OWNERSHIP RESTRUCTURING, POLITICAL CONNECTIONS, AND FOREIGN PORTFOLIO INVESTMENT IN CONTEMPORARY CHINA

By

WEIYE LI

B.A., BEIJING UNIVERSITY, BEIJING, CHINA, 2003

M.A., BROWN UNIVERSITY, 2004

A DISSERTATION SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF DOCTOR OF PHILOSOPHY IN THE DEPARTMENT OF ECONOMICS AT BROWN UNIVERSITY

PROVIDENCE, RHODE ISLAND
MAY 2008

This dissertation by Weiye Li is accepted in its present form
by the Department of Economics as satisfying the
dissertation requirement for the degree of Doctor of Philosophy.

Date _____ _____

Louis Putterman, Advisor

Recommended to the Graduate Council

Date _____ _____

George Borts, Reader

Date _____ _____

Brian Knight, Reader

Approved by the Graduate Council

Date _____ _____

Sheila Bonde, Dean of the Graduate School

VITA

Ms. Li entered the Graduate Program of Economics at Brown University, Providence, Rhode Island, in September 2003, received the Master's degree in Economics in May 2004, and was admitted to a Ph.D. candidacy in Economics in June 2004. She presented her dissertation work at the Macro and Applied Micro Lunch Seminar in the Department of Economics at Brown in 2006 and 2007.Prior to her joining the program, she was based in Beijing, and she holds the Bachelor's degree in Finance and Banking (granted in 2003) from Beijing University, China. She is specialized in Development Economics, Finance, and Investment.

In addition to her writing a dissertation, Ms. Li has involved in a variety of research activities in the past several years including: collaborating with Professor Louis Putterman in surveying the Chinese State Owned Enterprise Reform since 1978; collecting and cleaning data for "Why So Little Redistribution in the United States? The Poor don't Vote", by Professor Howard Rosenthal at Brown University and Dr. Christine Eibner at the RAND Corporation; recording and processing the China Statistical Yearbook data from the Fairbank Center for East Asian Research for Professor Nancy Qian at Brown University; and presenting research on political connections in the 11th Annual Graduate Conference of Harvard East Asia Society.

While pursuing her doctoral degree at Brown University, Ms. Li acted as a teaching assistant for the following undergraduate and graduate courses: Intermediate Microeconomics, Mathematics for Economists, Corporate Finance, Investment I, Investment II, International Finance, Corporate Governance, and Chinese Economy. She served as a referee for the *Journal of Comparative Economics*. She also served as a tutor at the Academic Support Center for two semesters, and she assisted a number of undergraduate students with their course work for Economics.

Ms. Li was employed by the General Electric Medical System (Now GE Healthcare), Beijing, China, as an intern during the summer of 2001. She was assigned to work in the Finance Department. Ms. Li is a member of Chartered Financial Analyst Institute and now the CFA level II candidate.

In July 2008, after completion of her doctoral study in Economics, Ms. Li will join Pricewaterhouse Coopers, USA, LLP as a transfer pricing economist in their San Jose office.

ACKNOWLEDGMENTS

I would very much like to thank my advisor Professor Louis Putterman, who sparked my interest in Chinese economy, kept me on the track of research, helped me extend my limit, and carefully supervised me in daily work. I enjoyed the time working with him as a research assistant and teaching assistant. He not only taught me how to understand the Chinese economy in a historical, comparative, political, and even experimental perspective, but also influenced me greatly with his working philosophy. He offered me the dataset of chapter 1 and encouraged me to take initiative to communicate with scholars in the Chinese University of Hong Kong on chapter 2. He spent time going over my draft, presentation, and job application materials. His suggestions on paper writing are always helpful. I cannot imagine that I can complete this dissertation without him.

I am very grateful to Professor George Borts, who taught me International Finance and provided insightful advice on the finance and banking part in chapter 2 and chapter 3 respectively. As a non-native speaker, I am greatly appreciative of Professor Borts' infusion of American history, culture, slang, and even black humor into our economic conversations.

I am highly indebted to Professor Brian Knight, who gave me precise advice on empirical work, job presentation, and job market strategy. In particular, the empirical strategy in chapter 3 was hinted by Professor Knight.

I want to express my appreciation to Professor Ivo Welch, Lily Qiu, David Weil, Nancy Qian, and Ross Levine for their comments on my presentations. I thank Commerce, Organizations, and Entrepreneurship program at Brown University for its financial support in purchasing the China Real Estate dataset for the chapter 2.

I want to express my appreciation to Professor Heng-fu Zou who supported my research and shared the finance dataset with me. I am very grateful to Joseph P.H. Fan who was kind enough to host me in Chinese University of Hong Kong and provided me invaluable contextual information in chapter 2. I am very grateful to Dr. Ziran Li who shared part of the datasets in chapter 2 and chapter 3. He helped to clarify the institutional background of the China stock markets and housing market to me. I would like to thank Ms. Xiaojie Bo who provided the real estate dataset in chapter 2. I greatly appreciate the generous data support by *Soufun China Real Estate Data Bank*.

I would like to express my special thanks to Ying Pan, Fumiko Tamura, Takuma Kunieda, Chun-fang Chiang, Cheng-tao Tang, Masaki Yamada, Mariko Klasing, Monic Jiayin Sun, and Feng Zhu for their effective communication and helpful consultancy during my job hunting process.

I thank all the supporting staff in the economics department at Brown University.

Apart from research, my father and mother gave me enormous positive energy while I was writing thesis at Brown University. Without their support and encouragement, I would not have survived my Ph.D. study. I am most appreciative of their support.

Lastly, I would definitely like to express my thanks to my husband who motivated my research ideas, stimulated my working passion, and kept eyes on my writing progress all the time. He is always helpful and important in my research.

PREFACE

This dissertation provides three empirical essays on contemporary China's development. It deals with the institutional reform, organization and finance of industrial enterprises in contemporary China from the standpoint of ownership restructuring, political connections, and foreign portfolio investment, with an eye to consequences for efficiency improvement, income distribution and well-being. Its contribution is to pinpoint the critical problems that are usually difficult to quantify in China and provide empirical evidence with regard to the impact of ownership restructuring, the value of political connections, and the signaling effect of Qualified Foreign Institutional Investors.

Chapter 1, "The Second Wave of Reform: Enterprise Restructuring in China, 1995-2001." Since the mid-1990s China has witnessed a second wave of state-owned enterprise (SOE) reform which involved accelerated changes in enterprise ownership compared to the first wave of reform from 1978 to early 1990s. This paper estimates how different forms and timings of ownership restructuring affect firms profitability and liquidity using a panel of data on 683 industrial SOEs in 11 cities of China from 1995 to 2001. The standard panel data treatment evaluation procedure and instrumental variables regression are used to deal with the selection bias problem. Among the various forms of ownership restructuring, going public or joint venture (PJ) which brings in diversified outsider ownership has had the largest impact on firm performance improvement relative to unreformed firms. In terms of profitability, PJ increases return on asset (ROA) by 2.31%, sales over asset ratio by 21.43%, and earnings before interest and tax (EBIT) over asset ratio by 5.49% relative to unreformed ones. With respect to liquidity, PJ reduces debt asset ratio by 11.92% relative to unreformed ones. By exploiting a set of plausibly exogenous variations associated with firms' geographic characteristics, transaction costs of ownership restructuring, and legal restrictions, the instrumental variables regression is implemented. The IV regression result is consistent with the fixed effects regression result that PJ plays an important role in improving firm performance. In terms of timing, firms restructured in 1998 see the most pronounced improvement particularly in profitability while firms restructured after 1998 see declining marginal improvement after the restructuring. I interpret this as a signal of a new reform era under a new leadership.

Chapter 2, Shanghai Surprise: Estimating the Value of Political Connections in China's Real Estate Market." Political connections matter in China. However, the market value of such connections remains difficult to measure. I construct an index of political connections for Chinese real estate firms on the basis of land locations of their property projects. Using a unique shock provided by a top official purge in Shanghai, I examine how publicly traded real estate firms with various degrees of political connections respond to the surprise. On the trading side, analysis reveals that the loss of political connections leads to a decline ranging

from 231 to 300 basis points in the abnormal returns of connected firms. On the corporate side, contrary to the previous literature, my result shows that connected firms have strikingly less leverage than normal firms before the event, whereas they increase leverage upon the loss of connections. One way to look closer at this abnormality is to take a case study. Case study shows that connected listed firms have alternative financing opportunities through parent firms' political connections. Parent firms take loans to purchase the non-tradable state assets of listed subsidiaries and leave the latter a pretty balance sheet with a low leverage. The results highlight the role of political connections in China's real estate sector and document a new pattern of corruption in state asset transfer and corporate financing activities. They suggest the need for more stringent regulations on asset stripping and related-party transactions.

Chapter 3, "Does Money Chase Money: Estimating the Signaling Effects of Qualified Foreign Institutional Investors in China Domestic Stock Markets." Rapidly growing China has made a real attempt to modernize its banking and financial systems. On 12/01/02, the Qualified Foreign Institutional Investor (QFII) Act was enacted. It allowed QFIIs to invest in the range of US$ 50 million-1 billion in RMB denominated shares listed on China's stock exchanges (A-Share), provided that each QFII cannot exceed 10% of total shares and all QFIIs cannot exceed 20% of total shares. The main idea behind this act is that QFIIs will spur on better and more effective governance and functioning of listed firms. In only three years or so, QFIIs have risen to become China's second-largest group of institutional investors. How does this program work for the capital market in China? This paper estimates the signaling effect of QFII by studying the impact of the announcement of QFII holdings in public companies' financial reports. Results show that the announcement of positive QFII change leads to significantly positive abnormal returns.

Again, the data sets and empirical models of this dissertation can be applicable to other economic issues. For example, with the dataset and empirical model in chapter 2 I can potentially study the political connections in other cities of China. The trading behavior of QFIIs in A-share markets, the signaling effect of foreign investors in H-share markets, and the co-movement of H-share and A-share markets can be done with the dataset and method in chapter 3. Unfortunately, these investigations are not complete at the time of this dissertation; however, they are certainly important issues to study, and I leave them for future research.

May 2008, Providence

Weiye Li

Contents

List of Tables

List of Figures

Chapter 1

The Second Wave of Reform: On the Effects of Enterprise Restructuring in China, 1995-2001.

1.1 Introduction

Since the mid-1990s China has witnessed a second wave of industrial state-owned enterprise (SOE) reform, which has involved accelerated change in enterprise ownership compared to the first wave of reform from 1978 to the early 1990s(Cao, Qian, and Weignast, 1999; Lin and Zhu, 2001; Garnaut, Song, Tenev, and Yao, 2003; Yusuf, Nabeshima, and Perkins, 2006). The number of SOEs fell by 40 percent in the period 1996-2001 and most of the remaining SOEs were scheduled for restructuring within a short period (Garnaut et al., 2003). Unlike the mass privatization programs that have occurred in Eastern Europe and the former Soviet Union since the late 1980s, SOE restructuring in China have been gradual and low profile. However, the significance of the Chinese restructuring should not be underestimated. As recent studies have shown, SOE restructuring has brought positive gains to firm profitability (Xu, Zhu and Lin, 2002; Song and Yao, 2004; Jefferson, Su, Yuan, and Yu, 2004). This paper tries to answer questions usually raised in transition economy, that is, how and when does the ownership restructuring work. It is shown that among various forms of SOE restructuring, IPO and Joint Venture which bring in diversified outsider ownership have shed the strongest positive impact on firm performance. This result is robust in group fixed effect model, firm fixed effect model and instrumental variables regression

(IV regression) model. It is also consistent with research findings in other transitional countries. It supports the hypothesis that heterogeneous ownership not only provides checks and balances which facilitate monitoring, but also revitalizes SOEs in terms of profitability. Another finding of the paper is that firms restructured in the year 1998 have biggest improvement on firm performance, which echoes the signaling effect of new leadership found in other China research literature. The instrumental variables regression utilizes plausible exogeneous variations associated with firms' geographic characteristics, transaction costs of ownership restructuring, and legal restrictions. The instrumental variables chosen for various restructuring variables include the following: the distance to two main coastal ports (the minimum of the two distances from the city to Shanghai and Shenzhen),[1] firms' age, employment structure (by gender, retirement, etc), land area, whether the firm changed to another industrial sector, land-use rights and layoff upper limit. The IV regression model confirms that outsider private ownership indeed plays an important role to improve firm performance.

The performance measures I am going to evaluate include profitability, liquidity and productivity. Profitability matters especially for Chinese SOEs because in an economy with poorly developed system of financial intermediation, profit accumulation is a major source of funding for expansion. In China, approximately one-half of industrial SOE investment is financed through internal enterprise funds. Low profitability may lead to a vicious cycle of deteriorating financial performance. Profitability will be understood better combined with labor remuneration, liability-asset ratio and access to bank loans in the context of Chinese economy(Holtz 2003).

The SOE restructuring covers a wide variety of forms which constitute a spectrum incorporating different degrees of ownership changes. At one end of the spectrum is internal restructuring, where no changes in ownership takes place. At the other end is open sale, leases, and bankruptcy which involve the transfer of asset from state to private parties. Between these two ends are: ownership diversification such as IPO and joint venture, where there is a change in the ownership structure but assets are not transfered from the state to the new owners in the sense that new owners come

[1]Before 1994, 50% of China's total export are through ports in Shanghai and Hongkong. Shenzhen is the city in Guangdong province, just beside Hongkong.

in on the margin; and employee shareholding, where new owners are introduced and this is accompanied by a transfer of assets from the state to the new owners. It is interesting to study how effective they are and when they take effect. There are obviously some selection biases such as the "prettier daughter married first" effect (better performing firms are restructured earlier) or "cash cow" effect (the state wants to hold the better performing firms).

With the help of a recent panel survey data of 683 firms in 11 cities for the period 1995-2001, I am able to provide an assessment of the impacts of various restructuring forms and timings on firm performance while effectively dealing with the selection bias problem. I use two empirical strategies to address the selection bias problem. One is the standard panel data treatment evaluation procedure with different restructuring forms (or timings) viewed as the "treatments" variables. The procedure evaluates one group subjected to one form of the restructuring treatments against the control group (firms not restructured), while controlling for potential pretreatment differences among the different groups categorized by forms or timings. The second is to use instrumental variables to capture plausible exogenenous variations for the endogenous restructuring variables(forms or timings). The instruments are potential variables which correlate with the independent variable (restructuring) and also correlate with dependent variable (firm performance) only through the independent variable (restructuring). The IVs that I choose include: the minimum distance of the firm to two main coastal ports Shanghai and Shenzhen), firms' age, employment structure (by gender, retirement, etc), land area, whether the firm changed to another industrial sector, land-use rights restrictions, and layoff restrictions.

The remainder of the paper is organized as follows: section 2 describes the background, the data set, and the measurement for firm performance. Section 3 discusses the econometrics issues and the instruments for restructuring variables. Section 4 presents the main results regarding the impacts of restructuring forms and timings on firm performance. Section 5 then concludes the paper.

1.2 The Background of SOE Restructuring

1.2.1 Forms of SOE Restructuring

The central issue of SOE Restructuring is the reallocation of property rights over enterprise assets and liabilities. A variety of forms and mechanisms have emerged to accomplish this task, including public offering, internal restructuring (incorporation, spinning off), bankruptcy and reorganization through debt-equity swaps, ownership diversification, employee shareholding (limited liability companies or cooperatives), open sale (to management, employees, outside private firms, or another SOE), leasing (to management, employees, outside private firms, or another SOE), joint ventures, or a combination of the above.

Internal Restructuring. Internal restructuring does not change the identity of the owner. A form of internal restructuring is incorporation, which started soon after the Company Law came into force in 1994. According to the Company Law, if an SOE is to be reorganized into a company, it must change its operating mechanism, identify and verify its assets and determine their respective owners, settle its creditors' rights and liabilities, conduct an assets appraisal, and set up standard internal management organs. The law requires a company to have at least two shareholders, but it allows SOEs to register as limited liability companies with the state as the sole owner. Therefore, while incorporation may not involve any change in ownership, it does change the formal relationship between the state and the enterprise through the concept of limited liability. Incorporation prepares the ground for ownership diversification, because the firm can now avail itself of a legal framework for bringing in new investors.

Another common way to revitalize an SOE has been to split the firm into several smaller firms that begin to manufacture new products. The old firm becomes a holding company that owns the new spun-off firms and maintains a contractual relationship with them. Another practice of spinning off has been to set up a new company that takes the good assets of the old firm, including buildings, equipment, and capable personnel, and leaves it with the nonperforming assets, bank and commercial debts, retiree, and redundant workers. Since spinning off does not change the ownership, it

can be seen as a form of internal restructuring, although reform measures within the new firms can be quite radical. Initial public offerings by state-owned companies in China have been typically preceded by some sort of internal restructuring described above.

Bankruptcy and Reorganization. Although China's Bankruptcy Law came into force in 1988, it applied only to SOEs and was not widely applied until the mid-1990s, when the central government began to adopt bankruptcy as a means to restructure SOEs (Gao and Yao 1999).[2] Bankruptcy often occurs with reform that diversifies the ownership of the firm. Therefore, bankruptcy and subsequent reorganization often imply partial or full restructuring. Debt-equity swaps were introduced by the central government in 1999 to alleviate the huge nonperforming loan (NPL) problem. In 1999, four asset management companies (AMCs) were established to tackle the problem to implement the debt-equity swaps. By the end of March 2004 the four AMCs had disposed of RMB528.7 billion cash recovery of NPLs (excluding policy-oriented debt-equity swaps) in total (Garnaut *et al.*, 2005).[3]

Ownership Diversification. Ownership diversification involves bringing in outside investors while maintaining the majority state ownership. Diversification could occur by means of an initial public offering (IPO), a private placement, or a private offering. IPO in China has been used as a mechanism to bring new owners in, rather than enabling existing owners (in this case, the state) to exit. Following the IPO the firm's ownership becomes more diversified, but the public offering typically does not change the dominant position of the state as an owner. The state, directly or indirectly, still holds about two-thirds of the shares of Chinese listed companies in the form of non-tradable shares.[4]

[2]Since then the program of "policy-oriented bankruptcy" has resulted in 3,377 bankruptcy cases, RMB223.8 billion in write-offs, and 6.2 million layoffs. The program is expected to be phased out by the end of 2010, when the last batch of 2,000 cases of policy bankruptcy is closed. A new Bankruptcy Law was approved on August 27, 2006 after 10 years of drafting and went effective from June 1, 2007.

[3]It is estimated that the four AMCs have accepted approximately 50% of total NPLs according to http://www.tycool.com/bbs/post1504660.html#post1504660.

[4]State-owned enterprises have been the main participants in Chinese stock markets as, until recently, sales of shares were a low-cost of financing SOEs. Tenev, Zhang, and Brefort (2002) provide an overview and analysis of the corporate governance aspects of the IPO process in China.

Employee Shareholding. Employee shareholding has been by far the most popular form throughout the country. Although proven to be a suboptimal arrangement in other transitional countries, this form entailed the least political risk in the early stages of urban reforms. To be registered as a limited liability company, the maximum number of shareholders must be below 50, as stipulated by the Company Law. Firms with a larger number of shareholders, but which cannot meet the requirements for a joint stock company, can assume the status of employee shareholding cooperatives. Shareholding cooperatives have been an innovative mechanism for the transformation of township and village enterprises (TVEs) in China. Some employee-owned firms with more than 50 shareholders have been able to register as companies by forming block shares; that is, groups of employees elect a representative or trustee and register all the group's shares under that person's name.

Many employees gained shares through compensation given by the local government in exchange for the removal of their state employee status. In the early stages of reform, shares were widely dispersed throughout the firm. In recent years, managers have been able to buy a larger number of shares in newly restructured firms. Some firms have gone through second and third rounds of reform, further increasing the number of shares owned by managers. Management buy-outs have become quite controversial in China, given the growing number of cases of reported abuses.

Open Sales. This form has become more popular in recent years. The firm is openly sold to insiders or outsiders through auction. This is the most radical form of restructuring because it can involve the transfer of the firm to a single private owner or a management group.

Leases. In the early years of SOE reform, leases acted as incentives within the SOE, but leases are now used to break up the SOE. Under current leases the lessee is a legal entity independent of the government. Some lessees are outsiders and own their own firm, while others are former employees who have set up new companies and lease the buildings, land, and equipment from the government. Leasing is often adopted in cases where the lessee does not have enough money to buy the firm. It is another radical form of SOE reform.

Joint Ventures. Forming a joint venture with a domestic or foreign firm involve separating assets from the existing firm and forming a new entity.

Firms undergoing SOE restructuring may adopt a number of the above measures. The various forms of SOE reform constitute a spectrum incorporating different degrees of change of ownership. At one end of the spectrum is internal restructuring, where no change of ownership takes place but ownership is clarified and set on a shareholding basis. At the other end is open sale. In between are: ownership diversification, where there is a change in the ownership structure but assets are not transferred from the state to the new owners; bankruptcy, reorganization, and leases, which can lead to significant ownership changes involving the transfer of assets from the state to the new owners; and employee shareholding and joint ventures, where new owners are introduced and this is accompanied by a transfer of assets from the state to the new owners.

I follow the taxonomy on the forms of SOE restructuring by Garnaut *et al.*(2005): internal restructuring; employee shareholding; sales, leases, and bankruptcies; and IPOs and joint ventures. Sales, leases and bankruptcies are grouped together because they represent the most radical form. Previous study (Garnaut *et al.*, 2005) shows that firm size in terms of number of employees, private-sector development in terms of the percentage of private-sector employment in total employment in the respective locality, municipality fiscal strength in terms of government revenues per capita, and geographic location of the firm[5] play significant roles in determining the form of restructuring. Group fixed effects model assumes that firms adopting the same restructuring form share the same unobserved group characteristics which can be correlated with the independent variable, i.e., restructuring form. The group fixed effects estimator in fact capture the time variation within each group and thus effectively deals with the unobserved heterogeneity problem.

1.2.2 Timings of SOE Restructuring

[5]Garnaut *et al.* assign a value of one if the firm is in the northeast of China, where the old industrial base is located, otherwise 0.

Reform of China's state-owned enterprises (SOEs) has been a major aim since urban reforms began in 1984. Although there were calls to restructure the SOEs, the government's initial emphasis was on boosting performance by changing the internal governance of SOEs and improving the market environment in which they operated. Restructuring started in earnest after a visit by Deng Xiaoping to southern China in 1992. As with many other reform initiatives, restructuring started at the local level and was later sanctioned by the central government. The most important impetus for restructuring in the localities was the large amount of debt built up by the state sector. The level of debt was a more pressing problem in small cities. Most local governments decided that it would be possible to restructure only small firms, but Shunde (in Guangdong province) and Zhucheng (in Shandong province) went further by privatizing almost all of their state and collective firms (Huang and Wei 2001; Yao 2003).

In 1995, after extensive discussion, the central government decided on the policy of *zhuada fangxiao*, or "keep the large and let the small go". The state decided to keep between 500 and 1,000 large state firms and to allow smaller firms to be leased or sold. There were good reasons for this decision. In 1997 the 14,923 large and medium industrial SOE accounted for only 20.06% of all industrial SOEs, but for 85.43% value-added and 74.68% of average annual employment in industrial SOEs; the 4,800 large industrial SOEs alone accounted for 70.08% of value-added and 51.01% of employment.[6] Small firms owned by local governments had been performing poorly. In 1995, 72.5% of local firms, but only 24.3% of central government firms, were unprofitable (Zhao 1999). Restructuring first commenced in rural areas. Many localities—including those renowned for the success of their collective enterprises, such as Shunde and southern Jiangsu—implemented restructuring on a massive scale. By the end of 1998, more than 80% of state and collective firms at the level of the county or below had gone through the restructuring, which involved direct privatization in most cases (Zhao 1999). Previous results unveiled a marked difference in the reform strategies between urban and the rural enterprises. While there is no systematic relationship be-

[6]See *Statistical Yearbook 1998*, p.448; *Industrial Yearbook 1998*, p.89.

tween pre-restructuring performance and the likelihood of restructuring among rural enterprises, among urban enterprises those that performed worse before restructuring were more likely to be restructured in the region for which a comparative study exists (Dong, Putterman and Unel,2003). The latter outcome differs from what is found in transition economies in Eastern Europe. Urban SOE reform has occured in two waves. Ownership restructuring including privatization started in the mid-1990s and followed the model of employee shareholding adopted by Zhucheng. When Zhucheng abandoned this model and moved toward concentrated ownership through management buy-outs (MBOs), other cities followed suit. Forms of MBO have been the most common model in the second wave of reform and have spread to very large firms, such as the SOEs listed on the stock exchanges. In particular privatization has been accepted as the key for urban reform, and the slogan "the state retreats and the private sector moves forward" has become common in many cities.

From 1998 to 2000, the central government initiated a three-year reform program for SOEs that focused on, but was not limited to industrial SOEs. For large and medium(-sized) industrial SOEs, the reform program consisted of two major objectives. First, most large and medium SOEs were to adopt the "modern enterprise system."[7] Second, most loss-making large and medium SOEs were to "escape their difficulties (tuokun)." Small industrial SOEs were to be "enlivened" (gaohuo) by any means necessary to improve their finances. Since most small industrial SOEs are owned by local governments, the central government left it up to the latter to develop specific policies. The government bureaucracy on all levels subsequently promulgated individual reform measures.

Since 2000 the SOE reform has accelerated and acquired some qualitatively new features. First, the scale of change has expanded to affect almost every kind of SOE—small, medium, large and very big; under both central and local control. Second, ownership diversification has been so extensive that the wholly state-owned non-

[7]The modern enterprise system encompasses four elements, "clearly allocated property rights, clear rights and responsibilities, separation of government and enterprise, and scientific management." The State Economic and Trade Commission (SETC) published a long document outlining the various aspects of the modern enterprise system on 28 September 2000. Key to the establishment of the modern enterprise system is the gradual switch to the company system.

financial company has become an endangered species in China's business ecology. Third, the range of restructuring mechanisms being used has expanded dramatically to include bankruptcies, liquidations, listings and de-listings, debt-for-equity swaps, sales to private parties (domestic and foreign), auctioning of state firms and their assets or liabilities, standard corporate governance techniques, and so on. Finally, mass layoffs have become a widespread phenomenon (Garnaut *et al.*, 2005).

1.3 Data and Measurements

1.3.1 Data Issues

The present study is based on a 2002 International Finance Corporation survey of 683 firms in 11 Chinese cities: Harbin, Fushun, Tangshan, Xining, Lanzhou, Chengdu, Guiyang, Weifang, Zhenjiang, Huangshi, and Hengyang. Some of these cities are large provincial capitals and others are medium-sized cities. The choice of these cities was made on the basis of their geographic and economic representation. Harbin, Fushun, Tangshan, Lanzhou, and Chengdu are important industrial bases and are suffering from the sluggish SOE sector and related unemployment problem. Xining and Guiyang are less important in China's industrial development, but also have a significant presence of SOEs. Weifang, Zhejiang, Huangshi, and Hengyang are medium-sized cities; they are more swift and flexible in implementing reform programs. Firms were sampled from the SOEs managed by each city as of the end of 1995. The year 1995 was chosen because large-scale ownership restructuring started in 1996. Data were recorded for the period 1995-2001. A few firms in the sample underwent ownership change to one form and later on a second change to a different form. To avoid complications, these firms are dropped from the sample analyzed in this paper.[8] The distribution of surveyed firms by sector, city, form, starting year and initiator is shown in table I.

Most of the surveyed firms fall in the manufacturing category. In the survey there are no firms in the sectors of finance, telecommunication, or oil mining. The cen-

[8]The firms in question account for 20% of the overall sample. It is not disastrous to ignore them in the preliminary study.

Table I Distribution of Surveyed Firms by Sector, City, Forms, Year and Initiator

	Number	Percentage
Panel A:Distribution of Total Sampled Firms by Sector (with 518 missing values)		
Primary	30	4.39
Manufacturing	494	72.33
Texile	58	9.52
Paper Manufacturing	10	1.64
Printing and Copying	16	2.63
Furniture	1	0.16
Food Processing	22	3.61
Food Manufacturing	20	3.28
Oil Processing	2	0.33
Chemistry	46	7.55
Pharmaceutical	21	3.45
Rubber Manufacturing	18	2.96
Plastic Manufacturing	19	3.12
Non-metal Minery Production	30	4.93
Metal Production	14	2.30
Mechanics Manufacturing	51	8.37
Specific Equipment Production	26	4.27
Transportation Equip	16	2.63
Electronic & Communication	13	2.13
Utility Provision	85	12.45
Service	74	10.83
Total	683	100.00

Table 1 Continued

Panel B: Distribution of Total Sample by City		
Harbin	120	17.57
Fushun	11	1.61
Tangshan	59	8.64
Weifang	30	4.39
Lanzhou	39	5.71
Xining	26	3.81
Huangshi	79	11.57
Guiyang	69	10.10
Zhenjiang	57	8.35
Hengyang	149	21.82
Chengdu	44	6.44

Panel C: Restructuring Forms		
Internal Restructuring	86	24.93
Employee Shareholding	103	29.86
Sales&Leases&Bankruptcy	91	26.38
IPO&Joint Venture	25	7.25
Other forms	40	11.60
total cases	345	100.00

Table 1.2: Table 1 Panel B, C: Distribution of Surveyed Firms by City and Restructuring Form

Table I continued:

Panel D: Timings of 1st restructuring		
Start<=95	42	14.38
Start=96	37	12.67
Start=97	23	7.88
Start=98	43	14.73
Start=99	38	13.01
Start=00	39	13.36
Start=01	47	16.10
Start>=02	23	23.29
total cases	292	100.00
Panel E: Initiators of 1st restructuring		
Firm Management	69	23.55
Firm Employees	7	2.39
Local Government	197	67.24
Central Government	4	1.37
others	16	5.46
total	293	100.00

Table 1.3: Table I Panel D, E: Distribution of Surveyed Firms by Restructuring Timing and Initiator

tral government still controls these sectors: the big four state-owned banks (Bank of China, Industrial and Commercial Bank of China, Agricultural Bank of China, China Construction Bank),[9] two telecommunication providers (China Telecom and China Netcom), and oil mining companies (China National Petroleum, China National Offshore Oil Corp). Since these monopolies with much less competition pressure are not sampled in the survey, I assume firms in the manufacturing industries other than those highly monopolized ones face similar degree of competition and thus market competition may be a minor consideration in my paper.

The surveyed cities are provincial capitals and medium-sized cities. There is no central direct district such as Beijing, Shanghai, Tianjin, and Chongqing, where many central state owned enterprises are located. Thus it will not come as a surprise that the average central state share is about 8% before the restructuring in the sample.

The most popular form of restructuring is employee shareholding of 29.86%), which is consistent with the national survey of 25%). Although it is argued by the

[9]Except Agricultural Bank of China, all other banks have sold minority shares to foreign investors and went public in either domestic A-share stock market or Hong Kong H-share stock market. The total foreign share limit is 25% and individual foreign share cannot exceed 20%.

previous literature that employee shareholding is a suboptimal institutional arrangement, it is a mild type of restructuring and less likely to lead to political unrest. Sales, leases and bankruptcy became popular after 1998 as more and more SOEs suffered losses. Management buy-outs are frequently used in the late 1990s and early 2000s. This form of restructuring has been criticized as the possible cause of the state asset drain. There is an almost equal percentage of cases falling in each of the first three categories, i.e., internal restructing (IR), employee shareholding(ES), and sales & leases & bankruptcy (SLB). Only 7.25% of restructuring cases fall into the IPO & Joint venture group.

There are some firms that were restructured before 1995. The starting year of restructuring ranged from 1986 to 2002. The number of restructuring case increases dramatically in the early 2000s. In the analysis of restructuring timing, I group the sample into the seven categories: restructured before 1995 or in 1995, restructured in 1996, restructured in 1997, restructured in 1998, restructured in 1999, restructured in 2000, restructured in 2001 or later. I will test whether the various restructuring timings have differential effects on firm performance.

Several sampling problems need to be addressed before going further.The first is about the missing values problem. There is missing information on some variables included in the analysis. Anderson *et al.* (2001) pointed out two factors in particular responsible for the missing values. First, after a spin-off or merger there is usually no usable historical information on basic production data. Second, accounts are not consistent between enterprises, leading to missing values for some accounting categories.

The second set of the problems is concerned with attrition, mergers, and splits. Attrition happened when a firm went bankruptcy, liquidated, and disappeared. Since the survey was conducted in 2002 and all data were recorded in a retrospective way, firms that had been liquidated and disappeared as of 2002 were not sampled in the survey. The survey does include firms which went into bankruptcy procedure but was not liquidated ultimately. In fact, bankrupt does not necessarily lead to the liquidation of the bankrupt firm under the current Chinese *Bankruptcy Law*.[10] It is often

[10]Bankruptcy is often used as a means to evade state bank debts. A firm first declares bankruptcy

the case that the bankrupt firm is reorganized and operates under a new name. Because the firms that had been actually liquidated and thus were not captured by the survey tend to be those with poor performance in terms of profitability, the surveyed firms under the bankrupt category may be those with generally better performance in terms of profitability. The unavailability of liquidated firms' data makes it rather difficult to judge the actual effect of going bankrupt on firm performance. The estimate of bankrupt impact only applies to the existing firms which used to go into bankrupt. In the case of a merger, usually the worse performing firm loses its name and the better performing firm retains its name. So there is a potential upward bias of performance in the sample. To avoid this problem, data were recorded from the year of the merger. That is, only the new firm was surveyed. In the case of a split, the largest of the new active firms was surveyed and data were recorded from the year of the split. It was often the case that splits took the form of spinning off, that is, the old firm spun off a new firm and moved all the production to this new firm, leaving the old firm only with a name, bank debts, and the burden of retiree (Garnaut *et al.*, 2003). As a result, the only active firm was the new firm. The estimate of the effect of reform is not likely to be affected significantly, though, because spinning off does not necessarily lead to more reforms.

1.3.2 Measurements for Firm Performance

Performance indicators used in this study are the following: first, profitability measures include sales revenue, pre-tax profit, net profit, sales revenue over total asset, pre-tax profit over asset, net profit over asset (ROA);[11] second, liquidity measures include asset, debt, equity, debt over asset, debt over equity; third, cost measures include material and operational cost per unit of output, labor cost (wage per worker),

and then was reorganized into a new firm, often on the site of the old firm. The current Chinese bankruptcy law only applies to SOEs. Because employee settlement is at the top and banks are often at the bottom of the priority list of creditors, it is quite easy for an SOE to evade bank debts by way of bankruptcy. Because the banks owned by the central government, the local government have an incentive to collude with local firms to use bankruptcy to write off bad debts and evade state bank debts. See Garnaut *et al.* (2003) for more discussion and Gao and Yao (1999) for a theoretical treatment of the issue).

[11] Since equity could be negative for some firms, we do not want to get into trouble of the meaninglessly positive ROE deriving from negative profit and negative equity.

total employment (number of on-duty workers). Third, productivity is measured by output per worker.

Profit, sales revenue, and cost are used because each has some pros and cons. Profit is the most comprehensive measure of firm efficiency (Song and Yao, 2004). However, profits are a very unreliable measure of short-term performance in the initial stages of the post-communist transition (Frydman *et al.*, 1999). The accounting systems are in flux, disclosure mechanisms are very imperfect. In China the accounting profit is far from perfect as it has been repeatedly redefined through various revisions to the industrial enterprise accounting system (Holz, 2002). It is as important to focus on the separate components of profitability as on profitability itself to get a better understanding of the role played by SOE reform on firm performance.

Liquidity analysis will be understood in the context of the policy-oriented bankruptcy and debt-equity swap. It is also of particular help to understand profitability better. The previous literature established the fact that a reduction in debt may not affect profitability of Chinese SOEs. Quantitative analysis confirmed that a high liability-asset ratio leads to high profitability (profit per unit of equity) in 1993-1997 but low profitability (in level or in growth) for 1999-2000 across provinces (Holz, 2002).[12] Although I cannot say much about the causality of liability-asset ratio and profitability from the analysis below, I can provide some descriptive facts about their changes.

Labor productivity is defined as the revenue contributed by an on-duty worker. A salient feature of the Chinese SOEs is their worker redundancy. A considerable portion of the workforce is not active although it is attached to a particular firm.[13] That is why I use on-duty workers in the estimation. Labor productivity captures the features of both passive adjustments and positive expansion by the firm (Song

[12]The fact that a high liability-asset ratio implies a high level of profitability suggests that contrary to economic theory (the Modigliani-Miller theorem), industrial SOEs in China may indeed be able to achieve leverage effects. The positive impact of the liability-asset ratio on profitability could in part be driven by artificially low government-determined interest rates on loans. Government-subsidized bank lending rates simply reflect a redistribution of economic surplus from the budget through banks to SOEs. Any improvement in profitability due to a rise in the liability-asset ratio thus has to be measured against government subsidies through low interest rates.

[13]There are two categories of redundant workers. One is internal retirement and the other is the so-called *xiagang,* i.e., a situation in which a worker is legally attached to a firm but nevertheless does not work in it. The first type of workers is fully supported by individual firms, and the second type is supported by both the firm and the local government (Song and Yao, 2004).

and Yao, 2004).

One critical element in the determination of the estimation specification is whether to use the rate of growth or the level as the dependent variable(Anderson *et al.*, 2000). The existing theoretical literature on whether to use the rate of growth or the level measures as the dependent variable is mixed.[14] Empirically though, virtually all existing results point to the inappropriateness of the growth specification.[15] Thus the study that follows adopts level measures specification.

The summary statistics for the performance measures, ownership structure, bank loans, tax, and social security obligations from 1995 to 2001 are listed in table II.

The production is expanding according to the increasing sales, raw materials, fixed capital investment and R&D. The shrinking work force and increasing capital investment show the strucutrual transfer from labor-intensive to capital-intensive in industial SOEs. This is consistent with the policy in the SOE reform "decrease the redundant, increase the efficiency". The large-scale lay-offs and unemployment indicate the breakup of iron rice bowls. Performance indicators measured in per asset term seems worse in 2001 than in 1995 while those measured in per employee term gets larger in 2001 than in 1995. However, value-added and EBIT are both increasing from 1995 to 2001. These facts show that fixed assets increased faster than sales, value-added and EBIT. From 1995 to 2001, insider (central and local included) state share declines from 96% to 73% on average; the outsider state share increases from 2.13% to 6.69%; the insider private ownership increases from 0.28% to 11.62% on average; the outsider private ownership share increases from 0.06% to 2.87% on average; the legal person share[16] increase from 1.16% to 4.11% on average.

Changes in firm performance by ownership are listed in table III. A general pattern of the restructuring effects and hypothesis are motivated. Changes in sales by ownership are shown in figure1; changes in value added per employee by ownership

[14]Djankov (1999), Frydman et al. (1998, 1999), and Weiss and Nitikin (1998)use growth, whereas Clasessens and Djankov (1996b), Claessens et al. (1997), Earle (1998), and Earle and Estrin (1998) use levels.

[15]See, for example, Claessens and Djankov (1999b), Claessens et al. (1997), and Earle and Estrin (1998).

[16]Legal person share is owned by legal entities such as other state owned enterprises or social organizations. It is not traded on the stock market.

