are included in the model but are not reported in Table 6 for brievity.

4.2.3 Industry dummy variables

The industry coding is based on the classification scheme adopted in the Prowess database. Companies are classified as non–financial (including manufacturing, mining, electricity, non-financial services, and construction companies) and financial services companies. Five dummy variables — Indu_dummy_1, Indu_dummy_2, Indu_dummy_3, Indu_dummy_4, and Indu_dummy_5 — are used in regression Model (2) to capture the influence of each of these six different industries (the five industries classified as non-financial and the

financial services industry).

The sample firms include 639 manufacturing companies, 23 mining companies, 35 electricity companies, 240 non-financial service companies, 57 construction companies, and 148 financial companies. The five industry dummy variables are included in the model but are not reported in Table 6 for brievity.

Chapter 5 Empirical Results

Table 4 reports descriptive information on client firm characteristics divided by class of firm ownership and auditor type in Panel A and summarizes the statistical relationship between auditor opinion and auditor type in Panel B. The analysis of mean F-values indicates that Auditors-Fees and Receivables differ significantly in the two firm ownership categories: Indian government-owned companies and non-government-owned companies. Panel B of Table 4 shows that among Indian government-owned companies, the percentage of companies that receive a modified auditor opinion is 64.5% for those audited by local Indian auditors and 63.6% for those audited by Big 4 auditors. However, among non-government-owned companies, the percentage of companies that receive a modified auditor opinion is 20.6% for those audited by local Indian auditors and 25.4% for those audited by Big 4 auditors. The differences between these two sets of results indicate that Indian government-owned companies are more likely to receive a qualified opinion than non-government-owned companies as proposed by Hypothesis 2.

Further, in Panel C of Table 4, the percentage of companies receiving modified auditor opinions from joint auditors is reported as 40.4%, while the percentage of companies receiving a modified opinion from a single auditor is only 23.8%. These results support the view that companies audited by joint auditors are significantly more likely to receive a modified auditor opinion, as predicted by Hypothesis 3.

Table 4: Descriptive statistics on client firm characteristics, auditor opinions divided by client ownership, auditor type, and number of auditors (N = 1142)

	Government-owned Companies		Non-government-owned Companies		Analysis of mean F-value	
	Local auditors (Mean)	Big 4 auditors (Mean)	Local auditors (Mean)	Big 4 auditors (Mean)		
Panel A: **Client firm characteristics**						
Assets	4.098	3.022	3.716	2.728	0.099	
Inventories	0.100	0.128	0.102	0.129	2.069	
Receivables	0.128	0.109	0.150	0.209	4.560	*
Current_ratio	1.927	1.250	1.992	2.014	0.340	
D/E_ratio	0.915	0.747	1.184	0.763	0.431	
ROE	2.781	1.619	1.905	2.260	0.380	
Auditors_Fees	2.976	0.190	2.110	0.425	6.723	**
Age	9.883	5.286	11.658	11.662	2.218	
N	111	7	316	708		

	Government-owned Companies				Non-government-owned Companies			
	Local Auditors		Big 4 Auditors		Local Auditors		Big 4 Auditors	
	Number	%	Number	%	Number	%	Number	%
Panel B: **Auditor opinions and auditor type**								
Unqualified opinion	61	35.5	4	36.4	251	79.4	528	74.6
Modified opinion	50	64.5	3	63.6	65	20.6	180	25.4
N	111	100	7	100	316	100	708	100

	Joint Auditors		Single Auditor	
	Number	%	Number	%
Panel C: **Auditor opinions and joint auditors**				
Unqualified Opinion	99	59.6	735	76.2
Modified Opinion	67	40.4	229	23.8
N	166	100	964	100

Notes: $\chi 2$ test for the difference between auditor opinion and auditor type for government-owned companies: $\chi 2 = 0.013$, $p = 0.613$;

$\chi 2$ test for the difference between auditor opinion and auditor type for non-government-owned companies: $\chi 2 = 2.828$, $p = 0.054$;

$\chi 2$ test for the difference between auditor opinion and MS (joint auditors or single auditor): $\chi 2 = 20.200$, $p = 0.000$.

