

MASTER OF PHILOSOPHY

Empirical studies of corporate governance in china

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Aston University

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EMPIRICAL STUDIES OF CORPORATE GOVERNANCE IN CHINA

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Master of Philosophy

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Thesis Summary

The thesis aims to provide empirical studies towards Chinese corporate governance. Since China initially established its stock exchange system in the 1990s, it has gone through different stages of changes to become a more market-oriented system. Extensive studies have been conducted in Chinese corporate governance, however, many were theoretical discussion focusing on the early stages and there's a general lack of empirical analysis.

This paper provides three empirical analysis of the Chinese corporate governance: the overall market discipline efficiency, the impact of capital structure on agency costs, the status of 2005-2006 reform that substantially modified ownership structure of Chinese listed firms and separated ownership and control of listed firms.

The three empirical studies were selected to reflect four key issues that need answering: the first empirical study, using event study to detect market discipline on a collective level. This study filled a gap in the Chinese stock market literature for being the first one ever using cross-market data to test market discipline.

The second empirical study endeavoured to contribute to the existing corporate governance literature regarding capital structure and agency costs. Two conclusions can be made through this study: 1) for Chinese listed firms, higher gearing means higher asset turnover ratios and ROE, i.e. more debts seem to reduce agency costs; 2) concentration level of shares appears to be irrelevant with company performance, controlling shareholders didn't seem to commit to the improvement of corporate assets utilization or contribute to reducing agency costs. This study addressed a key issue in Chinese corporate governance since the state has significant shareholding in most big listed companies. The discussion of corporate governance in the Chinese context would be completely meaningless without discussing the state's role in corporate governance, given that about 2/3 of the almost all shares were non-circulating shares controlled by the state before the 2005-2006 overhaul ownership reform.

The third study focused on the 2005-2006 reform of ownership of Chinese listed firms. By collecting large-scale data covering all 64 groups of Chinese listed companies went through the reform by the end of 2006 (accounting for about 97.86% and 96.76% of the total market value of Shanghai (SSE) and Shenzhen Stock Exchange (SZSE) respectively), a comprehensive study about the ownership reform was conducted. This would be first and most comprehensive empirical study in this area. The study of separated ownership and control of listed firm is the first study conducted using the ultimate ownership concept in Chinese context.

Key Words: corporate governance, agency costs, ownership structure, capital structure, insider trading

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Empirical Studies of Corporate Governance in China

Chapter 1 Introduction

1.1 Background

The market-oriented economic reform during the past thirty years in China has led to rapid development of China's stock market. Especially after the implementation of Company Law in July 1994¹, most of the medium-to-big state owned enterprises (SOE) started their process of corporatization and began to get listed on domestic or foreign stock market. By end of 2011, the number of companies listed on Shanghai and Shenzhen Stock Exchange reached 2,341 companies, total market value 21.5 trillion rmb, ranking the third globally². Given that China's GDP in 2011 is 47.16 trillion rmb, its stock market capitalization ratio to GDP is about 46%, almost half of its GDP; without any doubt, listed firms in China take a very prominent position in Chinese economy. Comparatively, according to data from the World Bank, the stock market capitalizations to GDP ratios of the same year for other countries are: 103.6% for U.S., 49.4% for U.K. 60.3% for Japan and 33.2% for Germany.

¹ Company Law of People's Republic of China was approved on 29th December, 1993 and enforced since 1st July 1994. It has been subsequently modified in 1999, 2004 and 2005. The current Company Law was enforced since 1st June 2006 to reflect changes in Chinese economic system, namely to provide improved guidance in corporate governance and protect stake holders' interests.

²Data collected from the Annual Report of China Securities Regulatory Commission 2011.

In spite of the dramatic development of Chinese stock market in the past two decades, it is still a relatively new emerging market, compared to much more mature and developed worldly stock market such as NYSE (founded in 1817), NASDAQ (founded in 1971; though founded relatively recently, it's an institution in a mature and developed market with almost two centuries of investment culture and history as well as very experienced professionals), London Stock Exchange (founded in 1801) or Amsterdam Stock Exchange (founded in 1602) etc.

Without any doubt, Chinese stock market and corporate governance has been a focal point of study for many scholars and researchers, such as Tian and Estrin (2007,2008), Bai et al (2006), Nenova (2003). However, it is still necessary to conduct further study for the following reasons.

First of all, Chinese stock market has its own distinctive characteristics that deserve more in-depth research. It is the writer's belief that Chinese listed firms distinguish themselves from the fact that the state has very influential impact on them. This has something to do with the listed firms' initial establishment. As a compromise between corporatization and 'protecting' state assets, the shares of listed firms got arbitrarily divided into circulating and non-circulating shares, the latter takes about 1/3 of total shares. The purpose of such a distinction is to preserve state's control over the shares and subsequently the decision-making rights of the listed firms. Other than this, the state can also exert influence over the listed firm through state-owned banks' differential lending policies. Such arrangement was believed to have the best interest of state-owned-enterprises (SOE) at heart. However, it is arguable as to how beneficial it is in terms of the development of the stock market as well as economy. One of the most important functions of Stock market as a financing source for companies is to raise capital from investors for their operational needs. It relies heavily on investors' confidence of the company's performance and options to improve the performance should it fail to satisfy. Such arbitrary arrangement largely restricted

investors' choices, since the tight grip of control by the state indicates it's extremely difficult if not impossible to make substantial changes, which in turn would discourage investment and damage the healthy development of the stock market in the long-term, leading to a stagnant stock market. It is equally important for the market to be a fair and open market without much foul play, another factor that might sabotage investors' confidence in the market. Thus it would be highly important to test the stock market's integrity so as to keep the policy makers and stakeholders informed of the status of the market and take necessary measures should they need to rectify the situation.

Secondly, as argued above, an emerging market such as China is still going through its formative stages while other developed markets already had centuries of experiences of market development. There's room for improvement in terms of corporate governance. According to the Cadbury Report³ (1992), corporate governance involves regulatory mechanisms, and the roles and relationships between a company's management, its board, shareholders and other stakeholders. It is important to have proper corporate governance to ensure the healthy operation of business. Failed energy giant Enron, and its bankrupt employees and shareholders have been a prime argument for the importance of solid corporate governance. However, the short period of Chinese stock markets' existence and difficulty to access data leads to insufficient empirical study. As a newly established market, regulations and information disclosure policies have only gradually come into shape: for instance, its main regulating law was only finalised in 2006. Given such circumstances, it is difficult to access authoritative sources of data with consistency and unity, making it particularly difficult to conduct empirical analysis. All the three studies included in this paper are empirical studies, which can make substantial contribution to the existing literature by using data-packed research.

³ The Cadbury Report, aka Financial Aspects of Corporate Governance, is a report of a committee chaired by Adrian Cadbury that sets out recommendations on the arrangement of company boards and accounting systems to mitigate corporate governance risks and failures. The report was published in 1992. The report's recommendations have been adopted in varying degree by the European Union, the United States, the World Bank, and others.

Thirdly, the stock market itself is still going through different stages of transformation and dramatic changes. It is highly necessary to conduct up to date studies to reflect the latest development and circumstances in the market for an accurate account of the current status. The third empirical study was conducted targeting the most substantial stock market reform in recent years (2005-2006), using first hand data collected from companies' annual reports, information officially released by China Securities Regulation Commission and stock market information, covering a large portion of all listed firms. This study is the first and most comprehensive empirical study of the latest stock market reform and would make valuable contribution to Chinese corporate governance.

For the above reasons, data-packed empirical studies will be conducted to do research on Chinese stock market discipline and Chinese corporate governance. In conclusion, the studies showed that there seems to be information spillage from one type of shares to another type, supported by the event study; the biggest shareholders don't seem to add value to the performance of listed firms, though increasing the level of debts plays a positive role in company performance. Finally, the 2005-2006 stock market reform, originally designed to dramatically reduce the state influence by allowing non-circulating shares, mostly controlled by the state, to circulate freely on the market, has radically changed the ownership structure, presenting the latest development of Chinese corporate governance status.

1.2 Contribution

These studies addressed different aspects of corporate governance issues in the Chinese context. They confirmed the emerging market status of the Chinese stock market albeit its widely acknowledged rapid

development over the past decades; contrary to what others might believe, the empirical study shows that fast development doesn't equate to a well regulated and fully developed mature market. They outlined features and phenomenon that are unique to the Chinese market and can't be explained by the 'standard' economic theories based on western mature market, such as principal-principal agency issues rather than principal-agent agency issue, adding to the existing literature of corporate governance study. It highlighted and pinpointed the overwhelmingly prevalent and strong state control even after the biggest ownership reform in history. Although this is not unknown to many, nobody has ever depicted the precise scale and scope of state control of almost the entire listed firms on Chinese stock market. The large-scale comprehensive data was then used to apply the ultimate ownership concept to test established western theories regarding separated ownership and control in the Chinese context, again showing the 'anomaly' nature of Chinese corporate governance issue. Overall, these studies have contributed to the current corporate governance literature by presenting a very maverick Chinese case, each through empirical study and analysis. Given these singularities of the Chinese market, studies in this area would warrant more interesting insight and refreshing perspective to the current literature of corporate governance study.

Empirical study one: Event Study of Detecting Information Spillage on Chinese Stock Market.

The aim is to test the efficiency of Chinese market discipline by detecting the existence of information spillage on the stock market. Had there been no such spillage, in case of major event announcement, both A shares and B shares should have been traded exactly the same way. By conducting Granger-causality test, a causal relationship has been established between A shares and B shares, suggesting information was flowing from A shares to B shares and thus indicates information spillage. The study of testing the actual development status of Chinese stock market bears important meaning for policy makers; they could then address such issues accordingly targeting exposed weak area. This would be specifically discussed in the concluding chapter 5.

Empirical study two: Impact of Capital Structure on Chinese Listed Firms

The aim of this study is to decide whether two of the most important corporate governance mechanisms, one internal (biggest shareholders) and one external (creditors), play any significant role in terms of corporate governance in China. Results show the biggest shareholders don't seem to contribute to company operation performance while debt plays a positive role in improving company value. Such seemingly contradictory conclusion owes very much to the unique feature of Chinese market, providing very valuable and important insight to the understanding of corporate governance in the Chinese context.

Empirical study three: The 2005-2006 Ownership Reform and Separate Ownership and Control

A very comprehensive sample of data targeting almost every listed company in the market were collected to test the scale and effect of the most substantial reform in the history of Chinese stock market. Such data was used to conduct empirical study regarding impact of separated ownership and control on company value. Results show that after the stock market reform ownership of Chinese listed firms remained status quo in essence, the state's powerful control was intact in spite of such a large scale reform. There is a positive relationship between concentration level of the biggest shareholder and firm performance and a negative relationship between the separation of control and firm performance. Again, this goes against the grain of economic theories based on western market, presenting very valuable and innovative insight to corporate governance on Chinese market, adding to existing literature.

The three empirical studies were selected to reflect key issues that need answering: the first empirical study, using event study to detect information spillage on a collective level. This is the first study using cross-market data to test level of market discipline.

The second empirical study endeavoured to identify the important factors determining the efficiency of corporate governance through testing companies' capital structure and agency costs. Two conclusions can be made through this study: 1) for Chinese listed firms, higher gearing ratio means higher asset turnover ratios and ROE, i.e. more debts seem to boost performance/reduce agency costs; 2) concentration level of shares appears to be irrelevant with company's operational performance, controlling shareholders didn't seem to commit to the improvement of corporate assets utilization. This study addressed a key issue in Chinese corporate governance since the state has significant shareholding in most big listed companies. The discussion of corporate governance in the Chinese context would be completely meaningless without discussing the state's role in corporate governance, given that almost 1/3 of all the shares were non-circulating shares controlled by the state before the 2005-2006 overhaul ownership reform.

The third study focused on the 2005-2006 reform of ownership of Chinese listed firms. By collecting large-scale data covering all 64 groups of Chinese listed companies went through the reform by the end of 2006 (accounting for about 97.86% and 96.76% of the total market value of Shanghai and Shenzhen Stock Exchange respectively), a comprehensive study about the ownership reform was conducted. This would be first and most comprehensive empirical study in this area regarding Chinese corporate governance. This study would subsequently be the first study ever to use the ultimate ownership concept to conduct empirical test of the relationship between firm performance and its biggest shareholders' concentration level; the relationship between firm performance and the separated control/cash flow.

It filled the gap in Chinese stock market and corporate governance literature in the following areas:

Firstly, instead of general theoretical discussion alone, this thesis used a large amount of data to substantiate theories and hypothesis. This has added valuable empirical input to the existing literature regarding Chinese corporate governance. Secondly, it focused on one of the most significant reforms in Chinese stock market, supported by very comprehensive across the market data, sampling data of 97.86% and 96.76% of the total market value of Shanghai and Shenzhen Stock Exchange respectively.

1.3 Layout of following chapters.

The chapters will be arranged as following:

Chapter 2 include an empirical study of information spillage on Chinese stock market, using event study.

Chapter 3 contains the empirical study of the impact of capital structure on corporate governance in China. The analysis suggests the biggest shareholders don't seem to add value to company operational efficiency; while company debts seem to have stronger motivational power to boost company performance.

Chapter 4 focuses on the 2005-2006 stock market reform in China and uses post-reform data to test impact of separate ownership and control on company value.

Chapter 5 Concludes.

Chapter 2: Event Study of Information Spillage Detection in Chinese Stock Market

As discussed in Chapter 1, Chinese stock market has only been established in the 1990s and is one of the emerging markets. This means it is still in the process of formulating rules and making improvement along the way. This chapter focuses on testing Chinese stock market using event study to decide whether there's information spillage.

One of the most important functions of Stock market as a financing source for companies is to raise capital from investors for their operational needs. It relies heavily on investors' confidence of the company's performance and options to improve the performance should it fail to satisfy. It is equally important for the market to be a fair and open market, another factor that might sabotage investors' confidence in the market. Thus it is would be highly important to test the stock market's integrity so as to keep the policy makers and stakeholders informed of the status of the market and take necessary measures should they need to rectify the situation.

The "Objectives and Principles of Securities Regulation" published by the International Organization of Securities Commissions (IOSCO) in 1998 and updated in 2003 states that the three objectives of good securities market regulation are:

1. Investor protection,
2. Insuring that markets are fair, efficient and transparent, and
3. Reducing systemic risk.

The importance of a fair, efficient and transparent market has been emphasized; phenomenon such as information spillage on a stock market would jeopardize the principle of fairness and create an unfair advantage to those who are privy to earlier access of information. Thus it is important to detect and take measures to eradicate such practice.

The World Bank and International Monetary Fund now use the IOSCO Core Principles in reviewing the financial health of different country's regulatory systems as part of these organizations' financial sector assessment program.

Event study was used to observe the market reaction towards company news announcements and see whether part of the market appears to know that information beforehand. If the possibility of 'information spillage' before the news announcement gets ruled out, it means good market practices are in place and vice versa.

2.1 Event Study Methodology

In a nutshell, event study refers to studies using the occurrence of significant news (the event) as a benchmark to compare the before and after situations.

As summarized by Macinlay (1997), event study has a long history. James Dolley (1933) is one of the first to use it analyzing normal price changes at the time of the stock splits. It is the seminal work of Eugene Fama (1969) that introduced the methodology essentially used today. Fama et al. studied the

effects of stock splits after removing the effects of simultaneous dividend increases. In years to come, there have been modifications to the existing method. They relate to the complications arising from violations of statistical assumptions used in the early work and related to adjustments in the design to accommodate more specific hypothesis.

Event studies are used to measure the impact of an economic event on firm value. Assuming that the event will be reflected in traded share prices, these studies focus on how share prices respond to information released during a public announcement of the event (Battacharya et al 2000).