Table II Summary Statistics for Performance Measures, Ownership Variables and Instrumental Variables

Panel A: Summary statistics for performance measures, accountings and ownership variables from 1995-1998

		1995		1996		1997		1998	
Variables	Units	Obs.	Mean	Obs.	Mean	Obs.	Mean	Obs.	Mean
Sales	10,000yuan	469	2667.092	479	2647.55	485	2361.69	496	2361.15
Employment(on-duty workers)	person	510	681	526	659	537	633	560	589
Raw materials	10,000yuan	308	2331.08	318	2293.62	326	2264.37	331	2111.35
Fixed capital investment	10,000yuan	255	765.89	267	832.29	266	741.22	277	878.39
R&D	10,000yuan	167	65.1	169	89.59	176	83.78	180	173.42
Sales over asset	%	418	63.68%	432	52.45%	441	45.78%	450	42.07%
value added over asset	%	273	16.52%	287	13.66%	293	13.34%	305	13.09%
EBIT/asset	%	357	0.36%	371	-0.77%	380	-1.07%	391	-1.81%
ROA	%	399	-2.81%	409	-4.45%	424	-4.05%	441	-4.94%
sales per employee	10,000yuan/person	430	5.3563	441	5.5867	446	4.7571	459	4.6704
value added per employee	10,000yuan/person	286	0.9324	300	0.7874	306	0.9682	321	1.1479
EBIT per employee	10,000yuan/person	366	0.2567	379	0.2817	388	0.2587	411	0.285
after-tax profit per employee	10,000yuan/person	410	0.0592	420	0.0146	435	-0.0354	463	-0.0734
State share	%	671	95.54%	661	94.65%	649	92.88%	636	89.74%
local county state share	%	671	94.49%	661	93.59%	649	91.57%	636	88.40%
Insider private ownership share	%	671	0.28%	661	0.63%	649	1.01%	636	2.16%
worker	%	671	0.27%	661	0.56%	649	0.75%	636	1.46%
senior management	%	671	0.00%	661	0.05%	649	0.13%	636	0.49%
middle management	%	671	0.01%	661	0.02%	649	0.13%	636	0.21%
Outsider ownership share	%	671	2.77%	661	3.15%	649	4.20%	636	5.30%
outside state	%	671	2.13%	661	2.45%	649	3.46%	636	4.21%
outside private	%	671	0.06%	661	0.11%	649	0.21%	636	0.58%
foregin	%	671	0.58%	661	0.59%	649	0.53%	636	0.52%
Judiciary person share	%	671	1.16%	661	1.32%	649	1.48%	636	2.07%
Loan balance	10,000yuan	441	2522.09	448	2552.16	452	2697.21	470	2850.92
Overdue loan balance	10,000yuan	445	980.19	454	1027.86	460	1101.41	478	1181.67
Overdue interest payment	10,000yuan	443	201.7	452	252.27	459	357.69	475	410.38
Cash balance	10,000yuan	464	166.42	480	194.01	492	220.75	512	322.84
Total tax	10,000yuan	435	211.05	451	222.15	462	242.96	476	215.3

overdue tax payment	10,000yuan	452	137.32	472	157.05	486	180.37	502	183.06
Overdue wage	10,000yuan	189	45.97	197	68.05	218	93.98	234	116.59
Overdue social welfare, medical care	10,000yuan	190	26.12	207	36.01	216	48.27	239	56.29
Unemployment and internal retirement	person	292	102.49	324	134.07	364	179.89	409	210.76

Panel B: Summary statisitcs for instrumental variables in the full sample

		1995		1996		1997		1998	
Instrumental Variables	Units	Obs.	Mean	Obs.	Mean	Obs.	Mean	Obs.	Mean
Distance to coast[a]	km	683	969.79	683	969.79	683	969.79	683	969.79
Age of the firm	years	653	26	653	27	653	28	653	29
employment	person	523	876	532	867	546	888	565	899
female workers	person	511	390	522	382	536	386	555	380
retired workers	person	497	196	502	201	518	237	536	246
land area	square meters	115	12036.76	115	12036.76	115	12036.76	115	12036.76
layoff uplimit	proportion	203	0.1527	203	0.1527	203	0.1527	203	0.1527
change to another industrial sector	proportion	651	0.0798	651	0.0798	651	0.0798	651	0.0798
allocated land	proportion	683	0.1361	683	0.1361	683	0.1361	683	0.1361

Note: [a] Distance to coast is measured by min (distance from the city to Shanghai, distance from the city to Shenzhen)

Panel C: Summary statistics for Distance to coast

From City	To Shanghai	To Shenzhen	Distance to coast
Haer Bin	1673.40	2806.89	1673
Fu Shun	1213.41	2335.66	1213
Tang Shan	984.34	1922.69	984
Wei Fang	638.06	1625.83	638
Lan Zhou	1728.25	1791.24	1728
Xi Ning	1915.52	1949.21	1915
Huang Shi	622.37	845.96	622
Gui Yang	1528.45	864.05	864
Zhen Jiang	221.80	1186.48	221
Heng Yang	987.67	495.49	495
Cheng Du	1664.04	1336.22	1336

Table II Summary Statistics for Performance Measures, Ownership Variables and Instrumental Variables

Panel A: Summary statistics for performance measures, accountings and ownership variables from 1998-2001

		1998		1999		2000		2001	
Variables	Units	Obs.	Mean	Obs.	Mean	Obs.	Mean	Obs.	Mean
Sales	10,000yuan	496	2361.15	513	2355.5	540	2667.33	547	2810.82
Employment(on-duty workers)	person	560	589	588	545	631	492	662	464
Raw materials	10,000yuan	331	2111.35	343	2156.91	348	2145.17	359	2498.79
Fixed capital investment	10,000yuan	277	878.39	288	905.8	318	831.05	321	959.23
R&D	10,000yuan	180	173.42	191	200.46	198	247.48	212	267.74
Sales over asset	%	450	42.07%	467	40.71%	485	45.92%	493	45.83%
value added over asset	%	305	13.09%	317	13.08%	325	15.27%	331	14.20%
EBIT/asset	%	391	-1.81%	403	-1.19%	429	-1.27%	441	-0.86%
ROA	%	441	-4.94%	459	-4.41%	484	-5.58%	501	-4.24%
sales per employee	10,000yuan/person	459	4.6704	478	3.6755	512	5.1091	524	5.8376
value added per employee	10,000yuan/person	321	1.1479	336	1.1193	352	1.405	365	1.3737
EBIT per employee	10,000yuan/person	411	0.285	427	0.2338	464	0.174	480	-0.4349
after-tax profit per employee	10,000yuan/person	463	-0.0734	486	-0.0857	522	-0.2252	544	-0.78
State share	%	636	89.74%	613	85.49%	601	78.71%	577	73%
local county state share	%	636	88.40%	613	84.19%	601	77.38%	577	71.62%
Insider private ownership share	%	636	2.16%	613	3.71%	601	8.24%	577	11.62%
worker	%	636	1.46%	613	2.18%	601	4.24%	577	5.75%
senior management	%	636	0.49%	613	1.05%	601	2.86%	577	4.18%
middle management	%	636	0.21%	613	0.48%	601	1.14%	577	1.69%
Outsider ownership share	%	636	5.30%	613	7.00%	601	8.11%	577	10.27%
outside state	%	636	4.21%	613	5.33%	601	6.17%	577	6.69%
outside private	%	636	0.58%	613	1.01%	601	1.23%	577	2.87%
foregin	%	636	0.52%	613	0.66%	601	0.71%	577	0.70%
Judiciary person share	%	636	2.07%	613	2.96%	601	3.81%	577	4.11%
Loan balance	10,000yuan	470	2850.92	490	2864.58	510	2707.47	522	2883.19
Overdue loan balance	10,000yuan	478	1181.67	496	1188.75	521	1284.56	535	1342.74
Overdue interest payment	10,000yuan	475	410.38	494	505.21	518	541.84	532	632.59
Cash balance	10,000yuan	512	322.84	534	471.02	561	434.54	578	530.35
Total tax	10,000yuan	476	215.3	495	312.28	527	254.78	537	314.49

overdue tax payment	10,000yuan	502	183.06	523	191.26	561	203.05	572	195.36			
Overdue wage	10,000yuan	234	116.59	244	165.36	262	125.36	279	134.51			
Overdue social welfare, medical care	10,000yuan	239	56.29	256	65.73	276	87.07	318	123.71			
Unemployment and internal retirement	person	409	210.76	445	227.88	498	233.09	528	236.68			

Panel B: Summary statistics for instrumental variables in the full sample

		1998		1999		2000		2001	
Instrumental Variables	Units	Obs.	Mean	Obs.	Mean	Obs.	Mean	Obs.	Mean
Distance to coast[a]	km	683	969.79	683	969.79	683	969.79	683	969.79
Age of the firm	years	653	29	653	30	653	31	653	32
employment	person	565	899	591	878	636	838	670	812
female workers	person	555	380	582	370	625	356	656	334
retired workers	person	536	246	564	248	602	250	632	253
land area	square meters	115	12036.76	115	12036.76	115	12036.76	115	12036.76
layoff uplimit	proportion	203	0.1527	203	0.1527	203	0.1527	203	0.1527
change to another industrial sector	proportion	651	0.0798	651	0.0798	651	0.0798	651	0.0798
allocated land	proportion	683	0.1361	683	0.1361	683	0.1361	683	0.1361

Note: [a] Distance to coast is measured by min (distance from the city to Shanghai, distance from the city to Shenzhen)

Table 1.4: Table II: Summary Statistics of Performance, Ownership, and Instrumental Variables

are presented in figure2; figure3 depicts changes in EBIT per asset by ownership.

Table III shows the adjacent year pairwise comparison in performance by different categories of ownership. Ownership categories are defined as: Majority State-Owned if state shares are more than 50% of outstanding shares in 2001; Majority Insider-Owned if insider private shares are more than 50% of outstanding shares in 2001; Majority Outsider-Owned if outsider shares are more than 50% of outstanding shares in 2001; Diversified if none of the above shares is more than 50% of outstanding shares in 2001. The reason I define the ownership category according to the share structure in 2001 is that I want to keep the composition of each category constant and look at their performance change over time, without mixing in performance changes due to composition changes. Since 2001 is the last year in the survey, the ownership category in 2001 generally corresponds to a certain form of restructuring that a firm had before 2001. Thanks to the constant composition of each category, the performance changes for each category provide descriptive statistics for a certain form of restructuring. Three major messages are conveyed: First, in general firms which are controlled by state till 2001 performance worse from 1995 to 2001, except that per employee measures improve. The deteriorating performance of unreformed firms can be due to the problems that can be fixed by restructuring or other problems that is beyond the remedy of restructuring. Second, most of the time, firms to be outsider controlled in 2001 perform better than those to be insider owned in 2001. One possibility is that the outsider take-over is more effective in improving firm performance than the insider take-over. Another possibility is that the better performing firms or firms with better prospects are selected into the outsider controlled sample. Studies on other transition countries find that the presence of outside investors has strong positive effects on firm performance (Djankov and Murrell, 2002). It is interesting to test if this is true in China. My null hypothesis is that firms restructured to outsiders (through sales or leases to outside parties) have more improvement in firm performance than those restructured to insiders (by employee shareholding) all else equal. Third, firms to be diversified in 2001 perform better than those to be outsider controlled after 1998. These facts motivates me to test if there are any differential effects of restructuring

Table III Changes in Performance and Employment by Ownership, Pairwise Comparison between Two Adjacent Years

Ownership categories are defined as: Majority State-owned if state share is more than 50% in 2001; Majority insider-owned if insider private share is more than 50% in 2001; Majority outsider-owned if outsider share is more than 50%; Diversified if none of them is more than 50% in 2001.

		Change Over Time in Median (1995-1999)									
Variables	Ownership	1995		1996		1997		1998		1999	
		Obs.		Obs.		Obs.		Obs.		Obs.	
Sales	Diversified	15	2918.13	16	3045.68	16	2810	17	4492.05	22	5239.59
	Majority State-owned	396	2499.71	401	2397.42	401	2118.06	404	2035.07	411	2021.59
	Majority Inside-owned	92	2658.31	97	2675.29	102	2616.01	105	2739.43	110	2649.25
	Majority Outside-owned	90	3567.97	95	3709.9	98	3497.75	106	3335.67	110	2904.81
Value Added	Diversified	10	1095.5	11	1085.63	10	1131.6	10	1368.7	15	1818.73
	Majority State-owned	261	1001.36	271	862.11	275	857.82	282	967.57	286	949.05
	Majority Inside-owned	67	719.82	71	672.87	73	742.82	76	747.57	75	697.62
	Majority Outside-owned	68	990.14	72	1016.13	74	1050.58	81	1120.76	82	1179.37
EBIT	Diversified	13	126.3	14	78	14	63.57	18	1712.77	20	1800.15
	Majority State-owned	338	125.22	342	117.8	346	136.59	356	50.72	363	159.09
	Majority Inside-owned	84	372.47	90	443.9	94	468.79	96	37.77	106	408.58
	Majority Outside-owned	85	441.02	94	537.78	99	662.36	103	305.03	113	632.4
Net profit	Diversified	14	17.5	15	-19.33	15	-59.6	18	1051.33	22	850.09
	Majority State-owned	379	-97.54	381	-140.07	390	-148.97	406	-155.43	415	-179.65
	Majority Inside-owned	90	-67.61	96	-90.38	101	-100.84	105	-170.2	113	-231.38
	Majority Outside-owned	91	-1.87	99	-0.79	104	47.37	113	8.28	123	-58.54
Sales	Diversified	13	3.54	14	3.28	14	2.55	16	4.57	20	4.83
per employee	Majority State-owned	360	3.91	367	3.62	368	3.16	373	3.18	382	3.25
	Majority Inside-owned	83	3.76	87	3.82	91	3.75	94	4.27	101	4.32
	Majority Outside-owned	82	11.34	85	13.81	87	11.78	94	9.2	99	4.33
Value Added	Diversified	8	0.96	9	0.96	8	1.02	9	1.18	14	2.04
per employee	Majority State-owned	232	0.84	243	0.64	246	0.83	255	1.04	261	0.91
	Majority Inside-owned	58	1.13	62	1.04	64	1.09	67	1.11	66	1.2
	Majority Outside-owned	60	1.22	64	1.27	66	1.33	72	1.31	73	1.53
EBIT	Diversified	11	0.02	12	-0.06	12	-0.2	17	0.49	19	0.59
per employee	Majority State-owned	301	0.005	307	-0.014	312	-0.039	325	-0.018	332	0.009
	Majority Inside-owned	74	0.136	79	0.039	83	0.019	86	0.07	96	0.2

	Majority Outside-owned	76	1.261	83	1.352	87	1.346	91	1.257	100	0.899
Profit	Diversified	12	0.003	13	-0.097	13	-0.227	17	0.239	21	0.313
per employee	Majority State-owned	342	-0.165	346	-0.251	356	-0.303	374	-0.333	384	-0.269
	Majority Inside-owned	80	-0.08	85	-0.196	90	-0.214	94	-0.22	103	-0.196
	Majority Outside-owned	82	0.949	88	0.971	92	0.965	100	0.83	110	0.391
Sales	Diversified	14	0.724	15	0.59	15	0.513	15	0.541	21	0.507
over asset	Majority State-owned	350	0.622	359	0.506	362	0.444	367	0.394	371	0.367
	Majority Inside-owned	82	0.652	87	0.564	92	0.55	95	0.482	98	0.546
	Majority Outside-owned	76	0.661	81	0.583	86	0.574	91	0.482	95	0.51
Value Added	Diversified	9	0.211	10	0.195	9	0.211	8	0.177	14	0.204
over asset	Majority State-owned	220	0.154	232	0.122	235	0.118	242	0.117	245	0.108
	Majority Inside-owned	59	0.188	64	0.161	66	0.16	69	0.14	67	0.162
	Majority Outside-owned	57	0.181	61	0.165	63	0.154	70	0.142	69	0.171
EBIT/asset	Diversified	12	0.025	13	0.004	13	-0.006	15	0.004	18	0.018
	Majority State-owned	295	-0.00017	301	-0.0118	306	-0.0149	313	-0.0265	314	-0.0225
	Majority Inside-owned	72	0.016	78	-0.012	82	-0.014	85	-0.025	90	-0.0071
	Majority Outside-owned	70	0.017	79	-0.00068	85	0.0035	86	-0.0089	93	-0.00099
ROA	Diversified	13	0.0082	14	-0.0129	14	-0.0225	15	-0.0193	20	-0.0062
	Majority State-owned	334	-0.032	337	-0.0498	347	-0.0447	360	-0.0566	364	-0.0529
	Majority Inside-owned	78	-0.0242	84	-0.0423	89	-0.0465	93	-0.05	97	-0.0506
	Majority Outside-owned	76	-0.021	84	-0.039	90	-0.033	95	-0.0407	102	-0.048

Table III Changes in Performance and Employment by Ownership, Pairwise Comparison between Two Adjacent Years (Cont)

Ownership categories are defined as: Majority State-owned if state share is more than 50% in 2001; Majority insider-owned if insider private share is more than 50% in 2001; Majority outsider-owned if outsider share is more than 50%; Diversified if none of them is more than 50% in 2001.

		Change Over Time in Median (1997-2001)									
Variables	Ownership	1997		1998		1999		2000		2001	
		Obs.		Obs.		Obs.		Obs.		Obs.	
Sales	Diversified	16	2810	17	4492.05	22	5239.59	23	6231.34	26	4952.840
	Majority State-owned	401	2118.06	404	2035.07	411	2021.59	417	2199.28	412	2291.730
	Majority Inside-owned	102	2616.01	105	2739.43	110	2649.25	131	3017.31	141	3284.461
	Majority Outside-owned	98	3497.75	106	3335.67	110	2904.81	121	3396.74	126	4091.167
Value Added	Diversified	10	1131.6	10	1368.7	15	1818.73	18	1633.66	17	1746.000
	Majority State-owned	275	857.82	282	967.57	286	949.05	281	1041.69	288	873.677
	Majority Inside-owned	73	742.82	76	747.57	75	697.62	88	686.6	94	835.681
	Majority Outside-owned	74	1050.58	81	1120.76	82	1179.37	86	1272.46	92	1755.891
EBIT	Diversified	14	63.57	18	1712.77	20	1800.15	20	2142.45	23	1751.522
	Majority State-owned	346	136.59	356	50.72	363	159.09	376	80.64	374	87.824
	Majority Inside-owned	94	468.79	96	37.77	106	408.58	120	153.1	130	358.908
	Majority Outside-owned	99	662.36	103	305.03	113	632.4	118	305	125	618.328
Net profit	Diversified	15	-59.6	18	1051.33	22	850.09	22	976.18	25	827.800
	Majority State-owned	390	-148.97	406	-155.43	415	-179.65	427	-151.22	431	-185.889
	Majority Inside-owned	101	-100.84	105	-170.2	113	-231.38	131	-79.72	141	3.071
	Majority Outside-owned	104	47.37	113	8.28	123	-58.54	132	-9.35	140	76.029
Sales	Diversified	14	2.55	16	4.57	20	4.83	23	13.59	26	7.712
per employee	Majority State-owned	368	3.16	373	3.18	382	3.25	392	3.93	389	4.477
	Majority Inside-owned	91	3.75	94	4.27	101	4.32	122	4.11	134	4.779
	Majority Outside-owned	87	11.78	94	9.2	99	4.33	113	7.22	119	10.105
Value Added	Diversified	8	1.02	9	1.18	14	2.04	18	2.49	17	2.205
per employee	Majority State-owned	246	0.83	255	1.04	261	0.91	258	1.22	266	1.099
	Majority Inside-owned	64	1.09	67	1.11	66	1.2	81	1.18	87	1.443
	Majority Outside-owned	66	1.33	72	1.31	73	1.53	79	1.72	85	2.245
EBIT	Diversified	12	-0.2	17	0.49	19	0.59	20	0.8	23	0.485
per employee	Majority State-owned	312	-0.039	325	-0.018	332	0.009	351	0.014	350	-0.041
	Majority Inside-owned	83	0.019	86	0.07	96	0.2	111	0.229	122	0.251

	Majority Outside-owned	87	1.346	91	1.257	100	0.899	110	0.698	117	-1.595
Profit	Diversified	13	-0.227	17	0.239	21	0.313	22	0.308	25	0.196
per employee	Majority State-owned	356	-0.303	374	-0.333	384	-0.269	400	-0.365	406	-0.441
	Majority Inside-owned	90	-0.214	94	-0.22	103	-0.196	120	-0.168	132	-0.135
	Majority Outside-owned	92	0.965	100	0.83	110	0.391	122	0.211	131	-1.920
Sales	Diversified	15	0.513	15	0.541	21	0.507	22	0.584	24	0.517
over asset	Majority State-owned	362	0.444	367	0.394	371	0.367	372	0.384	371	0.406
	Majority Inside-owned	92	0.55	95	0.482	98	0.546	112	0.625	126	0.571
	Majority Outside-owned	86	0.574	91	0.482	95	0.51	99	0.568	102	0.556
Value Added	Diversified	9	0.211	8	0.177	14	0.204	17	0.153	15	0.157
over asset	Majority State-owned	235	0.118	242	0.117	245	0.108	239	0.117	246	0.108
	Majority Inside-owned	66	0.16	69	0.14	67	0.162	77	0.202	84	0.184
	Majority Outside-owned	63	0.154	70	0.142	69	0.171	70	0.187	72	0.190
EBIT/asset	Diversified	13	-0.006	15	0.004	18	0.018	18	0.018	20	0.006
	Majority State-owned	306	-0.0149	313	-0.0265	314	-0.0225	325	-0.0251	326	-0.020
	Majority Inside-owned	82	-0.014	85	-0.025	90	-0.0071	101	0.0033	114	0.001
	Majority Outside-owned	85	0.0035	86	-0.0089	93	-0.00099	95	0.0002	99	-0.003
ROA	Diversified	14	-0.0225	15	-0.0193	20	-0.0062	20	-0.0165	22	-0.015
	Majority State-owned	347	-0.0447	360	-0.0566	364	-0.0529	372	-0.0672	380	-0.050
	Majority Inside-owned	89	-0.0465	93	-0.05	97	-0.0506	110	-0.0368	124	-0.035
	Majority Outside-owned	90	-0.033	95	-0.0407	102	-0.048	106	-0.0389	111	-0.040

Table 1.5: Table III: Yearly Changes in Performance and Employment by Ownership

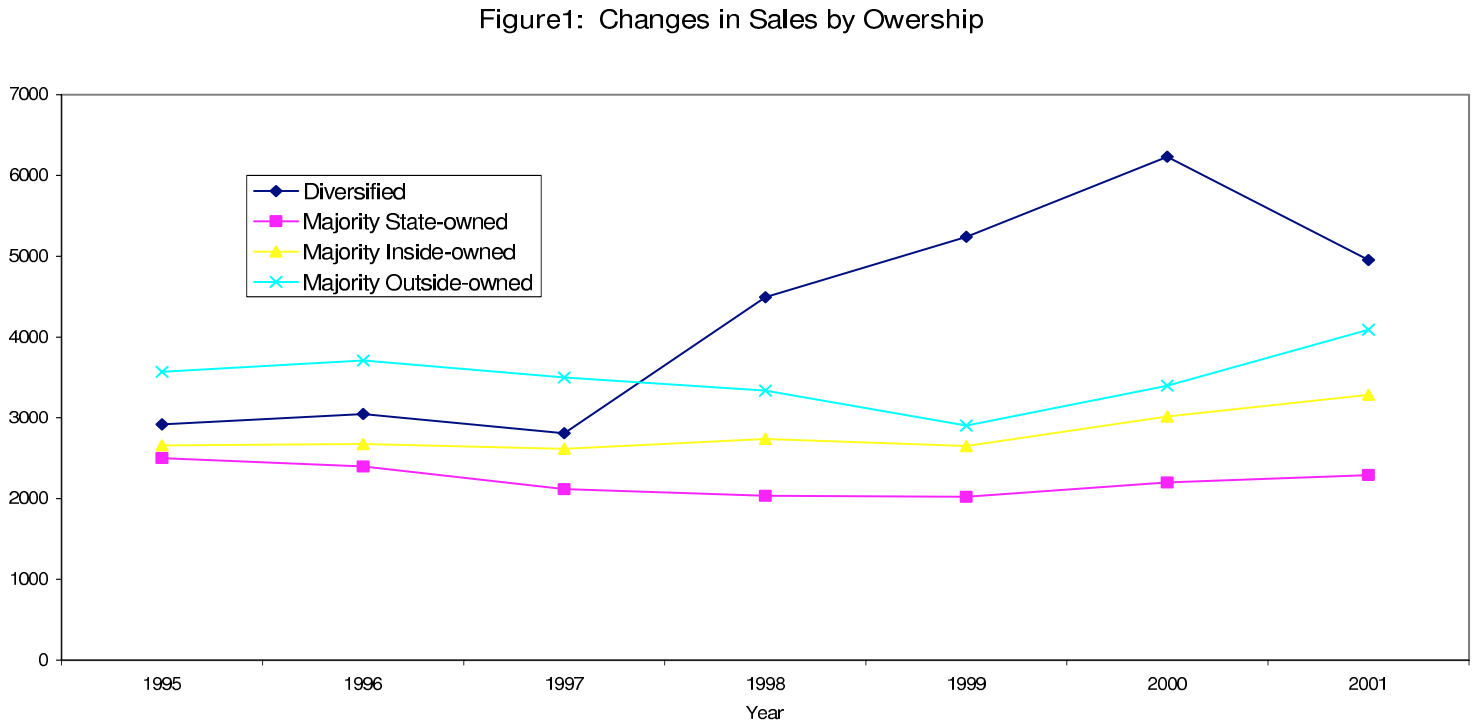


Figure 1.1: Changes in Sales by Ownership

This figure captures how sales change for four categories of firms from 1995 to 2001. The ownership categories are defined by the ownership structure in 2001: the firm is classified as majority state-owned if more than 50% of total shares is state share in 2001; majority insider-owned if more than 50% of total shares is insider private in 2001; majority outsider-owned if more than 50% of total shares is outsider owned in 2001; diversified if none of the above is satisfied in 2001.

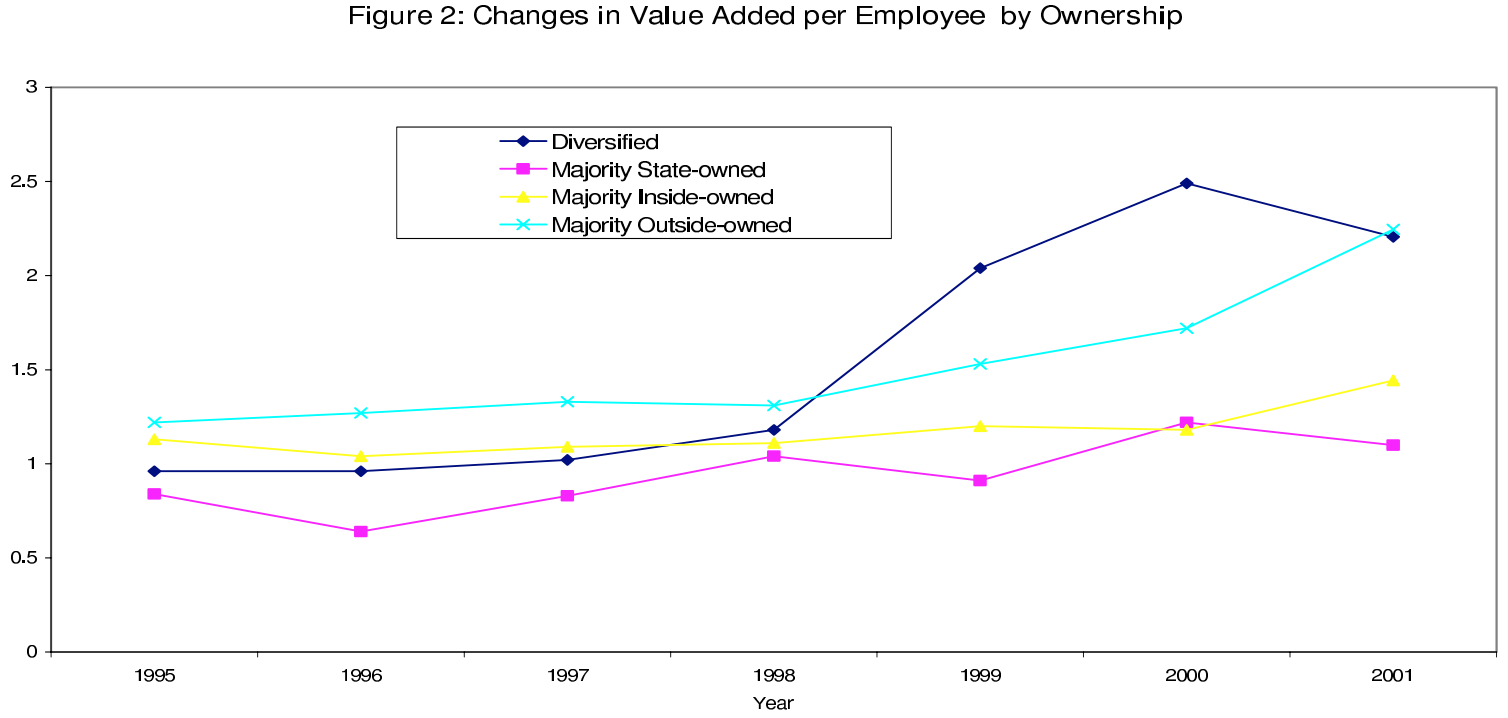


Figure 1.2: Changes in Value Added per Employee by Ownership

This figure captures how value added per employee changes for four categories of firms from 1995 to 2001. The ownership categories are defined by the ownership structure in 2001: the firm is classified as majority state-owned if more than 50% of total shares is state share in 2001; majority insider-owned if more than 50% of total shares is insider private in 2001; majority outsider-owned if more than 50% of total shares is outsider owned in 2001; diversified if none of the above is satisfied in 2001.

Figure 3: Changes in EBIT/Asset By Ownership

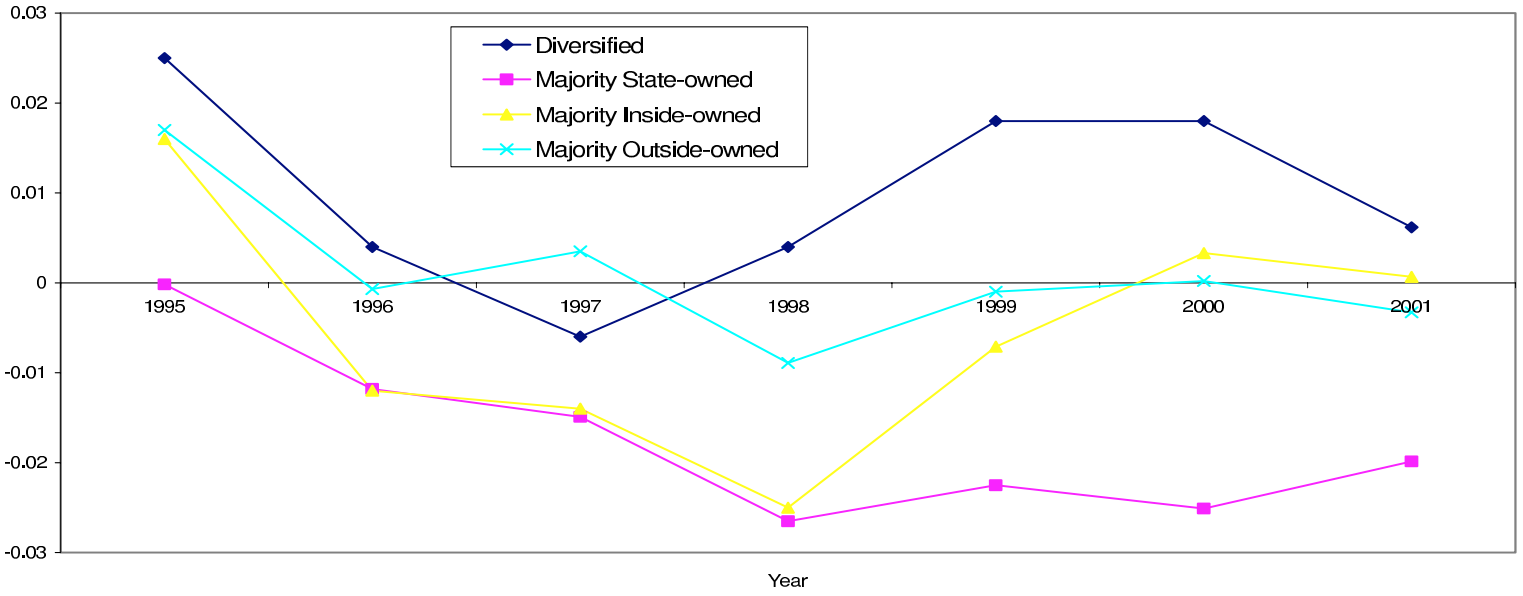


Figure 1.3: Changes in EBIT/ASSET by Ownership

This figure captures how EBIT(earning before interest and taxes) over asset changes for four categories of firms from 1995 to 2001. The ownership categories are defined by the ownership structure in 2001: the firm is classified as majority state-owned if more than 50% of total shares is state share in 2001; majority insider-owned if more than 50% of total shares is insider private in 2001; majority outsider-owned if more than 50% of total shares is outsider owned in 2001; diversified if none of the above is satisfied in 2001.

depending on the form and timing. Year 1998 is important in the sense because the new Prime Minister began his tenure at this year.[17] Restructuring strongly enforced by the motivated new government leaders may have more favorable effects on firm performance. Table I shows most of the restructuring cases are initiated by the local government, which stresses the role of the local state during restructuring. In this perspective, I will test if restructuring taking place in 1998 have significantly larger effect on firm performance.

1.4 Econometric Considerations

1.4.1 Fixed Effect Specification

I evaluate the impact of SOE restructuring on firm performance using a standard panel data treatment evaluation procedure (Groves *et al.*, 1994) with various restructuring forms as "treatment" categorical variables. The procedure evaluates the group subject to the treatment (certain form of restructuring) against the control group (unrestructured firms), while controlling for potential pretreatment (pre-restructuring) differences between the groups.

I begin with the following baseline specification of the fixed-effects model. Let i index individual firms, j indicate their restructuring form as designated earlier in this paper (e.g., measures internal restructuring; employee shareholding; sales & leases & bankruptcy; IPO & joint venture), t index the year, and let $y_{ijt,}$ the outcome variable, be the level of a performance measure for firm i at time t.

$$y_{ijt} = \alpha_j + T_{ijt}\beta_j + D_t\gamma_t + D_s\delta_s + D_c\zeta_c + \varepsilon_{ijt} \tag{1.1}$$

[17]Although China has been controlled by Chinese Communist Party (CCP) since 1949, there is usually a prime minister turnover for every 5 years. The central government will have single-candidate election for the Prime Minister and the local governments will hold single-candidate election for mayors. For example, three prime ministers, Mr. Li Peng, Mr. Zhu Rongji, and Mr. Wen Jiabao came into their offices in 1993, 1998, and 2003 respectively.

T_{ijt} is the treatment variable equal to 1 if firm i gets treatment j in period t and 0 otherwise. D_t is the year dummy capturing the macroeconomic trend because evidence shows 70% of the rise in profit across all industrial SOEs was due to improvements in the macroeconomic environment and state policies rather than to better performance originating in the enterprises (*China Infobank*, 25 June 2001b; Holz, 2002). D_s is the industrial sector dummy controlling for industry fixed effects.[18] D_c is the city dummy controlling for city fixed effect. ε_{ijt} is the error term.

The fixed group effects α_j are assumed to capture group specific characteristics of cross-sectional & cross-city restructuring form j and gauge the average performance of firms of type j in the absence of the restructuring "treatment". The fixed-effects specification assumes that firms grouped by restructuring forms have similar distributions of unobservable characterisitcs that influence performance and is intended to control for differences in such characteristics between different restructuring groups, i.e., those between un-restructured firms and firms undergoing internal restructuring, employee shareholding, sales & leases & bankruptcy, and IPO & joint venture. Equation (1) thus controls for possible selection bias stemming from nonrandom selection of firms to particular form of restructuring.

The coefficients of primary interest are β_j's, which measure the performance of a restructured firm compared to that of un-restructured ones. I call it *restructuring effects*. I follow estimation of baseline specification (1) with a number of additional specifications to control firms' previous performance using moving average measures and also address the "prettier daughter" effect by using restructuring timing as a group indicator.[19] All regressions are clustered by city*year (Deaton 2000).[20]

[18]Firm performance may not be equal across industrial sectors for a number of reasons. Petroleum and natural gas extraction, and also the tobacco industry, are prime examples of central state monopolies. Prices are set administratively and need not reflect the profit-maximizing rule. Electricity prices are determined by the government at the provincial level and approved at the central level. Other sectors, such as the furniture industry, have been largely liberalized with prices determined in close to perfectly competitive markets (Holz, 2002).

[19]Song and Yao (2004) provided empirical evidence for "prettier daughter" effect by exploying the post-reform time trend. They found that SOEs restructured in 1998 have the largest effect of restructuring.

[20]Because firms within clusters (city*year) are often similar to one anther in their relevant characteristics, it is frequently the case that clustering will increase variability compared with simple random sampling.

The validity of any assessment of restructuring effects depends critically on the ability to control for selection bias stemming from possibly nonrandom selection of firms for reform. Fixed-effects specification controls for such bias on the assumption that the firms within each reform group have similar unobserved characteristics influencing performance outcomes. But if an unobserved characteristic influencing a performance outcome is not related to the restructuring form nor the restructuring timing (for example, if firms with better management are restructured while those with worse management are not), controlling for measure-type or timing-type group fixed effects (α's)does not control for the resulting selection bias (in the example just cited, restructuring effects (β's) could reflect the stronger performance of firms with better management relative to firms with worse management, rather than the effect of restructuring itself). To eliminate the possibility of this kind of selection bias, I estimate a model using firm- (rather than group-) specific fixed effects (α's).

But even the firm-fixed effects model controls for selection bias only to the extent that the unobserved firm characteristics correlated with performance outcomes are indeed "fixed" (constant over time) and are captured during the pre-reform period by the performance measures I examine (profitability, debt over asset, cost, productivity). This assumption would be violated, for example, if some firms were to have better management, but the effects of this would not be visible in the firms' performance during the early period of the transition because company turnaround takes some time. This study follows the methods used in Frydman *et. al.* (1999), i.e., contrasting the 1995-1998 performance of firms restructured in the 1995-1998 period with that of firms which were restructured later (in 1999). These later restructured firms presumably have all the characteristics distinguishing themselves from those that will remain state-owned later but are not yet restructured during the period of comparison. This test, in effect, compares the restructured firms with what they would have been but for the fact of restructuring.[21]

Even this method does not take care of all potential forms of bias, such as would occur, for example, if better firms were to be selected for reform, but this fact would

[21]The use of subjects selected for treatment in the future as a control group for those already receiving it is the program evaluation procedure used in, for example, Grogger (1995).

remain undetectable in the entire pre-reform period because management would intentionally depress performance before reform in order to be able to acquire the firms at lower prices. I am, however, able to test this possibility directly, by contrasting the pre-reform performance of firms which were sold to management with that of the firms which adopted other restructuring forms.[22]

1.4.2 The Instruments for Restructuring

Besides the previous fix-effects models and other robustness checks, I deal with the selection bias by using a set of instruments for various restructuring variables. The set of instruments are listed in table II panel B. Three basic themes are reflected in these instruments. First, there are geographic variations in relation to the local preference of restructuring and foreign investment accessibility. Historically southern China is more exposed to the idea of commercialization and restructuring due to many reasons such as less arable lands, trading opportunities overseas, less control from central government. However, northern China is more influenced by agricultural culture and central power. The first five open ports in *China-UK Nanking Treaty(1842)* lie along the southern coast, i.e., Guangzhou, Fuzhou, Xiamen, Ningbo, and Shanghai. The first few urban SOE restructuring cases occured in southern China. Restructuring started in earnest after a visit by Deng Xiaoping to southern China (Shanghai and Shenzhen) in 1992. The opening of the Shenzhen Stock Exchange in 1990 and the Shanghai Stock Exchange in 1991 enabled SOEs to issue shares to the public. It is estimated that before 1994, 50% of China's total exports were through Shanghai and Hongkong.[23] I use the smaller distance from any sample city to Shanghai and Shenzhen capturing not only the degree of cultural acceptance of commercialization and restructuring, but also the accessibility of foreign investment in each locality. As shown in table II panel B, the mean distance to coast is around 1000km. As shown in table II panel C, Zhenjiang is the sample city which is nearest to the coast (actually

[22]The public debate about SOE reform includes the argument that the ongoing restructuring especially MBO, has resulted in the loss of a large number of state assets to the benefit of a small number of private entrepreneurs and SOE managers (Garnaut *et. al.*, 2005).