** Represents statistical significance at the 1% level.

* Represents statistical significance at the 5% level.

All variables are as defined in Table 1.

Table 5 presents the probit regression results for auditor choice from Model (1) based on the full sample of 1,142 firm-year observations during the 2006-2008 period. The model is significant at the 5% level, indicating a significant relationship between the dependent and the independent variables. All of the significant coefficient signs in the model are in the expected direction. The ownership variable has a positive coefficient (at the 1% significance level), showing that Indian government-owned companies are more likely to choose local Indian auditors. The coefficient of MS is negative (at the 1% significance level), indicating that the appointment of joint auditors normally involves all local auditors. In addition, the coefficients for Assets and Auditors_fees are significantly negative at the 1% and 5% significance levels, respectively, suggesting that companies that have a larger asset base and have paid more audit fees are more likely to choose Big 4 auditors.

Table 5: Heckman first-step probit regression of self-selection of auditor(s) (Dependent variable: Locality)

	Predicted Sign	Coeft.	Z-Statistic	P-Value
Constant		-4.316	-11.130	0.000
Ownership	+	1.486	6.330	0.000**
MS	-	-0.405	-2.720	0.006**
Assets	-	1.295	13.810	0.000**
Inventories	+	0.399	1.000	0.319
Receivables	+	-0.220	-0.580	0.564
Current_ratio	-	0.044	1.380	0.169
D/E_ratio	+	-0.047	-1.890	0.059
ROE	-	0.025	1.400	0.162
Auditors_fees	-	-0.035	-1.970	0.049*
Age	-	-0.002	-0.310	0.760
Lambda		0.377	3.520	0.000
Sample Size				1142

Notes: ** Represents statistical significance at the 1% level.
* Represents statistical significance at the 5% level.
All variables are as defined in Table 1.

In the second step of the regression based on Model (2), I test my hypotheses and identify the determinants of auditor opinion issuance. I include Ownership, Type, Own*Type, MS, MS*Big4, the six financial control variables, F_dummy, Year_dummy_1-2, and Indu_dummy_1-5 in the regression. The inverse Mills ratios are also incorporated to control for the self-selection problem between auditees and auditors. The positive coefficient on the inverse Mills ratio suggests that Indian government-owned companies more often select local auditors than randomly selected companies would select.

Table 6 shows the findings of the second-step opinion issuance logit model with and without the inverse Mills ratios. When the logit regression is run without the inverse Mills ratios, the direction of the coefficient on Ownership is consistent with the prediction, but not significance. However, after adding the inverse Mills ratios to the binary logit regression model to control for self-selection bias, the coefficient becomes significant. Moreover, pseudo R-squared for the overall model increases by nearly 1.7%.

In addition, instead of excluding the 148 observations of financial companies from the full sample which will significantly reduce sample size, I create a dummy variable (F_dummy) that is equal to 1 for financial company observations and is equal to 0 for non-financial company observations. This dummy is employed to identify whether financial companies and non-financial companies differ significantly in auditor reporting quality. The empirical regression result reported in Table 6 indicates no difference in the possibility of receiving a modified auditor opinion between financial companies and non-financial companies.