Chinese companies issue many different kinds of equity. For the purpose of this study, two types of shares interest us, the A-shares and B-shares. A shares may only be held by Chinese citizens and B shares may only be held by foreign investors or Chinese citizens residing abroad. It is this unique arrangement of A shares and B shares that enable us to conduct the granger-causality test to determine the direction of information leak, as discussed in details in section 3.5.2 A

In the specific case of our research, 'event' would be company performance related news, such as mergers and acquisitions, spin-offs, sell-off, etc. the kind of news that are significant enough to motivate investors to react accordingly such as buying or selling shares. Events could be used as a form of benchmark to determine the existence of changes before and after the occurrence of events.

2.2 Conceptual Framework of Information Spillage Detection.

Bhattacharya et al (2000) gives out their framework of the detection of information spillage. In a stock market where the stock prices do not seem to react to firm-specific news, several scenarios may possibly lead to such phenomenon:

(1).The stock market is inefficient. This implies that stock prices are not linked to firm values and stock prices don't catch new information about firm value released through corporate announcements. This is not true for Chinese stock market. Research conducted by Liu et al (1997) and Lawrence et al (1997) have shown that the two stock markets (Shanghai Stock Market and Shenzhen Stock Market) of China displayed weak-form efficiency. Therefore, this is not a viable explanation for lack of reaction to news-worthy events.

(2).The sample size is too small to pick up the market reaction towards company news. Similarly this can be disabused due to the reaction from stock market to big events. The same applies to the following scenario (3).

(3).There is no value-relevant new announcements. In this case, even if the stock market is efficient, prices have no announcement against which to respond to.

(4).The stock market is efficient and corporations do produce value-relevant news, the news may be completely anticipated. In such a market, the news brings no surprises and thus the prices wouldn't show any reaction. If this were the case, both A shares and B shares on Chinese stock markets would have displayed the same reaction: those events are either perceived as surprises on both markets or treated as not worthy of action on both markets. Should there be different reactions from A shares and B shares, this possibility would be ruled out.

(5). Mechanism prohibiting information spillages doesn't exist in the stock market, or, if it does, it is not enforced efficiently. After eliminating all above four possibilities, this would seem the only logical explanation.

From the above analysis of the specific case of Chinese stock markets, scenario (1) can be ruled out without much further ado, given that Chinese stock market has been found weak-form efficient by prior research. Scenarios (2) and (3) can also be invalidated, provided the sample size is sufficiently big enough to display reaction to event, and the events are material enough to motivate reaction. Following the above analysis, naturally hypothesis 1 would be to determine whether the stock markets react to news-worthy event. By establishing the mere presence of reaction, scenarios (2) and (3) can be immediately ruled out.

What remains to be seen is whether the A shares and B shares on the market would respond to significant corporate events, and whether they would both display reaction or lack of reaction to determine if scenario (4) or scenario (5) is valid. . Thus hypothesis (2) would be to determine if information spillage is the only remaining viable option.

Summarising the above discussions, the two hypotheses would be:

Hypothesis 1: Chinese stock market doesn't respond to significant corporate event.

Hypothesis 2: There's information spillage between A shares and B shares.

In order to test hypothesis 1 and 2, two sets of tests were conducted. In the first test, event study was conducted to determine whether significant corporate news has impact upon market through statistical

model, testing A shares and B shares respectively. The choice of using this method, the event study, is practically by default: the direct approach of using interviews or questionnaires asking for voluntary disclosure of information spillage on a case by case level is out of the question, leaving the indirect approach, using event study to see how the overall market reacts, the only viable option.

Then a second test, granger-causality test, would be conducted to determine the direction of information leak. Granger-causality tests are used to determine the lead-lag relationship between two parties. That is, without presuming the direction of which party is the lead (the reason that lead to the results), and which one is the lag (the results thus followed the previous reason), Granger-causality test can establish such direction. In this particular case, after using event study with both A shares and B shares to see their reaction or lack of reaction to news-worthy event, Granger-causality test will be conducted to determine if there's a lead-lag relationship between A shares and B shares. Confirmation of such lead-lag relationship will be evidence to hypothesis 2: there's information spillage between A shares and B shares.

2.3 Data Description

The sample data was selected randomly among all the listed companies that have firm specific news announcement from January 1997 to December 2000. Events happened in the four-year period between 1997 and 2000 are included. Altogether 138 shares were selected, including 84 A shares and 51 B shares, including both shares from Shanghai Stock Exchange and Shenzhen Stock Exchange. Company events include news about merger and acquisition, change of board, sell-off, spin-off, take-over and joint venture. A wide range of news announcement has been selected to include more data in the sample. The news announcements were from the website of China Security Regulatory Committee and all other data are

from TsingHua University data collection. An event period is defined as 80 days before the news announcement to 10 days after the news announcement. For each of these event periods, for both A shares and B shares, we obtained the daily closing transaction price and the daily trading volumes for 90 days.

2.4 Empirical Results

2.4.1 Event Study to Test Impact of Events upon Stock Market

The abnormal returns for each firm every day in the event period was tested, using the methodology by Brown and Warner (1985) and Bhattacharya et al (2000) and MacKinlay (1997). The constant expected return model: $R_{it} = u_i + e_{it}$, Where R_{it} is the return for stock i over time period t , u_i is the expected return for stock i and e_{it} is the usual statistical error term.

The constant expected return model, one of the statistic models, has been chosen to define excess returns for each firm for each day. Brown and Warner (1985) find this model often yield similar results to other models like the Market Model. MacKinlay (1997) attributes the lack of model sensitivity to the fact that the variances of the abnormal returns are frequently not reduced much by choosing a different model. For this study only the constant expected return model was used for analysis, though other models should produce similar results.

The normal period is defined as 80 days before the announcement day to 10 days before the announcement day. This time period was used to define the expected return: $AR_{it} = R_{it}$. With a reasonably

large length of the normal period, we can estimate the variance of security i : $\sigma^2(AR_{it}) = \frac{\sum (R_{it} - \mu_i)^2}{n-2}$ Given N

events, the sample aggregated abnormal returns for period t is $\overline{AR}_t = \frac{1}{N} \sum_{i=1}^N AR_{it}$, and its variance is

$\text{var}(\overline{AR}_t) = \frac{1}{N^2} \sum_{i=1}^N \sigma^2(AR_{it})$, Using these estimates, the abnormal returns for each event period can be obtained.

The concept of a cumulative abnormal return (CAR) is necessary to accommodate a multiple period event window. We will first consider aggregation through time for an individual security and then will consider

aggregation both across securities and through time. We define CAR as: $CAR_t = \sum_{i=-10}^2 AR_{it}$ Asymptotically the

variance of CAR is: $\sigma_t^2 = 13\sigma^2(CAR)$ 13 is the length of the period of the event window, 10 days before the news announcement to two days after the event day. The average abnormal returns can then be

aggregated over the event window: $\overline{CAR} = \sum_{t=-10}^2 \overline{AR}_t$ and $\text{var}(\overline{CAR}) = \sum_{t=-10}^2 \text{var}(\overline{AR}_t)$ The null hypothesis is that the

event has no impact on the behavior of the returns (mean or variance). It can be tested using $\theta_t = \frac{\overline{CAR}}{\text{var}(\overline{CAR})^{1/2}}$ -

$N(0,1)$ A t-statistic is estimated for each firm during the event window. Our null hypothesis is that excess returns for the event day is equal to zero. We use a t-distribution to decide on the rejection of the null

hypothesis, relying on a two-tailed t-test at a 5% significance level. As can be seen from the figure, on the event day (day 0) the sample average cumulative abnormal return for A shares is 0.01542, and the

standard deviation is 0.59243, thus the θ_t is 0.02603 and the null hypothesis that the event has no impact can't be rejected. However, the story is different for the B shares. The average cumulative abnormal

return for B shares is 1.27173 and its standard deviation is 0.53772, the value of θ_t for B shares is 2.36515 and the null hypothesis that the event has no impact can be rejected at 5% significance level. We

change the length of the event window and our conclusion remains the same.

2.4.2 Detection of Information Spillage.

A. Theoretical Framework

This study has followed the tests set out in Battacharya et al (2000) to detect the information spillage in a stock market. One of the reasons they listed about using this method, the event study, is by default: since there's hardly ever any volunteer disclosure of those who involved in information spillage, a case by case study is almost impossible. The alternative seems to be testing the overall market instead of individual cases, which would be a futile effort to convince people to incriminate themselves in absence of pangs of conscience. Since this direct approach is not viable in reality, the indirect approach, using event study to see how the overall market reacts, appears to be the only viable option left.

As discussed earlier, five possible reasons can attribute to the non-response of stock prices (Bhattacharya et al, 2000): inefficient market; small sample size; efficient market but the news is not value relevant; the news fully anticipated by external investors; information spillage has led to full incorporation of the news before its official release.

For the five scenarios, if any of the first three were true, there would be no price behavior that suggests an information spillage. However, if any of the last two hypotheses were true, there should be price behavior suggesting information spillage. If the public has fully anticipated the news announcement either through their diligent study of the stock market or through leakage, they would invest accordingly and the stock prices would have reflected the news announcement before its public announcement. This way there should be no surprise to the public investors and stock prices wouldn't be influenced. On the other hand,

widespread information spillage would lead to the almost full incorporation of the news into the stock prices and the stock prices would reflect such an information spillage. Again, the news announcement wouldn't appear as a surprise to the market.

The segmentation of A shares and B shares in Chinese stock market has made it possible to discern the five cases and identify the only cause. For the full anticipation case, the two types of shares should display same time series patterns. If the information spillage case is true, their price behavior might be different. The difference in the price behavior of A shares and B shares serves a two-fold purpose. Firstly, it reveals a significant spillover effect from one share to the other. This would provide evidence against the first four scenarios, small sample size, inefficient market, value-irrelevant news announcement and full anticipation. Secondly, it indicates the direction of information leakage. The information would flow from the share that has earlier access to information to the one that information spillage is less prevalent.

B. Granger Causality Test.

Granger-Causality test would be conducted to determine the lead-lag relationship between A shares and B shares. Since the exact direction of the information flow is uncertain, they will be treated equally without pre-assuming the direction of information leakage. Granger causality test is designed to establish the causal relationship between two variables. If the lags of variable x have explanatory power to variable y , but the opposite is not true, we can say that variable x granger causes variable y , x is the cause and y is the effect.

Among the sample of firms selected, only the firms issuing both A shares and B shares will be chosen for this test, due to our purpose of studying the direction of information flow between A shares and B shares.

The data of variance of returns will be used to decide such a relationship. The reason of using variance of returns instead of the absolute residual value of returns is that any news influencing the redistribution of returns between A shares and B shares would be taken as good news for one group of investors and bad news for the other group of investors. There are events like this in the sample as well as events that both groups of investors would deem as good news or bad news (e.g. higher earnings news might be perceived as good news by both groups). Their total effect might be obscure if the absolute value of the returns is used. For instance, an increase in the price of A shares could be followed either by an increase in B shares, due to the added value of the firm, or could be followed by a decrease in B shares because of redistribution, firms with these two different kind of cases might cancel each other out, make it possible to detect any causality effect, while it actually does exist.

In order to determine whether the information from A shares lead to B shares, or vice versa, firstly, the optimal lag lengths need to be decided. For this purpose, the Akaike (AIC) and the Schwarz (SBS) criteria select the orders of 2. The adjusted log-likelihood ratio statistics (adjusted for small samples) do not reject a VAR of order 2. In the light of these the VAR (2) model was selected. This means the 2 lag lengths are selected to test the direction of information spillage. The Granger-causality test here is a F-test, and the null hypotheses are as following:

Hypothesis 1: B shares do not granger cause A shares.

Hypothesis 2: A shares do not granger cause B shares.

Table 2-1: Granger-Causality Test Result

Null Hypothesis:	F-Statistic	Probability
B does not Granger Cause A	1.29275	0.27992
A does not Granger Cause B	24.8262	3.4E-09***

The above table shows the testing results of the null hypothesis to determine whether there is information flow between A shares and B shares and what is the direction of information flow if this is the case. From the results, the F value for the hypothesis that variance of B doesn't cause the variance in A shares is 1.29275 at the probability of 27.992% which is not a significant enough value to reject the hypothesis, therefore the hypothesis is true that variances of B doesn't cause variances in A shares.

However, for the following hypothesis that variance of A shares doesn't granger cause variances of B shares, the F value is 24.8262, significant at better than 1% which means the hypothesis can be confidently rejected therefore the opposite statement should be true: variances in A shares does granger cause variances in B shares, indicating an information flow from A shares to B shares.

The previous tests have rejected the first three hypothesis of small sample, inefficient market and no news-worthy event, since if any of these three scenarios were true, then the cumulative absolute return would have been zero for both A shares and B shares, however, the previous test significantly rejected the hypothesis 1 that Chinese stock market doesn't respond to events, since these events came as a surprise to B shares and they showed responses to such events.

Only two scenarios are left: investors fully anticipated such event and existence of information spillage. If the investors have fully anticipated these events and already incorporated the impact of the events into the stock prices, then both A shares and B shares should have exhibited same patterns of reaction. However,

this is not the case. Only A shares showed no reaction to such events, which appear to be a surprise to B shares. Additionally, the granger causality tests formally confirmed the information flowed the direction of information flow is from A shares to B shares, supporting information leakage scenario instead of the market anticipation theory.

2.5 Conclusion.

In this chapter, two empirical tests were conducted to detect the existence of information spillage.

The first test recorded the different reaction of market towards announcement of company related news: A shares don't seem to have much reaction, while B shares do show some signs of reaction. When some material events are announced, it is expected that the market would have some reaction accordingly, for instance: an announcement for profit increases would lead to increase in the value of a firm's share price; while an announcement of losses would cause a drop in the firm's share price. A lack of reaction in face of material news event would be abnormal and unusual. The possibilities for such a lack of reaction could be explained by the following scenarios:

(1). Inefficient market: market efficiency theory suggests that there are three forms of market efficiency, the weak form, the semi-strong form and the strong form efficiency. The weak form efficiency stipulates that stock prices reflect all past information; the semi-strong form efficiency means that stock prices reflect all past and current publicly available information; the strong-form efficiency indicates the stock prices have incorporate all information, past and present, publicly available or insider information etc. It is generally accepted that the stock markets in the world are mostly either weak-form efficiency or

leaning towards semi-strong efficiency and hardly any is strong-form efficiency. Chinese stock markets have been found as weak-form efficient by Liu et al (1997) and Laurence et al (1997).

(2). Small sample size.

(3). The news is not value relevant. The above two reasons can be ruled out since if any of these were true, both A shares and B shares wouldn't have demonstrated any reaction to news-worthy events at all.

(4). The news fully anticipated by external investors. This can't be the case since otherwise A shares and B shares would have both reacted or not reacted to the event.

(5). Information spillage has led to full incorporation of the news before its official release. This seems like the only option left after all the other scenarios got eliminated. The second set of test decides the lead-lag relationship between A shares and B shares. The return of one type of shares, A shares, unambiguously leads the return of another type of shares, B shares, before public news announcement. Suggesting there is an information spillover from one share type to the other. The observed lead-lag relationship between A shares and B shares in the pre-announcement period reveals that information is being gradually incorporated first into the prices of A shares and then into the prices of B shares.

Hypothesis 1: Chinese stock market doesn't respond to significant corporate event. Hypothesis 1 is not true, since there has been reaction from the B share market, as discussed in section 2.5.1.

Hypothesis 2: There's information spillage between A shares and B shares. Combining with granger causality test result, the lack of reaction from A share market cannot rule out the possibility information spillage, hypothesis 2 can't be rejected.