[23]Hongkong Special district and Shenzhen are adjacent to each other.So there is no difference to use Hongkong or Shenzhen as the destination.

221km from Shanghai), followed by Hengyang (495km from Shenzhen) and Huangshi(622km from Shanghai). The farthest city from Shanghai and Shenzhen is Xining (1915km from Shanghai), followed by Lanzhou (1728km from Shanghai), Harbin (1673km from Shanghai) and Funshun (1213km from Shanghai). The cities falling between these two groups are Weifang (638km from Shanghai), Guiyang (864km from Shenzhen), Tangshan (984km from Shanghai) and Chengdu (1336km from Shanghai).

A second set of IVs are firms' characteristics associated with transaction costs of restructuring. Firms' age, employment structure such as the proportion of female employees and retired workers, land area, and whether the firm switched its business to another industrial sector. Female workers are more difficult to redeploy and retired workers are supposed to be taken care of by the firm with restructuring. Actually many newly reformed firms adopt the one time transfer for the retired workers which is called "mai duan gong ling." So the number of retired workers will affect the transaction cost of restructuring but will not continue to affect firms' performance except for possible extra debt used for the transfer. An older firm may have either incentives to go private in order to get rid of the long-term difficulty or disincentives to go private in fear of the social burdens resulted from restructuring. I argue that these characteristics are less likely to influence the performance outcomes through other channels than restructuring variables. The reason is: first, most of the SOEs in the sample are local SOEs not central SOEs. Second, the local SOEs in China are running in a similar fashion and under similar institutions before the SOEs restructuring program. "Big Bowl, All Public and Absolute Equalization" (*yi da er gong san ping jun, meaning the equal economic status and situation*) is the typical description of the economic situation for SOEs before restructuring. So I have good reasons to believe the age and employment structure do not have impact on firm performnace through other channels rather than restructuring. The land area and whether the firm switched its business to another industrial sector will affect the transaction costs involved in the restructuring thus the ability for the firm to finance the restructuring because the regulation for the land-use appropriation will only apply for those which had stayed in the same sector for a certain amount of time and the land area of which

are within certain limits. However, the land area and whether the firm changed its business to another industrial sector will not directly impact the firm performance in the absence of the restructuring.

A third theme is the legal restrictions of restructuring forms due to different land-use rights and layoff constraints. Land in China is owned by the state or, in rural and suburban areas, by peasant collectives. Before 1995, all land-use rights for SOEs were under government control. The state being the owner of both enterprises and land, the land-use rights were not defined and the land was used free of charge by the SOEs. At least four methods are used to deal with land-use rights in restructuring: maintaining the appropriation by the firm of the land-use rights, leasing, buying, and converting land-use rights into equity. Maintaining the appropriation and buying the land-use rights correspond to the two types of land-use rights in China, i.e., allocated land-use rights and granted land-use rights. Granted land-use rights are limited in time, cost the holder a significant amount proportional to the market value of the land, and may be held by private individuals and entities. Allocated land-use rights are usually given without exchange of consideration and without time limitations, but may not be held by private individuals and entities. An allocated land-use right is not transferable, and technically cannot be leased or mortgaged, while the holder of granted land-use rights has a "user right" similar to that of an owner. Leasing is a suitable method for restructured firms that cannot afford to buy granted land-use rights. The method of converting land-use rights into equity is rarely used but can complement other methods. The survey found that maintaining appropriation was the dominant method of acquiring land-use rights. The second most common method was buying the land-use rights followed by leasing and converting land-use rights into equity. The different regimes of land-use rights may create disincentives for firms to be restructured. Private firms will have to pay a significant fee to convert the allocated land-use rights into grant-use rights. Allocated land-use rights also limit the ability of restructured firms to obtain bank financing or to enter into joint venture arrangements with domestic or foreign partners. I use the land allocation dummy as one of the instruments. It assumes a value of one if the land is allocated and a value of zero

otherwise. The Regulation on Appropriated Land-Use Rights in SOE Reform, and the document entitled "Strengthening Land Resource Management and Promoting SOE Reform," issued by the Bureau of National Land Resource Management, have stipulated that some restructured firms that currently occupy land can use it free of charge on conditions set by the local government. The usual land appropriation restrictions are: restructured firms must be operating in sectors stipulated by the government; land in use must be assessed, and any extra land must be returned to the government; the land must be used for production, and the firm's owners cannot change the land use or lease the land to others without the permission of the relevant agency; and land-use tenure is usually set for between 5 and 10 years, depending on the land use. The layoff limit imposed by local government during restructuring constitutes another exogeneous variation for privatization variables. The limit will not hold after the firm goes private and thus is unlikely to affect the firm's future performance.

1.5 The Effects of SOE Restructuring

Table IV provides FE estimates of equation (1) for all performance measures, panel A grouped by restructuring form, panel B grouped by restructuring timing. Table V depicts the profile of firm characteristics before and after restructuring by restructuring forms. Table VI runs the firm fixed-effects model for all performance measures by restructuring form and timing.

1.5.1 Restructuring Effects: Group Fixed Effect by Restructuring Forms

Table IV panel A presents the effects of different restructuring treatments on the restructured-firms compared to the un-restructured firms. The control group is the un-restructured SOEs, while the treatment groups are four groups of SOEs which have undergone one of the four restructuring forms, i.e., internal restructuring, employee shareholding, sales & leases & bankruptcy, IPO & joint venture. I differentiate the restructuring forms because I suspect that there might be some selection issues in

the restructuring process. For example, it is possible that the financially stronger firms would like to choose more radical forms of ownership change, while the weak firms might want to remain attached to the state so that they could get more support especially loans from state; or, alternatively, the state may not want to give up the financially stronger firms because they are large cash cows to generate tax revenue. The interaction term of a certain type of restructuring and post-treatment variable indicates the effect of that particular form of restructuring, while the coefficient of the restructuring form gives us information about how different these firms are from the non-reformed SOEs without any treatment.

Coefficients of interaction terms show that the effect of restructuring on all performance indicators is significantly positive for firms with IPO & joint venture (IJ for short later); all of them except wage and on-duty workers are getting significantly positive for firms with sales & leases & bankruptcy (SLB for short later); the performance indicators for firms with internal restructuring (IR for short later) and employee shareholding (ES for short later) are not significantly positive and sometimes are even significantly negative. Sales/asset, EBIT/asset, and ROA increase significantly with restructuring for firms adopting IJ and even higher for those adopting SLB. ROA, for example, increases 5.04% for SLB firms and 2.31% for IJ firms. One may worry that the profit asset ratio could be higher simply because of the decreasing total asset instead of increasing profit. I then check EBIT which indeed increases for firms restructured with SLB and IJ. The liquidity indicators show that the bad-debt problems have been alleviated significantly for firms with SLB and IJ. It is not surprising that the liability-asset ratio decreases 24.46% for SLB firms and 11.92% for IJ firms, considering the large scale policy oriented bankruptcy and debt-equity swap during the restructuring.[24] The equity level increases for firms with SLB and IJ significantly, more for the latter one possibly due to the highly diversified domestic and foreign ownership. It is interesting to observe that the liability and total asset (not reported in table 1) for SLB firms decrease significantly after restructuring while increase quite a lot after restructuring for IJ firms although both have reductions in

[24]The government buys the debt from the state commercial banks by issuing interest-carrying bonds (Holz 2002).

Table IV Restructuring Effects--Group Fixed Effect Model

This table runs fixed-effects specification(1) with restructuring form as group variables in panel A and with restructuring timing as group variables in panel B. Groups classified by restructuring forms are IR (internal restructuring), ES (employee shareholding), SLB (sales & leases & bankruptcy) and IJ (IPO &joint venture). Groups categorized by restructuring timing are time1 (restructured before or in 1995), time2 (restructured in 1996), time3 (restructured in 1997), time4 (restructured in 1998), time5 (restructured in 1999), and time6 (restructured in or after 2000). Post equals 1 if the firm is undergoing or has been restructured and 0 otherwise. The default group is un-restructured firms. time2*post is dropped because only post restructuring data available for those firms restructured in or before 1995 in the survey.

Panel A

	Profitability				Liquidity			Labor		
	sales/asset	EBIT/asset	ROA	EBIT	debt/asset	Debt	Equity	wage	On-duty worker	productivity
	%	%	%	(10000)	%	(10000)	(10000)	(10000)	person	10000/person
IR	0.0006	0.0221	0.0167	861.94	-0.0325	3139.05	1824.50	0.2861	848	-0.3059
	(.0279)	(.0072)***	(.0073)**	(255.22)***	(.0362)	(515.61)***	(272.53)***	(.1062)***	(149.82)***	(.6079)
ES	0.0870	0.0063	0.0122	-12.53	-0.0278	-562.61	-49.93	-0.5500	-125	2.0880
	(.0518)	(.0105)	(.0125)	(167.80)	(.0265)	(355.49)	(163.47)	(.2777)	(63.98)*	(.8662)**
SLB	-0.0119	-0.0317	-0.0175	-130.44	0.1614	423.76	-648.86	-0.3598	-203	-2.1479
	(.0353)	(.0124)**	(.0114)	(118.03)	(.0482)***	(565.60)	(167.15)***	(.2492)	(76.16)***	(.9609)**
IJ	-0.1134	0.0347	0.0521	765.62	-0.0806	-367.21	236.62	-0.5884	-150	-2.5018
	(.0889)	(.0143)**	(.0112)***	(439.02)*	(.0463)*	(619.96)	(211.78)	(.2179)***	(162.77)	(.8517)***
IR*Post	0.0203	-0.0106	0.0053	-583.80	0.0098	1471.83	56.72	0.2385	-367	-1.3884
	(.0561)	(.0126)	(.0145)	(310.16)*	(.0582)	(630.56)**	(434.80)	(.5007)	(157.99)**	(1.1927)
ES*Post	0.0130	0.0371	0.0253	308.37	0.0440	417.29	389.80	0.1312	-44	2.6430
	(.0612)	(.0131)***	(.0114)**	(208.29)	(.0629)	(533.10)	(267.26)	(.3464)	(61.81)	(3.9542)
SLB*Post	0.3544	0.0715	0.0504	511.05	-0.2446	-1738.41	642.59	-0.2009	49	2.5351
	(.0688)***	(.0130)***	(.0105)***	(152.06)***	(.0519)***	(656.01)***	(235.47)***	(.1534)	(100.26)	(1.1370)**
IJ*Post	0.2143	0.0549	0.0231	2257.52	-0.1192	2215.22	2534.62	0.4990	991	4.9743
	(.0874)**	(.0126)***	(.0099)**	(712.95)***	(.0433)***	(932.61)**	(495.71)***	(.1925)**	(226.45)***	(1.7252)***
year fe	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
city fe	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
sector fe	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

cluster in city*year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
observations	2860	2521	2811	2860	3065	3297	3206	3167	3561	2453
R-sqr	0.2251	0.1257	0.0488	0.1868	0.0875	0.2419	0.1513	0.027	0.2548	0.0602
adjusted R-sqr	0.2185	0.1173	0.0406	0.1799	0.0803	0.2363	0.1449	0.0195	0.2497	0.0509

Panel B

	Profitability				Liquidity			Labor		
	sales/asset	EBIT/asset	ROA	EBIT(RMB10,000)	debt/asset	Debt(RMB10,000)	Equity(RMB10,000)	wage(RMB10,000)	On-duty worker	productivity
<=1995(*post)	0.0588	0.0626	0.0560	587.39	-0.2074	1186.94	1236.02	-0.4926	3	1.3026
	(.0391)	(.0078)***	(.0105)***	(160.25)***	(.0315)***	(415.77)***	(168.47)***	(.3376)	(68.82)	(1.0964)
1996	-0.1297	0.0434	-0.0158	1194.85	0.1097	-1187.38	262.20	0.3790	-163	-0.9806
	(.0701)*	(.0216)**	(.0220)	(764.41)	(.1148)	(1370.93)	(484.08)	(.2153)*	(154.74)	(.9999)
1997	0.1243	0.0434	0.0298	75.63	-0.0421	2485.82	1060.71	-0.3526	419	0.9139
	(.0880)	(.0127)***	(.0107)***	(154.30)	(.0630)	(827.48)***	(435.83)**	(.2786)	(164.28)**	(1.0679)
1998	-0.0086	-0.0066	-0.0188	428.34	0.0269	727.69	575.64	0.3014	325	-1.8225
	(.0465)	(.0150)	(.0133)	(103.34)***	(.0386)	(518.95)	(225.77)**	(.1632)*	(145.60)**	(1.1450)
1999	-0.0845	-0.0006	0.0136	1287.49	-0.0640	981.85	796.78	-0.2775	852	-1.4625
	(.0406)**	(.0086)	(.0093)	(497.25)**	(.0378)	(634.21)	(271.61)***	(.0924)***	(261.86)***	(.5023)***
>=2000	0.0241	-0.0087	0.0039	-54.66	0.0548	862.32	151.82	-0.3372	-57	-0.1076
	(.0316)	(.0078)	(.0097)	(102.88)	(.0272)**	(324.22)***	(161.80)	(.2424)	(38.13)	(.5358)
1996*post	0.1834	-0.0085	0.0517	108.24	-0.1571	1071.44	485.84	-0.0513	101	1.3461
	(.0705)**	(.0222)	(.0236)**	(808.17)	(.1161)	(1417.85)	(541.47)	(.3077)	(157.32)	(1.1198)
1997*post	0.1550	-0.0151	-0.0063	350.40	0.1153	1641.53	475.50	-0.2151	-145	1.0282
	(.1402)	(.0228)	(.0175)	(251.38)	(.1262)	(1075.98)	(590.10)	(.2289)	(182.03)	(1.6327)
1998*post	0.2645	0.0390	0.0491	1005.01	0.0311	882.19	634.67	-0.5232	521	-0.0701
	(.0866)***	(.0186)**	(.0157)***	(369.39)***	(.0912)	(663.91)	(391.78)	(.2746)*	(177.93)***	(1.2132)
1999*post	0.1566	0.0305	0.0229	-921.54	0.1017	-700.00	-495.13	-0.4567	-484	9.3146
	(.0576)***	(.0120)**	(.0155)	(643.75)	(.0857)	(834.78)	(440.43)	(.3158)	(297.10)	(8.1473)
>=2000*post	0.1620	0.0184	0.0181	370.28	-0.0920	-744.40	560.62	0.9301	95	0.2078
	(.0619)**	(.0197)	(.0192)	(283.87)	(.0715)	(592.46)	(452.86)	(1.4227)	(82.50)	(1.1252)
year fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

city fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
sector fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
cluster in city*year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
observations	2891	2548	2838	2887	3097	3331	3238	3202	3597	2480		
R-square	0.2181	0.1189	0.0479	0.1436	0.0894	0.2138	0.1154	0.0263	0.2335	0.0599		
adjusted R-square	0.2107	0.1094	0.0388	0.1355	0.0814	0.2074	0.1079	0.018	0.2277	0.0496		

Table 1.6: Table IV: Restructuring Effects: Group Fixed Effects Model

liability-asset ratio. Wage, number of on-duty worker, and productivity increase for IJ firms, suggesting that the IJ firms are performing significantly better in the labor market in terms of higher pay, higher employment and also higher output per worker following restructuring. Productivity increases significantly after restructuring for firms with SLB. With insignificant wage and employment change I cannot say much about the labor market for SLB firms because the higher productivity measured by output per worker might be achieved by higher lay-offs or lower wage payment. For firms with IR, both EBIT and liability levels are significantly higher, which lead to insignificant increase on ROA. The EBIT and employment for IR firms decreases significantly during the reform. There is very little evidence of better performance for ES firms, except that the EBIT/asset and ROA increases after restructuring by 3.71% and 2.53% respectively. In conclusion, IJ firms do better after restructuring in profitability, liquidity and labor productivity; SLB firms do better in profitability and liquidity but not necessarily in labor productivity; and there are few significant improvements for ES and IR firms following restructuring compared to un-restructured firms.

Coefficients of restructuring forms show that firms chosen for IR typically have significantly higher profit, liability, equity, wage and employment in the absence of restructuring compared to the control group, i.e., un-restructured SOEs; firms chosen for ES have significantly less employment and higher productivity compared to the un-restructured SOEs; firms with SLB suffer huge profit loss, heavy financial burden (high debt), less employment (smaller size), and lower productivity; firms with IJ used to be profit-makers with lower wages and lower productivity. All these facts seem to go against the "prettier daughter" effect which says that the better performing firms are restructured earlier. Actually my results show that firms with partial or full privatization(SLB) are those that used to suffer profit loss and liquidity problems most severely before the treatment. Data also suggest that the government still wants to hold the cash cows probably due to the large tax revenue from these high EBIT industrial SOE firms.[25] But there are also some profit-making firms that are

[25]Before the introduction of modern tax system in 1994, sales taxes and surcharges relative to sales revenue are two to four times higher in SOEs than in non-SOEs; the value-added tax relative to

undergoing IJ. The firms with ES have significantly higher productivity. These facts point to the multi-fold government policy: first, "seize the big ones"(*zhua da*), i.e., hold the large and well-functioned firms; second, small industrial SOEs were to be "enlivened" (*gao huo*), i.e., let the small firms with higher productivity form employee shareholding; third, most loss-making SOEs are to "escape their difficulties,"(*tuo kun*) i.e., revitalize those financially burdened firms by policy bankruptcy, leases or sales; fourth, let those profitable firms go public and attract foreign investors. These facts are summarized in table V.

1.5.2 Restructuring Effects: Group Fixed Effect by Restructuring Timing

Table IV panel B presents the effects of restructuring timing. *Post* equals 1 if firms have undergone restructuring and 0 otherwise. Obviously *Post* equals 1 for all the observations of *time1* group. Thus the firms with restructuring time $\leq$ *1995* only have the interaction term *time1*post* in the fixed effect model. This model directly addresses the potential selection issue such as that the early restructured firms may be better performing firms. It is assumed here that firms within each timing group have similar unobserved characteristics correlated with performance outcomes.

The estimated coefficients on *timing*post*, for example,*(1998*post)*, show that firms restructured in a certain year, say 1998, have significant increase in profitability and employment compared to un-restructured firms. Liquidity indicators (liability-asset ratio, debt level, and equity level), wage level, and labor productivity are insignificant for all the interaction terms. Sales/asset increase for firms restructured in or after 1998, with the highest increase (26.45%) for firms restructured in 1998 and around 16% for groups after 1998. It seems that firms restructured in 1998 get the most pronounced improvements following restructuring, which is consistent with the findings by Yao and Song (2004). I estimate that ROA increases 5% for firms restructured in 1998 while Song & Yao found a 5% increase in ROA for a 1% increase in

value-added in SOEs is about one and a half times higher in SOEs than in non-SOEs. This suggests historical or governmental policy reasons for the high market share of SOEs in industrial sectors in which they pay high sales taxes and surcharges (Holz, 2002).

Table V Profiles of SOEs by Restructuring Forms

This table shows the profile of the sample SOEs restructured in a certain form (RI, ES, SLB and II, defined the same as in table I panel A). "+"shows a significantly higher level than controlled un-restructured SOEs, "-"means lower than controlled un-restructured SOEs, 0 means no significant difference from controlled un-restructured SOEs.

	Pre-Privatization					Post-Privatization				
	Profit	Liability	Equity	Wage	Employment	Productivity	Profit	Liability	Equity	Wage	Employment	Productivity
IR	+	+	+	+	+	0	-	+	0	0	-	0
ES	0	0	0	0	-	+	+	0	0	0	0	0
SLB	-	0	-	0	-	-	+	-	+	0	0	+
II	+	0	0	-	0	-	+	+	+	+	+	+

Table 1.7: Table V: Profiles of SOE by Restructuring Forms

private share in 1998. My finding supports the fact that the 1998-2000 restructuring program is effective in increasing the profitability for industrial SOEs (Holz,2002). The finding also lends support to the hypothesis that new government leaders (prime minister and local mayors) are more motived to enforce the SOE restructuring program in 1998.

1.5.3 Restructuring Effects: Firm Fixed Effect

The estimates reported in table IV deals with the selection bias associated with group fixed effects. The selection bias arises if firms are picked to begin with a certain form or year of restructuring. The group fixed effects model get rid of the group unobserved heterogeneity and generate consistent estimators of restructuring effect. The selection profile is described in table V.

Specification (1), however, involves only group-specific fixed effects. As such, it does not control for the selection bias stemming from the fact that firms grouped within a given restructuring form (or timing) category may differ among themselves with respect to some unobserved characteristics correlated with performance outcomes. For example, firms even in the same restructuring form (or timing) category could still have different relationship with the local government (e.g., local government may do a favor for loan access and financial support), only controlling restructuring form (or timing) group fixed effects would still not yield a consistent estimator of the restructuring effect. To eliminate the possibility of this kind of selection bias, I use firm fixed effects model. In estimating the firm fixed effects model. Some group dummies are absorbed by firm characteristics due to the colinearity. The coefficients of the interaction terms are reported in table VI.

The estimates are mostly consistent with those in group fixed effects model. The restructuring effects for IJ (IPO or Joint Venture) are significant in terms of profitability, liquidity, and labor improvements. Firm fixed effects model estimate that compared to un-restructured firms, firms adopting IPO or joint venture have 5% more ROA, 25%less liability-asset ratio, RMB2,000 more wage per worker, 250 more employment per firm, and RMB15,000 more output per worker. The group fixed

Table VI Restructuring Effects: Firm Fixed Effect

This table runs fixed-effects specification(1) with restructuring forms as group variables in panel A and with restructuring timing as group variables in panel B. Groups classified by restructuring forms are IR (internal restructuring), ES (employee shareholding), SLB (sales & leases & bankruptcy) and IJ (IPO &joint venture). Groups categorized by restructuring timing are time1 (restructured before or in 1995), time2 (restructured in 1996), time3 (restructured in 1997), time4 (restructured in 1998), time5 (restructured in 1999), and time6 (restructured in or after 2000). Post equals 1 if the firm is undergoing restructuring or has been restructured and 0 otherwise. The default group is un-restructured firms. time1*post is dropped because only post restructuring data are available for those firms restructured in or before 1995 in the survey.

Panel A

	Profitability				Liquidity			Labor		
	sales/asset	EBIT/asset	ROA	EBIT(RMB10,000)	debt/asset	Debt(RMB10,000)	Equity(RMB10,000)	wage(RMB10,000)	On-duty worker	productivity
IR*Post	0.0239	-0.0081	-0.0016	-167.15	0.0153	1689.75	36.19	-0.0182	-222	0.2924
	(.0301)	(.0113)	(.0107)	(124.65)	(.0253)	(310.76)***	(246.35)	(.0267)	(61.63)***	(.5356)
ES*Post	0.0770	0.0142	0.0154	82.75	0.1789	-119.89	-414.44	0.1326	42	-0.0504
	(.0394)*	(.0132)	(.0118)	(84.59)	(.0933)*	(373.92)	(253.38)	(.1237)	(14.45)***	(.7138)
SLB*Post	-0.0413	-0.0100	0.0147	-7.77	-0.0492	-126.93	36.10	-0.0589	-45	1.0025
	(.0377)	(.0207)	(.0172)	(89.47)	(.0703)	(245.63)	(199.79)	(.0201)***	(38.62)	(.8822)
IJ*Post	0.2104	0.0817	0.0557	736.94	-0.2511	-532.14	2338.16	0.1954	249	1.5609
	(.0609)***	(.0124)***	(.0101)***	(609.02)	(.0653)***	(404.12)	(569.12)***	(.0420)***	(67.04)***	(.8811)*
year fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
firm fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
cluster in city*year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
observations	3148	2738	3083	3122	3383	3653	3552	3471	3971	2683
R-square	0.6762	0.573	0.4393	0.8449	0.5171	0.9054	0.773	0.9908	0.9584	0.6562
adjusted R-square	0.6748	0.571	0.437	0.8442	0.5153	0.905	0.7722	0.9908	0.9583	0.6545

Panel B

	Profitability				Liquidity			Labor	
	sales/asset	EBIT/asset	ROA	EBIT(RMB10,000)	debt/asset	Debt(RMB10,000)	Equity(RMB10,000)	wage(RMB10,000)	On-duty worker	productivity
time2*post	0.0863	0.0077	0.0483	752.78	-0.2512	-275.92	421.89	0.4882	78	3.0929
	(.0577)	(.0143)	(.0165)***	(418.08)*	(.1241)**	(292.84)	(252.11)*	(.3714)	(63.41)	(1.5132)**
time3*post	0.0426	0.0280	0.0251	361.38	-0.0599	2229.51	1115.95	0.0217	18	1.6312
	(.0507)	(.0131)**	(.0113)**	(323.60)	(.0389)	(568.11)***	(311.48)***	(.0245)	(73.83)	(1.1271)
time4*post	0.0393	0.0268	0.0328	27.77	0.1252	691.56	-281.16	-0.0455	-57	-0.5169
	(.0351)	(.0127)**	(.0112)***	(108.56)	(.1077)	(138.35)***	(165.61)*	(.0257)*	(32.59)*	(.4540)
time5*post	0.1130	0.0148	0.0144	-249.95	0.1847	1238.30	-572.99	-0.0025	-157	0.4622
	(.0414)***	(.0142)	(.0155)	(154.35)	(.0574)***	(247.20)***	(213.78)***	(.0232)	(57.27)***	(.5697)
time6*post	-0.0018	-0.0242	-0.0171	-112.10	0.0225	-770.67	25.45	-0.0307	-86	-0.2603
	(.0411)	(.0134)*	(.0106)	(108.98)	(.0608)	(288.05)***	(291.28)	(.0299)	(28.36)***	(.9272)
year fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
firm fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
observations	3186	2772	3117	3156	3422	3694	3591	3506	4014	2717
R-square	0.6753	0.5725	0.4401	0.845	0.517	0.9058	0.7718	0.9909	0.9579	0.6563
adjusted R-square	0.6741	0.5708	0.4381	0.8445	0.5154	0.9056	0.7711	0.9908	0.9578	0.6548

Table 1.8: Table VI: Restructuring Effects-Firm Fixed Effects Model

effect model estimates that compared to un-restructured firms, firms going IPO or forming joint venture have 2% more ROA, 12% less liability-asset ratio, RMB5,000 more wage increases, 1,000 more employment per firm, and RMB50,000 more output per worker. The firm fixed effect model echoes the previous group fixed effect model and confirms the effectiveness of IPO and Joint Venture in raising profitablity, liquidity and productivity. However, it does not give strong support for improvement through sales, leases and bankruptcy. This conflict with the group fixed effect model suggest that the significant improvement in SLB firms may be confounded with the unobserved firm level heterogeneity such as the connection to the government or institutional factors. As the government policy "tuo kun" goes, most loss-making firms are supposed to "escape their difficulties" by policy bankruptcy and then be sold or leased to some private parties. These firms often have bad debts and used to enjoy easy access to bank loans. Not surprisingly those firms that could easily get financial support from the bank are those that have better connection with the government. The government-driven financial enlivening by throwing the current debt into future may keep alive those financially dying firms in the short run but may not generate the blood for their health in the long run. The significant decrease in R&D investment (about -130RMB per firm, not reported in table VI) for SLB firms compared to the un-restructured SOEs suggest that firms that underwent SLB restructuring may be trapped in a financial crisis and be unable to invest for long-run growth. Without the internal ability to find the new growing point rather than taking off debt by "plastic surgery", the sales&leases&bankruptcy firms remain inefficient. This point is reinforced by firms with IPO and Joint venture. Accompanying the higher profitablity, liquidity and productivity, the R&D investment for IJ firms increases by about RMB1,400 per firm after restructuring. The diversified outside ownership could be an important factor for these firms. Joint venture brings in foreign management system which will revitalize the old-fashioned SOEs. The R&D investment may bring technological improvement which will generate higher profitability and productivity. It is worth exploring the mechanism of the outsider ownership. However, there are not so many relevant variables available in the survey for such study.

In firm fixed effects model, firms restructured in year 1998 enjoy most significant improvements in their performance particularly in profitability. For example, compared to un-restructured firms, firms restructured in 1998 have 3% more EBIT-asset ratio and 3% more ROA, while have 4% more EBIT-asset ratio and 5% more ROA according to the group fixed effect model in table IV. The year 1998 has special meanings in Chinese economy and politics. Learning lessons from the Southeast Asian financial Crisis, the macroeconomic policy began to target on the domestic demand, such as infrastructure investment and vacation economy.[26] Another important issue is the new leadership effect. Since late 1990s the three new leadership years, i.e., 1993, 1998, 2003 are the peak years for domestic investment boom.[27] The local government focuses more on the economic achievements rather than other public obligations. And it could do so because it controls the land and capital (state-owned bank). The local economic performance will serve as a qualifier for local officials' promotion. I term this motivation of economic achievement by central and local leaders as the new leadership effect. Prime minister Zhu Rongji declared the new government's determination as "one guarantee, three targets, and five reforms". "One guarantee" means to make sure GDP growth reached 8% with inflation less than 3% in 1998. "Three targets" refer to make sure most large and medium sized SOEs get rid of their difficulties and establish the modern enterprise system; make sure to change the financial system, enforce the supervision of central bank while entitle management and operation rights for banks themselves at the end of 20th century; make sure to change the bureaucratic system. "Five reforms" include the reforms in grain circulation area, finance and investment areas, housing system, medical system, and tax system. The new leadership effect exists not only in the central level but also in the local level. The political tournaments provide incentives for the local government to prioritize GDP growth which is set as the criteria for promotion (Zhou, 2004). The SOE restruc-

[26] 7-day labor holiday and 7-day national celebration holiday

[27] Year 1993, 1998, and 2003 were years of prime minister turnover in which Li Peng, Zhu Rongji, and Wen Jiabao took office respectively. Before the new leader came into office, the state fixed investment averages 18% during the period 1989-1992, 13.6%during the period 1995-1997, and 5.3% during the period 1999-2002. In the year when the new leader took office, the state fixed investment surged to 44.1% in 1993, 17.4% in 1998, and 28.2%in 2003. There were also rounds of leadership turnover in local government in these three years.

turing program is executed in the local level especially for county-level state owned enterprises. The data back up the hypothesis that new government leadership will have positive effect on post restructuring performance.

1.6 Robustness Checks

There are still some concerns with regard to the above results. The first is that the management may face conflicts of interest when they perceive themselves as prospective buyers of the enterprise. Some managers may deliberately run the firm down before restructuring in order to lower the restructuring price, or they may strip assets out of the firm. I check this potential bias by comparing the pre-restructuring performance of managerially controlled firms with that of firms controlled by other types of owners. The results are shown in table VII and figure 4. Table VII compares the pre-restructuring performance of managerially controlled firms with that of firms controlled by other types of owners. For example, if firm A is sold to the management in 1999 and firm B is restructured to some outsiders in 2000. I compare firm A's average performance during 1995-1999 period and firm B's performance during 1995-1999 period. It is shown that before the management take control, the profitability and liquidity of the future managerially controlled firms are significantly higher than the non-managerially controlled firms. These results to some extent relieve the concern about the "big bath" accounting tricks that could be used in the restructuring, such as running down the firm to buy out the firm at a lower price.

The second concern is that the unobserved firm characteristics correlated with performance outcomes are not "fixed" and not captured during the pre-restructuring period. For example, if some firms were to have better management, but the effects of this were invisible in the firms' performance during the early period of the transition because company turnaround takes some time. I deal with this problem in part by comparing the 1995-1998 performance of firms restructured in the 1995-1998 period with that of firms which were restructured later (in 1999). The latter were selected for restructuring (and presumably have all the characteristics distinguishing selected firms from those that will remain state-owned), but not yet restructured during the

Table VIII Performance Comparison for firms restructured in 1995-1998 with those restructured in 1999 in the 1995-1998 period

This table contrasts the 1995-1998 performance of firms restructured in the 1995-1998 period with that of firms which were restructured later (in 1999) and thus were selected for restructuring (and presumably have all the characteristics distinguishing selected firms from those that will remained state-owned), but not yet restructured during the period of comparison. The difference is performance of firms which were restructured in 1999 minus that of firms restructured in 1995-1998. The comparison addresses the selection bias that the restructuring is given to those who are potentially more responsive for the restructuring but the potential may not be detected from the pre-restructuring performance.

	Profitability				Liquidity			Labor	
	sales/asset	EBIT/asset	ROA	EBIT(RMB10,000)	debt/asset	Debt(RMB10,000)	Equity(RMB10,000)	wage(RMB10,000)	On-duty worker	productivity
Privatized in 1995-1998	0.5774	0.0118	-0.0269	540.81	0.7679	4799.982	1812.45	0.5518	834	5.2618
	(.0278)	(.0084)	(.0062)	(150.57)	(.0379)	(351.81)	(167.41)	(.0626)	(63.35)	(.6298)
Privatized in 1999	0.4531	-0.0147	-0.0357	1283.41	0.7665	5760.66	1864.01	0.4184	1542	4.0538
	(.0396)	(.0101)	(.0090)	(631.54)	(.0335)	(706.01)	(309.22)	(.0196)	(329.33)	(.3970)
Difference	-0.1243	-0.0264	-0.0088	742.61	-0.0015	960.67	51.56	-0.1334	708	-1.2080
	(.0484)***	(.0131)**	(.0109)	(649.24)	(.0506)	(788.81)	(351.63)	(.0656)**	(335.36)**	(.7444)*

Table 1.9: Table VII: Pre-restructuring Performance Comparison between Managerially Controlled Firms and Others

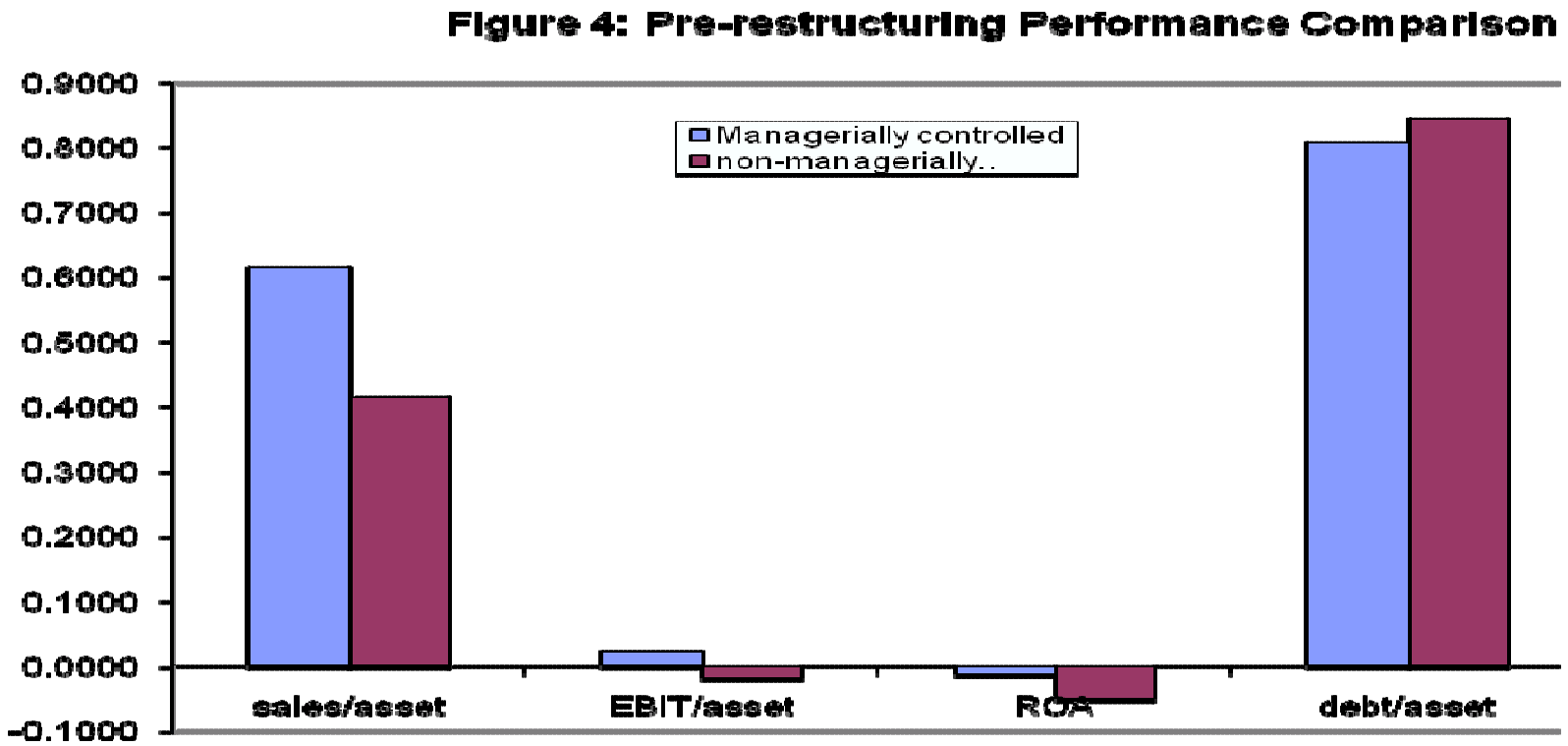


Figure 1.4: Pre-restructuring Performance Comparison

This figure shows the pre-restructuring performance of managerially controlled firms with that of firms controlled by other types of owners. For example, if firm A is restructured in 1997 and controlled by the management since 1997, firm B is restructured in 1999 and controlled by outsider private owners since 1999. Then what we compare is the average performance measures in 1995-1996 period for firm A and the average performance measures in 1995-1998 period for firm B. This comparison addresses the selection bias that the management may face the conflict of interests when they perceive themselves as prospective buyers of the firm. They could deliberately run down the firm so that they could buy out the firm in a lower price or strip the asset out of the firm.

Table VIII Performance Comparison for firms Privatized in 1995-1998 with those privatized in 1999 in the 1995-1998 period

This table contrasts the 1995-1998 performance of firms privatized in the 1995-1998 period with that of firms which were privatized later (in 1999) and thus were selected for privatization (and presumably have all the characteristics distinguishing selected firms from those that will remained state-owned), but not yet privatized during the period of comparison. The difference is performance of firms which were privatized in 1999 minus that of firms privatized in 1995-1998. The comparison addresses the selection bias that the privatization is given to those who are potentially more responsive for the privatization but the potential may not be detected from the pre-privatization performance.