Table 6: Heckman second-step logit regression of opinion issuance
(Dependent variable: Opinion)

		Original			Adjusted by Imills		
	Predicted Sign	Coeft.	Wald $\chi 2$	P-value	Coeft.	Wald $\chi 2$	P-value
Constant		-2.461	9.719	0.002	-7.622	1.000	0.000
Ownership	+	0.892	1.415	0.234	2.101	6.332	0.012*
Type	-	-0.822	14.672	0.000*	-0.688	9.553	0.002*
*Own*Type*	?	-0.004	0.000	0.996	-0.708	0.711	0.399
MS	-	-0.952	14.780	0.000*	-0.892	11.862	0.001*
*MS*Big4*	?	1.172	6.055	0.014*	0.691	1.902	0.168
Assets	-	0.258	5.308	0.021*	1.345	20.409	0.000*
Inventories	+	-0.457	0.528	0.467	0.376	0.310	0.578
Receivables	+	0.716	1.711	0.191	0.680	1.540	0.215
Current_ratio	-	0.001	0.014	0.907	0.108	5.608	0.018*
D/E_ratio	+	-0.019	0.223	0.637	-0.047	1.317	0.251
ROE	-	-0.003	0.017	0.897	0.012	0.316	0.574
F_dummy		0.459	0.651	0.420	0.391	0.430	0.512
Yeardummy_1		0.055	0.098	0.754	0.056	0.096	0.757
Yeardummy_2		-0.043	0.060	0.807	-0.008	0.002	0.965
INDU_dummy_1		0.412	0.571	0.450	0.537	0.891	0.345
INDU_dummy_3		0.451	0.416	0.519	0.293	0.157	0.692
INDU_dummy_4		0.333	0.355	0.551	0.479	0.676	0.411
INDU_dummy_5		0.459	0.547	0.459	0.575	0.804	0.370
Imills	+				1.327	1.000	0.000
Pseudo R^2				0.041			0.058
Sample Size				1142			1142
		LR chi2(18) = 53.52 Prob > chi2 = 0.000			LR chi2(18) = 75.03 Prob > chi2 = 0.000		

Notes: * Represents statistical significance at the 5% level.
All variables are as defined in Table 1.
Indu_dummy_2 is dropped because of collinearity.

The adjusted binary logit regression results for the auditor opinion issuance determinants are reported on the right-hand side of Table 6. The empirical results are consistent with my three hypotheses. Consistent with Hypothesis 1, the Type variable relates negatively to Opinion at the 1% significance level, providing good support for the prediction that Big 4 firms provide audits of higher quality than those of their local counterparts in India. The coefficient for Ownership is also significant at 5% level and supports the prediction in Hypothesis 2 that Indian government-owned companies are more likely to receive modified opinions than non-government-owned companies. This finding supports the view that the Indian government assumes a supervisory rather than a collusive role when interacting with the auditors of Indian government-owned companies. The coefficient for MS is significant at 1% level and is negative, thereby confirming the expectation of Hypothesis 3 that audits conducted by joint auditors are of higher quality than those conducted by a single auditor.

Chapter 6 Conclusions

This research extends previous accounting research on auditor independence and audit quality in the setting of India, a country about which relatively few prior studies have been conducted. I investigate the correlation between auditor type, firm ownership, and the issuance of auditor opinions under the joint audit requirement. I report exploratory empirical results based on a sample of 1,142 firm-year observations from the 2006-2008 period for firms listed on the Bombay Stock Exchange (BSE) that are members of the A-group of 200 companies and B-group firms audited by Big 4 affiliates in India.

First, my findings support the prediction that companies audited by Big 4 auditors (international auditors) are more likely to receive a modified opinion than companies audited by local Indian auditors. In contrast to an earlier study on India that uses aduit fee as the measure of audit quality (Simon et al., 1986), I use the frequency of receiving a modified audit opinion as the measure of audit quality which avoids low balling and other complexities affecting audit fees. Second, government-owned companies are associated with greater likelihood of receiving qualified opinions than non-government-owned companies in India, indicating the special supervisory role of the Indian government. Finally, the joint audit requirement is associated with a higher audit quality, which complements prior research findings on joint audit requirement in France but in a single country setting.