It wouldn't be possible to detect this pattern if the market is inefficient, or the news announcements are value-irrelevant, or the power of the tests is small because of a small sample size. This is because under any of these three assumptions there would be no linkage between prices and information, before or after the news announcements. The scenario that the public had fully anticipated the news prior to news announcement can be excluded, because then both A shares and B shares would have the same pre-announcement price behavior. The fact that the prices of A shares lead the prices of B shares hints that information spillage would be responsible for the lack of response in stock prices to corporate news announcements. (Bhattacharya et al, 2000). One of the possibilities is that the public get their information from observing the behavior of others, for instance, they might be following the investment savants' action and copy whatever they were doing. Thus the information would be absorbed and incorporate in the share prices in a much faster pace, looking as if there's not much shock to the recently announced news. Another piece of evidence is that although both types of shares show little reaction, the reaction from A shares are even less than those from B shares. So holders of the A shares are less surprised by the holders of B shares. This might not be mere coincidence, considering A shares are traded by domestic investors who are privy to the grapevine gossip while B shares are traded by foreign investors who are playing on guest-field and don't enjoy the same advantage of being close to the source of information.

Chapter 3 Capital Structure and Corporate Governance of Chinese Firms

3.1 Capital Structure and Corporate Governance

Capital structure refers to the way a corporation finances its assets through some combination of equity and debt. Capital structure theories focus on whether there is in fact an optimal capital structure that can maximize the value of the firm.

3.1.1 The Modigliani-Miller Theorem

The Modigliani-Miller theorem, proposed by Franco Modigliani and Merton Miller in 1958, forms the basis for modern thinking on capital structure, though it is generally viewed as a purely theoretical result since it disregards many important factors in the capital structure decision. The theorem states that, in a perfect market, how a firm is financed is irrelevant to its value. This result provides the base with which to examine real world reasons why capital structure is relevant, that is, a company's value is affected by the capital structure it employs. The real world reasons include bankruptcy costs, agency costs, taxes, and information asymmetry.

In 1963, their analysis was extended to include the effect of taxes and risky debt. Under a classical tax system, the tax deductibility of interest makes debt financing valuable; that is, the cost of capital decreases as the proportion of debt in the capital structure increases. The optimal structure then would be to have virtually no equity at all.

3.1.2. Trade-off Theory

Trade-off theory allows the bankruptcy cost to exist. It states that there is an advantage to financing with debt (the tax benefits of debt) and that there is a cost of financing with debt (the bankruptcy costs and the financial distress costs of debt). The marginal benefit of further increases in debt declines as debt increases, while the marginal cost increases, so that a firm that is optimizing its overall value will focus on this trade-off when choosing how much debt and equity to use for financing. Advocates of trade-off theory include Scott (1976) and Robicheck & Myers (1966)

3.1.3 Information Asymmetry

(1) Signal Function of Capital Structure

Corporate managers have access to inside information of a firm's future profits and risks while external investors don't, however, they have an understanding of the 'signal' sent out through managers' financing choice (Ross, 1977). More debt would be construed as a positive signal indicating managers' confidence in profitable return (equity would mean issuing shares which meant 'bringing external ownership' into the company). The associated risk of potential bankruptcy makes higher debt ratio a more reliable indicator of managers' optimism.

Alternatively, information asymmetry means investors can read into the profitability prospects of a company through proposition of debt financing and shareholding by managers (Leland and Pyle 1977). Higher debt ratio and managerial shareholding send out positive signals of the company's future profitability.

(2) Pecking Order Theory

Pecking Order theory tries to capture the costs of asymmetric information. It states that companies prioritize their sources of financing according to the law of least effort, or of least resistance, preferring to raise equity as a financing means of last resort. Hence: internal financing is used first; when that is depleted, then debt is issued; and when it is no longer sensible to issue any more debt, equity is issued. This theory maintains that businesses adhere to a hierarchy of financing sources and prefer internal financing when available, and debt is preferred over equity if external financing is required. Thus, the form of debt a firm chooses can act as a signal of its need for external finance. The pecking order theory is popularized by Myers (1984) when he argues that equity is a less preferred means to raise capital because when managers (who are assumed to know better about true condition of the firm than investors) issue new equity, investors believe that managers think that the firm is overvalued and managers are taking advantage of this over-valuation. As a result, investors will place a lower value to the new equity issuance.

3.1.4 Corporate Control Theory

Corporate control theory states that managers' choice of financing would be motivated by their efforts to maintain their control of the company. They would prefer internal financing and debt financing over equity. Internal financing won't have any impact on existing control rights. Although debt imposes stress of payment of principal and interest, managers would remain in control till actual default. Equity would introduce more shareholders into the firm and dilute the managers' control power (Harris and Raviv, 1988; Aghion and Bolton, 1992). This theory echoed with the pecking order theory in stating the preference of managers financing choice of internal financing, debt and equity. The change of company capital

structure would lead to the alteration of management shareholding proportion, and thus influence the competition result for company control (Stulz, 1988).

3.1.5 Agency Theory

Under the circumstances of management possessing less than 100% residual cash flow rights, potential interest conflicts between management (the agent) and shareholders (the principal) may arise (Jensen and Meckling, 1976).

This is also called the principal–agent problem. It concerns the difficulties in motivating the agent to act on behalf of the principal. The two parties have different interests and asymmetric information (the agent having more information), such that the principal cannot directly ensure that the agents are always acting in the principals' best interests, particularly when activities that are useful to the principal are costly to the agent, and where elements of what the agent does are costly for the principal to observe. Moral hazard and conflict of interest may arise. The deviation from the principal's interest by the agent is called 'agency costs.' The key issue regarding agency theory is how to minimize agency costs, i.e. motivate managers and align the interest of agents with principals.

The relevance of agency costs and capital structure can be explained in three ways:

(1). Assets substitution effect: as debt increases, management has an increased incentive to undertake risky even negative NPV projects. This is because if the project is successful, shareholders get all the upside, whereas if it is unsuccessful, debt holders get all the downside. If the projects are undertaken, there is a chance of firm value decreasing and wealth transfer from debt holders to shareholders.

(2). Underinvestment problem: if debt is risky, the gain from the project will accrue to debt holders rather than shareholders. Thus, management has an incentive to reject positive NPV projects, even though they have the potential to increase firm value (Myers, 1977).

(3). Free cash flow: Michael Jensen (1986) defined free cash flow as the residual cash flow of a company after meeting all capital expenditure requirements of projects with a positive NPV. This is the maximum amount of cash dispensable without disrupting the continuous development of a company. Unless free cash is given back to investors, management has an incentive to destroy firm value through empire building and perks etc. Higher debt imposes financial discipline on management (Grossman & Hart, 1982).

As discussed above, there are competing theories either advocating the benefit of debt financing (M&M theory, corporate control theory) or equity financing (signal function of financing choice, pecking order theory) regarding what's the best practice of financing choice in terms of corporate performance. Principal-agent conflict was created due to the separation of ownership and management of modern enterprises. Agency costs measure the damage suffered as a result of such conflict, leading to reduced corporate performance if not managed properly. Similarly, disputes regarding debt's role in reducing agency costs and boost company performance follow suit. Some argue for debt's value damaging role due to asset substitution and under-investment, some believe debt would reduce free cash flow available to manager and reduce agency costs. All these discussions were based on the western context of developed and mature market. Thus it would be necessary to conduct research about Chinese firms and provide empirical evidence regarding the relationship between raising debt and firm performance.

International research has been focusing on resolving the conflicts between shareholders and managers, the agency problem caused by the separation of ownership and management. However, due to the special features of Chinese stock market, agency problems are not limited to the conflict between agent and principal, but also include that between big shareholders and small shareholders. This study is concerned with the agency problem between big shareholders (state-owned shares) and small shareholders (circulating shares) in Chinese listed companies' ownership structure. Studies of Chinese scholars were about the impact of refinancing structure on corporate governance or vice versa, there hasn't been any study addressing their impact on each other except for Yan (2001), though he didn't perform any empirical study.

3.2 Characteristics of Chinese Listed Firms' Capital Structure

3.2.1 Low Gearing Ratio

Chinese listed firms have relatively (compare to other Chinese firms) low gearing ratios. This can be demonstrated from Table 3-1. From 1998-2001, the average gearing ratio (debt divided by sum of debt and equity) of listed firms are all lower than the national average by about 10%.

Table 3-1 Comparison of Gearing Ratio between Listed Firms and All Firms in China



Data sources: Donghui Shi, Empirical Analysis of Listed Companies' Capital Structure and Financing behaviours.
www.studa.com/newpaper/2003-10-31/

There are several reasons for the comparatively low gearing ratio of Chinese listed firms.

(1) Institutional Requirements

CSRC required that companies seeking to get listed should have lower than 70% gearing ratio. Listed firms normally manage to reduce their debt level before IPO; after the IPO, capital obtained through equity market would further reduce their debt. The easy access to money once a firm got listed is a strong motivation for low gearing. For instance, Sanyi Heavy Industrial Co. Ltd obtained 900 million rmb from the stock market since its listing in July 2003. Right before its listing, its gearing ratio has reduced dramatically from 72.5% (2000), 61.52% (2001) and 58.84% (2002). However, not all listed firms have low gearing. Some firms would have to increase their debts after IPO either because of bad management or their return on equity (ROEs) ratio doesn't meet requirements of right share issuance. For instance, according to www.stock.hexun.com, by the end of 2011, the 10 companies with the highest gearing ratios range from 292.28% to as much as 1339.69%. This means these companies don't have enough assets to cover their debts.

(2). Preference to Equity

Listed firms with comparatively good performance (in terms of ROE) are more willing to finance with equity and generally have lower debt ratio. The cost of obtaining capital through equity is relatively low in China due to investors' lack of experience and insufficient legislation. Firms are very keen to 'grab money' on the stock market, since dividend payment is not compulsory. Some of the reasons are listed below:

(1) Since its nascent stage, the Chinese Stock Market was set up mainly to provide financing resources to state owned enterprises; relevant regulations and policies were designed to favor the big institutions and

enterprises to small investors. Consequently, minority investors were left vulnerable and find it difficult to exert influence over listed firms.

(2) Lack of stringent IPO approval process for listed companies. Instead of the normal IPO approval process for listed companies on developed markets, where the companies have to go through strict and professional procedures to impress potential investors with their performances and financial statements, IPO for Chinese companies on the stock markets were actually ‘authorized’ by government until 2005. It is not unusual to see companies trump up their financial statements to get listed in order to access capital. Minority investors lack the necessary information and expertise to discern committed ones from the ones only intend to grab money. Similarly, the right issue was also ‘authorized’ instead of approved through stringent procedures, investors who refuse to participate would risk having their shares diluted or losing out.

(3). Lack of sufficient regulations. For instance, initially there was no regulation stipulating specific use of the capital raised. Listed companies could take advantage and abuse this by using the capital in whatever ways they may please without supervision or accountability. They would perceive the stock market as a goldmine to get money, since there’s no compulsory repayment of the investment and dividend payments are at the discretion of the company.

3.2.2 Debt Structure

Debt structure refers to the variety and proportion of different debts, which includes short-term debt. Short-term debt is the most common form of borrowing, also the riskiest one. A firm’s current debt level would influence the corporate value.

Table 3-2 shows that short-term debts of listed firms takes more than 78% of their total debts, 12% higher than that of the national average level. (The short-term debts and total debts here refer to bank loans only, not including working capital or trade credit etc). However, when compared to developed markets such as the U.S., the short term debts for Chinese listed firms are comparatively modest: short term debts for U.S. companies from 1914 to 2011 averaged about 66% of GDP, while it peaked in 2007 to 99% right before the sub-prime mortgage crisis in 2008. (Short Term Debts and Financial Crisis: what we can learn from the U.S. treasury supply. Krishnamurthy & Vissing-Jorgensen, May 2013). It is believed that the relatively low level of short term debt on emerging markets comparing to the developed markets is due to the tighter bank regulation in emerging markets.

Table 3-2 Comparison of Debt Structure between Listed Companies and the Average National Level



Data sources: Donghui Shi, Empirical Analysis of Listed Companies' Capital Structure and Financing Behaviours. www.studa.com/newpaper/2003-10-31/

The sources of debts for Chinese listed firms are mainly bank loans. Restrictions from the government as well as the finance system caused the bond market lag behind the stock market in supplying capital. A well-established capital market would have balanced equity market and debt market. Take U.S. for example, 1200 companies issued corporate bonds in 2001 and only 200 companies got listed during the same year. The amount of money injected in the firms from corporate bonds is about 30% and only less than 4% is from stock market. The situation in bond market is quite different in China. Out of more than 1200 listed firms in China, less than 20 of them issued bonds, only 1.56% of all the companies. The weak financing capability of corporate bond restricted the further development of Chinese financial market.

3.2.3 Highly Concentrated Share Ownership Structure

One of the very outstanding characteristics of Chinese large to medium enterprises is the large number of state owned or state controlled firms. Some listed firms still have one predominant controlling shareholder. Most of Chinese listed firms are transformed from former SOEs and the percentage of state shares is extremely high. By 2002, 890 out of 1124 listed companies' biggest shareholders have more than 50% of the company shares, 63 of them (5.62%) have shareholders controlling over 75% of total shares, mostly state and corporate shareholders. Such prevalent and predominant control possessed by the state indicates the relatively weak and vulnerable position of the minority shareholders, leading to the potential conflict between big and small shareholders discussed in the introduction section of this chapter.

3.2.4 Division of Circulating and Non-Circulating Shares

Chinese stock markets include circulating and non-circulating shares. About two thirds of the total shares are not allowed to circulate (see table 3-3). The state shares are not transferable as other public shares, and corporation shares are only allowed to circulate among corporation shareholders.

The circulating shares of Chinese listed firms are about 35% of the total shares and the government has absolute control over them. Such shareholding structure has substantial implications regarding corporate governance of listed firms. One of the implications is the agency problem. Jensen and Meckling (1976) predicted that, the higher the shareholding of management, the lower the agency costs. Theoretically, since the state holds the majority of shares, when the state manages the listed firms, agency costs should be comparatively low. However, the state can only run the firms through state nominated managers who

are government officials and don't respond to the usual governance mechanisms such as monetary reward or loss of position. This is because their salary and position in the government is fixed and won't change with company performance. With only one third shares, it's practically impossible to remove a manager with poor performance since the state's majority shareholding means it has the final say. The normal corporate governance mechanisms in the western equity market have very limited or virtually no power over managers in Chinese listed firms. It's easy for managers to abuse their inside information; agency costs would be exceptionally high.

Such principal-principal agency issue was also discussed by Hoskisson et al (2009). Their research focused on two potentially conflicting owners on the emerging market of South Korea: foreign institutional owners and family owners. Due to weak legal protection to foreign investors in East Asia, powerful family owners can often expropriate wealth from outside investors by diverting company resources for family's private wealth. As a result, outside investors are often concerned with agency problems engendered by dominant family owners.

A similar but different form of principal-principal agency issue was discovered in context of privatization in Eastern and Central Europe. In the process of privatization, management and workers might take advantage of the muddled redefinition of residual income and enrich their own interest at the cost of the state (Lipton & Sachs, 1990). Listed firms' share structure is shown in Table 3-3.

Table 3-3 Illustration of Share Structure of All Shanghai and Shenzhen Listed Companies



Data resources: CSRC Chinese Securities and Futures Statistical Year Book (2003)

From the above table, the number of circulating shares is about 1/3 of total shares for all four years from 1998 to 2002 and the numbers of state shares are all higher than total circulating shares for all four years. Put it in another way: even if a certain company/institution/individual gets all the circulating shares on the market, the state would still be in absolute control, there is not the slightest chance for the market to decide freely. The state as the majority shareholder could easily hijack the will of the minority shareholders to the extent of harming minority shareholders' interest. Therefore, the principal-agent conflict under agency theory transforms into the majority-minority shareholder conflict under the Chinese context.