	Profitability				Liquidity			Labor		
	sales/asset	EBIT/asset	ROA	EBIT(RMB10,000)	debt/asset	Debt(RMB10,000)	Equity(RMB10,000)	wage(RMB10,000)	On-duty worker	productivity
Privatized in	0.5774	0.0118	-0.0269	540.81	0.7679	4799.982	1812.45	0.5518	834	5.2618
1995-1998	(.0278)	(.0084)	(.0062)	(150.57)	(.0379)	(351.81)	(167.41)	(.0626)	(63.35)	(.6298)
Privatized	0.4531	-0.0147	-0.0357	1283.41	0.7665	5760.66	1864.01	0.4184	1542	4.0538
in 1999	(.0396)	(.0101)	(.0090)	(631.54)	(.0335)	(706.01)	(309.22)	(.0196)	(329.33)	(.3970)
Difference	-0.1243	-0.0264	-0.0088	742.61	-0.0015	960.67	51.56	-0.1334	708	-1.2080
	(.0484)***	(.0131)**	(.0109)	(649.24)	(.0506)	(788.81)	(351.63)	(.0656)**	(335.36)**	(.7444)*

Table 1.10: Table VIII: Performance Comparison between Firms Restructured in 1995-1998 and Those Restructured in 1999 in the 1995-1998 Period

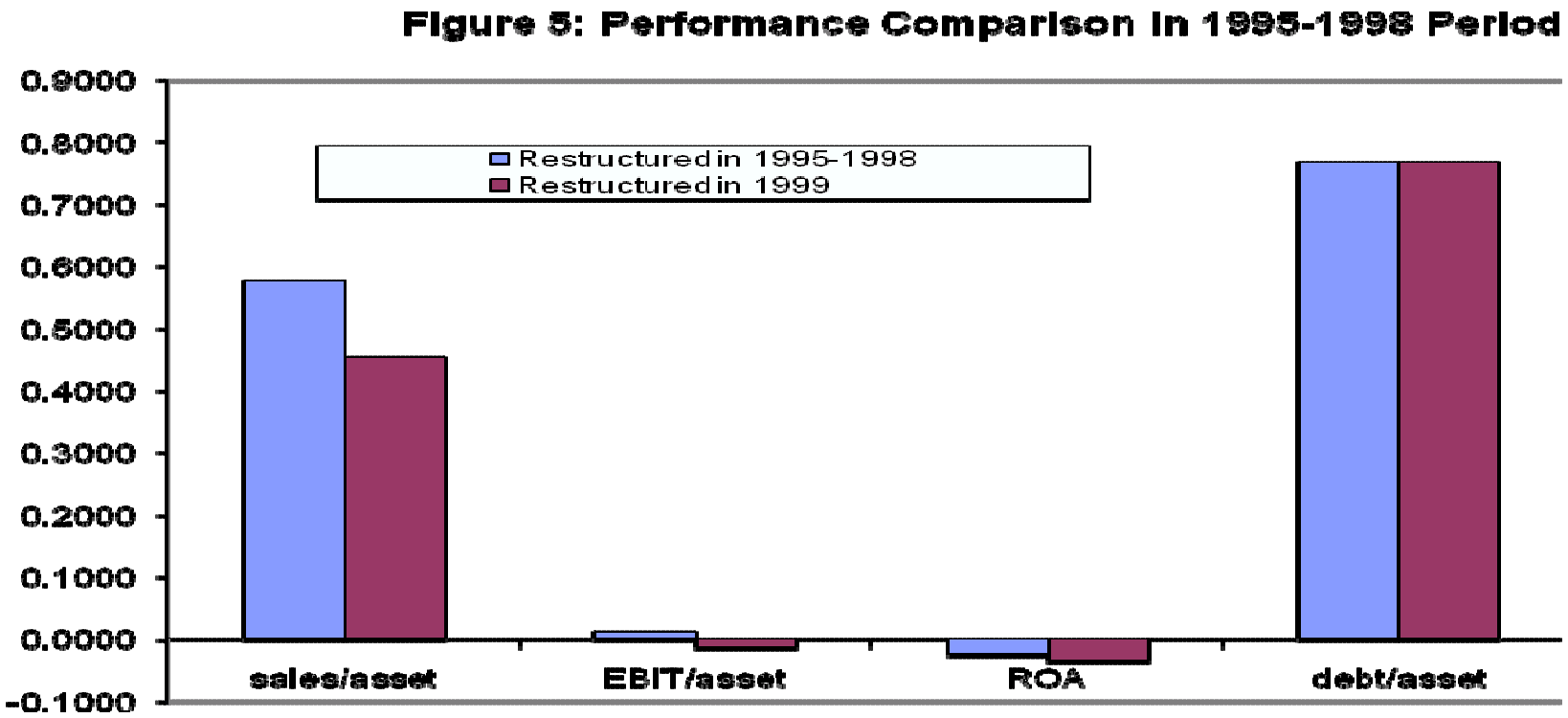


Figure 1.5: Performance Comparison in the 1995-1998 Period

This figure depicts the 1995-1998 performance of firms restructured in the 1995-1998 period with that of firms which were restructured later (in 1999) and thus were selected for restructuring (and presumably have all the characteristics distinguishing selected firms from those that will remained state-owned), but not yet restructured during the period of comparison. The comparison addresses the selection bias that the restructuring is given to those who are potentially more responsive for the restructuring but the potential may not be detected from the pre-restructuring performance.

period of comparison. This test, in effect, compares the restructured firms with what they would have been but for the fact of restructuring.[28] The results are shown in table VIII and figure 5. By using the future treatment group as the control group for the current treatment group, I could take care of this bias at least partially. This idea is somewhat similar to the regression discontinuity. As I elaborate before, year 1998 is the beginning year of the new government tenure and stands out differently as a special year for restructuring enforcement. Table VIII shows the jump of performance for firms with different ownership structure. I choose 1998 as the year of breaking point and then compare the pre-restructuring performance of firms restructured in 1995-1998 period with that of firms restructured in 1999. For example, if firm A is restructured in 1996, firm B is restructured in 1997, firm C is restructured in 1998, firm D is restructured in 1999. What I compare is the average performance of 1995 for firm A, 1995-1996 for firm B, 1995-1997 for firm C and 1995-1998 for firm D. Table VIII shows that restructuring indeed makes the treatment group (firms restructured in 1995-1998) enjoy a significantly higher profitability, but not significantly different in liquidity and productivity.

1.7 Instrumental Variables Regression

Table IX and table X present the first stage and second stage results of instrumental variables regression. I want to estimate the impact of different restructuring variables on firm performance. The restructuring variables included in model A are continuous ownership share including insider state ownership, insider private ownership, outsider state ownership, and outsider private ownership. In model B I are interested in the impact of restructuring forms defined as before.Actually there are some connections between these two sets of restructuring variables, for example, IPO and Joint venture may involve more outsider private ownership while employee shareholding may only involve insiders private ownership. As it turns out, these two models generate similar and consistent results both in first stage and second stage. So I look at them together

[28]The use of subjects selected for treatment in the future as a control group for those already receiving it is the program evaluation procedure used in, for example, Grogger [1995].

to figure out the impact of ownership structure and restructuring forms.

The estimating equation in the first stage is as follows:

$$\begin{aligned}\log it(form)_{it} = \alpha \ln(dis)_t + \beta \ln(age)_{it} + \gamma \ln(emp)_{it} + \delta \ln(fem)_{it} \\ +\epsilon \ln(ret)_{it} + \varepsilon \ln(land)_{it} + \zeta dum(layoff)_{it} + \eta dum(change)_i \\ +\theta dum(allocated)_i + \omega_{it} \qquad (1.2)\end{aligned}$$

In the first equation, I regress the share structure (including insider state share, insider private share, outsider state share, and outsider private share) of firm i in year t on its distance from coast (measured by the minimum distance from firm i to Shanghai and Shenzhen), the age of firm i, total number of employment of firm i in year t, number of female workers in firm i in year t, number of retired workers of firm i in year t, the land area of firm i in year t, a dummy assuming a value of one if there is a layoff upper limit for firm i, a dummy assuming a value of one if firm i changed its industrial sector in the past, a dummy assuming a value of one if firm i maintained the allocated land-use rights during restructuring. The regression is conducted controlling the city fixed effect, year fixed effect and sector fixed effect while clustering in the (city*year) level. The same set of instruments are used in the second estimation for the restructuring form (including internal restructuring, employee shareholding, sales & leases & bankruptcy, IPO & joint venture). The results are shown in table IX.

Table IX Panel A presents ownership structure measured in percentage on instruments and panel B runs the logit model regressing restructuring forms on instruments. There are significant F-statistics for the tests of whether the instrumental variables (IVs) explain ownership structure and restructuring forms. In particular, distance to coast, age, number of retired workers, land area, allocated land-use rights, layoff upper limit are mostly significant.

Table X presents the results for the second stage of IV regression. Panel A shows that both insider state and outsider private ownership significantly increase EBIT, but the latter one increase more than the former one. IPO & Joint venture significantly improve EBIT shown in panel B. It remains consistent with the previous fixed-effect models (OLS) that restructuring effects are significantly positive for IJ

Table IX First Stage

This table presents the first stage results of Ivreg. It regresses ownership variables (measured in percentage) on instruments: ln(distance) is ln of the smaller distance from the firm to Shanghai and Shenzhen; ln(age) is ln of the firm's age; ln(emp) is ln of the total employment in the firm; ln(female) is ln of female workers; ln(retire) is ln of retired workers; ln(land) is ln of the land area occupied by the firm; Layoff limit is a dummy indicating if the firm is subject to the layoff uplimit regulation; Change the sector is a dummy indicating if the firm changed to another industrial sector in the past; allocated land is a dummy indicating if the land-use right is allocated. Regress restructuring forms (IR, ES, SLB and IJ) on instruments using logit model.

	IR	ES	SLB	IJ
ln(distance of the city to the coast)	-3.1892	1.4385	-1.1167	0.0812
	(1.38)**	(.22)***	(.16)***	(.45)
ln(age of the firm)	-6.2657	1.0331	0.3693	0.2405
	(2.20)***	(.41)**	(.26)	(.23)
ln(number of total workers)	0.5584	-1.3200	-0.5460	2.5344
	(1.03)	(.31)***	(.31)*	(.94)***
ln(number of female workers)	1.1510	-0.2250	-0.1070	-0.3983
	(.64)*	(.13)*	(.16)	(.29)
ln(number of retired workers)	4.6425	0.6296	-0.0216	-2.1535
	(1.92)**	(.23)***	(.15)	(.52)***
ln(land)	4.7349	-0.6466	0.2965	0.3171
	(2.24)**	(.07)***	(.09)***	(.20)
Layoff upper limit	.	2.0075	1.5885	.
	.	(.49)***	(.43)***	.
Change the sector	.	0.4044	-0.0839	4.8121
	.	(.36)	(.28)	(.91)***
allocated land	-5.1857	0.8110	-1.1177	1.9308
	(2.22)**	(.29)***	(.29)***	(.48)***
year fe	Yes	Yes	Yes	Yes
city fe	Yes	Yes	Yes	Yes
sector fe	Yes	Yes	Yes	Yes
Observations	170	262	262	223
Pseudo R-square	0.5875	0.2763	0.1976	0.4322
Wald-chi2	25.24***	239.67***	170.36***	76.76***

Table 1.11: Table IX: First Stage

Table X Second Stage of Instrumental Variables Regression

This table presents the IVreg results for the effects of restructuring forms on firm performance. Each restructuring form is instrumented by the same set of instrumental variables presented in table IX.

	Profitability				Liquidity			Labor		
	sales/asset	EBIT/asset	ROA	EBIT(RMB10,000)	debt/asset	Debt(RMB10,000)	Equity(RMB10,000)	wage(RMB10,000)	On-duty worker	productivity
IR*Post	-0.8509	0.0547	0.0205	123.93	0.0063	-3798.80	-403.16	33.7138	157	-1.9923
	(.41)**	(.16)	(.07)	(488.79)	(.41)	(2764.58)	(732.58)	(3392)	(267)	(5.62)
ES*Post	-0.7171	-0.0158	-0.0435	-248.68	0.1659	-5003.11	-1565.92	16.4321	-791	-2.6841
	(.50)	(.14)	(.05)	(417.17)	(.30)	(2578.09)*	(849.81)*	(1671)	(240)***	(2.30)
SLB*Post	0.9822	1.3899	0.4209	3913.79	-0.5598	-19889.33	-2924.94	110.7362	-1105	14.5867
	(2.08)	(1.41)	(.29)	(3444.19)	(1.66)	(10424.44)*	(4778.01)	(11080)	(559)*	(9.42)
IJ*Post	0.0980	0.2611	0.2588	2446.75	0.3919	-7570.01	-3143.84	-8.4812	-1171	0.4999
	(.200)	(.26)	(.11)**	(967.64)**	(.42)	(4639.91)*	(1415)**	(841)	(336)***	(1.40)
year fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
firm fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
sector fixed effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
cluster in city*year	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
observations	72	115	124	127	140	145	140	138	168	117
R-square	0.7735	.	0.3777	0.0899	0.3403	0.6287	0.8355	.	0.6413	0.6838

firms. It is shown in panel B that IJ firms enjoy a significantly positive change in ROA and EBIT. What differs with the previous fixed-effect models are the following: First, the estimated magnitudes of the increase are different among the three specifications. Take the increase in ROA for IJ firms compared to un-restructured ones for example, group fixed-effect model estimates 2%, firm fixed-effect model estimates 6%, and IV regression estimates 3%, which is closer to estimate of the group fixed-effect model. The EBIT increase for IJ firms compared to un-restructured ones is around 200 million RMB in both group fixed-effect model and IV regression. Second, the number of performance measures which are significantly improved is less under IV regression than under OLS. Under OLS, IJ firms have significant improvement in sales/asset, EBIT/asset, ROA, and EBIT, liability ratio, equity, wage, employment and productivity, while under IV regression they have significant increase in ROA, EBIT and significant decrease in debt, equity and employment. Third, the restructuring effect for SLB firms is estimated differently under the three specifications. Group fixed-effect model estimates significant improvements in SLB firms' profitability, liability and labor productivity measures; firm fixed effect model estimates insignificant improvements in SLB firms' performance except a significantly negative change in wage levels; IV regression estimates almost insignificant improvements in SLB firms' performance measures except significant decrease in debt and employment. Fourth, there are conflicting estimates of equity levels and number of on-duty workers in IJ firms under IV regression and OLS. IV regression presents significant declines in equity and employment for firms adopting IPO & Joint venture while OLS yields the opposite results. Fifth, IV regression estimates a significant decline on sales/asset for IR firms and a significant decrease on debt and equity levels for ES firms, which are not observed in the other two models.

1.8 Conclusion

The evidence presented in this paper suggests that the effects of restructuring on corporate performance, while often quite powerful, are not automatic or uniform across different types of restructuring forms or different performance measures. In

the context of the transition economy of China, the restructuring program is effective mostly in enhancing profitability of firms that undergo IPO and Joint venture that bring in outsider investors. This result is consistent both in a fixed effect model and in an instrumental variables regression model. I also observe that firms restructured in 1998 have the most pronounced improvement in firm performance including higher profitability and liquidity.

Bibliography

[1] Anderson, James H., Young Lee, and Peter Murrell. "Competition and Privatization amidst Weak Institutions: Evidence from Mongolia." Economic Inquiry, October 2000, Vol. 38, No.4: 527-549.

[2] Cao, Yuanzheng, Yingyi Qian, and Barry Weingast. "From Federalism, Chinese Style to Privatization, Chinese Style." Economics of Transition, 7(1), 1999: 103-131.

[3] Djankov, Simeon. "Ownership Structure and Enterprise Restructuring in Six Newly Independent States." Comparative Economic Studies, 41(1), Spring 1999, 75-95.

[4] Dong, Xiao-Yuan, Louis Putterman and Bulent Unel. "Privatization and Firm Performance: A Comparison between Rural and Urban Enterprises in China." Journal of Comparative Economics, forthcoming.

[5] Frydman, Roman, Cheryl Gray, Marek Hessel, and Andrzej Rapaczynski. "When Does Privatization Work? The Impact of Private Ownership on Corporate Performance in the Transition Economies." The Quarterly Journal of Ecnomics, Nov., 1999, Vol. 114, No. 4: 1153-1191.

[6] Garnaut, Ross, Ligang Song, Stoyan Tenev and Yang Yao. "A Study of Firm Restructuring in China." Washington, D.C.: The World Bank, 2003.

[7] Garnaut, Ross, Ligang Song, Stoyan Tenev and Yang Yao. "China's ownership transformation : process, outcomes, prospects." Washington, DC : World Bank, 2005.

[8] Grogger Jeffrey. "The Effects of Arrests on the Employment and Earnings of Young Men." The Quarterly Journal of Economics, CX(1995), 51-71.

[9] Holz, Carsten A. "China's industrial state-owned enterprises between profitability and bankruptcy." Singapore ; Hong Kong : World Scientific, c2003

[10] Li, Wei. "The Impact of Economic Reform on the Performance of Chinese State Enterprises, 1980-1989." Journal of Political Economy, 1997, Vol. 105(5): 1080-1106.

[11] Lin, Justin and Guofu Tan. "Policy Burdens, Accountability and the Sort Budget Constraint." American Economic Review, 1999, Vol. 89(2): 426-431.

[12] Song, Ligang and Yang Yao. "Impacts of Privatization on Firm Performance in China." Chinese Social Sciences, English edition, forthcoming.

[13] Su, Jian, and Garry Jefferson. "A theory of Decentralized Privatization: Evidence from China." Working paper, 2003. Department of Economics, Brandeis University.

[14] Weiss, Andrew, and Georgiy Nikitin. "Performance of Czech Companies by Ownership Structure." IED Discussion Paper no. 85, Boston University, May 1998.

[15] Xu, Lixin, Tian Zhu, and Yimin Lin. "Politician Control, Agency Problems, and Ownership Reform: Evidence from China." Working paper, 2003, World Bank.

[16] Yao, Yang. "Chinese Privatization: Causes and Outcomes." China and World Economy, 2005, Vol. 13(1): 66-80.

[17] Zhao, Xiao. 1999. "Competition, Public Choice and Institutional Change." CCER, Working Paper No. C1999025, Beijing University.

Chapter 2

Shanghai Surprise: Estimating the Value of Political Connections in China's Real Estate Market

2.1 Introduction

This paper blends three important themes of China's development into one piece. First, China has witnessed a real estate boom in the past decade. Domestic real estate investment over total investment reached more than 24% in 2004. Foreign investing companies have kept betting on China's real estate market. For example, Morgan Stanley tripled its investment in China property in 2006, from $1.5 billion to $4.5 billion; General Electric Real Estate entered China with a $20 million investment in *Vanke China Property Development Fund* in 2006. More than one eighth of foreign investment went to property investment from January to September in 2007. Particularly Shanghai, the showcase city of China, experiences such a boom in a spectacular way along with its double-digit GDP growth 15 years in a row. For example, In 2004 Shanghai won a slot as a host city for F-1 motor racing. Shanghai's track was described as the finest in the world by veteran racer Jackie Stewart though "no democracy could afford this." Former Shanghai Party Secretary Chen Liangyu's brother-in-law headed this $1 billion project.

This brings in the second theme: political connections. Who captures the windfall in the explosive growth? Anecdotes suggest that 40% of real estate profits go to

various government organizations. The business model founded by interconnected interest group including government officials and businessmen is called "Shanghai Inc.", coined by a wall street journal reporter, describing such political connected business as "giant construction projects got funded from public coffers; choice assets moved out of state hands in elaborate transactions; and plum contracts went to the well-connected." But how can one measure political connections? Even with such an accurate measure, how can one identify the causality from political connections to firm value? The tool to efficiently extract the value of political connections is the stock market which is supposed to quickly factor new information into security prices. This is the third theme addressing the information efficiency of China's young stock market.

To put these ingredients together organically, I will use an event study of Shanghai municipal party secretary Chen Liangyu's purge on the ground of social security scandal. This is a great case in the sense that it provides a natural experiment for the termination of political connections and thus allows me to estimate the value of political connections from the security prices of public listed real estate firms.

My paper resolves these two questions in the following ways: first, the variation of property location is exploited to measure political connections. Urbanization in China sprawls outward from the city center (Naughton, 2006). Land in the city center has higher price than the land in the periphery. It is assumed that well connected firms can get highly valued land locations. Thus the weighted average distance of all property projects of a firm in the city center capture the magnitude of political connections. This measure could not only round up the usual suspects identified by previous literature using documents of personal ties (college classmates, former lovers, etc), but also generate leads to uncover the unusual suspects which have successfully hidden behind the media coverage such as institutional ties due to the ambiguous urban property rights in the emerging land market (Naughton 2006). Furthermore, it is an objective measure with less intensive human inputs than identifying personal ties from tabloid newspaper and thus could easily be replicated. To my knowledge, this is the first study using land location of property projects to measure political

connections.

Second, a natural experiment is exploited to identify causality. The sudden removal of Chen Liangyu, Secretary of the CPC Shanghai Municipal Committee and Standing Committee Member of the Politburo of the 16th CPC Central Committee on Sept. 24, 2006, delivered a stern warning to "Shanghai Inc." from the central government and constituted a power reshuffle between central and Shanghai governments. This exogenous shock provides a unique opportunity to identify the value of political connections.

Using the above two solutions, this paper attempts to estimate the degree to which public listed firms relied on connections with Chen Linagyu for their stock market rate of return, leverage ratio, cash flow, and profitability. The research relates to a growing body of economic literature that documents a wide range of benefits provided by governments to favored firms, such as: preferential access to credit (Chiu and Joh, 2004; Cull and Xu, 2005; Johnson and Mitton, 2003; Khwaja and Mian, 2005; Fan, Rui, and Zhao, 2006); preferential treatment by government-owned enterprises (Backman, 1999; Dinc, 2005); relaxed regulatory oversight of the company in question or stiffer regulatory oversight of its rivals (Stigler, 1971; Kroszner and Stratmann, 1998; De Soto, 1989); lighter taxation (De Soto, 1989); and government bailouts of financially distressed firms (Faccio, Masulis, and McConnell, 2006). This research also relates to the literature on political faction (Shih, 2004), urban planning (Wu, 2000; Wu, 2003; Li and Wu, 2006), and emerging land markets (Zhu, 2005) in China.

The rest of the paper is organized as follows. Section II describes the event background, addresses the identification concern, and formulates the null hypothesis. Section III describes data sources. Section IV discusses the methodology of measuring political connections, and the estimation specification. Section V presents the stock price results using various regression models and case studies of firm specific ties. Section VI presents the pre- and post-event comparison on leverage ratio, cash flow, and return on asset. This section also offers evidence corroborating the change in the stock prices and documents a new pattern of corruption in equity market. To my knowledge, this is the first paper to offer evidence of this new pattern of corruption in

the corporate level of China's real estate market. Finally, section VII concludes the paper. This paper features in its three innovations: It is the first study of political connections in China's real estate market; it is also the first one to use property land location to measure political connections; it is the first one to document a new pattern of corruption in China's real estate market.

2.2 Background

On Sept 25, 2006, Chen Liangyu was sacked on the ground of the Shanghai social security fund scandal.[1] The fall of Chen, who not only ran Shanghai Municipal Party but also sat in China's ruling Politburo, was China's biggest political shakeup in more than a decade.[2] The crackdown was extraordinary in terms of its scope, strength, and strategy.

First, the crackdown discovered the black hole of massive collusions among various interest groups. Chen is the leader of the network that consists of officials in Social Security Bureau, National Statistics Bureau and State Asset Supervision and Administration Commission, along with businessmen from manufacturers, property developers, and bankers, to fund managers. Chen, his brother, wife, sons and some other relatives are also suspected of involvement in misconduct committed by a Shanghai property magnate.[3] Some of Chen's colleagues in his network are leading large firms

[1]Chen Liangyu was charged with abusing his post and protecting municipal staff-members who violated laws, in the scandal in which the head of Shanghai's Labor and Social Security Bureau provided illicit loans of 3.2 billion RMB ($ 405 million) to corporate executives from its social security program.

[2]The last case happened in 1995, when Chen Xitong, Beijing mayor, Beijing municipal party secretary and member of ruling Politburo, was targeted in the crackdown on corruption.

[3]Zhang Rongkun, chair of Shanghai Fuxi Investiment Holding Co,received 3.2 billion yuan ($405 million) to obtain the management rights to the highway between Shanghai and Hanzhou, Zhejiang province. Fuxi Investment Holding Co. was actively participating in the privatization program of Shanghai Electric Group, the largest equipment manufacturing group in China and became the

in Shanghai. Most of those firms were established by government agencies, although some had been restructured to be listed firms held by diversified shareholders.

Second, the crackdown considerably destroyed, if not completely eliminated, the well-established network in Shanghai. Chen entered Shanghai politics in 1987, when he became the deputy secretary of Huangpu District in Shanghai. He was promoted as the Deputy Secretary of the CPC Shanghai Municipal Committee in 1992 as Deng Xiaoping's "spring wind" affirmation of economic reform began to spread out from Beijing. He finally became the secretary of the CPC Shanghai Municipal Committee and Standing Committee Member of the Politburo of the 16th CPC Central Committee in 2002. Nearly 20 years in Shanghai politics and 4 years as the Party boss allow Chen to found his "Shanghai Inc." with well-developed network under his vast power.

Third, the attack of Chen was kept in confidential and thus the information leakage is a minor consideration. The annual session of the National People's Congress (NPC) and the Chinese People's Political Consultative Conference (CPPCC) is deemed as the barometer of the relationship between the center and local governments. In the fourth session of the 10th NPC and CPPCC in March 2006, there was no particular sign of the tension between Beijing and Shanghai.[4] From early August 2006, the central government's corruption crackdown resulted in arrests of lower-level officials and well-connected businessmen in Shanghai. However, observers did not think it would necessarily evolve into a top official purge. On Beijing's side, state-controlled *Xinhua News Agency* kept the corruption investigation process low key. On Shanghai's side, Chen made public appearances even on the day before his arrest.[5] His staff kept his pre-arranged schedule during the following weeks unchanged although he would no longer be able to make it due to the purge, showing that Shanghai did not know of

second largest shareholder in Shanghai Electric after it went public in Hong Kong Stock Exchange (HKSE: 2727).

[4]In this paper, unless specifically indicated, Beijing stands for the central government and Shanghai stands for the municipal government.

[5]http://www.chinavitae.com/biography/Chen_Liangyu/travel.

the arrest in advance.[6]

Given that the attack is confidential, the identification assumption, i.e., an exogenous shock, is justified. The discovery of a number of corrupt officials and connected businessmen provides a decent potential sample of connected firms for investigation. The case draws attention to the misuse of the social security fund in the real estate sector, which has seen huge profits and soaring prices especially in Shanghai. To extract the value of political connections, this paper focuses on the stock performance of publicly traded real estate firms. If political connections played a role in firms' profitability, firms connected with Chen would see an immediate loss upon the sudden termination of connections given that the substitute boss was appointed by Beijing and the establishment of new connections takes time.

2.3 Data

My sample covers all publicly traded real estate firms in China's Shanghai Stock Exchange and Shenzhen Stock Exchange. I include those who were listed before the fourth quarter of 2005 and have remained listed till now. There are 96 firms in total, of which 52 are listed in Shanghai Stock Exchange and 44 are listed in Shenzhen Stock Exchange. Among the 96 real estate firms, 19 are registered in Shanghai while 77 are registered in Beijing, Tianjin, Shenzhen, Chongqing, Chengdu, etc. Daily stock prices adjusted for dividends and splits, financial data, firm-specific information such as management profile, shareholding structure and annual reports are all obtained by *Tian Xiang Security Information Database and Analysis System*, devised by a leading investment consulting company in China.

To exploit the variation of the property developers' territory, I compile a file containing addresses of each real estate firm's property projects in Shanghai and other cities of China extracted from *Soufun China Real Estate Data Bank*.[7] I also need the ring road system in Shanghai, which is provided by *DTZ China*, an international

[6]Details see Hong Kong Takunpao news, Hong Kong, 9/25/2006, www.takungpao.com

[7]http://research.soufun.com/cia.html

property consulting company. To facilitate my construction of political connection index, I need to locate the address of each property project in Shanghai map. The Chinese version of Google Map[8] provides precise GIS information.

With regard to the whole process of Chen's purge, I check *Lexis-Nexis*, *Google*, *Wikipedia*, and *China 2006 Legal Governance Blue Book* to identify the list of arrested government officials, businessmen and Chen's family members. All sources of firm specific and personal ties are checked with firms annual reports, *China Vitae*(a biographical information database for Chinese leaders),[9] *Google*, and *Wikipedia*.

2.4 Methodology

Political connections are difficult to measure. Following methods are pursued by previous literature. Fisman (2001) in his Indonesia study identified political connections based on Suharto Dependency Index, developed by Castle Group, a leading economic consultant in Indonesia. Faccio (2006) in her cross-country study used Worldscope, Extel, and Lexis-Nexis to capture 3 sources of connections, i.e., connections with members of Parliament, a minister or head of state, and close relationship with a top official, which she admitted is ambiguous in definition. Faccio and Parsley (2006) in their cross country study proposed a new approach to valuing political connections by companies headquarter location and politician's hometown. Shih (2004) in his China faction study inferred factional ties between provincial governors and party secretaries and members of the Standing Committee of the Politburo on the basis of shared birth, school or work ties. Similar kind of ascriptive characteristics are used by Fan et al. (2006) in their study in rent seeking activities in Chinese listed firms debt structure.

As some of these authors pointed out, the estimated value of political connections is biased if I only rely on the public record of personal ties, such as former colleagues, alumni, ex-lovers, and etc. Of course these are important sources of connections which

[8]http://ditu.google.com/

[9]http://www.chinavitae.com/

could be applied to case studies but overall not an objective candidate that could be easily replicated. To address this critique, I develop a new index using land location of property projects. The idea is that more connected firms are more likely to get land use rights in the city center while less connected ones are crowded away from the center towards the periphery.

This property location index is a simple and powerful measure. It can not only "Round up the Usual Suspects" that are identified from the public records, but also the "Unusual Suspects" that have successfully hidden away from the limelight. There are some usual suspects which put Chens son in the CEO position and which granted Chen's wife a good amount of stock stakes. A low key practice could be to use Chen's lover as the middlemen to establish connections quietly without letting others know of it. My method is based on the faith that property land location is the "fingerprint" of political connections in emerging land market structured by ambiguous property rights and lack of sound auction market (Zhu, 2004).[10] Land location information involves less intensive human labor and thus more objective and easily replicated. In this sense, my measure beats the previous ones using specific personal ties. Comparing to the headquarter location devised by Faccio and Parsley (2006), my property project location is a more relevant measure of political connections in the unique institutional background of Chinas transition from government land allocation system to market-based land acquisition (Zhu, 2004).

Land location is a good proxy for political connections of real estate firms in the background of China's fiscal decentralization and emerging urban land market. On the one hand, the fiscal decentralization since 1984 transformed China's provincial and municipal governments into active players pursuing local growth and urban landscape changes. The common interests in local growth entice a reciprocal relationship

[10]A dual land market in China includes land use rights transaction through negotiation (non-transparent), auction and tender (market-based). Compared with the market of land acquisition through negotiation, the market of land acquisition by auction and tender is insignificant in term of size. In the period 1988-1999, 36.4 sq km land was allocated through land leasing of which 97.7% was by negotiation.

between the local government and business interest groups (Zhu, 2000). On the other hand, the emerging land market is structured by the ambiguous property rights characterized by rent-seeking, hasty capitalization of land rents and inadequate order in land development (Zhu, 2000). With better knowledge of the local government's urban design blueprint and more leverage in and lease negotiations and auctions, better connected real estate developers are more likely to acquire urban land in good locations. During my trip back to Shanghai, I talked with several real estate analysts and confirmed that "big" and "influential" developers hold "hot land lots" from the local government.

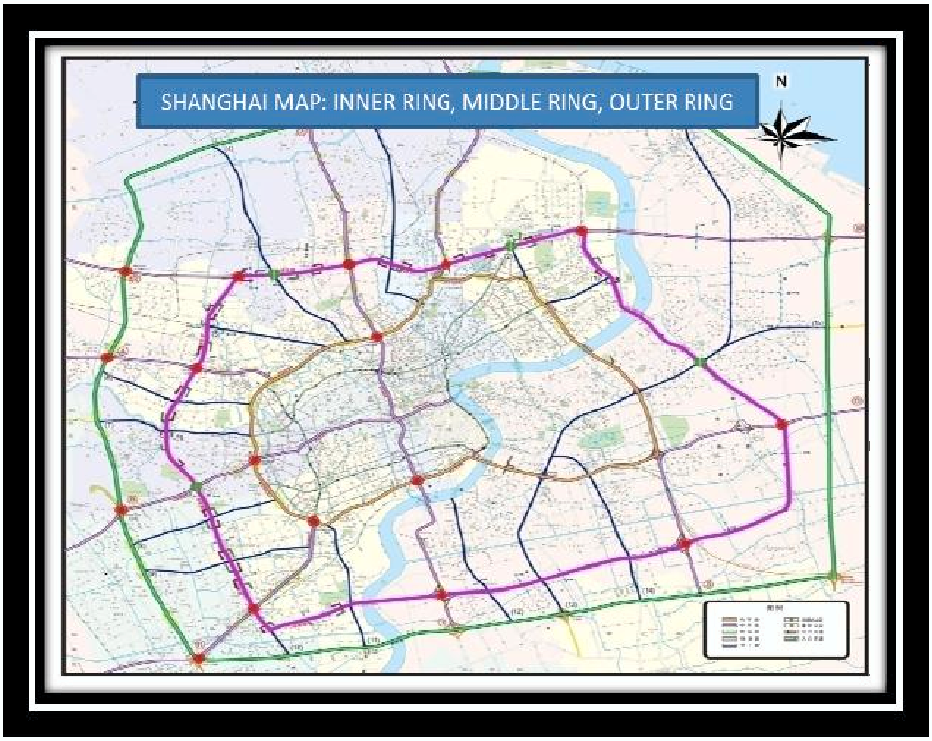
Metropolitan Shanghai is commonly divided into 4 land areas by the high way system called inner ring, middle ring and outer ring. I code the area within the inner ring as 3, between inner ring and middle ring as 2, between the middle ring and outer ring as 1, out of outer ring as 0. Figure 1 illustrates the location division and simple coding.

A firm's political connection index is the weighted average of the property land coding. Table 1 illustrates such the construction of political connection index (POL). The firm has 6 property projects, among which 4 are located within inner ring and 2 are located between inner ring and middle ring. The weighted averages include simple average (using number of the property projects as weight), area weighted average (using construction area as weight), and average price weighted average (using average sale/renting price). Hence the simple average in this case is 2.67, area weighted average is 2.55 and average price weighted is 2.81. This exercise can be repeated to all the other real estate firms. I will use simple average as the political connection index for simplicity. One reason is that there are some missing values in construction land and average prices. The second reason is that renting price should be converted into the sale price which is beyond the scope of this paper. Another concern is that price weighted may be misleading because profit matters rather than price itself.

The summary statistics of POL is presented in table 2. There are 96 public listed real estate firms in China in total, among which 52 are traded in Shanghai Stock Exchange (SHEX for short) and 44 in Shenzhen Stock Exchange (SZEX for short).

Figure 1. Shanghai Map: Inner Ring, Middle Ring, and Outer Ring

This figure presents the three-tier high way system in Shanghai, i.e., inner ring (yellow), middle ring (pink) and outer ring (green) in Shanghai. These three rings divide the city into four areas coded as 3 (within inner ring), 2(between inner and middle), 1 (between middle and outer) and 0 (out of outer). Such land coding forms the basis of political connection index.



Source: DTZ China.

Figure 2.1: Shanghai Map: Inner Ring, Middle Ring, and Outer Ring

Table 1. Construction of Political Connection Index (POL)

This table provides an example of the construction of political connection index. Political connections are measured by the simple average property project location index, construction area weighted index and average price weighted average.

Firm	Property Project	Location	Construction Area (square meter)	Average Price (yuan/square meter)
New Huangpu	New Huangpu Financial Mansion	3	35000	missing
	Ling Xiu Shang	3	5166	14000
	Pingjiang New Town	3	84503	5900
	Xueyuan Fengfan	3	15000	5500
	Pingjiang Shengshi	2	missing	1349
	Jiahua Yuan	2	114200	4800
Political connection (POL)		simple avg	area weighted avg	price weighted avg
		2.67	2.55	2.81

Sources: *China Real Estate Data Bank* provided by *Soufun China Index Academy; Google Map*.

Table 2.1: Table 1: Construction of Political Connection Index (POL)

I divide the sample into 4 different categories based on the POL score. The higher the score the firm gets, the more political connections it has. The very first row shows 8 firms get more than point 2 in SHEX and 0 such firms in SZEX. There are 8 firms which get score between 1 and 2 in SHEX and 0 in SZEX. Another 6 firms get score between 0.01 and 1 in SHEX and 3 firms fall in same score range in SZEX. Overall, firms traded in SHEX are more likely to be connected with CHEN. This table suggests three things. First, it is not surprising to discover that real estate firms tend to invest more in their own territory, which is their registration area. Actually 19 out of 52 firms traded in SHEX are registered in Shanghai, while none of the 44 firms traded in SZEX are registered in Shanghai. This observation is in line with the "home bias" argument in finance literature. Secondly, there are 9 real estate firms whose headquarters are not in Shanghai investing a good proportion of real estate projects in Shanghai and thus identified as connected firms. This point highlights how my location method differs from the headquarter measure used by Faccio & Parsley (2006). Thirdly, within the firms registered in Shanghai, there are variations

Table 2. Summary of Political Connection Index (POL)

This table presents the number of firms in various ranges of political connection scores constructed using property land locations (POL). Panel A presents number of firms listed in Shanghai Stock Exchange (SH EX) v.s. Shenzhen Exchange (SZ EX). Panel B shows the number of firms registered in Shanghai v.s. registered in other cities of China.

Panel A

POL	SH EX	SZ EX	Total
(2,3]	8	0	8
(1,2]	8	0	8
(0.01,1]	6	3	9
[0,0.01]	30	41	71
Total	52	44	96

Panel B

POL	Registered in SH	Not Registered in SH	Total
(2,3]	8	0	8
(1,2]	6	2	8
(0.01,1]	2	7	9
[0,0.01]	3	68	71
Total	19	77	96

Sources: *China Real Estate Data Bank* provided by *Soufun China Index Academy; Google Map*.

Table 2.2: Table 2: Summary of Political Connection Index (POL)

of connectedness from 0 to 3. These variations will be exploited to estimate political connections instead of a trivial region effect.

In order to implement an event study, I calculate abnormal returns (ARs) and cumulative abnormal return (CARs) as follows:

$$AR_{it} = RR_{it} - RR_{mt} \tag{2.1}$$

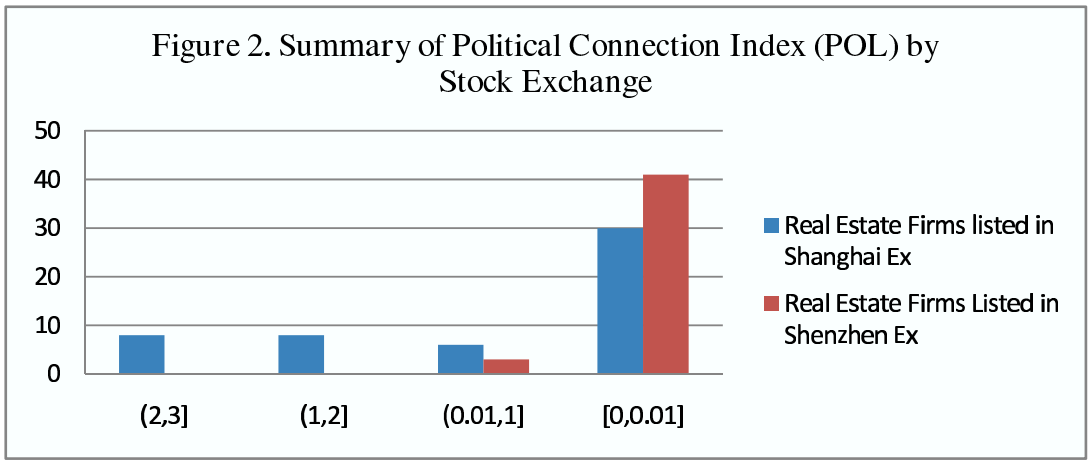


Figure 2.2: Summary of Political Connection Index (POL) by Stock Exchange

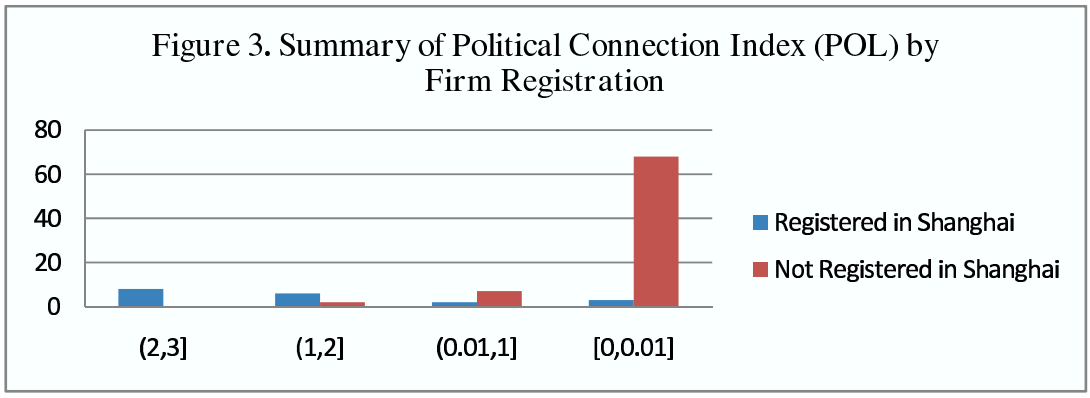


Figure 2.3: Summary of Political Connection Index (POL) by Firm Registration Location

where AR_{it} is abnormal return of stock i at time t, RR_{it} is the rate of return of stock i at time t defined as $RR_{it} = \frac{P_{it}}{P_{i(t-1)}} - 1$,RR_{mt} is the market return (Shanghai composite return or Shenzhen composite return) at time t defined as $RR_{mt} = \frac{P_{mt}}{P_{m(t-1)}} - 1$. CAR is computed as the sum of abnormal returns over the event window (τ_1, τ_2), i.e., $CAR_{it}(\tau_1, \tau_2) = \sum_{t=\tau_1}^{\tau_2} AR_{it}$.