This exploratory empirical study has a number of limitations that should be taken into account in interpreting the results. First, because data on audit fees among joint auditors is unavailable at the firm level, I cannot have a more precise measure of the auditor fees variable (the amount allocated to each auditor) in the regression models used in this study. Second, because the research period is limited to

2006-2008, further research based on data from other periods may further confirm the results obtained. Third, although the Bombay Stock Exchange (BSE) is the biggest and most important stock exchange in India and its A-group and B-group firms are the best listed companies on the BSE, the sample selection method employed means this study is skewed towards larger Indian firms. I have not studied companies listed on India's two other stock exchanges, the CSE (the Calcutta Stock Exchange) and the NSE (the National Stock Exchange). However, it is unrealistic to expect a single study to address all the gaps that exist in the prior literature. Furthermore, given that this is an exploratory empirical study, it is reasonable to start with a sample of higher quality listed companies.

This paper has implications for policy makers and users of financial information on listed firms regarding the quality of auditor reporting in India. First, the Big 4 auditors are confirmed to be associated with higher auditor reporting quality in the Indian setting. Hence, investors and information users should have a good degree of confidence in Big 4 auditor opinions issued on Indian companies. Second, Indian government-owned companies are more likely to receive qualified auditor opinions. This result indicates the constructive role played by regulators such as the CAG in ensuring sufficient supervisory oversight and is a lesson that can be transferred to other transitional economies that suffer from collusion between government and auditors in the audits of government-owned companies. Finally, the results of this study show that the joint audit requirement enhances auditor reporting quality, which should provide an encouragement for other countries to consider the use of joint auditors.

Further research may examine how the professional reputation of Big 4 auditors and their brand recognition in the Indian audit service market have been affected by

the Satyam scandal that occurred in January 2009. The Satyam Scandal is sometimes called India's Enron, which was publicly announced on 7 January 2009, when Chairman of the company, Ramalinga Raju, confessed that Satyam's accounts had been falsified for up to $1 billion. As the auditor of Satyam in 2009 was PricewaterhouseCoopers, this scandal has shaken investor confidence in one of the world's Big Four accounting firms, which have expanded rapidly in Asia despite a general shortage of qualified accountants. This study can also be considered as an exploratory investigation that ushers the way for researchers and regulators to study and compare factors that contribute to audit quality in transitional economies.

Appendix 1: Bombay Stock Exchange (BSE) group classifications

Group A: Shares in this category have high levels of liquidity, market capitalization and capital appreciation.

Groups B1 and B2: Similar to A and with good liquidity, but slightly lower levels of market capitalization and capital appreciation. These are financially healthy stocks.

Group T: Transactions in these shares must be settled by way of delivery only. Transactions in shares trading with a "T" designation require the actual delivery of scripts.

Group S: The Exchange has introduced a new segment named “BSE Indonext” with effect from January 7, 2005. The “S” group represents scripts forming part of the “BSE Indonext” segment. The “S” group consists of scripts from the “B1” & “B2” groups on the BSE and companies exclusively listed on regional stock exchanges that have capital of 30 million rupees to 300 million rupees. All tradings in this segment are done through the BOLT system under the S group.

Group TS: The “TS” group consists of scripts in the “BSE-Indonext” segments which are settled on a trade-to-trade basis as a surveillance measure.

Group Z: Suspended lots of shares. Shares in this group are suspended due to non-compliance with exchange board rules.

Apart from these equity groups, there are two other groups: fixed income securities (group F, a debt market segment) and government securities (group G). For more details, see the source: http://www.bseindia.com/about/tradnset.asp.