The division of circulating and non-circulating shares and state being the majority shareholder indicate compromised external corporate governance mechanisms of Chinese listed firms.

(1). The main channel to transfer corporate control is through negotiated transfer agreement of non-circulating shares, which deteriorated the unbalanced position of majority shareholders and minority shareholders, reinforcing majority shareholders' control.

(2) The governance mechanism of creditors won't function well. Government institutions as companies' majority shareholders instead of creditors normally lead the bankruptcy clearance. The constraint from creditors can't make much real impact.

(3). The majority of shares are not allowed to circulate and there's always one dominating shareholder of each firm, minority shareholders can't exert their influence over the management and operation of listed firms.

All the features mentioned above regarding Chinese listed firms, can be summarized as following: relatively low gearing ratio; lower proportion of short-term loans comparing to the developed markets such as the U.S., strong state ownership and arbitrarily divided circulating and non-circulating shares.

Each and every one of these features is distinctively different from the 'standard' features of the more mature and developed markets: they are very much the stark opposite of the 'norms' of developed markets that are the subject of prevalent research. Apply the tried and tested capital structure and agency theory formulated mostly in developed western markets in Chinese context would bring novelty and verify its applicable territory, adding new evidence to the literature.

3.3 Empirical Analysis of Capital Structure upon Agency Costs

3.3.1 Statistic Description of the Data Sample

Three types of independent variables are included:

- (1). debt to assets ratio was used to measure the capital structure (Gear);
- (2). the concentration level of shareholding would be shown through the percentage of the biggest shareholder and the top five shareholders to total amount of shares respectively (Con).
- (3). Control variables include the size of board (Board), company size (Size) and industry variable (Dum).

The reason to choose company size and industry variables is because these are standard control variables; whereas size of board is a control variable relating to corporate governance.

Hypothesis: companies with higher gearing level tend to have better performance.

The sample was selected randomly from 211 non-financial companies listed on Shanghai and Shenzhen Stock Exchange markets between 1999 and 2001 (www.csrc.com.cn); data of shareholding structure and size of board are from 'Shenglong Financial Analysis Software'.

From table 3-4, the average total assets turnover has increased slightly from 0.5335 in 1999 to 0.5634 in 2001. The net return on equity has dropped dramatically, from 11.42% in 1999, 9.98% in 2000 to 7.25% in 2001. There's no obvious change in debt to asset ratio. The comparison of the biggest shareholder to the top five shareholders shows it's quite common to have one dominating shareholder. The average operation return has been increasing and the number of board directors is rather stable. The average

management shareholding is 0.03%, and for each single year this number has been lower than 0.05%, displaying a decreasing tendency. The ratio of management shareholding is too low, and there's very remote possibility to increase the ratio of management shareholding to reduce the agency costs of shareholders. The factor of management shareholding has been ignored in this research.

Table 3-4 Statistical Description of Variables

Variables	1999		2000		2001		Panel Data	
	Average	Median	Average	Median	Average	Median	Average	Median
Total Assets Turnover	0.5335	0.4783	0.5500	0.4591	0.5634	0.4503	0.5575	0.4608
Return on Equity %	11.4210	10.4800	9.9839	9.6400	7.2498	7.8200	9.6150	9.5500
Debt to Assets Ratio %	40.4895	38.5374	39.6272	38.7600	41.4436	41.1300	40.4429	40.0496
Biggest Shareholder %	48.7506	49.0200	46.3133	45.5000	46.3500	45.9700	46.6115	47.2100
Top Five Shareholders %	61.6255	61.6600	59.2176	60.1000	58.3813	58.9900	59.6540	60.5100
Sales Revenue(10,000 rmb)	90894.29	46347.96	116239.10	65616.90	136408.90	73046.00	115986.3	62795.68
Board Size	9.6540	9.0000	9.7678	9.0000	9.7915	9.0000	9.7300	9.0000
Managers' Share %	0.0441	0.0191	0.0316	0.0154	0.0273	0.0116	0.0343	0.0150

3.3.2 Research Methodology

Following previous discussions, various schools of theories suggest different impact of capital structure on agency costs and means of achieving optimal capital structure arrangement. M&M theory suggested debt is irrelevant in a perfect market and extended to 100% of debt over equity, considering the its tax reduction effect; trade-off theory argues the optimal balance would be achieved when the marginal benefits and costs of having debt equals to each other; debt is perceived as a positive signal sent by managers who are optimistic about companies' prospective; pecking order theory suggests there's a preference to use internally generated finance first, followed by debt and then equity; corporate control theory resonated such preference, though it is motivated by managers' desire to maintain their control of the company rather than associated costs of financing. In terms of specific impact capital structure may have over agency costs, there are several competing theories: assets substitution effects of increasing debt, managers might take projects with negative NPV to transfer the risks to creditors, reducing firm value and

increasing agency costs; under-investment may occur when managers reject projects with positive NPV lest creditors reaps the benefits, also damage firm value and increase agency costs; free cash flow theory advocates debt's favourable function in reducing agency cost, since the managers would have less disposable cash flow when they have to satisfy debt and interest payment obligation.

In order to empirically test the impact of capital structure on agency costs in the context of Chinese stock markets, the following variables have been selected.

The dependent variable would be agency costs and one of the key independent variables would be the gearing ratio. This would show the impact of varying capital structure, in terms of debt to assets ratio, on the agency costs.

Two alternative measures are used for agency costs: asset turnover rates and return on equity (ROE). The asset turnover ratio measures managers' ability to utilize assets efficiently, the same measure was used in research of Ang et al (1999). Higher asset turnover ratio means high sales level and cash flows generated from a given level of assets. High level of asset turnover ratio indicates efficient assets management and increased value for shareholders. The higher the assets turnover, the higher the efficiency of corporate assets utilization, the better the management capabilities and the lower the agency costs. Thus, a positive relationship is expected between assets turnover ratio and gearing; similarly a positive relationship is expected between ROE and gearing. An alternative ratio ROE was used to measure agency costs. In China, most listed firms were transformed from SOEs. In order to protect the value of state assets, depreciation rates of fixed assets were determined by the state at an artificially low level, leading to an upward bias in the fixed assets; current assets would include inventory that either can't be sold at book value or can't be sold at all. Comparatively, ROE is more a more objective indicator of profitability. Higher ROE level indicates lower agency costs.

Other independent variables were also included to test their respective impact on agency costs. Due to the special ownership feature unique to Chinese listed firms, ownership concentration level was also included

in the test to see if it plays any significant role on agency costs. It would be amiss to ignore such a prominent feature all together.

Control variables include size of board, firm size and industry dummy. The number of board directors measures the size of the board; the logarithm of sales revenue measure the firm size and Chinese listed firms' classified 13 industries, excluding financial firms, are used to measure the industry dummy.⁴.This leaves 11 industry dummy variables.

Simultaneous equations are used for estimation.

$$\text{Agency Costs} = \beta_0 + \beta_1 \text{Gear} + \beta_2 \text{Con} + \beta_3 \text{Board} + \beta_4 \text{Size} + \sum \beta_j \text{Dum}_{jt} \quad (1)$$

$$\text{Gear} = \beta_5 + \beta_6 \text{Con} + \beta_7 \text{ROE} + \beta_8 \text{Val} \quad (2)$$

To solve potential endogenous problems, it's necessary to look at ROE and gearing ratios. On one hand, the gearing level can affect ROE. (1) Higher gearing would reduce profit through financial charges; higher gearing could also increase profit through creditor's enhanced motivation and monitoring of the firm. (2) Higher gearing ratio can increase ROE without actually increasing profit.

On the other hand ROE can affect gearing ratio. Higher ROE means the firm can refinance using internal finance or right shares instead of debt. Other than ROE, ownership structure can also impact on gearing ratio. Higher ownership concentration would motivate owners to reduce dividend and keep money in the firm, reducing gearing level. However, if the equity value growth rate is high, the firm can obtain plenty

⁴The 13 classified industries of Chinese listed firms include: (1) agriculture, forestry, animal husbandry and fishing; (2) mining; (3) manufacturing; (4) electricity, gas and water; (5) construction; (6) transportation, warehousing and postage; (7) information, IT and software; (8) wholesale and retail; (9) finance and insurance; (10) real estate; (11) services; (12) culture (13) miscellaneous.

of cash. Val will be used to measure the equity value growth, which is equal to the year-end market value of ordinary shares divided by the year-end book value of ordinary shares (Leech & Leahy, 1991).

Thus with two equations, one determining agency costs, the other the gearing ratio, another variable is needed to determine the gearing for equation (1) to be identified. When estimating the equation using asset turnover ratio, equation (1) itself would suffice. When using ROE to measure agency costs, both equations would be used.

3.3.3 Empirical Analysis

Empirical results are presented in Table 3-5 and Table 3-6. Table 3-5 presents the OLS regression analysis of results of agency costs measured by asset turnover ratio and ROE. Table 3-6 presents the results of simultaneous equations of ROE.

Table 3-5 Impact of Gearing and Shareholding Concentration Level on Agency Costs (Assets Turnover) - OLS

Constant	Gearing	Share Concentration %		Control Variable			Adjusted R ²
		Biggest Shareholder	Top Five shareholders	Board Size	Corp Size	Industry	
-1.1820 (-8.0504)***	0.0028 (3.4429)***	0.0002 (0.2773)		-0.0094 (-1.9838) **	0.1718 (14.4776)***	Yes	0.3986
-1.2294 (-7.9337)***	0.0027 (3.3710)***		0.0010 (0.9863)	-0.0088 (-1.8553) **	0.1716 (14.8980)***	Yes	0.3995

(The t-values are in brackets, *10% level, ** 5% level, ***1% level.)

$$\text{Equation: Assets Turnover} = \beta_0 + \beta_1 \text{Gear} + \beta_2 \text{Con} + \beta_3 \text{Size} + \beta_4 \text{Board} + \sum \beta_j \text{Dum}_{jt}$$

(1). Agency Costs Measured by Total Asset Turnover

In Table 3-5, the result shows total asset turnover as the dependent variable measuring agency costs. There are three independent variables: gearing, concentration of shares and control variables – size of board, size of company and industry dummy. The first two lines report the regression result on gearing together with the biggest shareholder concentration and the following two lines show the regression result on gearing and the top 5 shareholders concentration respectively. They both demonstrated similar results.

Under both circumstances, either using the concentration level of the biggest or the top five shareholders, a positive relationship between asset turnover ratio and gearing was identified, all significant at better than 1%. This shows firms with higher gearing ratio are more efficient in their assets utilization.

Under both cases, using the concentration level of either the biggest shareholders or the top 5 shareholders, no significant relationship was identified between the level of ownership concentration and agency costs. This result coincides with Singh et al (2001); they found when the agency costs are measured by total asset turnover ratios, the concentration level of shareholders irrelevant to agency costs. Among the control variables, the coefficient between the size of board and the total asset turnover ratio is negative, with a significance of 5%, meaning bigger board size is less efficient. There's a positive relationship between firm size and assets utilization, significant at 1%, suggesting large firms have more efficient corporate governance. There are five industries' coefficients significant with asset turnover, electricity, transportation, wholesale and retail, real estate and services industry. Except for the wholesale and retail industry, the coefficients of other industries are negatively related to asset turnover.

Table 3-5 shows gearing ratio has a significantly positive relationship with firms' performance measure by asset turnover ratio, indicating firms with higher gearing would also have better performance in terms of asset management efficiency.

(2). Agency Costs Measured by ROE.

Similar to table 3-5, table 3-6 displayed results with ROE as the dependent variable in the regression analysis. The first two lines reported the regression result on capital structure with biggest shareholder ownership concentration and the following two lines reported results with the top 5 ownership concentration. Control variables include board size, firm size and industry dummy.

Table 3-6 Impact of Gearing and Shareholding Concentration Level on Agency Costs (ROE) -OLS

Constant	Gearing	Share Concentration %		Control Variable			Adjusted R ²
		Biggest Shareholder	Top Five shareholders	Board Size	Corp Size	Industry	
8.9014 (2.5744)***	0.1416 (7.4026)***	0.02619 (1.3788)		-0.5538 (-4.9447)***	0.1217 (0.4356)	Yes	0.1663
7.2598 (1.9893)**	0.1364 (7.1781)***		0.0377 (1.6420)*	-0.5447 (-4.8468)***	0.1817 (0.6694)	Yes	0.1674

The t-values are in brackets, *10% level, ** 5% level, ***1% level.

Equation: $ROE = \beta_0 + \beta_1 \text{Gear} + \beta_2 \text{Con} + \beta_3 \text{Size} + \beta_4 \text{Board} + \sum \beta_j \text{Dum}_{jt}$

The gearing level has a positive relationship with ROE, at significance better than 1%, confirmed the result in table 3-5. Firms with higher gearing ratio have higher ROE. However, the ownership concentration result is different from table 3-5: the ROE result shows big shareholder are concerned about the productivity of the business and highly concentrated ownership structure would benefit the company performance.

For the control variables, the result of board size is consistent with that of table 3-5, a significantly negative relationship with ROE at 1%. Firm size displayed positive relationship with ROE but not significant. The industry dummy for the 11 industries didn't show any significance except one at a 10% level. Together with the industry result from table 3-5, it proves the industry factor didn't play any significant role in deciding the agency costs.

Since the gearing level could be an endogenous variable, to solve the potential endogeneity issue, two equations are needed: one to determine the ROE one to determine gearing level. Therefore, in equation (2), the independent variable ROE in equation (1) became the dependent variable and the dependent variable in equation (1) became the independent variable. Again, concentration level was included in the equation to see whether concentration level has any significant relationship with gearing level. Another variable included in equation (2) is the market to book value of listed firms' equity so as to make the simultaneous equation identifiable. This value is calculated by dividing the price per shares by the book value per share. It's a measurement of firms' performance and the lower the better since indicates the firm is undervalued and would be a good investment choice.

$$ROE = \beta_0 + \beta_1 Gear + \beta_2 Con + \beta_3 Board + \beta_4 Size + \sum \beta_j Dum_{jt} \quad (1)$$

$$Gear = \beta_5 + \beta_6 Con + \beta_7 ROE + \beta_8 Val \quad (2)$$

Table 3-7 and table 3-8 report the results of the simultaneous equations. For equation (1), result shows that gearing has positive relationship with ROE, significant at 1%. This result support Jensen's (1986) theory of debt's monitoring role. This is examined by Harris & Raviv (1990) and Stulz (1990), and it is empirically demonstrated by Maloney et al (1993) and Gul & Tsui (1998). Firms with higher gearing are subject to more restrictions of debt covenant and more supervision from creditors than those financed primarily with equity. This resonates with theories advocating the benefits of debts, such as the Modigliani-Miller Theorem (under a classical tax system the optimal structure would include virtually only debt), the theory of signal function of capital structure and pecking order theory and corporate control theory.

Table 3-7 Results for Equation (1):

Constant Variable	Gearing	Share Concentration %		Control Variable		
		Biggest Share-holder	Top Five share-holders	Board Size	Corp Size	Industry
-50.1593 (-9.3704)***	0.8332 (18.7996)***	0.1198 (102.6309)***		-0.0179 (-2.6085)***	0.1859 (11.3209)***	Yes
-25.6625 (114.1235)***	0.6978 (428.5688)***		0.0895 (35.6543)***	-0.0385 (-3.0672)	0.3490 (12.0077)***	Yes

$$ROE = \beta_0 + \beta_1 \text{Gear} + \beta_2 \text{Con} + \beta_3 \text{Board} + \beta_4 \text{Size} + \sum \beta_j \text{Dum}_{jt} \quad (1)$$

The first two lines show the results using biggest shareholders' concentration level and the last two lines show the results with the top five shareholders' concentration level. The results using the biggest and top five shareholders' concentration level displayed similar results. For equation 1, all the results showed these two variables had positive relationship with ROE, at a significant level of 1%. This result supported opinions of Shleifer & Vishny (1986), Yafeh & Yosha (2003) that big shareholders play a very important role in corporate governance.