Following the method used by Fisman (2001) and Faccio (2006), the two equations are estimated:

$$AR_{it} = \alpha + \rho_1 POL_{it} + \rho_{2t} \sum_{t=-5}^{4} Dum\_day_t + \rho_{3t} \sum_{t=-5}^{4} POL_i * Dum\_day_t + \epsilon_{it} \quad (2.2)$$

$$L_{it} = \alpha + \lambda_1 POL_{it} + \lambda_{2t} \sum_{t=-2}^{2} Dum\_quarter_t + \lambda_{3t} \sum_{t=-2}^{2} POL_i * Dum\_quarter_{it} + \epsilon_{it} \quad (2.3)$$

In the first equation, AR_{it} is the daily abnormal return of the stock i at day t. POL_i is the political connection index created by land location coding. Dum_day_t is the event dummy indicating each day within the window of [-5, +4], equal to 0 if -20 ¡= t ¡ -5 or 5 ¡= t ¡= 20. For example, $Dum\_day_{-5} = 1$ if $day = -5$.

$\rho_{3t}$is the coefficient of the interaction term and the parameter of interest. It measures the impact of political connection loss on abnormal return each day within the event window, i.e., [-5, +4], comparing to the average abnormal return within the estimating window, i.e., [-20, -4] and [5, +20].

In the second equation, L_{it} is the quarterly financial performance, such as the leverage ratio, cash flow and return on asset of stock i at time t. $Dum\_quarter_{it}$ is the quarter dummy indicating each of the four quarters of 2006 and the 1st quarter in 2007, among which 3rd quarter of 2006 is the event quarter. In this set up, $\lambda_{3t}$is the parameter of interest capturing the impact of political connection loss in each quarter during the event window comparing to the estimating window (4th quarter of 2005).

To generate a whole picture of political connections, cases of firm-specific ties will be studied in other industries. The Principal Components Analysis will also be used for robustness check.

2.5 Comparing Stocks before and after the Event

2.5.1 Normalized Price

Suppose the stock (index) price at pre-event day (9/22/06) is 100, then price on any other day relative to the event day price is called Normalized Price (NP). I use NP to capture the trend of market and stock of the most connected firm, in a setting that both the stock and the market kick off at the same point one day prior to the event day. To caution against other explanations such as corporate management threat, I have to point out that this most connected firm has no media coverage during the whole corruption investigation. Although there is no corruption involved, this firm is identified as the most connected because all its property projects are located within the Shanghai Inner Ring. So anything unusual to this firm on the event day must be solely caused by the loss of connection instead of merely a negative information response due to the arrest of management officials. If such an unusual suspect identified by the land location index in fact behaved abnormally with respect to the overall market, the power of the land location index will be verified.

If the event has no differential impact on the stock and the market, the stock should synchronize with the market and thus NP lines for both the stock and the market should be parallel. If the event has an impact specifically targeting the connected firm, we could see a break point on the event day for the connected firms stock. Figure 4 plots the NP for the most connected firm with POL=3. Figure 5 plots NP for Index. Figure 6 plots NP lines for both the connected firm and the market index.

Figure 4 shows that the stock price dropped from 100 on 9/22(previous trading day) to 93 on 9/25 (first trading day after the event) and then to 88.9 on 9/26. The decline for this stock continued till the 17th day after the event, although there are

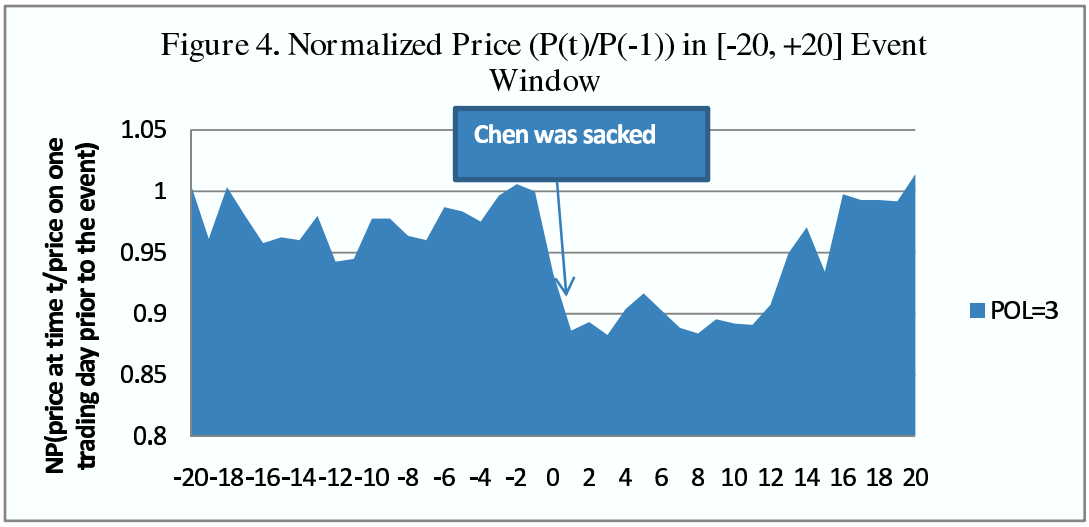


Figure 2.4: Normalized Stock Price in Event Window

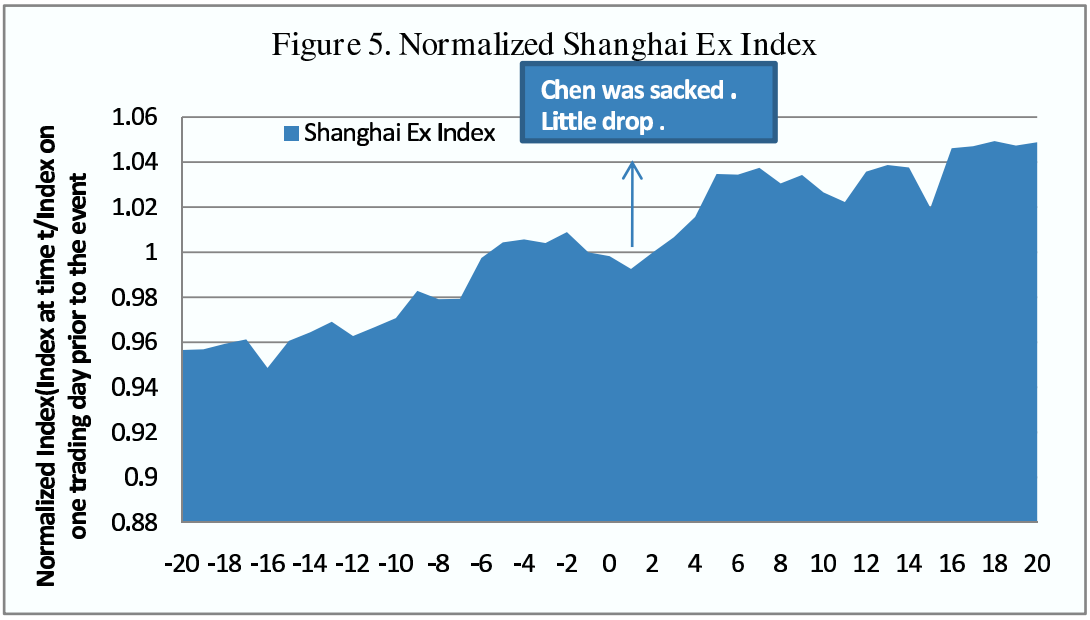


Figure 2.5: Normalized Market Index in Event Window

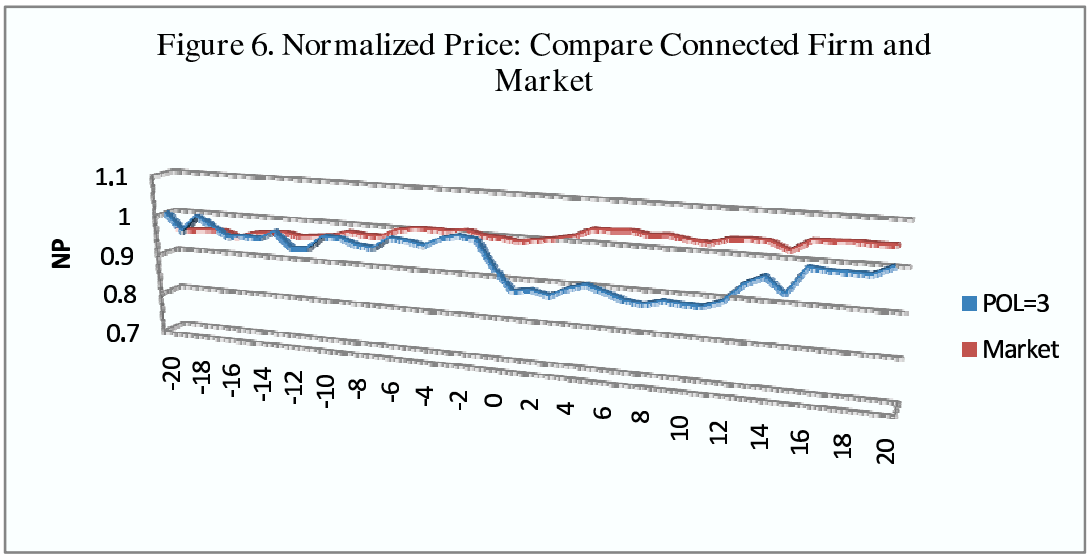


Figure 2.6: Normalized Price: Compare the Connected Firm and the Market

some small bumps during the period, including the 4th day after the event (9/29) which is the day prior to the 7-day long weekend of National Holidays. Figure 5 tells a different story for the market. Overall the market was going upward with a negligible slight drop on the event day (from 100 to 99.8), another small drop on the second trading day after the event (from 99.8 to 99.3). Figure 6 compares the NP of the stock and market index. The two lines keep more or less the same pace and shape except the break point at day 0. This means that the stock indeed behaved abnormally on the event day. Since there is not any other negative announcement on 9/25 for this firm, this suggests that the sudden drop of security price reflects the value of political connections if I assume that the stock market is efficient, i.e., once the purge was disclosed, all market participants including outsiders and insiders had factored the new information into the pricing of the stock.

2.5.2 Rate of Return

Taking the first derivative of NP, I can get the Rate of Return (RR) of both the stock and the market. Figure 7 compares the RR of the most connected firm and the market 20 days before the event and 20 days after the event. RR of the stock is

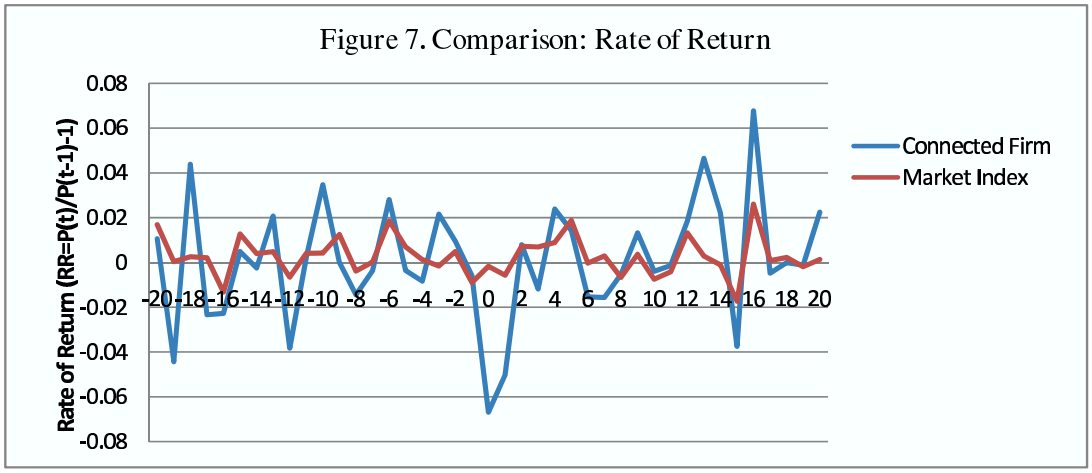


Figure 2.7: Rate of Return: Compare the Connected Firm and Market Index

-6.68%, more negative than the RR of the index -0.17% on day 0.

2.5.3 Abnormal Return

Taking the difference of RR of the stock and RR of the market, I get the Abnormal Return (AR) which is the market-adjusted rate of return. Figure 8 plots the abnormal return for the most connected firm. The abnormal return for the most connected firm is more than 6%.

2.5.4 Cumulative Abnormal Return

Summing up the abnormal return from 20 days before the event till 20 days after the event, I get the Cumulative Abnormal Returns (CARs) in the [-20,+20] window. Figure 9 plots the CARs for the most connected firm. CAR is 11.7% in the time horizon of [-20, 0], 16.2% in the window of [-20, +1] and reaches the lowest point on the 8th trading day after the event. Figure 10 plots the CARs for the most connected group (8 firms whose POL scores fall between 2 and 3) and the unconnected group (71 firms whose POL scores lie below 0.01). The two groups both have slightly positive CARs before the event although the connected group sees nearly zero CARs during the [-8, -4] window. From day 0 on, CARs of connected group dive down to the

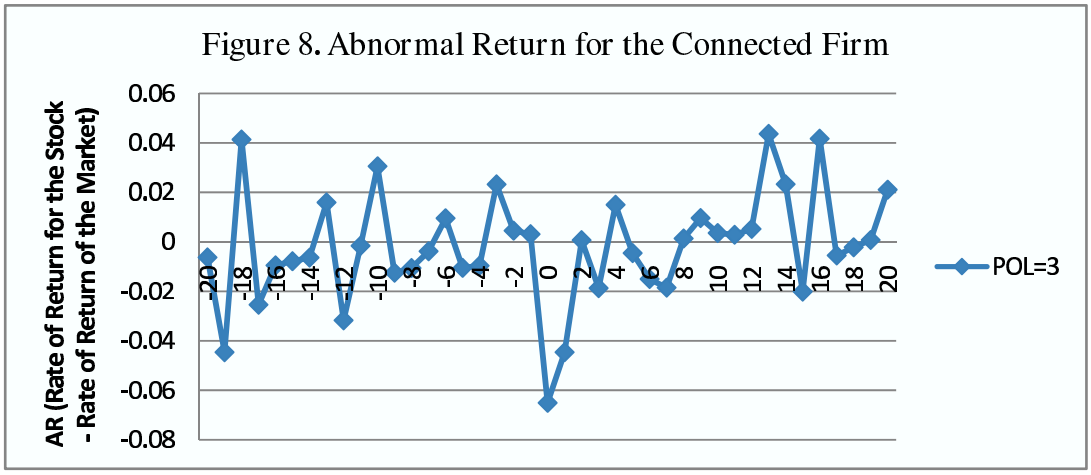
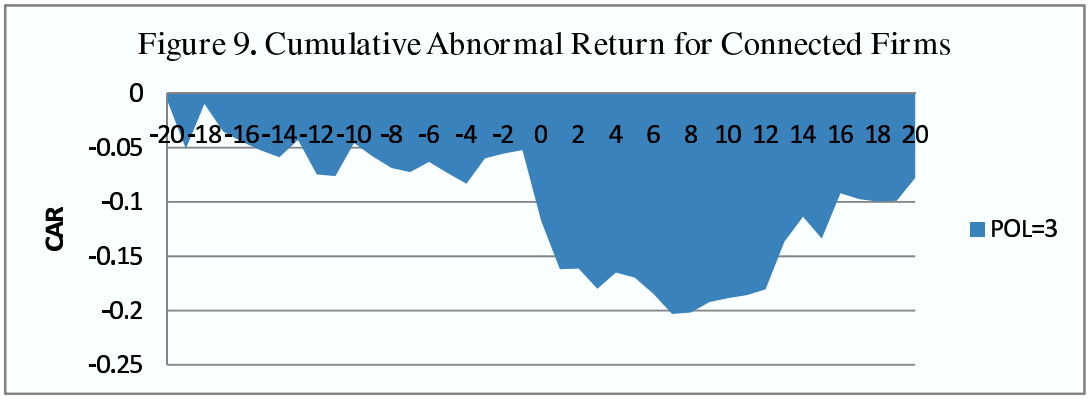


Figure 2.8: Abnormal Return for the Connected Firm

negative ones and continue declining till the end of the window, whereas unconnected group sees positive CARs till the 15th day after the event.

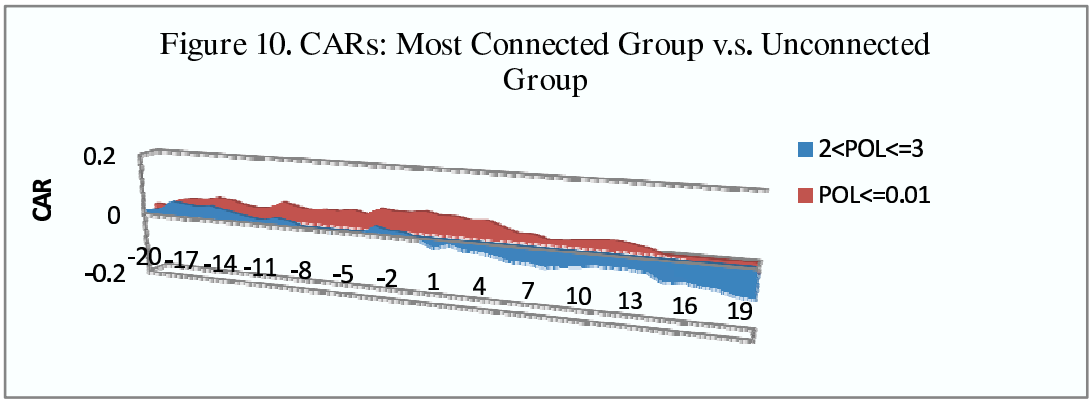
2.5.5 Difference-in-Differences Regression

As we can see, the impact is enormous for the most connected firm, i.e., POL=3. Is there such a pattern for other firms? Is there any monotonic relationship between the degree of political connectedness and the stock price response? The answers are yes for both. Figure 11 and 12 show the abnormal returns for four groups of firms with various degrees of political connectedness in the window [-20, +20] and [-5, +5] respectively. On the event day, the most connected firms and second connected firms see negative ARs while the least connected and unconnected ones see positive ARs. The extent of AR is decreasing with the degree of POL score. In Particular, the most connected group see negative ARs on day 0 (-1.8%) and day 1 (-2%), which are far more negative than ARs on any of the 20 days before the event and 15 days after the event. The second group whose POL scores fall between 1 and 2 also see negative ARs on day 0 (-0.3%) and day 1 (-1.2%), which are less negative than the ARs of the first group. However, the other two groups have mixed results. The third group whose POL scores lie between 0.01 and 1 see a positive AR on day 0 (0.3%) and a



Note: Cumulative Abnormal Return is defined as the sum of differences between the stock Rate of Return and the market Rate of Return over a certain time horizon.

Figure 2.9: Cumulative Abnormal Return for Connected Firms



Note: Cumulative Abnormal Return is defined as the sum of differences between the stock rate of return and the market rate of return over a certain time horizon.

Figure 2.10: Compare CARs: Most Connected Group and Unconnected Group

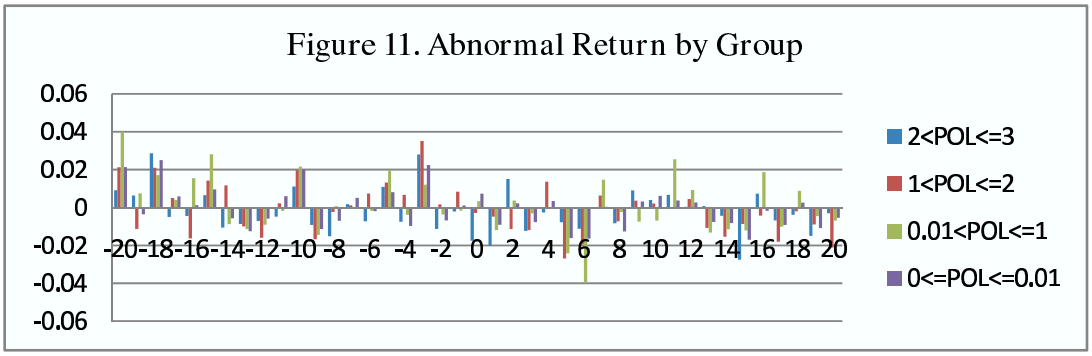


Figure 2.11: Abnormal Return by Group over [-20, +20] Event Window

negative AR on day 1 (-1%). The unconnected group sees 0.7% AR on day 0 and -0.9% AR on day 1. Take a closer look at the [-5, +5] event window, day 0 and day 1 see most negative ARs for group 1. In particular, day 0 witnesses monotonically decreasing ARs with regard to POL score.

To get a sense of the magnitude of the effect of political connections on the market adjusted rate of return (abnormal return) on the event day, I run a difference-in-differences regression using equation (2.2).

This regression is run for all 96 publicly listed real estate firms during [-20, +20] window. Table 3 shows that for all listed real estate firms, the impact of the event is significantly negative for connected firms. Specifically, one degree of political connection loss leads to 0.77% decline in AR. The pre-event ARs are all positive but insignificant except day (-3). The post-event ARs are insignificantly negative till the 4th trading day. This suggests that the event indeed surprises the connected firms which see an immediate value loss in their stock prices. The most connected firms lose their value at 2.31% of their abnormal returns (or rate of returns) compared to unconnected firms. That is to say, the market adjusts downward the valuation of the connected firms due to the loss of their connections by 2.31%. This downward adjustment is economically significant because it is in the same magnitude with the earning-price ratio in China stock markets.[11]

[11]The price-earning ratio was 33.3 in Shanghai Stock Exchange and 32.72 in Shenzhen Stock Exchange in 2006. Original data see

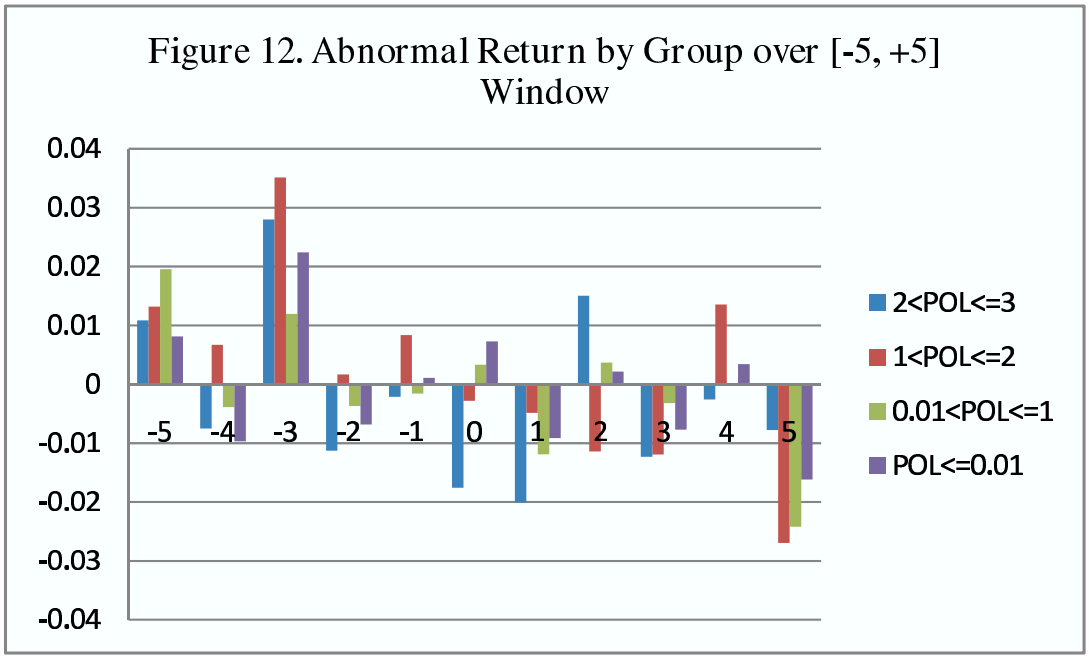


Figure 2.12: Abnormal Return by Group over [-5, +5] Event Window

My estimated value of political connection can be compared to other event studies on political connections. Fisman (2001) estimated that if the Jakarta market declined by 1% in reaction to news about Suharto's health, one might expect a firm with POL=x to drop 0.28%more than a firm with POL=x-1. The most connected firm in his sample has POL index equal to 5. So the difference of declines between the most connected firm and unconnected firm associated with 1% drop in overall market, by his estimation, should be 1.4%. If the market dropped 20% in the event of Suharto's sudden death, the return for a firm with POL=5 would have been about 28% lower than the returns for a firm with POL=0. Although my empirical model is not exactly the same as Fisman (2001), my estimate of political connections in Shanghai can be comparable to his given same parameters. In the event of Chen's purge, the overall stock market in Shanghai dropped 0.2%. My estimation says under such an onvernight shock the return for a firm with POL=3 has about 2.31% lower than the returns for a firm with POL=0. By Fisman (2001),under the same

http://www.csrc.gov.cn/n575458/n4239016/n4239073/n4847325/n4847355/n4888439.files/n4888437.pdf.

So the average earning-price ratio is about 3%.

shock the return for a firm with POL=5 would have been about 0.28% lower than the returns for a firm with POL=0 in Indonesia. Fisman et al. (2006)estimated the market valuation of personal ties to US vice president Richard Cheney is zero. My estimation lies between the value of political connections with Suharto in Indonesia and with vice president in US. The impression from these estimates is consistent with the *Corruption Perception Index* devised by *Transparency International*.[12] Knight (2006) documented that policy platforms in the Bush/Gore 2000 presidential election were capitalized into equity prices in Iowa Electronic Market: under a Bush administration, relative to a counterfactual Gore administration, Bush-favored firms are worth 3% more and Gore-favored firms are worth 6% less, implying a statistically significant differential return of 9%. Fan et al. (2006) studied the market reaction to 23 corruption cases in China and found that the cumulative abnormal return of bribing or connected firms from 10 days prior to the corruption disclosure day till the corruption disclosure day ranged from -0.4% to -0.9% depending on different samples.

There are some concerns about this result. First, there may be some firms whose management/board members had been involved in the illegal practice and thus were facing the litigation threat upon Chen's purge. I call these firms as target firms. The estimated value of political connections on these firms is contaminated by the impact of litigation threat. I need to clarify the difference between connected firms and target firms. The former one is defined according to property land location (POL) while the latter one is the firm whose management/board members were arrested during the Shanghai Corruption Investigation (from 7/24/2006 to 7/26/2007). Fortunately only 2 firms in the connected groups are the target firms whose current/former board/management members were arrested. The regression result is similar when I drop these two target firms.

Second, the result could be driven by the expectation that Shanghai will face greater uncertainty or less government expenditure after the event. Table 4 presents

[12]The higher the CPI score is, the less corruption perception is. 2007 CPI score for US is 7.2, for China is 3.5, and for Indonesia is 2.3. US ranks 20, China ranks 72, and Indonesia ranks 143. CPI table sees here http://www.transparency.org/policy_research/surveys_indices/cpi/2007

Table 3. Effect of Political Connections on Market Adjusted Rate of Return (Abnormal Return)

This table presents the coefficients of interaction terms in difference-in-differences regression. The coefficients estimates the impact of the event on the market adjusted rate of return (i.e., abnormal return) of political connected firms on daily basis over the [-5, +4] event window. Since the event day 9-24 is Sunday, the following business day9-25 is taken as day 0. Time horizon is [-20, +20]. POL is the political connection index.

	Coefficient	t-statistics	Calendar Date
POL*DAY(-5)	0.0016	0.53	9-18
POL*DAY(-4)	0.0038	1.25	9-19
POL*DAY(-3)	0.0054*	1.75	9-20
POL*DAY(-2)	0.0008	0.25	9-21
POL*DAY(-1)	0.0007	0.24	9-22
POL*DAY0	**-0.0077***	**-2.5***	**9-25**
POL*DAY1	-0.0025	-0.8	9-26
POL*DAY2	0.0015	0.5	9-27
POL*DAY3	-0.0015	-0.48	9-28
POL*DAY4	0.0006	0.2	9-29
Obs	3936		
R-square	0.0391		

Note: t-statistics are presented for significance tests. **significantly different from 0 at the 5-percent level.

Sources: Property location data are from China Real Estate Data Bank provided by Soufun China Index Academy. Stock prices are from Tian Xiang Security Information Database and Analysis System.

Table 2.3: Table 3: Effects of Political Connections on Abnormal Return

some evidence to weaken these alternative interpretations. Panel A shows that for the 19 firms registered in Shanghai, although overall have negative CARs over [-1, +1], [-2, +2] and [-4, +4] windows, it is important to note that there are still some firms have positive CARs during the same event windows. This weakens the region effect story. To rule out the increase in uncertainty story, I compare the standard deviation of returns for 19 Shanghai firms and 77 non-Shanghai firms 60 days before and 60 days after the event. In particular, for each firm in the sample, I compute the standard deviation of the daily (raw) returns for the window starting 60 days prior to the event, and ending one day before the event. This represents the pre-event volatility. I then compute, the standard deviation of returns over the window starting one day after the event and ending 60 days after. This is called post-event volatility. An increase in post-event volatility comparing to Non-Shanghai firms would lend support to (though not prove) the uncertainty story. In fact, I find that the average pre-event volatility is 0.0277 for Shanghai firms and 0.0294 for Non-Shanghai firms. The average post-event volatility is 0.0252 for Shanghai firms and 0.0401 for Non-Shanghai firms. These numbers look very similar; if anything, volatility has declined slightly for Shanghai and increase mildly for Non-Shanghai firms. The median post-volatility increases more in Non-Shanghai firms than in Shanghai firms.

To provide more explicit evidence, I run the same DID regression to exploit the variation within the Shanghai sample. If Shanghai region effect or general instability drives the stock decline, then the previously estimated value of political connection is biased away from zero. If the estimated coefficient of using only Shanghai sample becomes insignificant or smaller than the previous one, this would lend evidence to the alternatives. In fact, as shown in table 5, the estimated value of political connections using Shanghai sample is still significant at the 5% level and slightly bigger (0.94%) than the one estimated using all real estate firms (0.77%). I therefore conclude that the drop in prices I document is not the effect of an increase in Shanghai regional instability.

Table 4. Robustness Checks for Alternative Explanations

This table checks if the price drop is driven by Shanghai region effect or Shanghai Instability. Panel A presents cumulative abnormal return (CARs), calculated by summing the difference between the firm's stock return and the return of the market over the event window beginning 1(/2/4) day(s) prior to the event and 1 (/2/4) day(s) after the event . Panel B presents pre- and post-event volatilities (defined as) for Shanghai and Non-Shanghai firms.

Panel A: CARs around the Event for Shanghai Sample

Event Window	[-1, +1]	[-2,+2]	[-4,+4]
Mean	-2.27%	-2.89%	-0.61%
p-value	0.05	0.01	0.75
Median	-2.53%	-3.52%	2.66%
sign test p-value	0.02	0.06	0.36
negative CAR%	79%	74%	73%
No. of obs	19	19	19

Panel B: Volatilities for Shanghai and Non-Shanghai Stocks

	Window	Registered in SH	Not Registered in SH
Mean	[-60,-1]	0.0277	0.0294
	[1, +60]	0.0252	0.0401
Median	[-60,1]	0.0226	0.0252
	[+1, +60]	0.0238	0.0439
Obs		19	77

Sources: Stock prices are from Tian Xiang Security Information Database and Analysis System.

Table 2.4: Table 4: Robustness Checks of Alternative Explanations

Table 5. Effect of Political Connections on Market Adjusted Rate of Return (Abnormal Return) for the Shanghai Sample

This table presents the coefficients of interaction terms in difference-in-differences regression for real estate firms registered in Shanghai. The coefficients estimates the impact of the event on the value of political connected firms on daily basis over the [-5, +4] event window. Since the event day 9-24 is Sunday, the following business day9-25 is taken as day 0. Time horizon is [-20, +20]. POL is the political connection index.

	Coefficient	t-statistics	Calendar Date
POL*DAY(-5)	0.0008	0.23	9-18
POL*DAY(-4)	-0.0029	-0.66	9-19
POL*DAY(-3)	0.0009	0.20	9-20
POL*DAY(-2)	-0.0015	0.25	9-21
POL*DAY(-1)	0.0028	0.64	9-22
POL*DAY0	**-0.0094****	**-2.12****	**9-25**
POL*DAY1	-0.0011	-0.24	9-26
POL*DAY2	0.0053	-1.19	9-27
POL*DAY3	-0.0060	-1.36	9-28
POL*DAY4	-0.0030	-0.67	9-29
Obs	779		
R-square	0.2479		

Note: t-statistics are presented for significance tests. **significantly different from 0 at the 5-percent level.

Sources: Property location data are from China Real Estate Data Bank provided by Soufun China Index Academy. Stock prices are from Tian Xiang Security Information Database and Analysis System.

Table 2.5: Table 5: Effect of Political Connections on Abnormal Return for Shanghai Sample

2.5.6 Principal Factor Analysis

So far property land location works well in explaining the loss of value for real estate firms. I want to move even farther by including some traditional-recipe variables that help to identify connections. The 6 variables are: POL (as defined in previous section), dummy indicating if Chen's ex-colleague stands on Board or Management, dummy indicating if the firm used to be SOE, dummy indicating if the firm has connection with corrupt official,[13] dummy indicating if the firm receives social security loans, dummy indicating if Chens family members are involved in the firms business, financial analysts' coverage of land banking.[14] To efficiently simplify the data by removing multicollinearity and seeking underlying unobservable variables that are reflected in the observed variables, Principal Factor Analysis (PFA) approach is used. Table 6 presents the eigenvalues, individual explanatory proportion and cumulative explanatory proportion of the 6 factors. I use Kaiser Criterion (Kaiser, 1960) to decide the number of retaining factors. The first principal factor alone explains over 58% of the six variables combined variance. The first two factors have eigenvalues greater than 1 and explain nearly 80% of the six variables' combined variance. The unimportant 3rd through 6th principal factors will be disregarded in subsequent analysis.

Table 7 is the factor loading matrix, where variables with large loading (¿0.5) for a given factor are highlighted in bold. All of the 6 variables have more than 0.5 loading on factor 1 while half of them have more than 0.5 loading on factor 2. Specifically property land location has more than 0.88 loading on f1. Dummy indicating corrupt official has more loading on f2 (0.58) than f1 (0.51). Former SOE and media coverage of land banking practice have same loadings because they are highly correlated. I interpret factor 1 as the main indicator of institutional ties while factor 2 as the corruption ties. As clarified before, political connectedness has much

[13]The list of corrupt officials during this event is available in 2006 China Legal Governance Blue Book.

[14]In anticipation of future development, investors and city, county or state governments may purchase and hold land that is vacant, rural or underutilized at a relative bargain before its value skyrockets once it eventually falls in the path of development. This practice is called land banking.

Table 6. Principal Factor Analysis

This table presents the eigenvalues, individual explanatory proportion and cumulative explanatory proportion of the 6 principal factors. The original 6 variables are: POL (as defined in previous section), dummy indicating if Chen's ex-colleague stands on Board or Management, dummy indicating if the firm used to be SOE, dummy indicating if the firm has connection with corrupt official, dummy indicating if the firm receives social security loans, dummy indicating if Chen's family members are involved in the firm's business, media coverage of land banking . To efficiently simplify the data by removing multicollinearity and seeking underlying unobservable variables that are reflected in the observed variables, Principal Factor Analysis (PFA) approach is used.

Components	Eigenvalue	Proportion	Cumulative
Factor1	3.5091	0.5849	0.5849
Factor2	1.2334	0.2056	0.7904
Factor3	0.6207	0.1034	0.8939
Factor4	0.4938	0.0823	0.9762
Factor5	0.1431	0.0238	1.0000
Factor6	0.0000	0.0000	1.0000

Sources: Soufun China Real Estate Data Bank, Google Map, ChinaVitae, Lexis-Nexis, Google, Wikipedia, and China 2006 Legal Governance Blue Book.

Table 2.6: Table 6: Principal Factor Analysis

Table 7. Factor Loadings

This table presents the factor loadings of the original 6 variables after varimax rotation.

Variable	Factor 1	Factor 2	Uniqueness
land location	**0.8824**	0.1898	0.1853
former colleague	**0.8081**	0.3300	0.2380
Connected with Corrupt Official	**0.5145**	**0.5804**	0.3984
Receive Social Security Loans	**0.7336**	0.2692	0.3894
Former SOE	**0.7983**	**-0.5827**	0.0232
news coverage of land banking practice	**0.7983**	**-0.5827**	0.0232

Sources: Soufun China Real Estate Data Bank, Google Map, ChinaVitae, Lexis-Nexis, Google, Wikipedia, and China 2006 Legal Governance Blue Book.

Table 2.7: Table 7: Factor Loadings

broader meaning than those having been caught. Individual corruption is a minor part of political connections compared with the large and interconnected groups of insiders who divert resources from the broader public interest to their collective and institutional interest (Naughton, 2006). In this sense, I will run a regression using factor 1(F1) as the indicator of political connections while keep factor 2 (F2) as a control variable.

In order to facilitate comparison with previous results using POL from 0 to 3, I further standardize the F1 factor scores assigned to each firm along a 0 to 3 scale. Suppose X_i represents the F1 factor score for the ith firm. I calculate the standardized F1 factor score for the ith firm using the following formula, where X_{max} is the highest F1 score in the sample and X_{min} is the lowest F1 score in the sample.

$$StandardizedScore = \frac{X_i - Xmin}{X_{max} - X_{min}} * 3 \tag{2.4}$$

Regression results are shown in table 8. Without controlling the corruption factor (F2), one degree loss of political connections leads to significant loss of 1.19% market-adjusted rate of return on day 0. When F2 is controlled, the value loss reduced to 1% but still significant at 5% level. These numbers are in the same magnitude with the previous ones using POL.

Table 8. Estimating the Effect of Political Connections on Abnormal Return Using Factor Scores

This table presents the coefficients of interaction terms in difference-in-differences regression using standardized first principal factor scores (F1, from 0 to 3). F2 is the second principal factor score indicating residual event information. Panel A presents results without controlling F2. Panel B shows results with F2 as a control variable. The coefficients estimates the impact of the event on the value of political connected firms on daily basis over the (-5,+4) event window. Since the event day 9-24 is Sunday, the following business day9-25 is taken as day 0. Time horizon is [-20, +20].

Panel A: Without controlling F2

	Coefficient	t-statistics	Calendar Date
F1*DAY(-5)	-0.0019	-0.36	9-18
F1*DAY(-4)	-0.0027	-0.51	9-19
F1*DAY(-3)	0.0049	0.91	9-20
F1*DAY(-2)	-0.0043	-0.80	9-21
F1*DAY(-1)	0.0029	0.53	9-22
F1*DAY0	**-.01191****	**-2.20****	**9-25**
F1*DAY1	-0.0043	-0.79	9-26
F1*DAY2	-0.0042	-0.79	9-27
F1*DAY3	-0.0034	-0.63	9-28
F1*DAY4	-0.0039	-0.74	9-29
Obs	3936		
R-square	0.0440		

Note: t-statistics are presented for significance tests. **significantly different from 0 at the 5-percent level.