Appendix 2: Names of BIG 4 affiliates in India

Big 4	Affiliates in India
Deloitte	Deloitte Haskins & Sells, C. C. Chokshi & Co., A. F. Ferguson & Co, A. F. Ferguson & Associates, S.B. Billimoria & Co., and P. C. Hansotia
Ernst & Young	S.R. Batliboi & Company, S. R Batliboi & Associates, and S.V. Ghatalia & Associates
KPMG	BSR, BSR & Associates, and BSR & Company
Price Waterhouse	Price Waterhouse, Price Waterhouse & Co, Lovelock & Lewes , RSM & Co., and Dalal & Shah

Notes:

1. Some of the Big 4 affiliates in India cannot use their global brand names due to regulations issued by the ICAI in 1988 specifying that "The name of any firm that wants to register for ICAI membership must have a combination of the names of the partners or a name in being, that is a name in use before this rule was introduced."
2. Indian affiliates of the Big 4 international network firms operate using their pre-1988 registered brand names (eg. DTT and PRICE WATERHOUSE). The other two Big 4 firms (ERNST & YOUNG and KPMG) did not have any firms registered with the ICAI before 1988 and hence must use completely unconnected Indian member firm brand names. In addition, all four firms have private limited companies registered in India that use the global brand and actively sell all the firm's services other than those that must be provided by ICAI members. These private limited companies are not required to follow the strict code of ethics and are not subject to other ICAI rules and regulations.
3. The above information was provided by the CMIE (Centre for Monitoring Indian Economy).

References

Ahmed, K. and Goyal, M. (2005). A comparative study of pricing of audit services in emerging economies. International Journal of Auditing, Vol. 9, No. 2, pp. 103-116, July.

Banerjee, B. (2002). Regulation of corporate accounting and reporting in India. World Press, Calcutta, 2002, pp. xv+220.

Chan, K. H., Lin, K. Z. and Mo, P. L. L. (2006). A political–economic analysis of auditor reporting and auditor switches. Review of Accounting Studies, Vol. 11, pp. 21-48.

Chan, K. H. and D. Wu (2011). Aggregate Quasi Rents and Auditor Independence: An Empirical Study of Audit Firm Mergers in China. Contemporary Accounting Research (forthcoming).

Chibber, P. K. and Majumdar, S. K. (1999). Foreign ownership and profitability: property rights, control, and the performance of firms in Indian industry. Journal of Law and Economics, Vol. 42, pp. 209–38.

Craswell, A. T., Francis, J. R. and Taylor, S. L. (1995). Auditor brand name reputations and industry specializations. Journal of Accounting and Economics, Vol.20, pp. 297-322.

DeAngelo L. E. (1981). Auditor size and audit quality. Journal of Accounting and Economics, Vol. 3, Issue 3, December 1981, pp. 183-199.

DeFond, M. L., Wong, T. J., and Li, S. (2000). The impact of improved auditor independence on audit market concentration in China. Journal of Accounting and Economics, Vol. 28, pp. 269-305.

Dubin, J. A., Rivers, D., (1989). Selection bias in linear regression, logit and probit models. Sociological Methods Research 18 (2-3): 360-390.

Dugar, A., Ramanan, R., Simon, D.T. (1995). A comparative study of the audit services market for public sector versus private sector companies in India. Advances in International Accounting, Vol. 8, pp. 1-13.

Francis, J. R., Khurana, I. K. and Pereira, R. (2001). Investor protection laws, accounting and auditing around the world. Available at SSRN: http://ssrn.com/abstract=287652. (May 20, 2010).

Francis, J. R., Richard, C. and Vanstraelen, A. (2009). Assessing France's joint audit requirement: are two heads better than one? Auditing: A Journal of Practice & Theory, Vol. 28 (2), p. 35.

Ghosh, S. (2007). External auditing, managerial monitoring and firm valuation: an empirical analysis for India. International Journal of Auditing, Vol. 11, pp. 1–15.

Gul, F. A., Qiu, A. N. and Kim, J. B. (2007). Political economy, client economic importance and auditor independence: some evidence from Chinese non-big 4 auditors. Available at SSRN: http://ssrn.com/abstract=971233. (May 20, 2010).

Heckman, J. J., (1979). Sample selection bias as specification error. Econometrica 27 (1): 154-161.

La Porta, R., Lopez-de-Silanes, F., Shleifer, A. and Vishny, R. (1997). Legal determinants of external finance. Journal of Finance, 52 (July), pp. 1131-1150.