However, in equation 2, the concentration level of shareholding structure had a negative relationship with gearing. This means big shareholders prefer financing through equity rather than debts. The reason can be explained by CSRC's requirements of right share issuance: listed firms' ROE over the past three years must be more than 10%. Therefore, firms with ROE level higher than 10% would tend to refinance through equity rather than debt. This result conforms to Shleifer and Vishny's (1997) finding that large shareholders claim they both have a general interest in profit maximization and enough control over the assets of the firm to have their interest respected.

Table 3-8 Results of Equation (2)

Constant	Share Concentration %		ROE %	Equity Market to Book Value
	Biggest Share-holder	Top Five share-holders		
34.7605 (12.1722)***	-0.1694 (-3.2660)***		1.3532 (4.4911)***	0.1105 (0.5409)
34.7928 (9.1036)***		-0.13278 (-2.1735)**	1.3031 (4.4705)***	0.2024 (1.0390)

$$\text{Gearing} = \beta_5 + \beta_6 \text{Con} + \beta_7 \text{ROE} + \beta_8 \text{Val}$$

(2)

This study also provided new evidence for the conflict between big shareholders and small shareholders. Since the board of directors are mostly appointed by the big shareholders, the board's decisions reflect the will of the big shareholders. The positive relationship between big shareholders and ROE confirmed by the results in table 3-7 proves that big shareholders are motivated to reduce agency costs and maximize their value. However, the non-significant positive relationship between big shareholders and asset turnover ratio in Table 3-5 indicates they are not genuinely interested in increasing the operation efficiency. The significant negative relationship between big shareholders and gearing suggests big shareholders' are biased against using debt, a less costly source of capital, showing that big shareholders would sacrifice small shareholders' interest for their own interest.

The size of board has a negative relationship with agency costs, the coefficient from regression result is significant at higher than 1%. This indicates board directors demonstrated value-damaging behaviour to listed companies.

All related coefficients between the size of company and ROE has a significance level of higher than 1%, meaning big companies are more efficient at dealing with agency issues. In equation 2, ROE is positively relevant to gearing at a significant level of 1% or 5%. The equity market-to-book value is not significant.

3.4 Conclusion

There have been many research conducted concerning agency costs in developed markets, however not enough attention has been paid to emerging market like China. The contribution of this study is two-fold: firstly, it contributes to the literature of the impact of capital structure on agency costs in Chinese context. Second, among the limited research concerning capital structure, Yan Yanyang (2001) analyzed the relationship between the capital structure of Chinese listed companies and agency costs but no empirical research has been conducted. This study provided statistical evidence on firm capital structure and agency costs measured in terms of asset turnover and ROE. This chapter focused on empirical study testing the relationship between agency costs and companies' capital structure/ ownership concentration level. Using two different types of measurement for agency costs, the results are slightly different.

(1). When measured with assets turnover ratio, agency costs appear to be lower for firms with higher gearing ratio, supporting theories advocating debt's favourable function in reducing agency costs. Under both circumstances, either using the concentration level of the biggest or the top five shareholders, a positive relationship between asset turnover ratio and gearing was identified, all significant at better than 1%. This shows firms with higher gearing ratio are more efficient in their assets utilization with lower agency costs.

No significant positive relationship were identified between agency costs and the level of ownership concentration, indicating big shareholders don't necessarily make positive contribution to firms' performance in terms of operational efficiency (since measure by asset turnover ratio).

Size of board showed negative relationship with agency costs, significant at 5%, demonstrating value-damaging behaviour of large board. At a significance level of 1%, large firms displayed higher efficiency in reducing agency costs.

(2) When measured with ROE, simultaneous equations were used to solve the endogeneity problem.

The positively significant relationship (at 1%) between agency costs and gearing using assets turnover ratio in previous section get confirmed by results using ROE. There's strong evidence supporting debt's favourable function in reducing agency costs.

When measured by ROE, agency costs efficiency seems to be positively related with level of ownership concentration. Also firms with higher concentration level of ownership prefer to finance through equity rather than debt, demonstrated through the negative relationship between gearing and ownership concentration level.

Again, a negative relationship (5%) between size of board and agency costs efficiency was identified, confirming results from previous section measuring agency costs using assets turnover ratio. Consistently, large firms display better efficiency in reducing agency costs.

In summary, using two different types of agency costs to test the relationship between agency costs and capital structure, the two sets of results showed strong (1%) and consistent conclusion: higher level of gearing help to improve firm performance and reduce agency costs.

There's discrepancy when it comes to the role of highly concentrated ownership though. When measured by assets turnover ratio, no significantly positive relationship can be identified, suggesting big shareholders are not necessarily efficient in improving operational efficiency. Only when measured by ROE, a significantly positive relationship (1%) can be identified. So we can't come to a categorical conclusion that big shareholders always help to improve firm performance.

In fact, the negative relationship between big shareholder and their preference to finance through equity rather than the relatively low cost debt, suggests they could be demonstrating value-damaging behaviour. This shows a conflict of interest between large shareholder and minority shareholder.

This study shows a positive relationship between firm performance and gearing for Chinese listed firm. This seems to support arguments for debts' beneficial function in firm performance, such as M&M theory: without bankruptcy costs, firms should try to max out their borrowing capacity to increase their performance and firm value. This would seem like particularly good advice for Chinese firms with strong state background, if not universally true elsewhere. This is because of the unique feature of Chinese banks. Most Chinese firms get their loans from the state-controlled commercial banks. The state fully owns the four commercial banks: Industrial and Commercial Banks of China, Agricultural Bank of China, China Construction Bank and Bank of China. In a market where the state is both the creditor and the borrower, profit maximization is not always the top priority. Out of considerations such as social stability, unemployment concern etc, firms with poor performance don't have to worry about bankruptcy costs, since the state could pressure banks to renegotiate and extend their debts instead of forcing liquidation and shut down. Without bankruptcy costs as the deterrent, the idealized conditions of M&M theory is a de facto reality in the unique environment of Chinese market. Research by Tian & Estrin (2008) also provided similar evidence supporting the rather surprising positive role state may play in listed firms. They described the relationship as U-shaped: though state ownership at a low concentration level may prove to be a negative impact on firm performance, higher concentration level of state ownership would actually increase firm performance. They chalked it up to the preferential treatment and government partiality: when the state's stake is big enough it would be motivated enough to improve corporate performance.

The result of this study is seemingly different from the study by Tian & Estrin (2007), they contended a positive relationship existed between high gearing ratio and agency costs, measured by empire building, managerial entrenchment and managerial perquisites. The main differentiating factor for this study and their study is the different proxies used to measure agency costs. Tian and Estrin used a very specific and close measurement of agency costs, while this study used firm performance measures.

The result of this study also shows conflict of interest between big shareholders and small shareholders. This is caused by principal's moral hazard, whose pursuit of self-interest led to a lose-lose situation when they completely ignore investors' interest and eventually lose the minority shareholders' trust (Gary Miller, 2005). This seems prevalent in the privatization process of previous state-owned enterprises. Similar evidence can be found in the privatization in Eastern and Central Europe (Lipton & Sachs, 1990b) in terms of government retained residual income. In the process of privatization, management and workers might take advantage of the muddled redefinition of residual income and enrich their own interest at the cost of the state (Lipton & Sachs, 1990b).

Chapter 4 2005-2006 Ownership Reform and Impact of Separated Ownership and Control on Chinese Firm Value

4.1 Introduction

In the literature review summarized by Claessen et al (2000), Berle and Means (1932) depicted a picture of widely held corporations in the U.S. in their work, *The Modern Corporation and Private Property*. This notion was supported by later works such as Baumol (1959), Marris (1964), Penrose (1959) and Williamson (1964). Similar notion was advocated by Jensen and Meckling (1976), Grossman and Hart (1980). More recently, different opinions has been voiced, suggesting existence of concentration level in even big U.S. corporations (Demsetz 1983, Demsetz and Lehn 1985, Shleifer and Vishney 1986, Morck, Shleifer and Vishney 1988). La Porta et al (1999) were the first to use ultimate ownership to find out who has the most voting rights in the 27 richest countries in the world. Claessens et al (2000) furthered this line of study to include 9 countries/regions in East Asia.

However, in the above studies, either the 27 richest countries in the world or the 9 East Asia ones, China as an important global and regional economic power has been left out. This is partly due to the nature of Chinese stock market as an emerging market; it is still in the process of developing rules and regulations. For studies earlier than 2001, it is difficult to obtain data of ownership structure on Chinese listed firms: CSRC didn't require listed firms to disclose their ownership status until 2001, researches conducted at earlier years wouldn't have the required information; even later on when firms began to provide such information, English version is not compulsory, posing another obstacle. Also, there hasn't been any study of Chinese listed firms' ownership structure using the concept of ultimate ownership, a concept first applied by La Porta (1998, 1999), previous study of Chinese ownership structure were mostly about

immediate ownership. This makes it highly necessary to conduct research regarding the ultimate ownership structure for Chinese listed firms, filling in a gap in this area.

Another reason to conduct an up-to-date ownership structure study on Chinese market would be the 2005-2006 ownership structure reform. This is the most substantial ownership structure change in Chinese stock market history since its establishment in the 1990s. By allowing around two third of non-circulating share to become fully circulating shares, negotiations were conducted by each individual listed firms with their respective existing shareholders regarding compensations. It is quite conceivable that different negotiation skills, circumstances and investors' investment choices and strategies would have varied ownership changes in the end. A comprehensive study and comparison of the ownership structure before and after the reform would be highly necessary.

There have been many influential researches about the separation of ownership and control. In the widely quoted Nobel Laureate's co-authored article '*Separation of Ownership and Control*', Fama & Jensen (1983 a) discussed in great length about the concept of separated ownership and control. For them, this involves organizations in which 'important decision agents do not bear a substantial share of the wealth effects of their decisions.' Agency costs arise when decision managers are not the residual claimants, thus a separate management control is necessary to evaluate the decision management. For small organizations, combining decision management, decision control and residual claimant would minimize agency costs. However, for large organizations, separated ownership and control would be more beneficial. This theoretical discussion laid important foundation for future research.

La Porta et al (1999) were the first to use the concept of ultimate owners. They conducted a study of the corporate ownership of the world's 27 rich countries/regions (Argentina, Australia, Canada, Hong Kong, Ireland, Japan, New Zealand, Norway, Singapore, Spain, U.K., United States, Austria, Belgium, Denmark, Finland, France, Germany, Greece, Israel, Italy, South Korea, Mexico, Netherlands, Portugal, Sweden,

Switzerland). Their study suggests ownership and control can be separated to the benefits of large shareholders.

Claessen (2000) applied the same method used by La Porta et al (1999) to conduct similar study on the 9 East Asian countries/regions (Hong Kong, Indonesia, Japan, South Korea, Malaysia, the Philippines, Singapore, Taiwan and Thailand). They contended that due to weak legal system and protection of investors in emerging market, separated ownership and control exacerbates agency problem and damage firm value.

This chapter will include two parts. The first part will give a very detailed account of the 2005-2006 ownership reform in Chinese stock market, providing initiation background of reform, reform stages and empirical comparison of the extent of reform, using La Porta's method of tracing down the voting right of ultimate owner. This would be the first study using the ultimate ownership concept to assess the reform in 2005-2006.

The second part will use data collected from the first part, testing the impact of separated ownership on firm value, providing empirical evidence of Fama & Jensen's theoretical discussion using data from Chinese stock market.

This study will be the first to use data after the 2005-2006 reform and ultimate ownership theory to analyse the impact of separated ownership and control of listed firm's value in Chinese stock market.

4.2 Chinese Stock Market 2005-2006 Ownership Reform

4.2.1 Background

The construction of Chinese stock market has been very unique. Ever since the establishment of its stock market in 1990, there's been the separation of circulating and non-circulating shares for SOEs: only about 1/3 shares are allowed to trade on the market, the majority 2/3 is generally held by the state and not permitted to trade. Such arrangement has been designed to protect state assets. It has served the purpose of appeasing voices against establishing the Chinese equity market, worrying it would either make the state lose control of the state assets or put too much pressure on the then very fragile stock market with such huge demand of capital.

However such arbitrary arrangement did have its downside. According to data from National Statistical Bureau of China (NSBC), by the end of 2004 the national GDP increased about 9.5%, a performance not reflected accordingly by the Chinese stock market. For instance, the Shanghai Stock Exchange Composite Index (SSE Composite Index) dropped about 15.15% during the same period of time. Generally stock market goes hand in hand with national economy, working as a thermometer of economic health; such an obvious divergence usually indicates problems. This can be supported by macroeconomic evidence from NSBC. In year 2000, the SSE Composite Index increased more than 50%, far more than the 8% annual GDP. Since its inauguration in 1990, SSE Composite Index started at 100 point and reached 2245 point in 2001, an dramatic increase of 2100%; even compare to the 1250 point at the beginning of 2005, it is still as high as 13 times its starting point. GDP during the same period of time increased only about 200%.

Such dramatic expansion of Chinese stock markets is partly due to its method of expansion: taking the

golden eggs by killing the hen. Companies keep grabbing money from investors by issuing large amount of shares even though their performances don't match up. As a result, investors gradually lose faith in the stock markets. This is why the stock markets have been bearish in years before 2005, lingering at around 1200 points. Although public companies were in dire need of capital, investors were very reluctant to get in the market. Even favourable policies from the government can't fundamentally change the very desperate situation, such as the 'State 9 Opinions' issued on 1st February, 2004 and capital gains tax reduction.

The division of circulating shares and non-circulating shares has been the main target of criticism. Although this was meant to protect the state property, in fact preventing free circulation of almost 2/3 of total shares rendered the self regulating function of market invalid and almost useless in punishing incompetent managers or violation of corporate governance since it's literally impossible for other investors to collect majority shares; shareholders can only express their opinions passively by 'vote by feet' and sell their shares.

Various solutions were proposed to solve this problem. One of them is to set up a 'C' share just for the transfer of state shares. This was actually taken into practice very briefly since 4th January 2004. It was stipulated that all the state shares on the market must register with SZSE for transfer, and shareholders can have a weekly update about the latest transferring status of state shares. However, the market show very little reaction to this arrangement, and it was proven to be a temporary and not a fundamental change the market expected. Eventually, complete elimination of the unreasonable artificial arrangement of having 'non-circulating shares' seems the only rational choice.

4.2.2 Stages of the Reform

A very stagnant Chinese stock market propelled the state to make up its mind for a fundamental reform. Its official inauguration date is the 29 April 2005, marked by the announcement of ‘Notice about Relevant Issues in the Reform Trial of Publically Listed Companies’ by CSRC. The process is a trial and error process, since this is unique to Chinese stock market. The plan was to have two groups of trial firms first to test water. The selecting criteria are companies with healthy performance and steady development over the years, and four firms were selected for the first round.

All four companies share some common points:

(1). None of them are central government state companies; rather they belong to either municipal government or run by families, one of them is even a joint venture with foreign firms. Since it is a process of trial and error, leaving central government state companies out would be easier to control the consequences in case anything goes wrong. This is an obvious cautionary decision.