(Continued on next page)

Table 8. Estimating the Effect of Political Connections on Abnormal Return Using Factor Scores

(continued from previous page)

Panel B: Controlling F2

	Coefficient	t-statistics	Calendar Date
F1*DAY(-5)	0.0000	0	9-18
F1*DAY(-4)	-0.0008	-0.19	9-19
F1*DAY(-3)	0.0069*	1.65*	9-20
F1*DAY(-2)	-0.0024	-0.57	9-21
F1*DAY(-1)	0.0048	1.15	9-22
F1*DAY0	**-0.0100****	**-2.39****	**9-25**
F1*DAY1	-0.0023	-0.56	9-26
F1*DAY2	-0.0023	-0.56	9-27
F1*DAY3	-0.0014	-0.34	9-28
F1*DAY4	-0.0020	-0.49	9-29
Obs	3936		
R-square	0.0380		

Note: t-statistics are presented for significance tests. *significantly difference from 0 at 10-percent level. **significantly different from 0 at the 5-percent level.

Sources: Property location data are from China Real Estate Data Bank provided by Soufun China Index Academy. Stock prices are from Tian Xiang Security Information Database and Analysis System. Google Map; ChinaVitae; Lexis-Nexis, Google, Wikipedia, and China 2006 Legal Governance Blue Book.

Table 2.8: Table 8: Effects of Political Connections on Abnormal Return using Standardized Factor Scores

2.5.7 Case Studies on Firm-specific Ties

Although property land location provides circumstantial evidence of political connections in the real estate industry, it has limitation in explaining political connections in other industries such as banking and textile in which property locations do not play a significant role in determining political connections. However powerful property land location is in explaining economic loss of connected firms, at end of the day people still want to make sure that there indeed exist some substantive ties for these losers on the day 0. To address these two concerns, I will use case studies on firm-specific ties. Table 9 lists 10 publicly listed firms with personal ties with Chen in various industries, among which 6 are in the real estate industry, 1 in banking, 1 in manufacturing, 1 in construction and 1 in media. Indeed these connected firms lose value in terms of rate of return. The firm who puts Chen's son in the CEO position in its subsidiary lose 7% rate of return in [-1, 0] window and 6% in [-1, +3] window. Pudong development bank which is the custodian of social security fund lose 2.82% in [-1,0] window and 4.5% in [-1,+3] window. For real estate firms, 1 firm (New Huangpu) has arrested Board Chair, 4 firms have former government officials on board, and 1 firm is connected with Chen's wife. As I emphasized before, connected firms must be distinguished from target firms. As long as the firm is not targeted by the corruption investigation in Shanghai between 7/24/2006 to 7/26/2007, it is called connected firm although it has political connections with Chen. The rate of return decline in these connected yet untargeted firms supports the argument that the value loss is not only attributable to the corruption investigations per se, but also due to the lost connections with Chen.

2.6 Financial Results

The empirical evidence on the benefits of political connections indicates that, at least in some countries, political connected firms have preferential access to debt financing. Evidence of greater access to debt financing is, for example, reported for Malaysia (Johnson and Mitton, 2003), China (Cull and Xu, 2003; Fan, Rui,

Table 9. Firm-Specific Ties: Case Studies

This table presents 10 cases of firm-specific ties in the real estate, manufacturing, banking, construction and comprehensive sectors. Rate of Return in [-1, 0] and [-1, 2] event windows for firms and market index are calculated.

Specific Ties	Industry	RR in [-1,0]	RR in [-1,2]
Huawen(Chen's son,Chen Weili)	Comprehensive	-7%	-5.84%
Shanghai Real Estate Co.LTD (Cai Laixing,chair,former gvnmt official)	Real Estate	-6.66%	-11.20%
Zhonghua Co.(Zhu Shengjie,chair,former SH Housing Bureau official)	Real Estate	-4.80%	-3.92%
Shanghai Electric(Wang Chengming,Han Guozhang, corrupt official)	Manufacturing	-3.60%	-4.87%
Hainiao Development(Chen's wife large shareholding)	Real Estate	-3.40%	-5.38%
Shanghai Pudong Development Bank(custodian of Social Security fund)	Banking	-2.82%	-4.50%
Waigao Bridge(Zhang Guanming, former gvnmt official)	Real Estate	-2.20%	-2.36%
Huning Highway(Zhang Rongkun,businessman connected with Zhu and Chen)	Construction	-1.50%	-3.13%
Lujiazui(Yang Xiaoming, chair, ex-pudong dvlpmt bureau official)	Real Estate	-1.09%	-0.10%
New Huangpu(Wu Minglie, Wang Zheng, corrupt)	Real Estate	-0.21%	-3.65%
Commercial Index		0.50%	0.23%
Shanghai Stock Ex Index		-0.17%	-0.91%

Sources: Lexis-Nexis, Google, Wikipedia, and China 2006 Legal Governance Blue Book

Table 2.9: Table 9: Firm-specific Ties: Case Studies

and Zhao, 2006), and Pakistan (Khwaja and Mian, 2005). A second major piece of evidence is that connected firms receive preferential treatment in the competition for government contracts, relaxed government regulatory oversight of the company in question or stiffer regulatory of its rivals (Agrawal and Knoeber, 2001, Stigler, 1971, Kroszner and Stratmann, 1998, and De Soto, 1989). If it is true that the drop in price we observe at the time of Chen's purge reflects the interruption of benefits, then it makes sense to compare proxies for these benefits of connected firms before and after the event. I will focus on three sets of financial data. The first set of variables is on leverage including total liability over total asset (L/A), current liability over total asset (CL/A), and long-term debt over total asset (LD/A). The second set of variable is cash flow, including cash flow from operating activities (CFO), cash flow from investing activities (CFI) and cash flow from financing activities (CFF). The third group of variable includes return on asset (ROA). Results are reported in table 10. The event occurred at the end of 3rd quarter of 2006. Thus the first three quarters are pre-event period and the 4th quarter of 2006 and 1st quarter of 2007 are post-event period.

Table 10. Effect of Political Connections on Corporate Benefits

This table compares proxies for benefits of connected firms before and after the event. I focus on three sets of financial data. The first set of variables is on leverage including total liability over total asset (L/A), current liability over total asset (CL/A), and long-term debt over total asset (LD/A). The second set of variable is cash flow, including cash flow from operating activities (CFO), cash flow from investing activities (CFI) and cash flow from financing activities (CFF). The third group of variable includes return on asset (ROA). The purge occurred at end of the 3rd quarter of 2006.

	L/A	CL/A	LD/A	CFO/A	CFI/A	CFF/A	ROA
POL	-0.1080	-0.0898	-0.0263	0.0061	0.0030	-0.0047	0.0013
	(-2.29)**	(-1.67)*	(-2.47)**	(0.89)	(0.50)	(-0.57)	(0.47)
POL*(Q1_06)	-0.0034	-0.0041	0.0042				
	(-0.02)	(-0.03)	(0.23)				
POL*(Q2_06)	-0.0169	-0.0181	0.0043	-0.0197	0.0045	0.0031	0.0007
	(-0.11)	(-0.12)	(0.24)	(-2.02)**	(0.52)	(0.27)	(0.17)
POL*(Q3_06)	-0.0362	-0.0356	0.0040	-0.001	-0.0014	-0.0118	-0.0005
	(-0.24)	(-0.23)	(0.22)	(-0.10)	(-0.16)	(-1.01)	(-0.13)
POL*(Q4_06)	0.0171	0.0153	0.0026	0.0041	-0.0028	-0.0066	-0.0050
	(0.11)	(0.10)	(0.15)	(0.42)	(-0.33)	(-0.56)	(-0.12)
POL*(Q1_07)	0.0212	0.0154	0.0053	-0.0104	-0.0034	0.0040	-0.0012
	(0.14)	(0.10)	(0.29)	(-1.08)	(-0.39)	(0.34)	(-0.30)
R-sqaure	0.0087	0.0089	0.0331	0.0275	0.0090	0.0224	0.0167
obs	576	576	576	480	480	480	480

Note: t-statistics are presented for significance tests. *significantly difference from 0 at 10-percent level. **significantly different from 0 at the 5-percent level.

Sources: Property location data are from China Real Estate Data Bank and Google Map. Financial data are from Tian Xiang Security Information Database and Analysis System.

Table 2.10: Table 10: Effects of Political Connections on Corporate Benefits

2.6.1 Leverage Ratio

Contrary to the previous findings on rent-seeking activities in debt-financing (Cull and Xu, 2005; Fan, Rui and Zhao, 2006), I did NOT find any systematic decrease of leverage ratios upon the loss of connection. Moreover, I find that in the absence of the event, political connected firms have less leverage ratio than normal firms. When I take a closer look at the data, I find 9 of the 25 connected firms have zero debt from the fourth quarter of 2005 till the fourth quarter of 2006. I interpret these counter-intuitive observations as a result of new pattern of corruption in China's real estate sector. Since debt financing in the real estate investment has been strictly restricted by the Central government since 2005, firms have to find alternative low-cost financing channels other than bank loans. Social security loans which demand the same or even lower interest with bank loans[15] are the top choice for starving real estate firms. At local level, Social Security Fund is controlled by the local government entity called Labor and Social Security Bureau. For example, Shanghai Social Security Fund is controlled by Shanghai Labor and Social Security Bureau. Often a government designated bank acts as the custodian of the Social Security Fund. In the case of Shanghai, Pudong Development Bank is the custodian bank. Social Security Fund can only be invested in bonds according to China's Regulation. But in practice Social Security Loans are channeled to the real estate sector through "Entrustment Loans Model," in which bank acts as an agent of "entrusted" funds from a depositor (Social Security Bureau) and on-lends the funds to borrower designated by the Principal. If the firm is connected with Social Security Bureau official, it stands a chance to get such a loan through the "entrustment loans model."

I will take a case to explain how connections operate in channeling low-cost social security loans to the real estate industry. Balance sheet items for Shanghai New Huang Pu Co., Ltd (NHP, POL=2.67) from the fourth quarter of 2005 to the first quarter of 2007 are shown in table 11.

It has zero debt financial structure throughout 2006 and suddenly increases RMB300

[15]For example, the interest rate of a 5 year social security loan is 5.8%, while that of a 5 year bank loan is 6.8% in 2006.

Table 11. Leverage: Case Study

This table presents total asset, current liability, short-term debt, long-term debt, total liability, and total equity of Shanghai New Huangpu Real Estate Co., Ltd., from its 2006/2007 quarterly reports, 2006 semi-annual report and 2005/2006 annual reports. The event occurred at the end of 3q/06. Short-term and long-term debts increase after the event.

	4q/05	1q/06	2q/06	3q/06	4q/06	1q/07
Asset	2,564,930,476	2,804,033,995	2,815,994,650	2,832,284,715	3,068,201,051	3,293,308,433
Current liability	278,505,307	499,049,015	480,962,043	478,477,561	725,727,706	617,717,465
Short term debt	0	0	0	0	0	150,000,000
Long term debt	0	0	0	0	0	300,000,000
Long term payables	0	0	0	0	0	0
Liability	278,505,307	499,049,015	480,962,043	478,477,561	725,727,706	917,717,465
Equity	2,286,425,169	2,304,984,980	2,335,032,607	2,353,807,154	2,342,473,345	2,375,590,968

Source: Tian Xiang Security Information Database and Analysis System.

Table 2.11: Table 11: Leverage: a Case Study

million long-term debts and RMB150 million short-term debts. The firm disclosed a major state-asset transaction in its 2005 annual report. On 12/22/2005, Shanghai State Asset Supervision and Administration Commission (SH SASAC), the largest shareholder of NHP, signed the "Share Transfer Protocol" with Shanghai New Hua Wen Investment Co., Ltd (SH NHW), which agrees on the acquisition of 18.18% of NHPs total shares. This protocol was approved by China Security Regulatory Commission on 3/22/2006. Since then, SH NHW replaced SH SASAC as the largest shareholder. The shareholding structures of NHP before and after the asset transfer are shown in figure 13.

SH NHW is the subsidiary firm of China New Hua Wen (China NHW). So the ultimate control party of NHP is China NHW. Figure 14 shows this relationship. Why do these two come together? Is there anything to do with Chen? The quick answer is YES. NHP, as the real estate firm based in Huangpu District, the base of Chen's power, is a strategic investment target for China NHW who was ambitious in Shanghai

Figure 13. State Asset Transfer: A Case Study

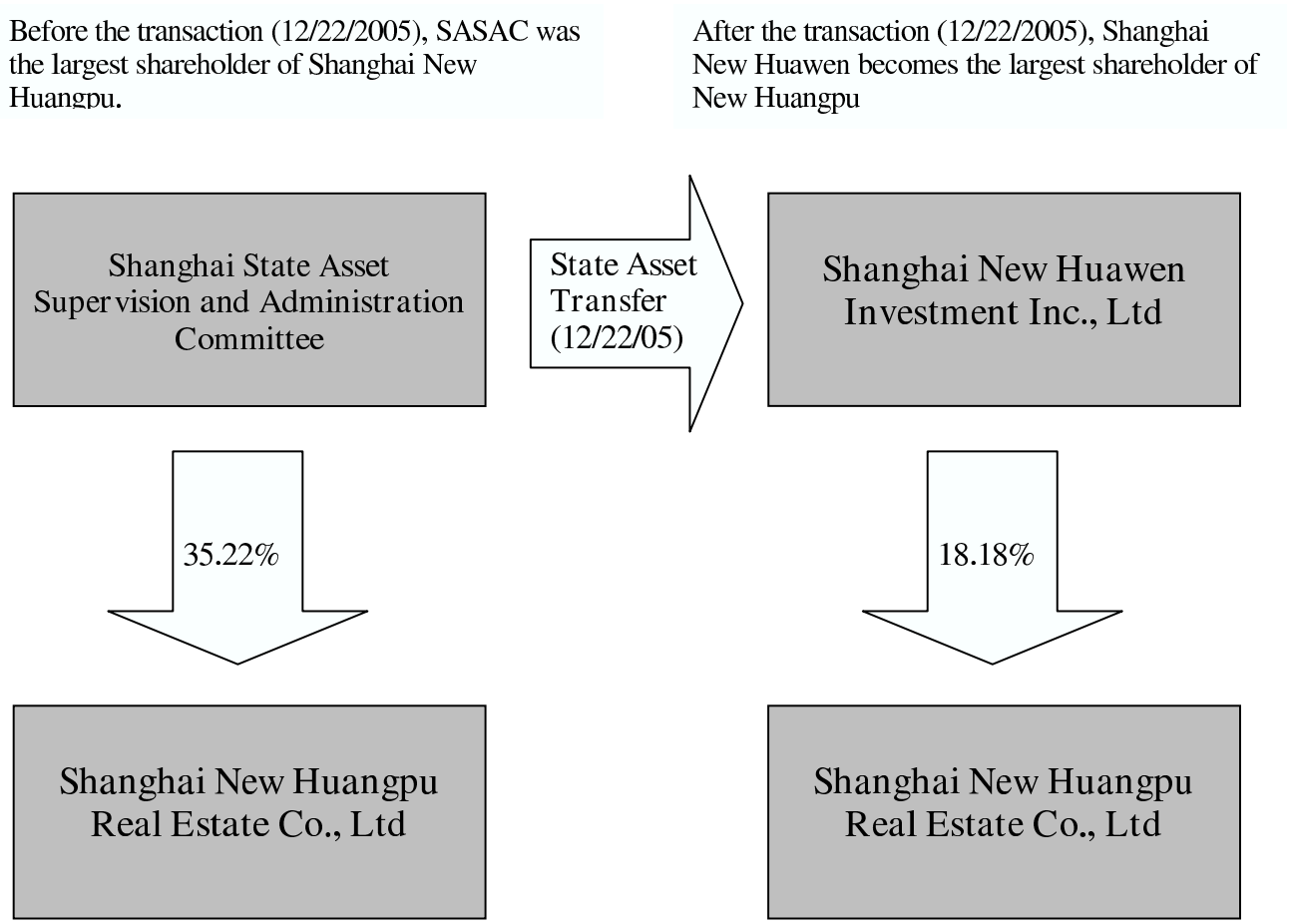


Figure 2.13: State Asset Transfer: a Case Study

market but lost several opportunities due to the absence of strong connections.[16] Obviously China NHW is trying hard to be connected with Chen. Such a connection is established from the fact that Chen's son Chen Weili stands as the CEO of China NHW's subsidiary firm. Due to the connections with Chen and the head of Shanghai Labor and Social Security Bureau, China NHW manages to get RMB800 million social security entrustment loans, half of which are used to finance the asset acquisition of NHP. Through state asset transfer, the social security loan flows into the NHP.

This explains why NHP has zero debt and still has enough cash to take active investment activities . But why does NHP suddenly have RMB300 million increase in long-term debt and RMB150 million increase in short-term debt in the first quarter of 2007. Remember the social security loan NHP got in 2006 through asset transfer is RMB425 million, the future value of the loan is exactly RMB450 million given that the interest rate is 6%. It suggests that at least NHP signals in its financial reports that it is going to pay back the "sin money."

2.6.2 Cash Flow and Return on Asset

Column (4), (5), and (6) show the impacts of the event on cash flow from operating activities, cash flow from investing activities and cash flow from financing activities. I do not detect any significant difference between connected and unconnected firms upon the termination of connections. In terms of return on asset, all results remain insignificant. The insignificant impacts on cash flow and return on asset suggest that the event does not trigger any systematic operational cut-off for connected firms, such as the take back of land by the government.

2.7 Conclusion

This study provides direct evidence of political connections in the Chinese real estate firms. In the context of China's fiscal decentralization and emerging urban land

[16]Details see Cai Jing, 2006.

Figure 14. Social Security Loan: A Case Study.

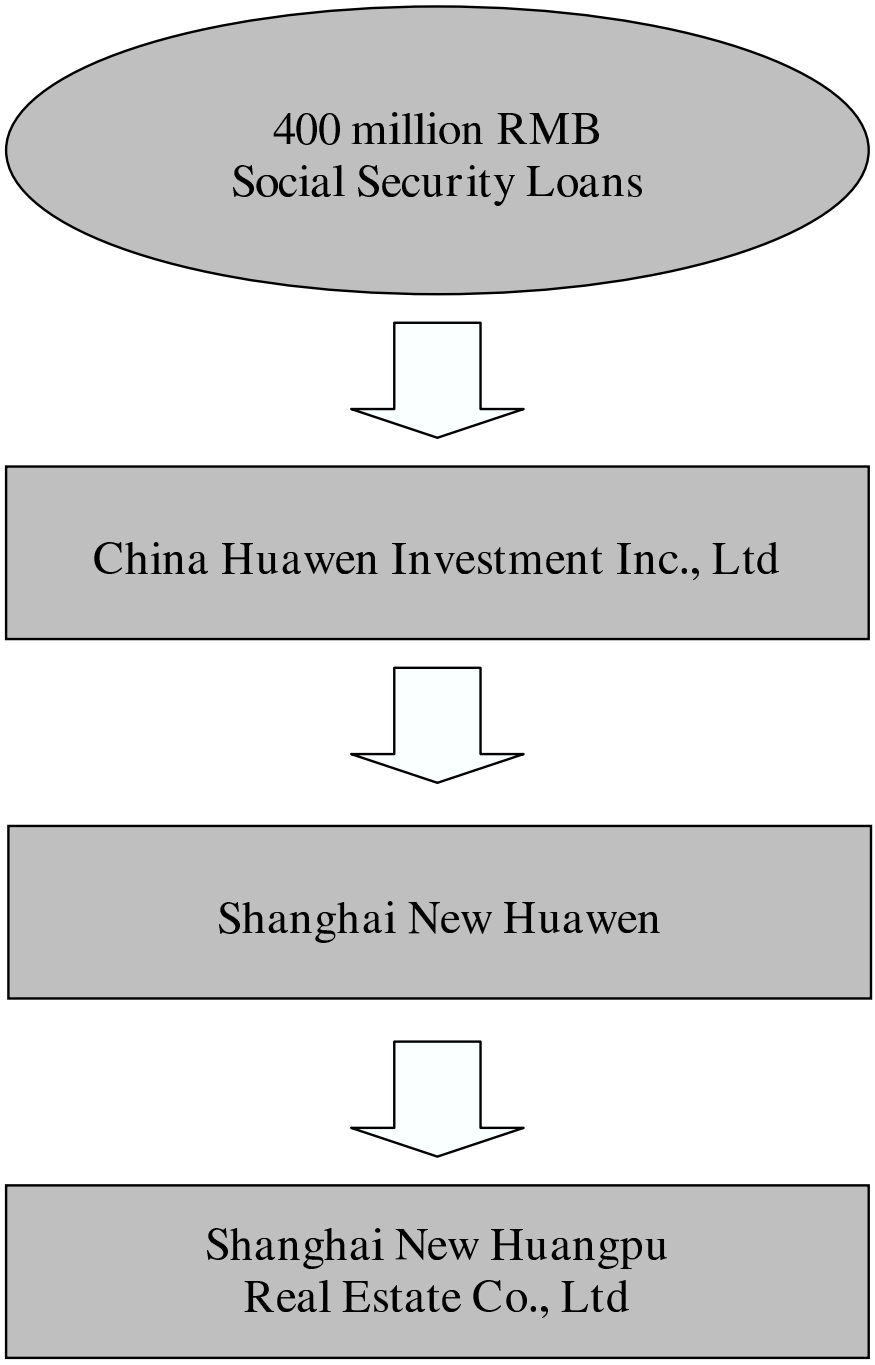


Figure 2.14: How is a Real Estate Firm Financed by Social Security Loans: A Case Study.

markets, I construct an index of political connections for real estate firms using land locations of their property projects. Various degrees of political connections are created in correspondence to developing areas inside the inner ring, between the inner ring and the middle ring, between the middle ring and the outer ring, and outside the outer ring. The arrest of Shanghai municipal party secretary Chen Liangyu provides a unique natural experiment to estimate the value of political connections. Using the difference-in-differences estimation, this paper finds that the loss of political connections results in about 231-300 basis points reduction in market adjusted rate of return. It suggests that the premium of political connections is estimated in the range from 231 to 300 basis points of the firm's market adjusted rate of return when it moves from the urban periphery to the urban center due to better connections. The fact that the estimated value has the same magnitude of average earning-price ratio in China's public companies suggests the political connections are economically significant. My estimate lies between the estimated value of political connection with Vice President Cheney in US (Fisman et al, 2006) and Suharto in Indonesia (Fisman, 2001), which is consistent with the *Corruption Perception Index*. This result is robust subject to sub-sample check and Principal Factor Analysis. On the corporate side, contrary to the previous literature on firms' political connections and access to bank loans, my result shows that connected firms have strikingly less leverage than normal firms before the event, whereas they increase leverage upon the loss of connections. One way to look closer at this abnormality is to take a case study. Case study shows that the connected listed firm has alternative financing opportunities through its parent firm's political connections. The parent firm takes loans to purchase the non-tradable state assets of the listed subsidiary and leave the latter a pretty balance sheet with low leverage and lower cost of capital. The results highlight the role of political connections in China's real estate sector and document a new pattern of corruption in state asset transfer and corporate financing activities. They suggest the need for more stringent regulations on asset stripping and related-party transactions.

Bibliography

[1] Backman, Michael. 1999. Asian Eclipse: Exploring the Dark Side of Business in Asia. Wiley, Singapore.

[2] Chiu, Ming Ming, and Sung Wook Joh, 2004. Loans to distressed firms: Political connections, related lending, business group affiliations, and bank governance. Working paper, Chinese University of Hong Kong.

[3] Cull, Robert, and Lixin Colin Xu, 2005. Institutions, ownership and finance: The determinants of profit reinvestment among Chinese firms. Journal of Financial Economics, 77: 117-146.

[4] De Soto, Hernando, 1989. The Other Path: The Invisible Revolution in the Third Worlds. Harper and Row Publisher, New York.

[5] Dinc, I. Serdar, 2005. Politicians and banks: political influences on government-owned banks in emerging countries. Journal of Financial Economics, 77: 453-479.

[6] Faccio, Mara, 2006. Politically connected firms. American Economic Review, 96: 369-386.

[7] Faccio, Mara, and David C. Parsley, 2006. Sudden Deaths: Taking Stock of Political Connections.CEPR discussion paper No. 5460 available at SSRN http://ssrn.com/abstract=899378.

[8] Faccio, Mara, Ronald W. Masulis, and John J. McConnell, 2006, Political connections and corporate bailouts, Journal of Finance, forthcoming.

[9] Fan, Joseph P. H., Oliver Meng Rui, and Mengxin Zhao, 2006. Rent Seeking and Corporate Finance: Evidence from Corruption Cases. Chinese University of Hong Kong Working Paper.

[10] Fisman, David, Raymond Fisman, Julia Galef, and Rakesh Khurana, 2006. Estimating the Value of Political Connections to Vice-President Cheney. Columbia Business School Working Paper.

[11] Fisman, Raymond, 2001. Estimating the value of political connections. American Economic Review, 91: 1095-1102.

[12] Khwaja, Asim Ijaz, and Atif Mian, 2005. Do lenders favor politically connected firms? Rentseeking in an emerging financial market. Quarterly Journal of Economics, 120: 1371-1411.

[13] Knight, Brian, 2006. Are Policy Platforms Capitalized into Equity Prices? Evidence from the Bush/Gore 2000 Presidential Election. Journal of Public Economics, 90: 751-773.

[14] Kroszner, Randall S., and Thomas Stratmann, 1998. Interest Group Competition and the Organization of Congress: Theory and Evidence from Financial Services Political Action Committees. American Economic Review, 88: 1163-1188.

[15] Johnson, Simon, and Todd Mitton, 2003. Cronyism and capital controls: Evidence from Malaysia. Journal of Financial Economics, 67: 351-382.

[16] Li,Zhigang and Fulong Wu, 2006. Socioeconomic transformations in Shanghai (1990-2000): Policy impacts in global-national-local contexts. Cities 23(4), 250-268.

[17] Naughton, Barry, 2006. The Chinese Economy: Transitions and Growth. The MIT Press, Cambridge, Massachusetts.

[18] Ramo, Joshua Cooper, 1998. The Shanghai Bubble. Foreign Policy, 111, pp. 64-75.

[19] Roberts, Brian E., 1990. A dead senator tells no lies: Seniority and the distribution of federal benefits. American Journal of Political Science, 34: 31-58.

[20] Shih, Victor, 2004. Faction matters: personal networks and the distribution of bank loans in China. Journal of Contemporary China, 13(38): 3-19.

[21] Stigler, George J., 1971. The theory of economic regulation. Bell Journal of Economics and Management Science, 2: 3-21.

[22] Wu,Fulong, 2000. The Global and Local Dimensions of Place-making: Remaking Shanghai as a World City. Urban Studies, 37(8), pp.1359-1377.

[23] Wu, Fulong, 2003. The (post-) socialist entrepreneurial city as a state project: Shanghai's reglobalisation in question. Urban Studies 40(9): 1673-1698.

[24] Zhu, Jieming, 2005. A transition institution for the emerging land market in urban China. Urban Studies, 42(8), pp. 1369-1390.

Chapter 3

Does Money Chase Money: Estimating the Signaling Effects of Qualified Foreign Institutional Investors in China Domestic Stock Markets.

3.1 Introduction

China launched two stock exchanges —— the Shenzhen Stock Exchange in 1990 and the Shanghai Stock Exchange in 1991 ——- as part of concerted effort to implement market-oriented reform.[1] The China stock markets have grown at a phenomenal pace

[1]It is noted that China had a vibrant stock exchange before the People's Republic was founded in 1949. According to Goetzmann, Ukhov, and Zhu (2001): "By 1935, the Shanghai China Merchant

since their inception. The number of listed stocks has increased from 13 in 1991 to 1550 at the end of 2007, and the aggregate market capitalization has risen from US$1.3 billion to more than US$32.714 trillion during the same period. In terms of market capitalization, the China stock market is now the largest in emerging markets and the 4th largest around the world.

Due to historical reasons, about two thirds of outstanding shares in China stock markets are owned by the State and legal persons and cannot be traded in public markets as of 2007. Of the tradable shares, A-share, which is listed in domestic stock exchanges and denominated in Reminbi, is by far the most important investment vehicle. The China Securities Regulatory Commission (CSRC) reveals that 1325 out of 1434 companies listed in Shanghai Stock Exchange and Shenzhen Stock Exchange have only A-shares in issue as of 2006. Foreign investors had been legally prohibited from investing in the A-share markets until the end of 2002 when the Chinese government authorities introduced the Qualified Foreign Institutional Investor (QFII) scheme, which opened the domestic capital market to some extent to certain qualified fund management institutions, security companies, banks, insurance companies, university endowments, pension, charity foundations, and government investment companies. The econometric analysis later on will focus on the A-share markets because by definition the Qualified Foreign Institutional Investors (QFII) scheme applies only to the A-share markets.

The QFII scheme sends favorable signals to the A-share markets which are dominated by retail investors.[2] who tend to trade stocks with speculative sentiment due to their lack of fund and investment skills. According to Ferguson and McGuinness

Stock Exchange had grown to become one of the biggest exchanges in the Far East with a list of 190 companies and an annual trading volume from 2 to 5 trillion Yuan(p 8)." I do not address the earlier Chinese stock market in this paper.

[2]There are over 50 million accounts opened by retail investors. (Eun and Huang, 2007) This number suggests that for every 28 Chinese people there is one stock trading account, or for every 8 urban people there is one stock trading account. It is reported that 90% of turnover on the stock exchanges consist of trades by retail investors with limited funds (Eun and Huang, 2007).

(2004), with sophisticated investment knowledge and skills, "QFIIs are likely to pick out the very best of the listed SOEs to invest (in)." The criteria for their judgment will likely rest on the plausibility and attractiveness of the target companies business models and corporate governance attributes. QFII might also select companies which they have good reason to believe will be well backed by the state. Thus, an immediate effect of QFII investment will be the release of signals pertaining to the underlying value of those companies chosen and not chosen for investment. Thus, an immediate effect of QFII investment will be the release of signals pertaining to the underlying value of those companies chosen and not chosen for investment.

This paper investigates the signaling effect of QFII investment on stock returns in China domestic tradable share (A-share) markets using an event study method. The exogeneous variations in the number and fraction of QFII holdings can be identified from public companies' quarterly financial reports announcements. I will show that market reacts positively following these announcements on QFII presence and change. These signaling effects suggest that domestic investors are positive on QFII presence and optimistic about the QFII-invested firms. Section II gives background of the China stock markets in terms of ownership structure, investor characteristics, corporate governance, and the QFII scheme. Section III summarizes three categories of relevant literature including the impact of share issue privatization in China, impact of institutional investors on stock prices in other emerging markets, and QFII signaling in China. Section IV briefly goes over three sources of data including information on QFII investment, stock price, and financial report disclosure date. Section V presents results including descriptive statistics of QFII investment and report release date, benchmark event study regression, and various robustness checks. Section VI concludes the paper.

3.2 Background

3.2.1 Ownership Structure

The most prominent characteristic of the China stock market is the two-tier equity structure of non-tradable and tradable shares.[3]Although both classes had the same theoretical rights, the non-tradable share cannot be traded on the public markets. The non-tradable shares are owned by the state[4] and legal persons[5]. State shares cannot be traded on the stock exchange but can be transferred to other institutions subject to approval by authorized organizations in accordance with current laws and regulations. Major entities in the state shareholding category include the State Asset Supervision and Administration Commission of the State Council (SASAC), industrial companies which were previously government ministries, and state assets investment bureaus (Delios et al, 2006; Eun et al, 2007). Like state shares, legal -person shares cannot be traded in exchanges.[6] This two-tier equity structure was formed when China began privatizing its state-owned enterprises (SOEs) in the 1990s. The government intended to use capital market pressures to improve the performance of a large number of SOEs, many of which had weak balance sheets and were not as commercially focused

[3]They are also called nonnegotiable/negotiable shares.

[4]State shares (gajia gu) are shares obtained through investments in the firm by institutions and departments representative of the state (SASAC, 1994: Article 2).

[5]Legal person shares (faren gu) are owned by domestic institutions with legal person status. Legal person shares can be divided into state-owned legal person (guojia faren gu) and society legal person shares (shehui faren gu). State-owned legal person shares are owned by state-owned enterprises or other institutions with legal person status. Society legal person shares are owned by non-state-owned institutions with legal person status. According to Delios et al (2006), the legal person category usually includes three distinct ownership identities: government agencies, market-oriented state-owned enterprises and privately-owned enterprises.

[6]However, since August 1992, legal person shares have been allowed to float among qualified institutions on a special market in the Beijing-based Securities Automatic Quotation System.

as publicly held companies elsewhere. However, the government wanted to retain substantial shareholdings in and influence over these companies, which precluded the full privatization of state assets. To allow such companies to raise capital in the context, a two-tier equity structure was put in place. As of 2006, 38% of all stock in issue for companies listed in mainland markets of Shanghai and Shenzhen is tradable and 62% is non-tradable.[7] The econometric analysis later on will focus on the tradable shares because QFII investment occurs only in the domestic tradable markets.

Second, of the tradable shares there are segmentations of A, B, H shares and other foreign exchange listed shares, which constitute 58%, 5% and 37%[8] of outstanding tradable shares. A-shares are Reminbi denominated shares traded in domestic markets, i.e., Shanghai and Shenzhen Stock Exchanges. Foreigners were legally prohibited from buying A-shares until the Qualified Foreign Institutional Investor (QFII) scheme came into effect in December 2002. So far A-shares are open to both domestic investors and QFIIs. As of the first quarter of 2007, there were about 17% of domestic listed firms having part of their tradable shares held by QFIIs. The fact that foreign investment houses want to invest in the A-share markets, while possibly also investing in the H-share market, is sufficient evidence that they see these as different markets and see some value from trading A-shares. This paper focuses on the A-share market without controlling the foreign investment in B-share or H-share markets because by definition QFII investment occurs only in this market and previous literature has established the fact that A-share, B-share, and H-share markets are highly segmented and demonstrated different micro structures and financial performances. [9]

Upon approval from the government, an A-share company listed on either Shanghai Stock exchange or Shenzhen stock exchange may simultaneously issue B-shares

[7]http://www.csrc.gov.cn/n575458/n4239016/n7828263/n8419132/n8419292/8469449.html

[8]http://www.csrc.gov.cn/n575458/n4239016/n7828263/n8419132/n8419292/8469449.html

[9]Particularly, H-shares are traded in the Hong Kong Stock Exchange which domestic investors cannot get access to until Qualified Domestic Institutional Investor (QDII) scheme came into effect in 2007. B-share markets are not open to domestic investors until 2001. B-share markets are much thinner and smaller than A-share markets and have seen price discounts relative to A-share markets.

to foreign investors on the same exchange. B-shares carry the same voting rights and claims on the firms earnings and assets. To issue B-shares, however, a company must report financial statements in accordance with both the Chinese accounting rules and the International Accounting Standards (IAS), and they must have their financial statements audited by international accounting firms. B-shares are quoted in Chinese Yuan but are settled in foreign currencies, in particular, in US dollar in Shanghai stock exchange and HK dollar in Shenzhen stock exchange. Foreign brokerage houses are allowed to take seats in both stock exchanges and are directly involved in B-share trading, thereby increasing exposure of B-shares to foreign investors. In addition, B-shares dividends are paid in US dollar for Shanghai-listed stocks and HK dollar for Shenzhen-listed stocks. The B-share markets are smaller and thinner than the A-share markets. As of December 2006, only 109 out of 1434 domestically listed companies have B-shares in issue. The B-share markets have long witnessed a price discount relative to the A-share markets.[10] Due to the segmentation of A-share and B-share markets and their consistent price differentials established by the previous literature, it is safe to assume that I do not need to control for B-share holdings of the same stock when judging the effect of QFII purchase of A-shares.

Chinese companies can seek overseas listings in the form of H and N shares. Companies with approval from the government as well as the relevant foreign exchanges may list their stocks on the Hong Kong stock exchange as H-shares or on New York

[10]Gordan and Li (1999) argue that legal restrictions create the segmented markets and limited investment opportunities, the domestic investors have inelastic demands for equity due to insufficient supply and thus push up the A-share price; Bergstrom and Tang (2001) demonstrate that information asymmetry between foreign investors and domestic investors, liquidity effects, diversification effects, clientele bias, risk-free return differentials between foreign and domestic investors, and foreign exchange risks are significant factors in explaining B-share discounts; Chan et al (2008) examine the effect of information asymmetry on equity prices in the local A- and B-share market and find that their constructed measures of information asymmetry (price impact measure and adverse selection component of bid-ask spread) explain 44% and 46% of the variation in B-share discounts.

Stock Exchange as N shares. N shares are traded as American Depository Receipts (ADRs). H share companies must report financial statements in compliance with IAS or HK standards (HK GAAP), in addition to the Chinese standards. In other words, all H-share companies accounting reports must provide two sets of figures, one based on Chinese accounting rules and the other based on either HK GAAP or IAS, with explanations for any differences between the two. Unlike B shares, H shares may have different voting rights from A-shares and provisions are in place for arbitration between the two when a dispute arises. Dividends for H shares must be paid in HK dollar. Domestic investors cannot get access to H-share until 2007 when Qualified Domestic Institutional Investor (QDII) scheme came into effect. Companies seeking to list shares in New York Stock Exchange, on the other hand, must provide financial statements in accordance with US GAAP and register the offerings under the US Securities Act.

Finally, it is worth noting that China-play investments can also come in the form of "red-chip" and "China-concept" stocks. According to Ferguson and McGuinness (2004), "notable examples of red-chips —— created either by injecting Chinese SOEs assets into non-Mainland listed entities or by spinning off such assets into newly created non-Mainland concerns —— include Bank of China Hong Kong Holding Ltd., China Mobile (Hong Kong), CNOOC,[11] and China Unicom (Hong Kong)." The red chips were popular in 1990s when the domestic capital market was not large and strong enough to raise money. Now some of the red chips have already or are planning to return to the A-share market as the domestic market grows larger and stronger. The already returning red chips include CNOOC, China Construction Bank, and Bank of China. According to Ferguson and McGuinness (2004), "China-concept stocks are also exposed to Mainland assets, but are typically controlled by Hong Kong or US entrepreneurs. Prominent examples include counters like Sohu.com Inc, Netease.com,

[11]CNOOC is short for China National Offshore Oil Corporation. It is a state-owned oil company, 70% of whose shares were owned by the state, and the State-Owned Assets Supervision and Administration Commission of the State Council (SASAC) performs the rights and obligations of shareholder on behalf of the state.

and SINA.com."

3.2.2 Investor Characteristics

First, the domestic tradable markets, i.e., the A-share markets, are dominated by retail investors, or individual investors, with over 100.03 million retail accounts as of May 2007[12]. This number suggests that on average for every 14 Chinese people there is one stock trading account, or for every 7 urban people there is one stock trading account. In particular, amid the stock mania in 2007, China saw an explosion of assets flow-in from retail investors. According to a Bloomberg report, retail investors opened 300,000 new accounts on daily average of 2007[13]. A total of 2.6 million of new mutual fund accounts were set up last year, while total assets managed by China's 62 fund houses tripled, reaching RMB 3 trillion ($413 billion) by the end of December 2007.[14] It is reported that 90% of turnover on the stock exchanges consist of trades by retail investors with limited funds (Eun and Huang, 2007). Although more and more domestic and foreign institutional investors have come into play since 2002, they appear to be a relatively small part of participants so far.