La Porta, R., Lopez-de-Silanes, F., Shleifer, A. and Vishny, R. (1998). Law and finance. Journal of Political Economy, Vol. 106 (December), pp. 1113-1155.

Marmousez, S. (2008). The choice of joint-auditors and earnings quality: evidence from French listed companies. April 2008, CAAA Annual Conference 2009 paper.

Ministry of Corporate Affairs, India. (1956). The Company Act (1956). Available at: http://www.mca.gov.in/Ministry/acts_bills.html. (May 20, 2010).

Ministry of Finance, India. (1949), The Banking Regulation Act (1949). Available at: http://fiuindia.gov.in/relatedacts-bankingregu.html. (May 20, 2010).

Mudhaki, J. A. and Joshi, P. L. (2004). The Role and Functions of Audit Committees in the Indian Corporate Governance: Empirical Findings. International Journal of Auditing. 8: 33–47.

Perumpral, S. E., Evans, M., Agarwal, S. and Amenkhienan, F. (2009). The evolution of Indian accounting standards: its history and current status with regard to international financial reporting standards. Advances in Accounting, Incorporating Advances in International Accounting, Vol. 25 (2009), pp. 106-111.

Piot, C. and Janin, R. (2005). Audit quality and earnings management in France. Available at SSRN: http://ssrn.com/abstract=830484. (May 20, 2010).

Ren Y. P. (2009). Research on Indian accounting standards and its convergence with IFRS. Accounting Research, Vol. 7, pp. 43-49.

Reynolds, K. and Francis, J. (2001). Does size matter? The influence of large clients on office-level auditor reporting decisions. Journal of Accounting and Economics, Vol. 30, Issue 3, pp. 375-400.

Securities and Exchange Board of India (SEBI). (1956). The Securities Contracts (Regulation) Act (1956). Available at: http://www.sebi.gov.in/acts/contractact.pdf. (May 20, 2010).

Securities and Exchange Board of India (SEBI). (1992). The Securities and Exchange Board of India Act (1992). Available at: http://www.sebi.gov.in/acts/act15ac.pdf. (May 20, 2010).

Schwartz, K. B. and Menon, K. (1985). Auditor switches by failing firms. The Accounting Review, Vol. 60, pp. 248–261.

Simon, D.T., Ramanan, R., Dugar, A. (1986). The market for audit services in India: an empirical examination. The International Journal of Accounting, Vol. 21, Issue no.1, pp. 27-35.

Streim, H. (1994). Agency problems in the legal political system and supreme auditing institutions. European Journal of Law and Economics, Vol. 1, Issue 3, pp. 177-191.

The Institute of Charted Accountants of India (ICAI). (1949). Standards on Auditing (SA, known as Auditing and Accounting Standards (AAS)). Available at: http://www.caclubindia.com/forum/files/50_auditing%20and%20accounting%20standards.doc. (May 20, 2010).

The Institute of Charted Accountants of India (ICAI). (1949). The Charted Accountants Act (1949). Available at: http://www.icai.org/resource_file/7694announ1209a.pdf. (May 20, 2010).

The Word Bank and the International Monetary Fund (IMF). Report on the observance of standards and codes (ROSC) – India, accounting and auditing. December 20, 2004.

Thinggaard, F. and Kiertzner, L. (2008). Determinants of audit fees: evidence from a small capital market with a joint audit requirement. International Journal of Auditing, Vol. 12, pp. 141-158.

Wang, Q., Wong, T.J. and Xia, L.J. (2008). State ownership, the institutional environment, and auditor choice: evidence from China. Journal of Accounting and Economics, Vol. 46, pp. 112-134.

Watts, R. L. and Zimmerman J. L. (1983). Agency problems, auditing, and the theory of the firm: some evidence. The Journal of Law and Economics, Vol. 26. Available at SSRN: http://ssrn.com/abstract=928710. (May 20, 2010).