(2). Their ownership structures are all relatively simple: the controlling shareholders have absolute control over the firm. For instance, three firms’ top shareholders have more than 50% of the shares (50.40%, 72.42% and 74.51%), and their second shareholders only have about 1%. Thus it would be easier to get consensus about how and how much to compensate the circulating shares’ shareholders. Since by allowing non-circulating shares to circulate on the market is in effect diluting the ownership of each share held by previous circulating shareholders. Compensating properly means it would both ensure the interest of previous circulating shareholders and previous non-circulating shareholders. This is the focus of attention for the general meeting of shareholders and the key debating issue for the appropriate proposal of each individual listed firm.

(3).They are all A share companies. No B share or H share companies were selected.

(4).Their performances are all relatively strong, no loss for the past 3 years. They were never publically renounced by CSRC and had a very clean slate.

The first stage of reform proceeded rather slowly, from the time the four companies were selected (9 May 2005) to the date the second round of trial firms (totally 42 companies) were selected (19th June 2005), more than a month has passed. Another three months passed before the overall reform started officially at 12th September 2005. From then on, the process was largely accelerated, in total 64 groups of companies were requested to reform over the next 16 months, about 97.86% of the total market value of all the listed companies on SSE and about 96.76% of the overall market value of the SZSE main board, with only 40 not yet started the reform by end of 2006.

4.2.3 Data

The initial data sample includes all the 64 groups of companies, 1250 companies in total, announced by CSRC to proceed with the reforming process from 29th April 2005 to 31st December 2006. Among them, 795 are listed on Shanghai Stock Exchange (SSE), taking about 97.86% of the total market value of all the listed companies on SSE, with only 18 companies in SSE not entering the reform process yet. The other 455 companies entered the reform process before 2006 are listed on Shenzhen Stock Exchange (SZSE), taking about 96.76% of the overall market value of the SZSE main board, with only 22 companies in SZSE not yet started the reform.

The screening process for all the 1250 companies then involves selecting only those that have finished the

reform process by end of 2006 so that the 2006 annual reports published by April 2007 would be able to accommodate and reflect the ownership structure changes. Besides, companies with very poor performances would be excluded from the sample, normally marked by CRSC as ‘ST (special treatment)’ companies that suffering losses for the past three years. Also, companies in the financial industry or real estate industry would be excluded due to their own unique leverage levels. Finally, companies that have missing data would also be excluded. After above mentioned screening process the final sample of this study includes 987 companies in total, 229 finished the reform by end of 2005 and 758 companies finished their reform by end of 2006. This is about 80% of all the companies listed on the two stock markets in China (SSE and SZSE), and their status should be a quite comprehensive and fair reflection about the genuine status of the overall Chinese listed firms.

Mainly two sources of data are used to provide the needed information in this study.

One is first hand data of companies’ ownership structures, listing times, gearing ratios and other financial information etc, coming directly from the listed companies’ official annual reports. They are publicly available at the website of Chinese Security Regulatory Committee (www.csrc.cn). For the companies that finished their reform by 2005, their annual reports of year 2003, 2004 and 2005 are used. The reason to choose year 2004 is because that's the year before the ownership reform started, it helps to paint a clear picture to compare the situation before the reform and afterwards. The annual reports in 2005 were selected since that's the time the actual reform initiated as well as the time when some of the listed firms finished their reform. Leverage level obtained from year 2003 annual reports would serve as an instrument for estimation purpose at the next statistical analysis stage. For similar reasons companies that finished their reform by 2006 have their annual reports of year 2004, 2005 and 2006 obtained.

The other source of information is from website of sina finance (biz.finance.sina.com.cn), providing the year end trading price of stocks in order to determine the year end market value of the stocks.

The ownership structure before and after the 2005 reform will be discussed, with analysis of the extent of actual change and its implications.

The empirical results will be presented in two groups: companies that finished their reform by end of 2005 and companies that finished their reform by end of 2006. For companies that finished their reform by 2005, data from both 2004 and 2005 will be used in order to compare the status before and after the reform. For companies that finished their reform in year 2006, data from both 2005 and 2006 would be used for purpose of comparison, to see the actual changes before and after the reform.

The overall impact of the 2005-2006 reform on the ownership structure of the listed firms on Chinese stock markets will be discussed in three aspects: the control level (absolute and relative control), management involvement, and aspects such as pyramid control, crossholding and differentiated voting rights.

4.2.4 Ownership Structure Comparison: Control Level

Control and ownership will be categorized into two groups: absolute control and comparative control

Absolute control: the owner has the absolute control over the company if he has more than 50% of its voting right.

Comparative control: refers to companies whose biggest owner has more than 20% but less than 50% of the voting right. For instance, Tsinghua Tongfang LTD (code 600100), one of the first companies that went through the ownership reform, 50.40% of its shares belong to the state, that makes the state its ultimate owner having absolute control over the company. On the other hand, Shanghai Jinling's (600621)

ultimate owner only has comparative control over the company since they only control 26.39% of the total shares.

(A) Absolute Control

The concentration level of shareholder ownership has been largely reduced after the reform; though still remain at quite a high level.

a. Companies Finished Reform by 2005

Table 4-1 The Ultimate Ownership of Listed Firms: Comparison Before and After Reform in 2005

Ultimate Owners	Number of Firms (%) with Absolute Control Owner		Number of Firms (%) with Comparative Control Owner		No Ultimate Owner	
	Before	After	Before	After	Before	After
State	66 (85.71%)	48 (85.71%)	54 (45.76%)	64 (56.14%)	—	—
Individual/Family	8 (10.39%)	6 (10.71%)	57 (48.31%)	46 (40.35%)	—	—
TVE	1 (1.30%)	1 (1.79%)	2 (1.69%)	1 (0.88%)	—	—
Company	2 (2.60%)	1 (1.79%)	5 (4.24%)	3 (2.63%)	—	—
Total Number of Firms	77	56	118	114	32	57
Percentage (out of 227)	33.92%	24.67%	51.98%	50.22%	14.10%	25.11%

(1) For the 227 companies finished their reform by end of 2005 (see Table 4-1), the number of firms with ultimate owners having absolute control (holding more than 50% of the total company stocks) was 77 before the reform, 33.92% of all the companies. Among them, about 85.71% were owned by the state; 10.39% owned by individuals and their families; only less than 4% were owned by companies and TVEs.

(2) After the reform in 2005, the total number of companies with absolute controller dropped from 77 to 48, a reduction of almost 40% and the percentage of firms with absolute control owners reduced from about 33.92% to 24.67%. The sub-structure among different types of owners is quite stable, and 85.71% of the companies with absolute owners are still the state, 10.71% of them are individuals and their families.

b. Companies Finished Reform by 2006

Table 4-2 The Ultimate Ownership of Listed Firms: Comparison Before and After Reform in 2006

Ultimate Owners	Number of Firms (%) with Absolute Control Owner		Number of Firms (%) with Comparative Control Owner		No Ultimate Owner	
	Before	After	Before	After	Before	After
State	195 (96.53%)	102 (94.44%)	312 (78.39%)	348 (80.93%)	—	—
Individual/Family	4 (1.98%)	4 (3.70%)	66 (16.58%)	65 (15.12%)	—	—
TVE	1 (0.50%)	1 (0.93%)	7 (1.76%)	4 (0.93%)	—	—
Company	2 (0.99%)	1 (0.93%)	13 (3.27%)	13 (3.02%)	—	—
Total Number of Firms	202	108	398	430	156	216
Percentage (out of 755)	26.75%	14.30%	52.72%	56.95%	20.53%	28.48%

(3) For the 755 companies finished their reform by end of 2006 (see Table 4-2), the number of firms with ultimate owners having absolute control is 202 before the reform, 26.75% of all the companies. Among them, 96.53% are owned by the state; 1.98% owned by individuals and their families; only less than 1.5% are owned by companies and TVEs.

(4) After the reform in 2005, the total number of companies with absolute controller dropped from 202 to 108, a reduction of as much as almost 50%, and the percentage of firms with absolute control owners reduced from 26.75% to 14.30%. Again, similar to companies finished their reform in 2005 the subcategory of the different types of ownership remained stable, before and after the reform.

c. Overall Comparison Before and After the Reform.

Table 4-3 The Ultimate Ownership of Listed Firms: Overall Comparison

Ultimate Owners	No. of Firms (%) with Absolute Control Owner		No. of Firms (%) with Comparative Control Owner		No Ultimate Owner	
	Before	After	Before	After	Before	After
State	261 (93.55%)	150 (91.46%)	366 (70.93%)	412 (75.74%)	—	—
Individual/Family	12 (4.30%)	10 (6.10%)	123 (23.84%)	111 (20.40%)	—	—
TVE	2 (0.72%)	2 (1.22%)	9 (1.74%)	5 (0.92%)	—	—
Company	4 (1.43%)	2 (1.22%)	18 (3.49%)	16 (2.94%)	—	—
Total Number of Firms	279	164	516	544	188	273
Percentage (out of 982)	28.41%	16.7%	52.55%	55.40%	19.14%	27.8%

Absolute control ownership is quite high for Chinese listed companies, 28.41% of all the selected listed companies had an absolute controller before the reform; even after the reform, that figure is still quite high at 16.7% (see Table 4-3). Among them, state owned companies take a very obvious majority: over 90% (93.55% and 91.46% before and after the reform) of all the listed companies that have an absolute controller are owned by state, showing that companies that have the highest concentration level are state-owned ones.

(B) Comparative Control

Companies with comparative control are the ones own more than 20% but less than 50% of company stocks. The reason to choose the starting point of 20% instead of 10% as some other studies is because Chinese listed companies generally have a rather high concentration level, the average ownership for the biggest owners in 2004 is over 40% (40.62%) and there's no substantial difference if 10% has been chosen as the differentiating level. Even using a more stringent standard at 20% instead of 10%, over 70%

of firms got identifiable ultimate owners: 80.86% before the reform and 72.2% after the reform.

a. Companies Finished Their Reform by 2005

For the 227 companies finished their reform by 2005, more than half of them fall in the category of having an owner with comparative control, 51.98% for year 2004 and 50.22% for year 2005. Of all the listed firms with comparative control owners, about half belong to the state and half belong to individuals and their families. Only less than 6% are owned by companies or TVEs. It has shown that after 2005 the percentage of relative controlled firms has increased. This is not surprising given the downsizing of the absolute control owner group during the same period of time.

b. Companies Finished Their Reform by 2006

For the 755 companies finished their reform by 2006, also more than half of them have owners with comparative control, 52.72% before and 56.95% after the reform. Though for companies finished their reform this year, state owners again take the majority at 78.39% before the reform, and 80.93% after the reform.

c. Overall Comparison.

Pulling all the companies together, as in Table-3, over half of the companies have one ultimate owner with comparative control (52.55% and 55.40%), and about 70% of those owners are the state. Just like the absolute control category, the relative control group shows that state takes a very firm control of the majority listed companies both before and after the reform.

(C) Companies with No Ultimate Owner.

Companies with their biggest owners stock holding of less than 20% are defined as companies with no ultimate owners. The results from all three tables show a consistent trend of reduced concentration, there are more companies with scattered ownership after the reform, increasing from lower than 19.14% to 27.8% (Table 4-3). If 10% was used as the bench mark instead, the result is still the same: more companies are widely held after the reform, though the actual percentage would change (percentage of widely held companies increase from 7% to 9.5%).

4.2.5 Ownership Structure Comparison: Management Involvement.

We define management involvement as when the ultimate owners themselves were holding one of the following positions during the period of our research: general manager, chief executive officer, chair of the board or a board director. This is a common mechanism employed by shareholders to reinforce their control over the firm. In this sample, the majority companies' (682 out of 982 companies before the reform; 669 out of 982 companies after the reform) biggest owner is state and it is common practice for the state to appoint its own representatives on key positions of companies for monitoring purposes. Besides these state controlled companies, 231 out of 313 companies have their biggest shareholders as part of the management team before the reform, and 237 out of 300 companies' biggest shareholders have management involvement. The ratio of management involvement is very high and quite steady over time.

4.2.6. Ownership Structure Comparison: Pyramid Control, Crossholding and Differentiated Voting Rights.

Pyramid structure has been widely used in the listed companies. For companies finished reform by 2005, only 19 out of the 227 companies don't have pyramiding structure. For companies finished reform by 2006, that rate is 49 out of 755 companies. These directly controlled companies showed a shorter chain of command, demonstrating a tighter control over the listed companies. In most cases their biggest shareholder is the state: all the 19 cases in 2005 are state owners; 39 out of the 49 cases in 2006 have state owners. This shows a strong influence from the state over some of the listed companies.

Only 1 case of crossholding has been observed. Unlike other countries, it is not common for listed companies in China to hold shares of other listed companies.

Different voting right is also rather scarce with one observation only, with a TVE company. However, this is not part of the stocks' features, it happened when one big shareholder entrusted the voting rights to another.

The average percentage of cash flow the biggest shareholders have is 40.62% in 2004, and 34.33% in 2005 for companies finished reform by 2005; 36.41% in 2005 and 30.31% in 2006 for companies finished their reform by 2006; overall, before the reform the average shareholding for the biggest shareholder of all the companies in our sample is 37.39% and after the reform it is 31.29%. Although it is very clear that the ownership concentration level has reduced in many aspects, the ownership structure is still quite high at over 30% on average for all the companies and has remained rather stable in the sense that the biggest shareholders have pretty much been the same. For instance, for all the companies finished their reform in 2005, only three companies have actually changed their biggest owners.

4.2.7 Conclusion.

The most influential reform since Chinese stock markets' establishment started since April 2005. It aimed to rectify the fundamental structure of the unique feature of Chinese stock ownership, allow the 2/3 non-circulating shares to circulate freely on the market.

The study selected all the 1250 companies finished their reform by the end of 2006, about 97.86% of the total market value of all the listed companies on SSE and 96.76% of SZSE as the original sample. After excluding ST companies, financial companies and companies with missing data, 987 companies were included in the final sample, counting for over 80% of all listed companies on Chinese stock markets, a very comprehensive and representative sample of the overall status of this reform.

This is the first study that collected comprehensive cross the market data to give a full picture of the scale and results of this most influential reform. It is the first study that presented the detailed and comprehensive ownership structure before and after the reform.

From the three tables presented in the above section, the following conclusions can be drawn:

(1).Chinese listed firms have highly concentrated ownership structure.

Before the reform, only 19.14% of listed companies don't have any ultimate owner with control of over 20%, even after the reform that figure is still as low as 27.8%.

(2).Chinese listed firms are under strong influence of the state.

For the over 70% of listed companies with ultimate owners, over 90% of the owners of absolute controllers are the state and over 70% of the comparative owners are also the state.

(3). It is prevalent for Chinese listed companies to have pyramid control.

Over 90% of all listed firms have pyramid control structure.

(4). The 2005-2006 reform has somehow changed the ownership structure.

Although still a state dominant and highly concentrated ownership structure for most listed firms in China, the reform has reduced the control level. The number of firms with absolute ultimate owner has reduced from 279 to 164, a reduction of as much as 41.22%. The number of firms without any ultimate owner has increased from 188 to 273, an increase of 45.21%.

(5). The fundamental ownership structure feature of Chinese listed firm remained largely the same.

Although there has been undeniable evidence suggesting the ownership structure of Chinese listed firms has made some progress towards being more widely held corporations, facts remain that this is still a market with overwhelmingly strong government control, as discussed in previous points of (1) and (2). Nonetheless, it is still encouraging to see first signs of absolute state control getting loosened up, making space for more market force to come in place. Depending on each company's negotiation with their investors, normally the previously non-circulating shares would be allowed to become activated gradually over the following several years. This is a precaution taken to make sure the influx of large amount of available shares wouldn't be too overwhelming for the market. A gradually scheduled slow release of these shares would give the market as well as investor more time to prepare. An interesting follow up study could be conducted in several years' time to see the ownership structure then.