Second, most domestic retail investors are short of investment knowledge and skills and tend to trade stock with speculative sentiment. The *Wall Street Journal*(August 22, 2001), for instance, describes the Chinese stock markets as casinos, "in ten years since they were founded, China's stock markets have operated like casinos, driven by fast money flows in and out of stocks with little regard for their underlying value." The *Economist* (June 30, 2001), concurs: "Trading, not ownership, is the approach of Chinas investorsThe next step in Chinas stock market reform is to bring in investors who know what they are doing." In a similar vein, a formal report on China's stock markets compiled by the Organization of Economic Co-operation and Development (OECD) (2001) states: "Despite its size and technological complexities, the capital market has not been effective in promoting corporate efficiency. Share prices are not

[12]http://investdirect.hsbc.ca/pdf/en/MarketCommentary/May_2007_in_review–ID.pdf

[13]http://investdirect.hsbc.ca/pdf/en/MarketCommentary/May_2007_in_review–ID.pdf

[14]http://www.asianinvestor.net/article.aspx?CIaNID=67792

well-correlated with corporate results. The market, which is dominated by small retail investors who are concerned primarily with short-term trading profits, has frequently been marred by speculation and market manipulation. Standards of disclosure and corporate governance fall short of global norms." A survey of 1547 individuals (Wang, Shi, and Fan, 2006) reveals that the majority of investors (76.3%) spent less than half a year on one investment cycle which is defined as the time from buying to selling. Some 27% of investors hold stocks for periods shorter than one month. Only 7.3% of respondents had investment cycle more than one year; 83.9% of respondents thought that they had some investment knowledge; only 28.2% of them believed that they had expertise in technical analysis; 12.5% admitted that they had a limited amount of investment knowledge; 3.6% did not even realize that the stock selection should be based on fundamental and technical analysis. To retail investors, the most important information type is variations in government policies related to stock market and the secondly important is the investment intention of market makers or bankers (Wang, Shi, and Fan, 2006).

3.2.3 Corporate Governance Structure

A survey of 1,160 Chinese public limited companies published in 2003 found that government controls 84% of these companies, among which 8.5% were directly controlled and 75.5% indirectly controlled by pyramid shareholding schemes.[15] Scholars have identified three formal models of corporate governance structure in Chinese limited companies:[16] (1). Joint-stock companies, the most common ownership structure, where state-owned institutions (operated by the State Asset Supervision and Administration Commission) and other organizations (either State or legal person in nature)

[15]Liu, G.S. and Sun, P. (2003). "Identifying Ultimate Controlling Shareholders in Chinese Public Corporations: An Empirical Survey." Asia Program Working Paper Series No. 2, Royal Institute of International Affairs, London (UK).

[16]Chen, J. and Strange, R. (2004) "The Evolution of Corporate Governance in China." The Management Center Research Paper Series No. 25, King's College, London.

jointly hold the non-tradable shares and control the firms. This can be regarded as "State dominating indirectly." (2). Companies whose shares are owned directly by the State Asset Supervision and Administration Commission, at different administrative levels. This can be regarded as "direct State shareholding." (3). Ownership of domestic institutions with a wide variety of public shareholders (domestic individuals or institutional investors). All these models contain both tradable and non-tradable shares, where the latter constitute the majority. In other words, the state in practice still owns a large proportion of shares in many companies especially in large-scale enterprise, although the government has encouraged diversified ownership (e.g., foreign joint ventures, privately owned, and individually owned enterprises) as an alternative to state-dominated enterprises. So far the empirical results on the effect of state ownership and the role of government on firm performance are mixed. On the one hand, within the common reformist argument, government must be separated from enterprise management in order to, among other thing, eliminate speculation by state officials and corrupt practices. On the other hand, recent research reveals that political connections help private firms obtain loans from banks or other state institutions and afford them more confidence in the legal system especially in regions with weaker market institutions and weaker legal protections (Allen et. al., 2005; Li et. al., 2007). Li's finding in 2007 that political connections have significant economic value in real estate business suggests that political connectedness may be as important a factor as other corporate governance attributes in QFIIs' investment analysis.

3.2.4 Qualified Foreign Institutional Investor (QFII)

On Nov 5 2002 the China Securities Regulatory Commission (CSRC) and People's Bank of China (PBOC) introduced the QFII (Qualified Foreign Institutional Investor) program[17] As a provision for foreign capital to access China's financial markets. Chinese QFII regulations relax some capital controls and allow foreign institutions to

[17]It is called "Provinsional Measures for the Administration of Investment in Domestic Securities by Qualified Foreign Institutional Investors" which went into effect on December 1 2002.

invest in Renminbi-denominated equity and bond markets. Indeed, QFII is a Chinese brokerage business, which allows qualified foreign institutions to trade Chinese A-shares via special accounts opened at designated custodian banks,[18] for their clients. There are 11 banks in China qualified for custodian business, of which 7 are domestic[19] and 4 are foreign custodian banks.[20]

QFII includes overseas fund management institutions, insurance companies, securities companies, and other assets management institutions which have been approved by the China Securities Regulatory Commission (CSRC). In order to encourage medium- and long-term investments, the CSRC stated that it will give preference to institutions managing closed-end Chinese-focused funds, pension funds, insurance funds and mutual funds with good investment records in other markets. The CSRC and State Administration of Foreign Exchange (SAFE) are the regulators of the securities investment activities conducted by QFIIs. They are responsible for overseeing all transactions and conducting annual inspections on QFIIs. SAFE is responsible for overseeing business tied with foreign exchange operations, such as the approval of the QFII investment quotas, issuance of the foreign exchange certificate, supervision of account management and foreign exchange settlements (as specified in Foreign Exchange Control on Securities Investments in China by Qualified Foreign Institutional Investors Tentative Provisions). The CSRC is the approval authority for QFII status. It interprets the rules regarding QFII and takes the role of a general regulator. The QFII applicant must meet certain criteria. For example, a fund management insti-

[18]A custodian acts as the primary communication channel between the QFII and the Chinese authorities. They service foreign exchange and cash settlement needs of the QFIIs and are in charge of the safekeeping of securities, receiving of dividend and interest payments, and reporting to the CSRC and State Administration of Foreign Exchange (SAFE) about the status of the account and compiling the QFII's annual report.

[19]The 7 domestic custodian banks are Bank of China, China Construction Bank, Industrial and Commercial Bank of China, Agricultural Bank of China, Bank of Communications, China Merchants Bank, China Everbright Bank.

[20]The 4 foreign custodian banks are Standard Chartered Bank, HSBC, Citibank, Deutsche Bank.

tution applicant must have operated its fund business for over 5 years with the most recent accounting year managing asset of no less than $10 billion; a commercial bank applicant must rank among top 100 of the world in terms of total assets for the most recent accounting year and manage securities assets of no less than $10 billion.

The newly revised QFII rules issued in 2006[21] lowered qualifying criteria in terms of assets-under-management (AUM),[22] allowed opening of multiple sub-accounts and choice of multiple brokers, reduced the capital lock-up period from one year to three months for insurance fund, pension fund, mutual fund, and other long-term investment funds, while stipulated the one year lock-up period for other types of QFIIs, increased the maximum investment quota from $800 million to $1 billion and relaxed the cap on fraction of QFII share holding.

QFII can invest in shares listed in China's stock exchanges (except B-share), treasuries listed on Chinas stock exchanges, convertible bonds and enterprise bonds listed on China's stock exchanges and other financial instruments approved by the regulatory authority "CSRC". Shares held by each QFII in one listed company should not exceed 10% of total outstanding shares of the company, which also applies to domestic investors. Total shares held by QFIIs in one listed company should not exceed 20% of total outstanding shares of the company.

On July 9, 2003, UBS AG, a Swiss-based financial group, made history by buying stocks in China's domestic A-share market under the QFII scheme. Other major investment houses, endowments, or foundations such as Goldman Sachs, Morgan Stanley, JP Morgan, Citigroup, Gates Foundation, Yale University, and Columbia University also have invested in A-shares through the QFII system. As of January 31 2007, there are 46 QFIIs approved by CSRC with total investment of $ 9.545

[21] On August 24 2006, the China Securities Regulatory Commission (CSRC), People's Bank of China (PBOC) and the State Administration of Foreign Exchange (SAFE) jointly issued new regulations, the "Measures for the Administration of Investment in Domestic Securities by Qualified Foreign Institutional Investors" (Circular #36), which went into effect on September 1 2006.

[22] For example, total assets of qualified fund management institutions for the most recent accounting year should be no less than $ 5 billion.

billion, according to State Administration of Foreign Exchange (SAFE). QFIIs have now become China's second largest institutional investor. QFIIs are investors "who know what they doing" and whose investment behaviors can be observed and learned by domestic investors. Hence, in the short term, QFIIs can emit signals of valuable stocks and investment opportunities to domestic retail investors and help to trigger the liquidity flows in an efficient way. In the long term, QFIIs can spur good corporate governance practices in Chinese public companies.

3.3 Literature Review

This paper relates to three types of literature: The first is the literature dealing with the impact of foreign ownership on firm performance. In the first comprehensive study on the effect of China's share issue privatization, Sun and Tong (2003) documented that the foreign ownership (B-share) had a significantly positive impact on the market to book ratio (MBR)of Chinese corporations,[23] and negative but insignificant effects on return on sales (ROS)[24]and earnings before interest and tax-to-sales ratio(EBITS).[25] They suggest that the foreign ownership then was small[26] and diffused.[27] Foreign owners cannot perform a corporate governance role in any meaningful way and tend to be passive investors. As a result, "although the market takes higher foreign ownership as a positive sign of firm performance, and hence a higher MBR, the *actual* performance results (in accounting terms such as ROS and EBITS) are weaker than what the market *expects*." In another study of the partial privatization of 53 SOEs by their listings on the Hong Kong Stock Exchange, Jia, Sun, and Tong (2005) find that an H-share listing has led to a medium increase of 70% in real net profits, 80% in real sales, 50% in capital spending, and a mild but insignifi-

[23]MBR is the market value of equity divided by the book value of net assets.

[24]ROS is net income per sale.

[25]EBITS is operating income per sale.

[26]In their sample the foreign ownerhsip on average is 2%.

[27]For most listed companies, the top 10 shareholders are normally the state and legal persons.

cant improvement in coverage ratios,[28] but no improvement in return on sales and a significant underperformance of returns against several market index benchmarks.

The second literature studies the behavior of institutional investors in other emerging markets. Lee et al. (1999) find that institutional investors' trading has little influence over security returns in Taiwan's stock market. Yang (2002) examines the impact of Taiwan institutional investors' trading behavior on stock returns and the information spillover among different institutional investors. His findings indicate that neither of the four classes of institutional investors in Taiwan, i.e., QFIIs,[29] foreign mutual fund, domestic institutional investors, and security dealers, influence stock returns by their trading behaviors. Domestic mutual funds pursue a "trend-chasing" strategy initiated by Foreign Funds. Moreover, foreign funds employ a "contrarian" trading strategy to buy (sell) when the market is down (up) on a long-run basis, which serves as a market-stabilizing mechanism.

The third type of literature includes event studies on Chinese public companies. Li (2007) estimated the value of political connections using a case study in Shanghai Municipal Party Secretary's purge and found that the loss of political connection led to 2.31-3% decline in connected firms' abnormal return. The fact that her estimated value range of political connection as 2.31-3% of abnormal returns is in the same magnitude with the earning price ratio[30] in Chinese public companies suggests the economic significance of political connections in China's real estate market. Huang and Zhao (2008)showed that bank loan announcements generated negative abnormal returns to firms that are poorly governed and that borrow from banks with weak monitoring ability. In particular, they estimated that: firms making loan announce-

[28]Coverage ratios include "times-interest-earned" defined as earning before interest and tax(EBIT)/interest expense and operating cash flow per unit of debt.

[29]Taiwan introduced its QFII scheme in December 1990.

[30]The price-earning ratio was 33.3 in Shanghai Stock Exchange and 32.72 in Shenzhen Stock Exchange in 2006. Original data see http://www.csrc.gov.cn/n575458/n4239016/n4239073/n4847325/n4847355/n4888439.files/n4888437.pdf. So the earning-price ratio is about 3%

ment on average saw a -0.42% 5-day cumulative abnormal return following their loan announcements at a 5% significance level; firms borrowing from big four state-owned Bank saw a -0.47% 5-day cumulative abnormal return following their loan announcements at a 10% significance level; state-owned enterprises borrowing from big four state-owned Bank witnessed a -0.65% 5-day cumulative abnormal return following their loan announcements at a 5% significance level.

My paper adds another evidence to support the market efficiency hypothesis in China by estimating the signaling effects of QFII announcements on equity abnormal returns. Such signaling effects imply that domestic investors are positive about QFIIs' presence and optimistic about the QFII-invested firms.

3.4 Data

There are three sources of data. The first source is Wind Info, a leading provider of financial data and research system in China . It provides data set which includes QFII names, QFII-invested companies' names and stock tracking number in each quarter, QFII-invested companies' industry, number of QFIIs in the previous and the current quarter, fraction of QFII holdings in the previous and the current quarter. The second source is Tianxiang Security Information Database and Analysis System, devised by a leading investment consulting company in China . It provides daily stock prices adjusted for dividends and splits and market indices. The third one is the relevant website. China Securities Regulatory Commission (CSRC) website provides an overview of China's stock market, such as the total number of public listed companies, their market capitalization, and the tradable/non-tradable shares; State Administration of Foreign Exchange (SAFE) website provides the document "Provisional Measures for the Administration of Investment in Domestic Securities by Qualified Foreign Institutional Investors." "Jinrong Jie"[31] website provides the document "Measures for the Administration of Investment in Domestic Securities by Qualified Foreign Institutional Investors" (Circular #36); Google search with key

[31] http://www.jrj.com

Chinese words "quarterly report disclose date or semi-annual report disclosure date" or "annual report disclosure date" directs to relevant documents including report disclosure dates for public companies listed in Shanghai and Shenzhen Stock Exchanges in the designated quarter. I combine the three sources of data together and compile a new data set with QFII-invested companies' name, ID, previous QFII number, current QFII number, previous fraction of QFII holding, current fraction of QFII holding, report disclosing date, daily stock return from 49 days before the release date to 48 days after the release date, market return during the same period. The abnormal return is defined as the difference between stock return and market return.

3.5 Results

3.5.1 Descriptive Statistics

Table 1 panel A shows the quarterly statistics in QFII investment. Overall the QFII investment in A-share market has witnessed huge increases, measured in both aggregate and average terms. At the very beginning, i.e., the fourth quarter of 2003, there were 20 firms invested by QFIIs. However, QFIIs' enthusiasm was dampened in the first quarter of 2004 when there was only one QFII-invested firm constituting merely 0.08% of all public firms listed in Shanghai and Shenzhen Stock Exchange. All around the year of 2004, the total number of QFIIs investment increased steadily from 30 to 62 and the number of firms invested by QFIIs increased from 24 to 38. The year 2005 saw double growth in QFII investments. The total number of QFII investment soared from 62 to 123 and the total number of firms invested by QFIIs went from 38 to 81. This growth continued in the year 2006 which witnessed more than 300 QFII investments in every quarter and more than 100 QFII-invested firms all around the year. The average number of QFIIs and the average fraction of QFII holdings reach the peaks at the end of 2006, i.e., 1.92 and 4.09% respectively. The total number of QFII investments peaked at 407 in the first quarter of 2007 constituting 17% of all public firms listed in A-share market. By the second quarter of 2007, the total

Table 1. Descriptive Statistics of QFIIs

Panel A. Investment by QFIIs

	Total # of QFIIs in A-share market	Average # of QFIIs per firm	Fraction of QFII shares per firm(%)	Firms Invested by QFIIs	QFII investments in A-share market	Firms in A-share market	Most invested industry (# of investments)
034q	3	1.05	1.76	20	21	1287	IT hardware (5)
041q	1	1.00	1.56	1	1	1302	Manufacturing(1)
042q	7	1.25	2.84	24	30	1346	Manufacturing(6)
043q	7	1.28	2.91	32	41	1378	Manufacturing(8)
044q	11	1.61	3.27	38	62	1377	Manufacturing(10)
051q	15	1.52	2.90	81	123	1379	Manufacturing(25)
052q	18	1.80	3.33	93	167	1391	Manufacturing(33)
053q	18	1.58	3.26	120	190	1381	Manufacturing(35)
054q	21	1.72	3.83	130	223	1381	Manufacturing(39)
061q	25	1.91	4.11	169	323	1376	Manufacturing(58)
062q	26	1.85	3.65	192	356	1375	Manufacturing(69)
063q	29	1.79	3.78	213	382	1396	Manufacturing(65)
064q	32	1.92	4.09	207	397	1434	Manufacturing(78)
071q	33	1.67	3.36	243	407	1461	Manufacturing(88)
072q	35	1.52	3.14	200	304	1477	Manufacturing(64)

Source: Wind Info; CSRC.

Table 3.1: Table 1 Panel A: Descriptive Statistics of QFIIs Investment

number of firm invested by QFIIs has reached 200 which constitute 14% of public firms listed in A-share market. During the same period, the total number of QFII investment in A-share market has reached 304, 64 of which are in the manufacturing industry. On average terms, the second quarter of 2007 sees 1.52 QFIIs per firm and 3.14% average QFII holdings among QFII-invested firms. Since the QFII investment has become popular since the end of 2005, the regression afterwards will be based on the sample in the period between the fourth quarter of 2005 and the second quarter of 2007.

Panel B shows the classification of QFIIs. The definition of the classification is based on CDA Spectrum Institutional Investors Classification in US (Shin 2006), i.e., banks, investment companies, insurance companies, and others. The "others" category includes pension, university endowments, foundations, and Government Investment Company. From the quarterly statistics, banks and investment companies are the main QFII vehicles. There is one insurance company making investment in the second quarter of 2006. Among the 42 QFIIs that have been active during the period between the fourth quarter of 2003 and the second quarter of 2007, 17 are banks, 20 are investment companies, 1 is insurance company and 4 are other investment vehicles including foundations,[32] university endowments,[33] and Government Investment Company.[34]

Panel C shows the origin of QFIIs. There are four regions that QFIIs are from, i.e., North America, Europe, Asia, and Australia. Among the 42 QFIIs which have been actively investing in A-share market since the fourth quarter of 2003, 13 are headquartered in North America, i.e., US and Canada, 17 are headquartered in European countries like UK, France, Netherlands, Germany, and Switzerland, 11 are located in Asian countries or administration district such as Japan, Singapore, and Hong Kong, and the remaining one is from Australia. The appendix provides a full list of QFIIs which are active as of the second quarter of 2007 and their number of investments, classification, origin, custodian bank, and quota in million US$.

[32]It is Bill & Melinda Gates Foundation.

[33]It is Yale University endowment.

[34]It includes Temasek Fullerton (Singapore) Alpha Pte Ltd and Government of Singapore Investment Corporation Pte Ltd.

Table 1. continued

Panel B. Classification of QFIIs

	# of Active QFIIs	Banks	Investment Companies	Insurance Companies	Others
034q	3	2	1	0	0
041q	1	0	1	0	0
042q	7	4	3	0	0
043q	7	5	2	0	0
044q	11	6	4	0	1
051q	15	8	6	0	1
052q	18	8	9	0	1
053q	18	9	8	0	1
054q	21	11	9	0	1
061q	26	12	12	0	2
062q	27	11	12	1	3
063q	29	13	13	0	3
064q	32	13	15	0	4
071q	33	13	16	0	4
072q	35	12	19	0	4
All	42	17	20	1	4

Source: Wind Info.

Note:Others include pension, university endowments,foundations, and government investment company. The classification is based on CDA Spectrum Institutional Investors Classification in US.

Table 3.2: Table 1 Panel B: Descriptive Statistics of QFII Type

Table 1. continued

Panel C. Origin of QFIIs

	# of active QFIIs	North America	Europe	Asia	Australia
034q	3	1	2	0	0
041q	1	1	0	0	0
042q	7	2	3	2	0
043q	7	2	3	2	0
044q	11	4	3	4	0
051q	15	3	7	5	0
052q	18	5	6	7	0
053q	18	5	7	6	0
054q	21	5	9	7	0
061q	26	7	10	9	0
062q	27	8	11	8	0
063q	29	10	11	7	1
064q	32	12	12	8	0
071q	33	11	12	9	1
072q	35	12	12	10	1
All	42	13	17	11	1

Source: Wind Info.

Note: North America includes US and Canada; Europe includes UK, France, Netherland, Scotland, Germany, and Switzerland.

Table 3.3: Table 1 Panel C: Descriptive Statistics of QFII Origin

Table 2. Descriptive Statistics of Report Release Date

Quarter	Earliest Release Date	Latest Release Date	Median	Mode	# of firms
054q	1/25/2006	4/29/2006	3/29/2006	3/29/2006	130
061q	4/7/2006	5/8/2006	4/25/2006	4/24/2006	169
062q	7/12/2006	8/31/2006	8/16/2006	8/28/2006	192
063q	10/11/2006	10/31/2006	10/26/2006	10/27/2006	213
064q	1/13/2007	4/30/2007	3/28/2007	3/30/2007	207
071q	3/8/2007	4/30/2007	4/26/2007	4/30/2007	243
072q	7/16/2007	8/31/2007	8/20/2007	8/25/2007	200

Sources: Shanghai Stock Exchange, Shenzhen Stock Exchange.

Table 3.4: Table 2: Descriptive Statistics of Report Release Dates

Investors usually get the information of QFII investment from companies' quarterly/semi-annual/annual reports. The report release date is important to understand and estimate the impact of QFII investments on stock prices and returns. As mentioned before, the regression will be based on the sample in the time period between the fourth quarter of 2005 and the second quarter of 2007. The report release date is usually later than the calendar end of the quarter, especially for the annual reports for they take more time to compile. The quarterly reports are usually released within one month of the calendar end of the quarter. For example, the third quarterly reports of 2006 filed by 207 QFII-invested firms were released between 10/11/2006 and 10/31/2006. The median release date is 10/26/2006 and the mode is 10/27/2006. The semi-annual reports are usually within two months later than the calendar end of the quarter. Take the semi-annual reports of 2006 filed by 192 QFII-invested firms for example, the earliest release date is 7/12/2006 while the latest is 8/31/2006, the median date is 8/16/2006 and the mode date is 10/27/2006. The annual reports are usually several months later than the calendar end of the year. Take the 2005 annual reports filed by 130 firms for example, the earliest release date is 1/25/2006 and the latest is 4/29/2006, the median date is 3/29/2006 and the mode is 3/29/2006. These statistics tell us that the release of QFII investment is usually later than the time when actual transactions take place. This makes it easier to distinguish two possible explanations of the price impact. The first one is the liquidity effect, which is driven by QFIIs' demand on domestic stocks and the in-elasticity of the domestic stock sup-

ply. If this liquidity demand results in the price increase, such an effect should occur at the time of QFII transactions and disappear as transactions are completed. The second is the signaling effect of QFII investments on stock prices and returns, which happens as domestic investors get the information of QFII investment through companies' financial reports. The separation of actual QFII transaction dates and public companies' financial reports release dates helps to identify the correct explanation for the price effect.

3.5.2 Benchmark Event Study Regression

The regression is based on the sample firms that are invested by QFIIs in a certain quarter in the period between 054q and 072q.[35] The event period is 49 days before the report release date and 48 days after the release date. I divide the event period into four parts, [-49,-2) as the "Before" period, [-2, 0) as the "Pre" period, [0, 2) as the "Post" period, and [2, 48] as the "After" period. There are 99 daily stock return observations for each firm in each quarter. The difference between the stock return and the A-share market index return are defined as the abnormal return. By reading the public companies' quarterly reports, investors can figure out two pieces of information related to the change of investment by QFII: one is the change of QFII shareholdings from the last to this quarter, the other is the change of QFII number from the last to this quarter. The benchmark regression specification is:

$$AR_{it} = \alpha + \beta_{01}\Delta QFII_{it} + \beta_{02}Pre + \beta_{03}Post + \beta_{04}After + \beta_{11}\Delta QFII_{it}Pre + \beta_{12}\Delta QFII_{it}Post + \beta_{13}\Delta QFII_{it}\ After + \epsilon_{it} \quad (3.1)$$

where AR_{it} is the abnormal return for stock i at day t. $\Delta QFII_{it}$ refers to the two types of QFII change for stock i at day t, i.e., the change of fraction and the change of number. "Pre","Post", and "After" stand for the three blocks of time, i.e., [-2, 0), [0, 2), and [2, 48]. The comparison time period is the "before" period in which the QFII change information is not known by the public. The coefficients of interaction

[35] I use "0XYq" to denote for the Yth quarter of the year 200X.

terms capture the separate effect of QFII change on the stock abnormal return in each block of time. If the signaling effect is valid and there is information leakage,[36] the impact of QFII change on the stock abnormal return would be significantly positive in the Pre period and thus β_{11} is expected to be significantly positive. This is called the information leakage effect. The coefficient β_{12} captures the linear impact of QFII change on the abnormal return in the post period relative to the "Before" period. If the signaling hypothesis is valid, a significantly positive β_{12} is expected. This is called the market revaluation effect. If there is overshooting of abnormal return in the "Post" period due to the signaling effect, there should be some re-adjustment in the "After" period. In this case, a significantly negative β_{13} is expected. Another reason why abnormal returns are negative in the "After" period is the argument made by Ferguson and McGuinness (2004), who state that "signaling arguments would suggest that stocks selected by QFIIs are likely to experience a contraction in their liquidity premia (page 57)."[37] If the liquidity premia are indeed contracted, a decreasing rate

[36]The possible information leakage channels include but not limited to the Stock Exchange Depository and Clearing Corporation which possesses all the confidential transaction statistics, QFIIs' custodian bank responsible for safeguarding QFIIs' financial assets in China, QFIIs' broker which directly makes the order for QFIIs, the company which can legally check up its QFII shareholders through the Depository and Clearing Corporation, or some commercial stock analysis software in China tracking aggregate transaction volume of various categories of stock accounts in the Shanghai Stock Exchange Depository and Clearing Corporation Database. For example, the software can provides two-day lagged transaction volume on D-account (stands for the account opened by mutual fund), B-account (opened by legal persons), A-account (opened by retail investors), and etc. These categorical transaction data can possibly generate leads in the trading patterns of large funds, although they are two days lagged, because it takes some fund managers more than two days to complete a deal. Here is a report in Chinese describing that mutual fund managers in China feel "being spied" by this kind of commercial software: http://bbs1.21our.com/viewthread.php?tid=1208943&extra=page%3D1.

[37]Liquidity premia are the premia demanded by risk-averse investors to compensate their liquidity

of return is expected in the "After" period which will result in a negative abnormal return compared to the "Before" period in which the signal is not released. This is called long-term adjustment effect.

Table 3 presents the coefficients of the interaction terms in the "Pre", "Post", and "After" period. 1 out of 7 quarters shows significantly negative rather than positive effects of QFII number change on the abnormal return in the "Pre" period. Pooled regression with 7 quarters' observations shows insignificant impact of QFII change on the abnormal return. These facts do not support the information leakage hypothesis. For the "Post" period, 3 out 7 quarters show significantly positive coefficients and the pooled regression also generates significantly positive coefficients. 1% change in QFII fraction in a firm increases the firm's stock abnormal return by 0.094%. One more QFII investor in a firm increases the firm's stock abnormal return by 0.175%.

The signaling mechanism might work through judgments from domestic investors. First, domestic retail investors may feel that QFIIs are serious investors with superior experience, knowledge, and investment skills than themselves and "know what they are doing." Thus they may feel good to read QFIIs' investment and follow suit. Second, domestic investors have more confidence in QFII-invested companies' corporate governance since QFII, as a significant block shareholder, have incentives in protecting their investment and enhancing their financial returns by exerting their monitoring and controlling capability in improving corporate governance and disclosure transparency under the international standards.

For the "After" period, the full regression has one significant coefficient regarding QFII number change but the magnitude of the negative figures is small compared to the corresponding positive one in the "Post" period. For quarterly regressions, only 072q shows significantly negative coefficients. However, the magnitudes of the negative figures (-0.011 and -0.023) are smaller compared to those in the "Post" period (0.094 and 0.175). The negative abnormal return in the "After" period compared to the "Before" period suggests the possibility of overshooting in the "Post" period or the likely contraction of liquidity premia that are associated with the signaling effect.

risk when purchasing less liquid equities.

Table 3. Benchmark Event Study Regression

The regression is based on the sample including all firms with positive QFIIs in the current quarter. The observation period is from 49 days before the announcement and 48 days after the announcement. The dependent variable is the abnormal return. Independent variables are the dummy variables for "pre" period from two days before the announcement to one day before the announcement, "post" period from the announcement day to one day after the announcement, "after" period from two days after the announcement to 48 days after the announcement, fraction/number change from the previous quarter to current quarter, and the interactions of time dummies and QFII fraction/number change. The default comparison period is "before" period from 49 days before the announcement to 3 days before the announcement.

	[-2,0)pre		[0,2)post		[2, 48]after		
	(Frac_t)-(Frac_t-1)	(Num_t)-(Num_t-1)	(Frac_t)-(Frac_t-1)	(Num_t)-(Num_t-1)	(Frac_t)-(Frac_t-1)	(Num_t)-(Num_t-1)	obs
054q	0.05678	0.07583	0.05593	0.04621	-0.03022	-0.02913	12740
	(0.63)	(0.41)	(0.62)	(0.25)	(-1.18)	(-0.56)	
061q	-0.07177	-0.31736	0.14011	0.40687	-0.00778	0.02501	16562
	(-1.08)	(-2.15)**	(2.11)**	(2.76)***	(-0.41)	(0.59)	
062q	-0.00501	-0.07711	0.04379	0.13478	-0.01663	-0.03292	18718
	(-0.10)	(-0.82)	(0.89)	(1.43)	(-1.18)	(-1.23)	
063q	-0.03419	-0.04852	0.13523	0.0837	0.01336	0.01547	20874
	(-0.62)	(-0.60)	(2.47)**	(1.03)	(0.85)	(0.66)	
064q	0.0298	0.09499	0.03726	0.07499	-0.00353	-0.04567	20286
	(0.46)	(0.82)	(0.58)	(0.64)	(0.19)	(-1.37)	
071q	0.012	0.16437	0.15916	0.25583	-0.00678	-0.02916	23814
	(0.21)	(1.48)	(2.82)***	(2.31)**	(-0.42)	(-0.92)	
072q	0.00144	-0.09522	0.00988	0.1078	-0.05039	-0.09458	19600
	(0.02)	(-0.73)	(0.13)	(0.82)	(-1.78)*	(-1.98)*	
054q-072q	0.000932	-0.00199	0.09376	0.17497	-0.01131	-0.02262	132594
	(0.04)	(-0.05)	(3.90)***	(3.96)***	(-1.62)	(-1.75)*	

Source: Wind Info; Tianxiang Securities Investment Database.

Note: t-statistics is reported in parentheses. *,**,*** stand for the significance level of 10%,5%, and 1%.

Table 3.5: Table 3: Benchmark Event Study Regression

The overall impression from the benchmark regression is that the signaling argument is valid: market revaluation is speedy upon the QFII announcement while the information leakage is less likely; long-term adjustment follows two days after the QFII announcement. Furthermore, the magnitude of the signaling impact is significant in economic terms. For example, if the QFII fraction changed from 0 to 100%, the abnormal return is shooting to 9%. The suspicion that QFII transactions directly results in higher abnormal returns is compromised given the fact that "Post" abnormal return is significantly higher than the "Before" period and the fact that the release date of quarterly report is usually one month later than the time when actual QFII transactions take place.

3.5.3 Robustness Checks

To confirm the signaling effect in the "Post" period, for robustness checks I define alternative event windows, i.e., the "Before", "Pre", and "After" periods are [-49, -a), [0, a), [a, 48] respectively, where a=2, 5, 7. The coefficients of the interaction terms in the "Pre", "Post", and "After" periods are reported in table 4-Panel A, B, and C. Panel A shows that the coefficients for all three event windows are insignificant except for 061q in which 5 out of 6 coefficients are significantly negative. That does not support the information leakage argument either because if the leakage is the case the coefficients should be positive. It can be shown in panel B that both the significance and magnitude of the signaling effect is dwindling as time passes by. The [0, 5) window sees less significant and less positive coefficients. The [0, 7) window sees entirely insignificant coefficients. This suggests that the market has a speedy response to the QFII change announcements. 2 out of the 6 coefficients for the "After" period are significantly negative. The magnitude of the negative figures is smaller than that of the positive figures in the "Post" period. So the decreasing abnormal return in the "After" period does not offset the increasing abnormal return in the "Post" period. Thus, the results shown in table 4 confirm the benchmark results in table 3.

Previous regressions use "before" period as the default comparison period. To further check the relative stock performance in each block of time period, I define an

Table 4. Robustness Check of Alternative Event Window

Panel A. The regression is based on the sample including all firms with positive QFIIs in the current quarter. The observation period is from 49 days before the announcement and 48 days after the announcement. The dependent variable is the abnormal return. Independent variable is dummy "pre" from 2/5/7 days before the announcement to one day before the announcement, fraction (number) change, and the interaction of change and the dummy "pre". The default comparison window is [-49,-a), a=2,5,7.

	[-2,0)		[-5,0)		[-7,0)		
	(Frac_t)-(Frac_t-1)	(Num_t)-(Num_t-1)	(Frac_t)-(Frac_t-1)	(Num_t)-(Num_t-1)	(Frac_t)-(Frac_t-1)	(Num_t)-(Num_t-1)	obs
054q	0.05678	0.07583	0.01837	-0.02991	-0.000286	-0.02599	12740
	(0.63)	(0.41)	(0.28)	(-0.23)	(-0.01)	(-0.25)	
061q	-0.07177	-0.31736	-0.08942	-0.26685	-0.07447	-0.24286	16562
	(-1.08)	(-2.15)**	(1.86)*	(-2.50)**	(-1.98)**	(-2.91)***	
062q	-0.00501	-0.07711	0.02874	0.01691	0.02391	-0.00927	18718
	(-0.10)	(-0.82)	(0.80)	(0.25)	(0.85)	(-0.17)	
063q	-0.03419	-0.04852	0.00636	0.02578	-0.00163	0.02691	20874
	(-0.62)	(-0.60)	(0.16)	(0.44)	(-0.05)	(0.58)	
064q	0.0298	0.09499	0.02238	0.09911	-0.02489	-0.01291	20286
	(0.46)	(0.82)	(0.48)	(1.18)	(-0.68)	(-0.20)	
071q	0.012	0.16437	0.05861	0.14748	0.06052	0.12392	23814
	(0.21)	(1.48)	(1.43)	(1.84)*	(1.89)*	(1.98)**	
072q	0.00144	-0.09522	-0.07962	-0.09607	-0.08086	-0.03428	19600
	(0.02)	(-0.73)	(-1.42)	(-1.02)	(-1.84)*	(-0.46)	
054q-072q	9.32E-04	-0.00199	0.00464	0.02063	-0.00519	0.00143	132594
	(0.04)	(-0.05)	(0.27)	(0.65)	(-0.38)	(0.06)	

Source: Wind Info; Tianxiang Securities Investment Database.

Note: t-statistics is reported in parentheses. *,**,*** stand for the significance level of 10%,5%, and 1%.

Table 3.6: Table 4 Panel A: Robustness Check with Alternative Event Window for "Pre"

Table 4. Robustness Check of Alternative Event Window

Panel B. The regression is based on the sample including all firms with positive QFIIs in the current quarter. The observation period is from 49 days before the announcement and 48 days after the announcement. The dependent variable is the abnormal return. Independent variable is dummy "post" from the announcement day to 1/4/6 day(s) after the announcement, fraction (number) change, and the interaction of change and the dummy "post". The default comparison window is [-49,-a), a=2,5,7.

	[0,2)		[0,5)		[0,7)		
	(Frac_t)-(Frac_t-1)	(Num_t)-(Num_t-1)	(Frac_t)-(Frac_t-1)	(Num_t)-(Num_t-1)	(Frac_t)-(Frac_t-1)	(Num_t)-(Num_t-1)	obs
054q	0.05593	0.04621	0.04609	-0.03552	0.01959	-0.02599	12740
	(0.62)	(0.25)	(0.79)	(-0.30)	(0.39)	(-0.25)	
061q	0.14011	0.40687	0.10176	0.24364	0.04355	0.13359	16562
	(2.11)**	(2.76)***	(2.34)**	(2.53)**	(1.16)	(1.60)	
062q	0.04379	0.013478	-0.02185	-0.04045	-0.0000316	-0.015	18718
	(0.89)	(1.43)	(-0.68)	(-0.66)	(0.00)	(-0.28)	
063q	0.13523	0.0837	0.06732	0.01064	0.0428	0.01281	20874
	(2.47)**	(1.03)	(1.88)*	(0.20)	(1.38)	(0.28)	
064q	0.03726	0.07499	0.00927	0.00734	-0.03388	-0.03351	20286
	(0.58)	(0.64)	(0.22)	(0.10)	(-0.93)	(-0.51)	
071q	0.15916	0.25583	0.06862	0.09082	0.059	0.10872	23814
	(2.82)***	(2.31)**	(1.86)*	(1.25)	(1.84)*	(1.73)*	
072q	0.00988	0.1078	-0.00979	0.02899	0.01172	0.0352	19600
	(0.13)	(0.82)	(-0.19)	(0.34)	(0.27)	(0.48)	
054q-072q	0.09376	0.17497	0.03834	0.04547	0.02122	0.03362	132594
	(3.90)***	(3.96)***	(2.44)**	(1.57)	(1.56)	(1.34)	

Source: Wind Info; Tianxiang Securities Investment Database.

Note: t-statistics is reported in parentheses. *,**,*** stand for the significance level of 10%,5%, and 1%.

Table 3.7: Table 4 Panel B: Robustness Check of Alternative Event Window for "Post"

Table 4. Robustness Check of Alternative Event Windows

Panel C. The regression is based on the sample including all firms with positive QFIIs in the current quarter. The observation period is from 49 days before the announcement and 48 days after the announcement. The dependent variable is the abnormal return. Independent variable is the dummy "after" from 2/5/7 days after the announcement to 48 days after the announcement, fraction (number) change, and the interaction of QFII change and the dummy "after". The default comparison window is [-49,-a), a=2,5,7.

	[2, 48]		[5, 48]		[7,48]		
	(Frac_t)-(Frac_t-1)	(Num_t)-(Num_t-1)	(Frac_t)-(Frac_t-1)	(Num_t)-(Num_t-1)	(Frac_t)-(Frac_t-1)	(Num_t)-(Num_t-1)	obs
054q	-0.03022	-0.02913	-0.0358	-0.03135	-0.03712	-0.03196	12740
	(-1.18)	(-0.56)	(-1.36)	(-0.58)	(-1.37)	(-0.58)	
061q	-0.00778	0.02501	-0.01834	0.00767	-0.01841	-0.000717	16562
	(-0.41)	(0.59)	(-0.94)	(0.18)	(-0.92)	(-0.02)	
062q	-0.01663	-0.03292	-0.01047	-0.01949	-0.01222	-0.02587	18718
	(-1.18)	(-1.23)	(-0.72)	(-0.71)	(-0.82)	(-0.91)	
063q	0.01336	0.01547	0.01496	0.02367	0.01562	0.02599	20874
	(0.85)	(0.66)	(0.93)	(0.99)	(0.94)	(1.06)	
064q	-0.00353	-0.04567	-0.00245	-0.04142	-0.00236	-0.04883	20286
	(-0.19)	(-1.37)	(-0.13)	(-1.21)	(-0.12)	(-1.39)	
071q	-0.00678	-0.02916	-0.00291	-0.02377	-8.45E-05	-0.0253	23814
	(-0.42)	(-0.92)	(-0.18)	(-0.73)	(-0.00)	(-0.76)	
072q	-0.05039	-0.09458	-0.06353	-0.11158	-0.08708	-0.12755	19600
	(-1.78)*	(-1.98)**	(-2.11)**	(-2.20)**	(-2.74)***	(-2.39)**	
054q-072q	-0.01131	-0.02262	-0.0118	-0.01916	-0.01263	-0.02207	132594
	(-1.62)	(-1.75)*	(-1.64)	(-1.44)	(-1.70)*	(-1.61)	

Source: Wind Info; Tianxiang Securities Investment Database.

Note: t-statistics is reported in parentheses. *,**,*** stand for the significance level of 10%,5%, and 1%.