4.3 Empirical Study of Separated Ownership and Control on Chinese Listed Firms

4.3.1 Definition of Ownership, Control and Separation Ratio

To study the separation of ownership and control of listed firms, it's necessary to construct relevant data. Following Claessens et al (2000; 2002), similar method has been used to calculate the ownership and control power of listed firms.

For companies with pyramid structures, the ownership of controlling shareholder equals the product of their ownership over the chain of control; the control power would be the weakest link over the chain of control.

For instance, if B is A's biggest shareholder with 60% shares, and C is B's biggest shareholder with 40% shares, then C has 24% ownership of A, the product of 40% and 60%. The control power of C over A would be 40%.

To measure the level of separation between ownership and control, separation ratio of listed firms was calculated as ownership divided by control. The smaller the separation ratio, the more severe the situation of separated ownership and control is. For instance, in the example above, the separation ratio would be ownership of 24% divided by control level of 40%, equals to 0.6 separation ratio. A similar situation where B has 40% of shares in A and C has 40% of B, C would have 16% of the ownership of A, and 40% of control. The separation ratio would be $16/40=0.4$ separation ratio. In both cases, the control power of C over A is 40%, however, in the latter case C only had 16% of ownership to achieve the same level of

control though its vested interest (actual ownership) is much lower (16% compare to 24%) than the previous case, thus the lower separation ratio of 0.4 (compared to 0.6) indicates a bigger gap between actual ownership and control, i.e. a more severe case of separated ownership and control and higher separation level. In a nutshell, the lower the separation ratio, the bigger the gap between owner's residual cash flow entitlement and actual decision making power, presenting a case of using very little actual ownership to exert much bigger influence on management decisions. Fama & Jensen's theoretic discussion would suggest a positive relationship between the separation level and firm performance for listed firms. The actual result of Chinese listed firms would be presented at later section 4.4 empirical results.

4.3.2. Types of Ultimate Ownerships:

Similarly, the ultimate control theory was used for the study, and five types of ultimate owners will be included in this study:

A. The state: companies with the state as the ultimate owner refer to the companies that are either directly controlled by relevant ministry or departments of central/provincial/municipal government or indirectly controlled by them through pyramid. The common characteristics of this type of listed firms are that normally their CEOs or G.M are appointed by relevant government agents. For this reason, we assume that all the firms in this category have management involvement, that is, the dummy variable describing all the state-owned listed firms for management involvement would be 1.

B. Individuals and their family members: we don't differentiate among family members but will see them as one group that shares the same interests.

C. Town and village enterprises (TVEs): this refers to companies that are controlled by a town or village.

D. Companies, which means there's no ultimate owners, i.e. they are widely held companies.

E. Other.

4.3.3 Research Methodology

Shleifer and Vishny (1997) pointed out that due to bigger shareholders possess the majority of company shares, they are motivated to monitor managers' behaviours, which help to resolve the issue of 'Free Riding' of small shareholders since they don't have sufficient incentive (Grossman & Hart, 1980). Also, the possession of majority shares enabled the big shareholders to actually monitor managers' behaviours. Particularly with increased shares held by big shareholders, their interest in the company also increases and convergence of managers' and shareholders' interest would emerge (Morck, 1988).

Hypothesis 1: increased number of shares held by controlling shareholders would increase company value, there will be positive relationship between these two.

When the control power of big shareholder exceeds their actual ownership, Claessens et al. (2002) pointed out due to their relatively small residual return at the listed firms, they are not sufficiently motivated to manage the company well; on the contrary with their comparatively strong control power they can conveniently transfer wealth out of the company by means of unfair insider trading, illegal guarantee etc to maximize their own interest at the cost of small shareholders, causing agency issues with other small shareholders and hurt companies' performances. Situation could be more severe in regions where legal protection is relatively weak, such as East Asia. Thus, hypothesis 2 is proposed:

Hypothesis 2: the separation of control power and ownership by controlling shareholders decreases the company value, there will be negative relationship between these two.

Variables and Dummy Variables

Tq: Tobin's Q, i.e. company value, equals the sum of total market value of company and book value of debts divided by total assets. The market value of companies is estimated as the products of year-end share value and total number of shares. If the data on last day of trading is unavailable the nearest date will be used.

Return: Annual income from the company's main business.

Gear: Gearing ratio of company, equals the ratio of total debts divided by total assets

Equ: Ownership of listed firm. It equals to the product of ownership over the chain of control.

Con: Control power of listed firm, equals the weakest amount of ownership over the chain of control.

Sepa: Degree of separation. It equals to the ratio of ownership divided by control

Lth: The length of years since become public listed. For instance, if a company get listed on the same year its Lth would be 0, if it get listed the year before its Lth would be 1, etc.

Size: Natural logarithm of the total assets.

Type: Although the original data has 5 different types of ownership, they got categorised into 2 large categories: state-owned and non-state owned to see whether state-owned firms can outperform non-state ones.

Three dummy variables are included:

Pyramid Structure (Pyram): this variable refers to companies whose ultimate owners and their direct owners are not the same, i.e. the ultimate owner doesn't own the listed company directly but through a chain of ownership. The existence of pyramid structure indicates the control from the ultimate owner is less tight, and thus would render their influence less effective, a detrimental effect and a negative sign would be expected from the estimation. All companies that have pyramid structure would be set at 1, otherwise their Pyram value would be 0.

Management involvement (M): if a company's ultimate owner holds positions as CEO, General Manager, or director of boards, etc, the value of its management involvement would be assumed as 1, otherwise it's 0. In cases where the ultimate owner is the state or TVEs it is assumed to be 0, since the senior management staff would be directly appointed by governments or head of town or villages, they don't really share a personal interest in the wellbeing of the company. Thus all the state controlled companies and the companies whose head (i.e. CEO, General Manager or director of board) is not an ultimate owner would have a M value of 0, otherwise it is 1.

Type of Ownership (Type): this variable indicates the types of ultimate ownership of a listed company.

As discussed earlier there are altogether 5 types of different ownerships included in this research: the state, individuals and their family members, companies, town and villages, and others. Among them, we set the state controlled companies as 0, all the other types as 1. This way we get to compare the efficiency of the state controlled companies to companies with other ownerships.

Research Model:

$$Tq_i = a_0 + a_1 Equ_i + a_2 Sepa_i + a_3 Pyram_i + a_4 Gear_i + a_5 M_i + a_6 Lth_i + a_7 Type_m + a_8 Size_i + e_i$$

$$Gear_i = a_9 + a_{10} Gear_{i-1} + a_{11} Tq_i$$

$$Return_i = b_0 + b_1 Equ_i + b_2 Sepa_i + b_3 Pyram_i + b_4 Gear_i + b_5 M_i + b_6 Lth_i + b_7 Type_m + b_8 Size_i + e_i$$

$$Gear_i = b_9 + b_{10} Gear_{i-1} + b_{11} Return_i$$

4.4 Empirical Results

The estimation methodology in this study is Three Stage Least Squares (3SLS). This method is similar to Two Stage Least Square (TSLS) in the sense that it can deal with over identified simultaneous equations such as our model, but enjoys further advantage of dealing with contemporary correlation.

Since the least square method is only applicable in cases that satisfy the 10 classic assumptions, for our

model many of these assumptions are violated such as the endogenous problem caused by more than one internal variable such as Tobin's q and the gearing level of a firm. To address the problem of endogeneity, TSLS would have sufficed. Since its principle is to express the simultaneous equations in form of all predetermined or external variables to avoid the problem of endogeneity. However, the other problem of contemporary correlation can't be dealt with TSLS only. Thus 3SLS would be a more appropriate choice since after the similar first two steps of TSLS, 3SLS further proceed to use GLS to address the heteroscedasticity and autocorrelation problems.

For purpose of comparison, Tobin's q and company's return were used to show the difference between the response of market valuation and a company's true value under the same situation. Thus two sets of simultaneous equations will be included: one with Tobin's q, the other with return, as indicated in the previous model.

There are two sets of hypothesis to be tested as state earlier: one focusing on the relationship between company value and companies' biggest owners' equity holding; the other is to estimate the relationship between company value and the separation of companies' biggest owners' shareholding and actual control power.

The results will also be reported for companies that finished in year 2005 and 2006 separately, since the reform took place over two years. Companies finished their reform by end of 2005 will be included in the year 2005 tests with all corresponding data; while companies finished by end of 2006 will be included in 2006 tests.

a. Statistical Analysis Results with Tobin's Q.

Table 4-4 Year 2005- Tobin's Q Result

Total system (balanced) observations 908

	Coefficient (Constant Value)	Std. Error	t-Statistic	Prob
Constant ₁	6.215679	0.662205	9.386329	0.0000
Equity	0.448584	0.181566	2.470645	0.0137
Separation	-0.111434	0.121410	-0.917835	0.3590
Pyramid	0.012095	0.062355	0.193977	0.8462
Gearing	-0.020349	0.086677	-0.234768	0.8144
Management	-2.435119	0.228676	-10.64878	0.0000
Length of Period	0.008767	0.006781	1.292953	0.1964
Type	0.088992	0.089548	0.993801	0.3206
Size	-0.499832	0.075388	-6.630084	0.0000
Constant ₂	0.280926	0.025964	10.81989	0.0000
Gearing _{t-1}	0.546221	0.039883	13.69571	0.0000
Tobin's Q	-0.108417	0.014391	-7.533853	0.0000

Determinant residual covariance 0.001757

$$\text{Equation: } TQ=C(1)+C(2)*EQU+C(3)*SEPA+C(4)*PYRAM+C(5)*M+C(6) \\ *LEV+C(7)*LTH+C(8)*TYPE+C(9)*SIZE$$

Observations: 454

R-squared	0.468044	Mean dependent var	0.589935
Adjusted R-squared	0.458481	S.D. dependent var	0.818291
S.E. of regression	0.602164	Sum squared resid	161.3575
Durbin-Watson stat	1.751161		

$$\text{Equation: } LEV=C(10)+C(11)*LEV_1+C(12)*TQ$$

Observations: 454

R-squared	0.713306	Mean dependent var	0.469087
Adjusted R-squared	0.712034	S.D. dependent var	0.167889
S.E. of regression	0.090093	Sum squared resid	3.660678
Durbin-Watson stat	1.929397		

Table 4-5 Year 2006 Tobin's Q Result

	Coefficient	Std. Error	t-Statistic	Prob.
	(Constant Value)			
Constant	4.968708	0.569791	8.720230	0.0000***
Equity	0.378787	0.157016	2.412405	0.0159**
Separation	-0.197839	0.098299	-2.012634	0.0442**
Pyramid	-0.009713	0.087782	-0.110645	0.9119
Gearing	0.124186	0.084379	1.471753	0.1412
Management	-2.484488	0.176271	-14.09471	0.0000***
Length of Period	0.031511	0.007154	4.404645	0.0000***
Type	-0.136928	0.079648	-1.719169	0.0857
Size	-0.363292	0.062877	-5.777856	0.0000***
Gearing _{t-1}	0.788625	0.027929	28.23671	0.0000***
Tobin's Q	-0.042798	0.010589	-4.041871	0.0001***
R-squared	0.191354	Mean dependent var		0.554012
Adjusted R-squared	0.187065	S.D. dependent var		1.113427
S.E. of regression	1.003898	Sum squared resid		1519.779
Durbin-Watson stat	1.458329			

Table 4-4 and Table 4-5 shows that the level of biggest owner's shareholding has a positive relationship with company value: the higher the company's biggest shareholder's shareholding the higher the company value. This result is very significant at 1.37% and 1.59% respectively. Thus the first hypothesis is verified by the results with Tobin's Q as performance measurement.

The results with Tobin's Q support the theory by Shleifer and Vishny (1997), Grossman & Hart (1980), Morck (1988) etc that large percentage of shareholding would help to increase company value, that when the amount of shareholding increases the owner's interest would converge with that of the company and become more motivated to increase company value instead of seeking personal gains at the expense of the

company.

Secondly, the level of separation of the biggest shareholders' actual ownership and their control power in both years' results showed negative relationship with companies' performances. The result for year 2005 is not significant at 35.9%; it is significant for year 2006 sample at 4.42%. The second hypothesis is verified in both cases with Tobin's Q as performance measurement, although the result is only very significant for year 2006 sample.

Other observations worth noticing including:

(1) gearing level is significantly (both at better than 1% level) negatively related to company performance, meaning that the more a company financing through debt the worse a company performs; this supports the theory that debts can actually serve as a disincentive for listed firms since the shareholders would have less common interest with the companies. This result supports Tian and Estrin's (2007) finding that an increase in bank loans increases the size of managerial perks and free cash flows and decreases corporate efficiency. They find that bank lending facilitates managerial exploitation of corporate wealth in government-controlled firms but constrains managerial agency costs in firms controlled by private owners. They believe the failure of corporate governance may derive from the shared government ownership of lenders and borrowers.

(2) Company size is also significantly negatively relating to company performance (at better than 1% in both cases), indicating larger companies (SOEs in many cases) actually fare worse than smaller companies.

(3) The number of years companies got listed is also significant for both cases, though in 2005 sample it's not significant while in year 2006 sample it's significant at better than 1% level

(4) Other variables such as management involvement, pyramid holding structure, and types of companies didn't show any significant relationship with the company performances.

b. Statistical Analysis Results with Annual Return.

Table 4-6 Year 2005 Annual Return Result

Total system (balanced) observations 908

	Coefficient (Constant Value)	Std. Error	t-Statistic	Prob
Constant ₁	-9.32E+10	7.28E+09	-12.79394	0.0000
Equity	3.42E+09	2.17E+09	1.575117	0.1156
Separation	-2.14E+09	1.48E+09	-1.451945	0.1469
Pyramid	-3.57E+08	7.61E+08	-0.469344	0.6389
Management	1.21E+09	1.06E+09	1.139881	0.2546
Gearing	-3.37E+09	2.44E+09	-1.384544	0.1665
Length of Period	-3430998.	81850416	-0.041918	0.9666
Type	5.12E+08	1.09E+09	0.470542	0.6381
Size	1.05E+10	8.16E+08	12.91811	0.0000
Constant ₂	0.095890	0.015024	6.382266	0.0000
Gearing ₋₁	0.766921	0.030333	25.28337	0.0000
Annual Return	6.44E-12	1.14E-12	5.622576	0.0000

Determinant residual covariance 3.90E+17

$$\text{Equation: RETURN} = C(1) + C(2)*\text{EQU} + C(3)*\text{SEPA} + C(4)*\text{PYRAM} + C(5) \\ *M + C(6)*\text{Gear} + C(7)*\text{LTH} + C(8)*\text{TYPE} + C(9)*\text{SIZE}$$

Observations: 454

R-squared	0.340648	Mean dependent var	2.98E+09
Adjusted R-squared	0.328794	S.D. dependent var	7.80E+09
S.E. of regression	6.39E+09	Sum squared resid	1.82E+22
Durbin-Watson stat	1.218163		

$$\text{Equation: LEV} = C(10) + C(11)*\text{Gear}_1 + C(12)*\text{RETURN}$$

Observations: 454

R-squared	0.569785	Mean dependent var	0.469087
Adjusted R-squared	0.567877	S.D. dependent var	0.167889
S.E. of regression	0.110364	Sum squared resid	5.493235
Durbin-Watson stat	1.959157		

Table 4-7 Year 2006 Annual Return Result

Total system (balanced) observations 3034

	Coefficient (Constant Value)	Std. Error	t-Statistic	Prob
Constant ₁	-2.17E+11	1.96E+10	-11.06644	0.0000
Equity	1.05E+10	5.60E+09	1.866479	0.0621
Separation	-2.97E+08	3.55E+09	-0.083838	0.9332
Pyramid	-1.66E+10	3.23E+09	-5.153890	0.0000
Management	-1.50E+09	3.06E+09	-0.489359	0.6246
Gearing	-7.56E+09	5.73E+09	-1.319696	0.1870
Length of Period	-4.27E+08	2.40E+08	-1.776989	0.0757
Type	3.57E+09	2.88E+09	1.238078	0.2158
Size	2.56E+10	2.14E+09	11.97032	0.0000
Constant ₂	0.070714	0.006026	11.73542	0.0000
Gearing ₋₁	0.884973	0.011898	74.37728	0.0000
Annual Return	7.39E-13	1.81E-13	4.093771	0.0000

Determinant residual covariance	5.99E+18
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Equation: RETURN=C(1)+C(2)*EQU+C(3)*SEPA+C(4)*PYRAM
+C(5)*M+C(6)*LEV+C(7)*LTH+C(8)*TYPE+C(9)*SIZE

Observations: 1517

R-squared	0.114153	Mean dependent var	3.87E+09
Adjusted R-squared	0.109454	S.D. dependent var	3.41E+10
S.E. of regression	3.22E+10	Sum squared resid	1.57E+24
Durbin-Watson stat	1.034496		

Equation: LEV=C(10)+C(11)*LEV_1+C(12)*RETURN

Observations: 1517

R-squared	0.784377	Mean dependent var	0.497652
Adjusted R-squared	0.784092	S.D. dependent var	0.173110
S.E. of regression	0.080437	Sum squared resid	9.795777
Durbin-Watson stat	1.896296		

In the above section, statistical analysis has been conducted to study the relationship between various variables and company's performance using Tobin's Q as the variable measuring companies' performance level.