Table 3.8: Table 4 Panel C: Robustness Check of Alternative Event Window for "After"

Table 5. Robustness Check of Alternative Default Comparison Window

Panel A. The regression is based on the sample including all firms with positive QFIIs in the current quarter. The observation period is from 49 days before the announcement and 48 days after the announcement. The dependent variable is the abnormal return. Independent variable is the dummy "before" from 49 days before the announcement to 3/6/8 days before the announcement, fraction (number) change, and the interaction of change and the dummy "before". The default comparison window is [-a, +48], a=2,5,7.

	[-49,-2)		[-49,-5)		[-49, -7)		
	(Frac_t)-(Frac_t-1)	(Num_t)-(Num_t-1)	(Frac_t)-(Frac_t-1)	(Num_t)-(Num_t-1)	(Frac_t)-(Frac_t-1)	(Num_t)-(Num_t-1)	obs
054q	0.02356	0.0222	0.0242	0.03163	0.02563	0.02885	12740
	(0.94)	(0.43)	(0.96)	(0.62)	(1.01)	(0.56)	
061q	0.00455	-0.02653	0.01248	-0.00918	0.01768	0.01396	16562
	(0.24)	(-0.64)	(0.67)	(-0.22)	(0.94)	(0.33)	
062q	0.01386	0.02817	0.00862	0.01874	0.00629	0.0225	18718
	(1.00)	(1.07)	(0.62)	(0.71)	(0.45)	(0.84)	
063q	-0.01622	-0.01563	-0.01917	-0.02262	-0.01684	-0.02448	20874
	(-1.06)	(-0.68)	(-1.24)	(-0.99)	(-1.08)	(-1.06)	
064q	0.000682	0.03562	-0.000474	0.02649	0.009	0.04254	20286
	(0.04)	(1.09)	(-0.03)	(0.81)	(0.49)	(1.29)	
071q	-0.000328	0.01075	-0.00827	0.000478	-0.01461	-0.00949	23814
	(-0.02)	(0.35)	(-0.52)	(0.02)	(-0.91)	(-.30)	
072q	0.04142	0.07844	0.05596	0.08325	0.06257	0.06781	19600
	(1.55)	(1.74)*	(2.12)**	(1.88)*	(2.42)**	(1.56)	
054q-072q	0.0065	0.01356	0.00562	0.00969	0.00734	0.01186	132594
	(0.95)	(1.07)	(0.82)	(0.77)	(1.06)	(0.93)	

Source: Wind Info; Tianxiang Securities Investment Database.

Note: t-statistics is reported in parentheses. *,**,*** stand for the significance level of 10%,5%, and 1%.

Table 3.9: Table 5 Panel A: Robustness Check of Alternative Default Comparison Window for "Before"

Table 5. Robustness Check of Alternative Default Comparison Window

Panel B. The regression is based on the sample including all firms with positive QFIIs in the current quarter. The observation period is from 49 days before the announcement and 48 days after the announcement. The dependent variable is the abnormal return. Independent variable is the dummy "pre" period defined as 2/5/7 days before the announcement to one day before the announcement, fraction (number) change, and the interaction of the change and the dummy "pre". The default comparison window is [-49,-a) & [0,+48], a=2,5,7.

	[-2,0)		[-5,0)		[-7, 0)		
	(Frac_t)-(Frac_t-1)	(Num_t)-(Num_t-1)	(Frac_t)-(Frac_t-1)	(Num_t)-(Num_t-1)	(Frac_t)-(Frac_t-1)	(Num_t)-(Num_t-1)	obs
054q	0.07072	0.08943	0.03306	-0.01301	0.01575	0.00445	12740
	(0.80)	(0.49)	(0.52)	(-0.10)	(0.32)	(0.04)	
061q	-0.0708	-0.33834	-0.08606	-0.28348	-0.06912	-0.2528	16562
	(-1.08)	(-2.32)**	(-1.83)*	(-2.72)***	(-1.91)*	(-3.15)***	
062q	0.00239	-0.06346	0.03491	0.02839	0.02969	0.00411	18718
	(0.05)	(-0.68)	(1.00)	(0.43)	(1.11)	(0.08)	
063q	-0.04369	-0.058	-0.00438	0.01388	-0.01231	0.01365	20874
	(-0.81)	(-0.72)	(-0.11)	(0.24)	(-0.41)	(0.31)	
064q	0.03079	0.11626	0.02306	0.11854	-0.02117	0.01274	20286
	(0.48)	(1.01)	(0.51)	(1.44)	(-0.60)	(0.20)	
071q	0.01207	0.17362	0.05636	0.15404	0.05602	0.12751	23814
	(0.22)	(1.58)	(1.41)	(1.97)**	(1.82)*	(2.12)**	
072q	0.01649	-0.06956	-0.06182	-0.06825	-0.060037	-0.00624	19600
	(0.21)	(-0.54)	(-1.11)	(-0.73)	(-1.41)	(-0.09)	
054q-072q	0.0044	0.00511	0.008	0.02696	-0.00111	0.00876	132594
	(0.18)	(0.12)	(0.47)	(0.86)	(-0.09)	(0.36)	

Source: Wind Info; Tianxiang Securities Investment Database.

Note: t-statistics is reported in parentheses. *,**,*** stand for the significance level of 10%,5%, and 1%.

Table 3.10: Table 5 Panel B: Robustness Check of Alternative Default Comparison Window for "Pre"

Table 5. Robustness Check of Alternative Controlling Window

Panel C. The event period is [-49,+48]. The dependent variable is abnormal return. Independent variable is dummy post, fraction (number) change, and change interacted with dummy post. The controlling window is [-49,0)&[a,+48], a=2,5,7.

	[0,2)		[0,5)		[0,7)	
	fraction_change	number_change	fraction_change	number_change	fraction_change	number_change
054q	0.06986	0.0592	0.06262	-0.01906	0.03715	-0.00991
	(0.79)	(0.33)	(1.10)	(-0.16)	(0.76)	(-0.10)
061q	0.1455	0.40098	0.11448	0.2514	0.05797	0.15261
	(2.21)**	(2.75)***	(2.71)***	(2.68)***	(1.61)*	(1.90)*
062q	0.05221	0.15284	0.01802	-0.03175	0.0039	-0.00206
	(1.07)	(1.64)*	(0.57)	(-0.53)	(0.15)	(-0.04)
063q	0.12926	0.07698	0.05981	-0.00192	0.03554	-0.00154
	(2.39)***	(0.95)	(1.72)*	(-0.04)	(1.19)	(-0.03)
064q	0.0384	0.09584	0.00949	0.02312	-0.03085	-0.00945
	(0.60)	(0.83)	(0.23)	(0.31)	(-0.88)	(-0.15)
071q	0.16229	0.26699	0.06751	0.09598	0.05438	0.11114
	(2.90)***	(2.44)***	(1.88)*	(1.36)	(1.77)*	(1.85)*
072q	0.02518	0.13935	0.01236	0.06524	0.04234	0.07083
	(0.33)	(1.07)	(0.25)	(0.78)	(0.99)	(0.98)
054q-072q	0.09924	0.18595	0.04368	0.05352	0.02742	0.04357
	(4.17)***	(4.25)***	(2.85)***	(1.90)*	(2.10)**	(1.81)*

Source: Wind Info; Tianxiang Securities Investment Database.

Note: t-statistics is reported in parentheses. *,**,*** stand for the significancy of 10%,5%, and 1%.

Table 3.11: Table 5 Panel C: Robustness Check of Alternative Default Comparison Window for "Post"

Table 5. Robustness Check of Default Comparison Windows

Panel D. The regression is based on the sample including all firms with positive QFIIs in the current quarter. The observation period is from 49 days before the announcement and 48 days after the announcement. The dependent variable is the abnormal return. Independent variable is the dummy "after" from 2/5/7 days after the event to 48 days after the event, fraction (number) change, and the interaction of QFII change and the dummy "after". The default comparison window is [-49,+a), a=2,5,7.

	[2, 48]		[5, 48]		[7,48]		
	(Frac_t)-(Frac_t-1)	(Num_t)-(Num_t-1)	(Frac_t)-(Frac_t-1)	(Num_t)-(Num_t-1)	(Frac_t)-(Frac_t-1)	(Num_t)-(Num_t-1)	obs
054q	-0.03473	-0.03401	-0.04153	-0.02575	-0.03958	-0.02704	12740
	(-1.38)	(-0.67)	(-1.65)*	(-0.50)	(-1.56)	(-0.52)	
061q	-0.01051	0.02143	-0.02119	0.00482	-0.01447	0.01319	16562
	(-0.57)	(0.52)	(-1.14)	(0.12)	(-0.77)	(0.32)	
062q	-0.01818	-0.03522	-0.01058	-0.01695	-0.01526	-0.02278	18718
	(-1.31)	(-1.34)	(-0.76)	(-0.64)	(-1.10)	(-0.86)	
063q	0.00932	0.01406	0.00813	0.02072	0.01038	0.02093	20874
	(0.61)	(0.62)	(0.53)	(0.91)	(0.67)	(0.91)	
064q	-0.00622	-0.05247	-0.00501	-0.04959	0.00512	-0.04292	20286
	(-0.34)	(-1.61)	(-0.28)	(-1.52)	(0.28)	(-1.31)	
071q	-0.01362	-0.04596	-0.0138	-0.04347	-0.0153	-0.0549	23814
	(-0.86)	(-1.48)	(-0.87)	(-1.40)	(-0.96)	(-1.76)*	
072q	-0.05085	-0.09509	-0.05659	-0.10707	-0.07827	-0.12766	19600
	(-1.82)*	(-2.02)**	(-1.93)*	(-2.17)**	(-2.56)**	(-2.48)**	
054q-072q	-0.0151	-0.02954	-0.01576	-0.02501	-0.01467	-0.02654	132594
	(-2.20)**	(-2.33)**	(-2.29)**	(-1.96)**	(-2.11)**	(-2.07)**	

Source: Wind Info; Tianxiang Securities Investment Database.

Note: t-statistics is reported in parentheses. *,**,*** stand for the significancy of 10%,5%, and 1%.

Table 3.12: Table 5 Panel C: Robustness Check of Alternative Default Comparison Window for "After"

alternative default comparison period for a given period as the remaining three other periods. For example, in panel C, the stock abnormal returns in the "Post" window [0, a) are compared to those in "Before", "Pre", and "After" periods all together, i.e., the windows over [-49, 0) and [a, +48], a=2, 5, 7. Table 5 runs the following regressions in panel A, B, C, and D respectively:

$$AR_{it} = \alpha + \beta_{01}\Delta QFII_{it} + \beta_{02}Before + \beta_{11}\Delta QFII_{it}Before + \epsilon_{it} \tag{3.2}$$

$$AR_{it} = \alpha + \beta_{01}\Delta QFII_{it} + \beta_{02}Pre + \beta_{12}\Delta QFII_{it}Pre + \epsilon_{it} \tag{3.3}$$

$$AR_{it} = \alpha + \beta_{01}\Delta QFII_{it} + \beta_{02}Post + \beta_{13}\Delta QFII_{it}Post + \epsilon_{it} \tag{3.4}$$

$$AR_{it} = \alpha + \beta_{01}\Delta QFII_{it} + \beta_{02}After + \beta_{14}\Delta QFII_{it}After + \epsilon_{it} \tag{3.5}$$

Panel A shows insignificant coefficients in the last row pooled regression including the period between 054q and 072q for three "Before" periods, i.e., [-49, -2), [-49, -5), and [-49, -7). 072q sees some significantly positive coefficients in 4 of 6 columns. Panel B presents insignificant coefficients in the last row but some significant results in 061q and 071q although the signs are mixed for these two quarters. Panel C studies the relative impacts of QFII change on three "Post" periods comparing to the rest of the event period. The last row indicates all coefficients are significantly positive which confirm the benchmark results. It is noted that the magnitude of the coefficients in this specification is bigger than the benchmark results. This is not surprising because the controlling window in this specification include the "After" period in which negative coefficients are observed while the benchmark controlling window is the "Before" period. Panel D makes clear a significantly negative trend as the market adjusts itself in the long term comparing to the "Before", "Pre", and "Post" periods as a whole. However, the magnitude of the negative figures is less than that of the positive figures in panel C which means that the overall effects of QFII change on stock abnormal return is significantly positive in the long term.

So far the regressions are only based on the sample firms which have at least one QFII in the current quarter which means I only check the signaling effect of QFII change given the current QFII investment is positive. To further confirm the signaling

Table 6. Robustness Check with a New Sample

The regression is based on a new sample including all firms with positive QFIIs in either the previous or current quarter. The observation period is from 49 days before the announcement and 48 days after the announcement. The dependent variable is the abnormal return. Independent variables are the dummy variables for "pre" period from two days before the announcement to one day before the announcement, "post" period from the announcement day to one day after the announcement, "after" period from two days after the announcement to 48 days after the announcement, fraction/number change from the previous quarter to current quarter, and the interactions of time dummies and QFII fraction/number change. The default comparison period is "before" period from 49 days before the announcement to 3 days before the announcement.

	[-2,0)pre		[0,2)post		[2, 48]after		
	(Frac_t)-(Frac_t-1)	(Num_t)-(Num_t-1)	(Frac_t)-(Frac_t-1)	(Num_t)-(Num_t-1)	(Frac_t)-(Frac_t-1)	(Num_t)-(Num_t-1)	obs
061q	-0.05874	-0.30308	0.15977	0.43434	0.01152	0.01866	16856
	(-0.91)	(-2.13)**	(2.47)**	(3.05)***	(-0.63)	(0.46)	
062q	0.01101	-0.01681	0.09972	0.19871	-0.01689	-0.0318	22442
	(0.27)	(-0.21)	(2.43)**	(2.50)**	(-1.46)	(-1.42)	
063q	0.0302	0.0191	0.09024	0.08088	0.00474	0.00803	25284
	(0.68)	(0.27)	(2.02)**	(1.14)	(0.38)	(0.40)	
064q	0.03456	0.08732	-0.00943	-0.01883	0.00591	-0.00784	26068
	(0.67)	(0.91)	(-0.18)	(-0.20)	(0.41)	(-0.29)	
071q	-0.01531	0.0705	0.15841	0.26283	-0.00919	-0.02238	29988
	(-0.34)	(0.77)	(3.50)***	(2.86)**	(-0.72)	(-0.86)	
072q	-0.0151	-0.06006	-0.01939	0.04919	-0.01153	-0.0531	30772
	(-0.31)	(-0.63)	(-0.40)	(0.51)	(-0.65)	(-1.53)	
054q-072q	8.41E-04	0.00179	0.08754	0.16921	-0.00922	-0.01905	151410
	(0.04)	(0.05)	(4.47)***	(4.52)***	(-1.61)	(-1.74)*	

Source: Wind Info; Tianxiang Securities Investment Database.

Note: t-statistics is reported in parentheses. *,**,*** stand for the significance level of 10%,5%, and 1%.

Table 3.13: Table 6: Robustness Check with a New Sample

argument, I also consider the case that QFII investment reduces from positive to zero by including firms which were invested by QFIIs in the previous quarter but dropped off QFIIs hands in the current quarter. The same regression specification is applied to the new sample and the results are presented in table 6. Still the significantly positive coefficients in the "Post" period and slightly negative coefficients in the "After" period are preserved for this sample with newly added firms with negative QFII changes. The magnitudes of coefficients based on the new sample are smaller than the benchmark results. In the "Post" period this sample shows that 1% change in QFII fraction results in 0.088% increase in abnormal return and one more QFII results in 0.169% increase in abnormal return, while the benchmark sample indicates that 1% change in QFII fraction results in 0.094% increase in abnormal return and one more QFII results in 0.175% increase in abnormal return. In the "After" period this sample shows that one more QFII results in -0.019% change in abnormal returns on the daily basis while the benchmark sample indicates -0.023% change in abnormal returns on the daily basis. This suggests that an asymmetric signaling effect emitted from a (positive or negative) QFII change given a currently positive QFII holding and from a negative QFII change from a previously positive QFII holding to a currently zero QFII holding. A QFII change given a currently positive QFII holding leads to a larger magnitude of abnormal return change in both the "Post" period and "After" period than the same magnitude of negative QFII change from a previous positive to a current zero QFII holding does.

The regressions so far have assumed that the signaling effect is constant given any initial QFII holdings. However the slope could be quite different when the variable jumps from zero to a positive number or from positive to zero. To address this issue, I make up a subsample including firms which have zero QFIIs in either the previous or the current quarter. The same event period and regression specification are applied in this subsample. Table 7 shows the regression results for this subsample. It is shown that the 1% QFII fraction change results in 0.088% change in abnormal returns, which in the same magnitude with the result in table 6. However, one more QFII number change leads to 0.128% change in abnormal returns, which is smaller

Table 7. Robustness Check with Subsample I

The regression is based on the subsample including firms with zero QFIIs in either the previous or current quarter. The observation period is from 49 days before the announcement and 48 days after the announcement. The dependent variable is the abnormal return. Independent variables are the dummy variables for "pre" period from two days before the announcement to one day before the announcement, "post" period from the announcement day to one day after the announcement, "after" period from two days after the announcement to 48 days after the announcement, fraction/number change from the previous quarter to current quarter, and the interactions of time dummies and QFII fraction/number change. The default comparison period is "before" period from 49 days before the announcement to 3 days before the announcement.

	[-2,0)pre		[0,2)post		[2, 48]after		
	(Frac_t)-(Frac_t-1)	(Num_t)-(Num_t-1)	(Frac_t)-(Frac_t-1)	(Num_t)-(Num_t-1)	(Frac_t)-(Frac_t-1)	(Num_t)-(Num_t-1)	obs
061q	-0.10997	0.05954	0.16085	0.1621	0.00457	0.01353	6272
	(-0.84)	(0.2)	(1.24)	(0.55)	(0.12)	(0.16)	
062q	0.00493	0.02364	0.13771	0.21915	-0.0358	-0.05771	9800
	(0.09)	(0.22)	(2.43)**	(2.08)**	(-2.23)**	(-1.93)*	
063q	0.10646	0.10115	-0.03049	0.00779	-0.01486	-0.0236	11074
	(1.63)	(0.89)	(-0.47)	(0.07)	(-0.81)	(-0.73)	
064q	0.05	0.08401	0.02745	-0.10212	0.0093	0.02676	10976
	(0.71)	(0.65)	(0.39)	(-0.79)	(0.46)	(0.74)	
071q	-0.00367	0.01427	0.11923	0.19529	-0.01426	-0.01989	16268
	(-0.07)	(0.13)	(2.21)**	(1.71)*	(-0.92)	(-0.62)	
072q	-0.03943	-0.12769	0.02492	0.03872	0.00199	-0.01273	18130
	(-0.66)	(-1.05)	(0.42)	(0.32)	(0.09)	(-0.29)	
054q-072q	0.00268	0.00992	0.08804	0.12835	-0.0126	-0.02	72520
	(0.10)	(0.20)	(3.37)***	(2.54)**	(-1.64)	(-1.35)	

Source: Wind Info; Tianxiang Securities Investment Database.

Note: t-statistics is reported in parentheses. *,**,*** stand for the significance level of 10%,5%, and 1%.

Table 3.14: Table 7: Robustness Check with Subsample I

than the result in table 6. In contrast with the previous findings, this subsample does not see any significant readjustment effect in the After period which suggests that the overshooting or the long-term liquidity premia contraction is less likely for this subsample.

There are two types of firms in the subsample used in table 7: the first type is firms with zero QFII holdings in the previous quarter and positive QFII holdings in the current quarter; the second one is firms with positive QFII holdings in the previous quarter and zero QFII holdings in the current quarter. To further distinguish these two cases, I make up the second subsample including firms with zero QFIIs in the previous quarter but nonzero QFIIs in the current quarter. The same event window and regression specification are applied. Surprisingly coefficients for all interaction terms are insignificant suggesting that the signaling effects of this type of firms are not significant. This means the significant positive effects in table 7 are driven by firms with positive QFII holdings in the last quarter but zero QFII holding in the current quarter. Combining information from table 6 and table 3, the signaling effect of firms with QFII change from positive to zero is smaller than that of firms with QFII change from zero to positive and positive to positive as a whole.

$$Positive\ to\ zero < (Zero\ to\ positive)\ \&\ (Positive\ to\ positive) \tag{3.6}$$

Combining results in table 7 and table 8, signaling effect of firms with QFII change from zero to positive is less than that of firms with QFII change from positive to zero.

$$Zero\ to\ positive < Positive\ to\ zero \tag{3.7}$$

Combining the above two results, we can conclude the signaling effects for different types of QFII changes are in the following order:

$$Zero\ to\ positive < positive\ to\ zero < positive\ to\ positive \tag{3.8}$$

The signaling effect of QFII change from zero to positive is the smallest among the three. The signaling effect of QFII change from positive to zero lies in the middle. The signaling effect of QFII change from positive to positive figures (either in positive or negative directions) has the largest magnitude. This sequence of signaling effect

Table 8. Robustness Check with Subsample II

The regression is based on the subsample including firms with zero QFIIs in the previous but positive QFIIs in the current quarter. The observation period is from 49 days before the announcement and 48 days after the announcement. The dependent variable is the abnormal return. Independent variables are the dummy variables for "pre" period from two days before the announcement to one day before the announcement, "post" period from the announcement day to one day after the announcement, "after" period from two days after the announcement to 48 days after the announcement, fraction/number change from the previous quarter to current quarter, and the interactions of time dummies and QFII fraction/number change. The default comparison period is "before" period from 49 days before the announcement to 3 days before the announcement.

	[-2,0)pre		[0,2)post		[2, 48]after		
	(Frac_t)-(Frac_t-1)	(Num_t)-(Num_t-1)	(Frac_t)-(Frac_t-1)	(Num_t)-(Num_t-1)	(Frac_t)-(Frac_t-1)	(Num_t)-(Num_t-1)	obs
061q	-0.18364	-0.10641	0.07456	-0.25082	0.00978	0.02633	5978
	(-1.30)	(-0.30)	(0.53)	(-0.70)	(0.24)	(0.26)	
062q	0.05404	0.14391	-0.05823	-0.17792	-0.05446	-0.10331	6076
	(0.55)	(0.65)	(-0.59)	(-0.80)	(1.95)*	(-1.65)*	
063q	0.02517	-0.35731	-0.03673	-0.06952	-0.02769	-0.07124	6664
	(0.20)	(-1.06)	(-0.29)	(-0.21)	(-0.76)	(-0.74)	
064q	0.05954	0.31308	0.22781	0.17399	-0.00754	-0.08025	5194
	(0.48)	(1.11)	(1.83)*	(0.62)	(-0.21)	(-1.01)	
071q	0.04522	0.33546	0.02278	-0.15615	0.00935	0.02774	10094
	(0.54)	(1.48)	(0.27)	(-0.69)	(0.40)	(0.43)	
072q	-0.00294	-0.81075	0.26288	0.65759	-0.02216	0.00726	6958
	(-0.02)	(-1.48)	(1.51)	(1.20)	(-0.35)	(0.04)	
054q-072q	0.01883	0.10931	0.07113	-0.03115	-0.0105	-0.02866	40964
	(0.40)	(0.92)	(1.51)	(-0.26)	(-0.78)	(-0.84)	

Source: Wind Info; Tianxiang Securities Investment Database.

Note: t-statistics is reported in parentheses. *,**,*** stand for the significance level of 10%,5%, and 1%.

Table 3.15: Table 8: Robustness Check with Subsample II

suggests that (1) the domestic investors may not be fully convinced by just seeing the first purchase by QFII. They would like to see more; (2) the domestic investors are more responsive to firms with previously positive QFII investment than to those without previous QFII investment; (3) the domestic investors are most responsive to firms with both previously and currently positive QFII investment. This result is confirmed by the regression shown in table 9 which is based on firms with non-zero QFIIs in both the previous and current quarter. 1% change from positive to positive QFII fraction results in 0.093% increase in abnormal returns while one change from positive to positive QFII number leads to 0.208% increase in abnormal returns. These magnitudes are larger than both the benchmark results (0.094% and 0.175%) and the results including firms with QFII change from positive to zero (0.088% and 0.169%).

The regressions so far have assumed linear effect of QFII change on stock abnormal returns. For robustness check, I will replace the linear QFII change with log QFII change, i.e., replace QFII(t)-QFII(t-1) with lnQFII(t)-lnQFII(t-1), or lnQFII(t)/QFII(t-1). The ratio of QFII in this quarter relative to the previous quarter rather than the difference between the two drives the magnitude of signaling effect. For example, QFII change from 1% to 2% will have the same signaling effect as the change from 10% to 20%. The sample used for this specification only include firms with non-zero QFIIs in both the previous and current quarter. The coefficients of the interaction terms are shown in table 10. The signaling effect is significant while the readjustment effect is insignificant. Suppose a firm has 1% QFII holding in the last quarter and 10% QFII holding in the current quarter, this QFII fraction change results in 0.837% change in abnormal return according to table 9 while 0.914% change in abnormal return according to table 10.

My estimated market response to the QFII announcement can be compared to the estimates in other event studies related to the Chinese public companies by Li (2007) and Huang and Zhao (2008). Li (2007)estimated the value of political connection by a case study in Shanghai Municipal Party Secretary's purge and found that the loss of political connections led to a 2.31-3% decline in connected firms' abnormal return. Huang and Zhao (2008) showed that the loan announcements made by the

Table 9. Robustness Check with Subsample III

The regression is based on the subsample including firms with positive QFIIs in both the previous and the current quarter. The observation period is from 49 days before the announcement and 48 days after the announcement. The dependent variable is the abnormal return. Independent variables are the dummy variables for "pre" period from two days before the announcement to one day before the announcement,"post" period from the announcement day to one day after the announcement, "after" period from two days after the announcement to 48 days after the announcement, fraction/number change from the previous quarter to current quarter, and the interactions of time dummies and QFII fraction/number change. The default comparison period is "before" period from 49 days before the announcement to 3 days before the announcement.

	[-2,0)pre		[0,2)post		[2, 48]after		
	fraction_change	number_change	fraction_change	number_change	fraction_change	number_change	obs
054q	0.03161	0.13145	0.05261	0.03649	-0.01668	-0.01791	8526
	(0.30)	(0.58)	(0.50)	(0.16)	(-0.56)	(-0.28)	
061q	-0.04378	-0.50147	0.15379	0.50251	-0.01794	0.00913	10584
	(-0.58)	(-2.86)***	(2.05)**	(2.87)***	(-0.85)	(0.18)	
062q	0.0218	-0.01542	0.04786	0.12577	0.0846	0.02469	12642
	(0.36)	(-0.12)	(0.79)	(0.98)	(0.50)	(0.68)	
063q	-0.05489	-0.02024	0.20226	0.14526	0.02316	0.0315	14210
	(-0.89)	(-0.22)	(3.28)***	(1.60)	(1.33)	(1.23)	
064q	0.01905	0.09221	-0.04913	0.10331	-0.0049	-0.0586	15092
	(0.24)	(0.63)	(-0.63)	(0.70)	(-0.22)	(-1.41)	
071q	-0.03891	0.13115	0.24626	0.36329	-4.54E-04	0.03065	13720
	(-0.47)	(0.80)	(3.00)***	(2.21)**	(-0.02)	(0.66)	
072q	0.05478	0.06696	-0.08251	0.07044	-0.06025	-0.12913	12642
	(0.61)	(0.42)	(-0.92)	(0.45)	(-1.84)*	(-2.25)**	
054q-072q	-4.99E-04	0.00102	0.09263	0.20761	-0.0088	-0.01186	87416
	(-0.02)	(0.02)	(3.18)***	(3.76)***	(-1.05)	(-0.74)	

Source: Wind Info; Tianxiang Securities Investment Database.

Note: t-statistics is reported in parentheses. *,**,*** stand for the significance level of 10%,5%, and 1%.

Table 3.16: Table 9: Robustness Check with Subsample III

Table 10. Robustness Check with Subsample III--log change

The regression is based on the subsample including firms with positive QFIIs in both the previous and the current quarter. The observation period is from 49 days before the announcement and 48 days after the announcement. The dependent variable is the abnormal return. Independent variables are the dummy variables for "pre","post", and "after" periods, the current quarter' s ln(fraction or number) subtracted by the previous quarter' s ln(fraction or number), and the interactions of time dummies and difference of ln(fraction or number). The default comparison period is "before" period from 49 days before the announcement to 3 days before the announcement.

	[-2,0)pre		[0,2)post		[2, 48]after		
	ln(F_t)-ln(F_t-1)	ln(N_t)-ln(N_t-1)	ln(F_t)-ln(F_t-1)	ln(N_t)-ln(N_t-1)	ln(F_t)-ln(F_t-1)	ln(N_t)-ln(N_t-1)	obs
054q	-0.04249	0.17598	0.64774	-0.18295	-0.00809	-0.00325	8526
	(-0.06)	(0.35)	(0.92)	(-0.37)	(-0.04)	(-0.02)	
061q	-0.29523	-1.3387	0.86958	1.08675	-0.08803	0.09129	10584
	(-0.65)	(-3.34)***	(1.92)*	(2.71)***	(-0.69)	(0.81)	
062q	0.02794	-0.04513	0.10935	0.18147	0.03184	0.06096	12642
	(0.08)	(-0.15)	(0.31)	(0.61)	(0.32)	(0.72)	
063q	-0.18049	-0.0136	0.54922	0.20352	0.12487	0.07251	14210
	(-0.62)	(-0.06)	(1.89)*	(0.91)	(1.52)	(1.15)	
064q	0.07142	0.18863	0.01704	0.50859	0.03277	-0.19256	15092
	(0.19)	(0.49)	(0.04)	(1.32)	(0.30)	(-1.76)*	
071q	-0.53804	0.31287	1.04707	0.85561	-0.14773	-0.03714	13720
	(-1.15)	(0.73)	(2.25)**	(2.00)**	(-1.12)	(-0.31)	
072q	0.20526	0.04974	-0.38319	0.10139	-0.30579	-0.34479	12642
	(0.56)	(0.13)	(-1.05)	(0.26)	(-2.31)**	(-2.44)**	
054q-072q	-0.05305	-0.06314	0.39716	0.43301	-0.06504	-0.04069	87416
	(-0.35)	(-0.47)	(2.65)***	(3.21)***	(-1.48)	(-1.04)	

Source: Wind Info; Tianxiang Securities Investment Database.

Note: t-statistics is reported in parentheses. *,**,*** stand for the significance level of 10%,5%, and 1%.

Table 3.17: Table 10: Robustness Check with Subsample III-Difference of log

public companies in China had negative signaling effects on their abnormal returns. In particular, they estimated that firms making loan announcement on average saw a -0.42% 5-day cumulative abnormal return following their loan announcements at a 5% significance level; firms borrowing from big four state-owned Bank saw a -0.47% 5-day cumulative abnormal return following their loan announcements at a 10% significance level; state-owned enterprises borrowing from big four state-owned Bank witnessed a -0.65% 5-day cumulative abnormal return following their loan announcements at a 5% significance level. These figures are in the same range with my estimates of QFII announcement, i.e., 0.938% daily abnormal return increase caused by 10% change in QFII fraction and 0.175% daily abnormal return increase resulted from one more QFII presence.

3.6 Conclusion

This paper studies the signaling effect of QFII investment on China domestic A-share stock returns. Results show that changes of QFII number and QFII holding fraction in public companies have significantly positive effects on stock abnormal returns immediately following the announcement date. While this premium is unlikely to be driven by the transaction of QFII investment itself, it is most likely to be a result of QFII investment signal through favorable judgment from domestic investors. In particular, a ten unit change in QFII number results in 1.750% abnormal return and ten percent change in QFII ownership leads to 0.938% abnormal return. Subsample regressions show that the signaling effect is most pronounced for firms with both previously and currently positive QFII holdings and least pronounced for firms without previous QFII investment. The method of this paper can be applied to the research on the signaling effect of foreign investors in the H-share market. Moreover, as China further liberalizes its stock markets, A-share and H-share markets will become more interrelated. It would be an interesting direction for future research to study the relationship between foreign investors' activities in these two different markets.

Bibliography

[1] Ahn, James and David Cogman. 2007. "A quiet revolution in China's capital markets," McKinsey Quarterly, July 2007.

[2] Allen, F, Qian, J., Qian, M., 2005. Law, Finance, and Economic Growth in China. Journal of Financial Economics 77, 57-116.

[3] Clas, Bergstrom and Ellen Tang. 2001. "Price differentials between different classes of stocks: an empirical study on Chinese stock markets. Journal of Multinational Financial Management. 11(2001): 407-426.

[4] Chan, Kalok, Albert J. Menkveld, and Zhishu Yang. 2008. Information Asymmetry and Asset Prices: Evidence from the China Foreign Share Discount. Journal of Finance, 63(1): 159-196.

[5] Chen, J. and Strange, R. (2004) The Evolution of Corporate Governance in China, The Management Center Research Paper Series No. 25, Kings College, London.

[6] Delios, Andrew, Zhijian Wu, and Nan Zhou. 2006. A New Perspective on Ownership Identities in Chinas Listed Companies. Management and Organization Review, 2:3, 319-343.

[7] Eun, Cheol S., Wei Huang. Asset Pricing in Chinas domestic stock markets: Is there a logic? Pacific-Basin Finance Journal 15(2007): 452-480.

[8] Ferguson, Michael J., Paul B. McGuinness. 2004. Chinese Securities Reform: The Role of QFIIs in the Corporate Governance Process. Business Horizons, 47(2): 53-61.

[9] Goetzemann, W., Ukhov, A., Zhu, N., 2001. China, and the world financial markets 1870-1930: modern lessons from historical globalization. Working paper. Yale University.

[10] Gordan, R. G., Li, W. 1999. Government as a Discriminating Monopolist in the Financial Market: the case of China. NBER working paper, No. 7110, National Bureau of Economic Research.

[11] Huang, Weihua, Shan Zhao. 2008. "When Loans are Bad News: Market Reactions to Loan Announcements under Poor Governance." Paper Presentation in the 2nd European EIF Job Market in Finance and Accounting.

[12] Jia, Jin, Qian Sun and Wilson Tong. 2005. Privatization via an Oversea Listing: Evidence from Chinas H-Share Firms. Financial Management, Autumn 2005: 5-30.

[13] Jingu, Takeshi. 2007. Corporate Governance for Listed Companies in China C Recent Moves to Improve the Quality of Listed Companies. Nomura Capital Market Review, 10(2): 36-52.

[14] Kato, Takao, Cheryl Long. 2006. CEO turnover, firm performance, and enterprise reform in China: Evidence from Micro Data. Journal of Comparative Economics, 34(2006), 796-817.

[15] Li, Hongbin, Lingsheng Meng, Qian Wang, and Li-An Zhou, 2007. Political Connections, Financing, and Firm Performance: Evidence from Chinese Private Firms. Journal of Development Economics, article in press.

[16] Liu, G.S. and Sun, P. (2003). Identifying Ultimate Controlling Shareholders in Chinese Public Corporations: An Empirical Survey, Asia Program Working Paper Series No. 2, Royal Institute of International Affairs, London (UK).

[17] McGuinness, Paul B. 2002. Reform in Chinas B share markets and the shrinking A/B share price differential. Applied Economic Letters (9 September): 705-709.

[18] Shin, Jae Yong. 2006. Institutional investor legal type and the use of CEO equity-based incentives. Working paper, UIUC.

[19] Sun,Qian, Wilson H.S, Tong. Chinas Share Issue Privatization: the Extent of its Success. Journal of Financial Economics, 70(2003): 183-222.

[20] Sias, Richard W., Laura T. Starks, Sheridan Titman. Changes in Institutional Ownership and Stock Returns: Assessment and Methodology. Journal of Business, 2006, vol.7, no. 6: 2869-2910.

[21] Tam, Ou Kit (1999) The Development of Corporate Governance in China, Cheltenham, UK and Northampton, M.A., USA: Edward Elgar.

[22] Wang, Xiao Lu, Kan Shi, Hong Xia Fan. Psychological mechanisms of investors in Chinese stock markets. Journal of Economic Psychology, 27(2006): 762-780.

[23] Yang, Jack J.W. The information spillover between stock returns and institutional investors trading behavior n Taiwan. International Review of Financial Analysis, 11(2002): 533-547.

APPENDIX

name	# of investment	Class	Origin	Custodian Bank	Quota(100 million US$)
Barclays Bank PLC	6	1	UK	Standard Chartered Bank Shanghai	0.75
Dresdner Bank Aktiengesellschaft	3	1	Germany	Industrial and Commercial Bank of China	0.75
Deutsche Bank AG	218	1	Germany	Citi Bank Shanghai	4
CALYON S.A.	11	1	Europe	HSBC Shanghai	0.75
La Compagnie Financiere Edmond de Rothschild Banque	20	1	France	Bank of China	1
BNP Parisbas	63	1	France	Agricultural Bank of China	2
Societe Generale	8	1	France	HSBC Shanghai	0.5
Fortis Bank	218	1	Europe	Bank of China	5
ING Bank N.V.	182	1	Europe	Standard Chartered Bank Shanghai	3.5
ABN AMRO Bank N.V.	56	1	Europe	HSBC Shanghai	1.75
Hang Seng Bank Limited	39	1	HK	China Construction Bank	1
The Bank of Nova Scotia	4	1	Canada	Bank of China	1.5
JP Morgan Chase Bank	33	1	US	HSBC Shanghai	1.5
UBS GB	476	1	Europe	Citi Bank Shanghai	8
The Hongkong and Shanghai Banking Corporation Limited	240	1	HK	China Construction Bank	4
DBS Bank Ltd	2	1	Singapore	Agricultural Bank of China	1
Standard Chartered Bank Hong Kong	22	1	UK	Bank of China	0.75
JF Asset Management Limited	23	2	US	China Construction Bank	1.5
AMP Capital Investors Limited	8	2	Australia	China Construction Bank	2
KBC FinancialProducts UK Limited	1	2	UK	Citi Bank Shanghai	1

(to be continued in the next page)

(Appendix continued)					
Goldman Sachs & Co.	41	2	US	HSBC Shanghai	3
Goldman Sachs Asset Management International	33	2	US	HSBC Shanghai	2
Citigroup Global Markets Limited	213	2	US	Standard Chartered Bank Shanghai	5.5
INVESCO Asset Management Limited	22	2	UK	Bank of China	2.5
Lehman Brothers (Europe)	60	2	Europe	Agricultural Bank of China	2
Martin Currie Investment Management Limited	131	2	Scotland	Citi Bank Shanghai	1.2
AIG Global Investment Corp.	19	2	US	Bank of China	0.5
Merrill Lynch International	186	2	US	HSBC Shanghai	3
Morgan Stanley & International Limited	228	2	US	HSBC Shanghai	4
Morgan Stanley Investment Management Inc.	33	2	US	HSBC Shanghai	2
Nikko Asset Management Co., Ltd	136	2	Japan	Bank of Communications	4.5
Credit Suisse (Hong Kong) Limited	139	2	HK	Industrial and Commercial Bank of China	5
UBS Global Asset Management (Singapore) Ltd	1	2	Singapore	Citi Bank Shanghai	2
GE Asset Management Incorporated	6	2	US	HSBC Shanghai	2
Nomura Securities Co., Ltd	15	2	Japan	Citi Bank Shanghai	3.5
Prudential Asset Management (Hong Kong) Limited	12	2	UK	Agricultural Bank of China	2
The Dai-Ichi Mutual Life Insurance Company	1	3	Japan	Bank of China	1
Bill&Melinda Gates Foundation	100	4	US	HSBC Shanghai	1
Temasek Fullerton Alpha Pte Ltd.	12	4	Singapore	HSBC Shanghai	1
Government of Singapore Investment Corporation Pte Ltd	25	4	Singapore	Standard Chartered Bank Shanghai	1
Yale University	8	4	US	HSBC Shanghai	0.5

Note: class is defined as: banks=1, investment companies=2, insurance comapanies=3, others=4. Others include pension, charitable foundations, university endowments, and government investment companies,

Table 18: Appendix: QFIIs as of January 2007