Tobin's Q has been calculated as the difference between a listed company's current market value (the product of year end stock value and total number of shares) and debt, divided by total assets. In another

word, Tobin's Q is the market perceived value of a company, which may or may not be the same as the actual company value. Therefore, as a test of robustness, listed companies' annual return was also used as an alternative measurement of the companies' performance. The results are presented in Table 4-6 and Table 4-7.

Firstly, the two results (companies finished reform in year 2005 and in year 2006 respectively) measured with return as the variable of company performance showed that the portion of biggest owner's shareholding has a positive relationship with company value: the higher the portion of shareholding by a company's biggest shareholder the higher the company value. This result is significant at 11.56% and 6.21% respectively. Thus the first hypothesis is verified by the results with companies' return as performance measurement. This is consistent with the results measured by companies' Tobin's Q levels, only slightly less significant.

Secondly, the level of separation of the biggest shareholders' actual ownership and their control power in both years' results showed negative relationship with companies' performances. However, the result for year 2005 is significant at 14.69%, and it is insignificant for year 2006 sample. The second hypothesis is partly verified in both cases by results with companies' return as performance measurement, although the result is only significant for year 2005 sample. Again, the result is consistent with the previous set of results with Tobin's Q as companies' performance measurement.

Other factors didn't show significant relationship such as gearing level, the number of years companies got listed, and management involvement. State and non-state owned companies didn't show significant difference in terms of performance. Company size is significantly negatively relating to company performance (at better than 1% in both cases), indicating larger companies actually fare worse than smaller companies. Different from previous sets of estimates is that the pyramid holding structure

demonstrated a significantly negatively relationship with company performance when it's measured by main business returns, significant at better than 1% level for year 2006, not significant for year 2005.

The data with both Tobin's Q and return as measurement of companies' performances showed very strong support to the theory by Shleifer and Vishny (1997), Grossman & Hart (1980), Morck(1988) etc that large percentage of shareholding would help to increase company value, that when the amount of shareholding increases the owner's interest would converge with that of the company and become more motivated to increase company value instead of seeking personal gains at the expense of the company; while gearing would reduce companies' value. The results also support finding of Tian and Estrin (2007) that when the shareholding is large the government can actually improve corporate value, which can be interpreted in terms of ownership concentration and government partiality.

Chapter 5 Conclusion

Since its establishment in the 1990s, Chinese stock market has gone through rapid development. Even so, it is still an emerging market with a rather short period of development history compare to the more developed and mature stock markets in the world, their history of development can be traced back to the early 17th century (Amsterdam Stock Exchange established in 1602), over 400 years ago

Chinese stock market, as a relatively new market is still in its formative stage and going through changes. Thus it is highly necessary to conduct relevant researches to provide up to date information for investors, policy makers and the general public for a better and more accurate understanding of its true position.

In the previous chapters, three empirical studies were conducted targeting Chinese stock market and corporate governance issues.

The first empirical study aims to study the overall and general market discipline. This could serve as a first step for a general understanding of the overall market. This study followed the research methodology proposed by Battacharya et al (2000), using Chinese market data. Due to lack of empirical studies previous to this study, this could contribute to fill in a gap in this area, using data to test the general market discipline level of Chinese stock market. Two types of studies were conducted. The first one is event study, to determine the existence of information spillage; the second one is granger-causality test, to determine the direction of information spillage.

To detect the efficiency of market regulations and discipline on the overall market, an event study was conducted in Chapter 2 using data from 1997-2000. After ruling out the other four possibilities like: inefficient market, not material news announcements, small sample size and full anticipation by the market, it was determined information spillage did exist. Afterwards, a granger-causality test was

conducted to determine the direction of information spillage: the information was leaking from A shares to B shares. This suggests the overall market lacks the necessary discipline to prevent one type of shareholders (shareholders of A shares) from having earlier access to information than another type of shareholders (shareholders of B shares). The fact that A shares are shares denominated in local currency RMB yuan and mostly traded by native Chinese shareholders might not be a mere coincidence. After all, these shareholders enjoy the advantage of being close to the grapevine for privy information that may not be available to those who are playing on a guest field. It follows naturally that regulations aiming to improve professionalism of those who have access to privy information should be formulated and effectively enforced. Such regulations should target stakeholders and their affiliates: company directors, management, employees, customers, suppliers, professional service providers such as their lawyers, consultants, accountants etc. This would help to build a more equitable and fair market for all investors, boost people's confidence in the stock market and encourage more investment. This is pivotal to the healthy development of the Chinese stock market in the long run.

Further study could be focused on latest status of similar studies on Chinese stock market. After all, this is still an emerging market, actively and constantly undergoing (sometimes quite dramatic) improvement and changes in terms of its policies and regulations. For instance, a new series of regulations have been introduced recently, such as the first draft of official insider trading regulations introduced in 2007 by China Security Regulatory Committee (CSRC) and updated at the end of 2012. With clearly defined professional boundaries of acceptable and unacceptable behaviours regarding information communication, information is supposed to be contained well within. For following up study, it would be interesting to see the actual effects of these newly introduced policies and regulations, whether it helps to eliminate the difference between A shares and B shares. The second empirical study was conducted to test the relationship between capital structure and agency costs. The modern corporate imposed a dilemma for investors and stakeholders in general: the development of modern corporations requires the expertise and knowledge of professional managers who are not necessarily the owners of corporation. Therefore,

professional managers as the agents have fiduciary duty to the real owners of the firm, the principal, who entrust them to run the day to day operation and make relevant decisions regarding the corporation. Conflict of interests arises when these two parties' interests are not perfectly aligned: managers want higher payment and more perks out of the job, the owners want to maximize their own wealth, part of which might come from a motivating enough yet merely reasonable payment to the managers. Capital structure theories come in handy to explain what would be the optimal structural arrangement in terms of debt and equity proportion. Since there are different opinions regarding this issue, it is best settled by conducting empirical study.

The relationship between capital structure and agency costs was studied in Chapter 3, using data from 1999 -2001. In order to get a more comprehensive picture, two different types of measurement for agency costs are used: assets turnover ratio and return on equity ratio (ROE). For the assets turnover ratio, only one equation was used; while a simultaneous equation was used for ROE measured agency costs due to the endogenous nature of ROE and gearing ratio. The empirical results from both the assets turnover ratio measured agency costs and the ROE measured agency costs showed strong evidence, significant at 1%, that higher gearing ratio helps to boost firm performance and reduce agency costs.

However, the two measurements showed different results regarding the big owners' role in company performance. When measured by assets turnover ratio, the empirical results show that the concentration level of listed companies big shareholders don't seem to add value to firm through reduced agency costs, indicating the big owners weren't interested or capable in improving companies' operational efficiency. On the other hand, agency costs measured by ROE demonstrated significantly positive relationship between big shareholder and firm performance, so we can't come to a categorical conclusion that big shareholders always help to improve firm performance. In fact, the negative relationship between big shareholder and their preference to finance through equity rather than the relatively low cost debt, suggests they could be demonstrating value-damaging behaviour. This shows a conflict of interest

between large shareholder and minority shareholder. This empirical study has provided new evidence supporting debt's favourable role in firm performance, questioning the operational efficiency of big shareholders and detected the conflict of interests between big and minority shareholders, another form of agency issue. This is not dissimilar to the East European countries' privatization process, during which time the agent-agent issue rather than the agent-principal conflict presented a more prominent problem (Lipton & Sachs; Miller 2005). This appears to be quite common for economy undergoing transformational changes in the process of changing from state owned enterprises to private firms. This is a distinctive feature that set Chinese stock market apart from more mature and developed markets. It confirms the finding in the first empirical study about the fledgling and formative nature of Chinese stock market.

Ever since the establishment of Chinese stock market in the 1990s, it has gone through many changes. One of the most prominent changes would be the 2005-2006 reform of ownership structure. It fundamentally changed the constitution of Chinese stock market listed firms' ownership: the previously non-circulating shares, about 2/3 of the total shares, gradually changed to circulating shares. This was meant to inject new energy to the then stagnant stock market: an overly tight grip by the state made it impossible for the stock market to function normally under market rules. This is just too important an event to be missed out in terms of Chinese stock market and corporate governance. This study will be the first and most comprehensive study regarding this stupendous change.

In Chapter 4, the latest 2005-2006 Chinese stock market ownership reform was studied, using very comprehensive data from 2004-2006, including an original sample of all the listed firm finished reform by end of 2006, accounting for about 97.86% and 96.76% of the total market value of Shanghai (SSE) and Shenzhen Stock Exchange (SZSE) respectively. The first part of chapter includes a detailed depiction of the ownership reform: though the 2/3 previously non-circulating shares are now fully circulatory in theory, and the overall Chinese listed firms demonstrated a trend of being more and more widely held than before,

the fundamental feature of tight state control remained largely intact. Further follow up study in several years (when the shares have an opportunity to change hand in trading) would be necessary to fully capture the impact of this reform. This is the first empirical study providing such a comprehensive and thorough study of the reform, fill in a gap in this area. It then included an empirical study using the post-reform data and ultimate ownership concept to test the impact of ultimate owners and separated ownership on company value. The results show increased level of ultimate owners' ownership has a positive relationship with company performance while separated ownership and control reduces company value. This is the first empirical study using ultimate ownership concept for such study in China.

It is not difficult to understand the positive correlation between increased state ownership concentration level and performance. Higher state ownership concentration level indicates close relationship between the company and government, which would more than likely provide preferential and favourable treatment or support, such access to rare natural resources, bank loans or even monopoly.

The separation level's negative relationship with firm performance needs more probing. According to Fama & Jensen (1983), for small closed firms, agency costs would be reduced by stipulating in the contract to have residual claimant as the decision controller and decision manager; they would be motivated by self-interest to make the best decisions and faithfully execute them. On the other hand, for large institutions, it's necessary to have separated ownership and control due to more expertise knowledge required at different levels of management. Fama & Jensen listed decision control mechanisms: stock market, market for takeovers, expert boards. However, there are prerequisites for any of these to work. For the stock market to fully function and display its specialty in 'pricing common stocks and transfer them at low costs', it is essential to have all shares freely transferrable and traded – a clear handicap for the Chinese stock market. With over 2/3 of the shares controlled by the state, the fledgling Chinese stock market has got its wings clipped and can't reach its full potential. By the same line of reasoning, the market of takeover is practically non-existent: no-one can possibly make any manoeuvre a takeover with

only 1/3 of circulating shares. Finally, the expert boards can only work as an efficient device if 'it limits the decision discretion of individual top managers'. With state appointed officials as top managers, this would be very hard to pan out in reality.

Like the two previous studies, the third empirical study also captured Chinese stock market during its formative and transformational stage. At this stage, more significant measures were taken to reduce the control and influence of the state in the stock market, by allowing full circulation of all shares and letting the invisible hands of market have more power.

These three empirical studies have all focused on the market discipline and corporate governance issues in Chinese context. . It suggests the following results:

(1). First and foremost, the studies point to one prominent feature of Chinese stock market: it is still an emerging market, undergoing its formative stages and improvement in various aspects. This has been reflected in the empirical study of information spillage between two markets. Due to lack of sufficient and enforceable laws and regulations, a feature going side by side with the early development stage of Chinese stock market, selective investors appear to have access to information not available to other investors.

(2). Secondly, Chinese stock market has an overwhelmingly strong state presence and control. The first part of Chapter 4 drives this point home in unequivocal terms: for the over 70% of listed companies with ultimate owners, over 90% of the owners of absolute controllers are the state and over 70% of the comparative owners are also the state. Even after the reform, though there are signs of loosening state control, it pretty much remained status quo in essence. Combining this with the capital structure study in Chapter 3, it provided a refreshingly new perspective as to why, rather unorthodoxly, Chinese listed firms with higher gearing ratio would show positive relationship with performance.

(3). Thirdly, evidence suggests Chinese listed firms displayed features shared by other previously owned state firms in the process of privatization, the agent-agent issue.

(4). The relationship between the ultimate shareholder's concentration level and performance is significantly positive, indicating ultimate owners would be more motivated to improve company performance when their holding in the company increases. When analysed with ultimate ownership, the results supports Tian & Estrin's result about positive relationship between higher concentration level and firm performance, especially when combined with results from the detailed ownership structure analysis: state ownership is not only very prevalent but also highly concentrated.

On the other hand, the bigger the difference between an ultimate owner's actual ownership and its control, the less motivated the ultimate owners are in improve company performance. This seemingly contradicts with Fama & Jensen's proposition that for large complex organizations, separated ownership would benefit from increase focus of expertise and knowledge, as proved by La Porta et al (2009): their study suggests ownership and control can be separated to the benefits of large shareholders. Though it does support Claessen's finding (2000) that due to weak legal system and protection of investors in emerging market, separated ownership and control exacerbates agency problem and damage firm value. This reconfirms Chinese stock market's feature as an emerging market.

From the above studies, the following conclusions and proposals can be made regarding corporate governance of Chinese listed firms and Chinese stock market

The lack of efficiency of market discipline (as tested in Chapter 2) on Chinese stock markets suggests more systemic changes are required for improvement.

(1). Strengthen market discipline. Chapter 2 showed a lack of efficient market discipline in prevent information spillage from one type of share to another, this requires the government put more effort in introducing more stringent and efficient mechanism and policy in the market to prevent this from happening again. This should both include introduction of new regulations as well as efficient enforcement measures, such as detection mechanisms and punitive measures.

(2). To mitigate the agency problem as detected in Chapter 3, especially the lack of motivation from the big shareholders such the state and managers appointed by the state, establish managerial labour market might be an option. Instead of directly appointing managers by the state, managers can be hired through the managerial labour market based on the performances of companies they manage. Managers' income should be linked with the company performance instead of a fixed payment or being treated as an administrative system. Given that the state owned or controlled companies are the majorities among Chinese listed companies (see Chapter 4), managerial labour market would provide a good incentive to align managers' interest with the firms and improve corporate governance efficiency.

(3). Increase managerial shareholding. Managerial shareholding of Chinese listed firms is extremely low, at below 1%. Increasing the managerial shareholding would help to align the interest of the managers with that of the owners, thus would be an efficient way of reducing agency costs and improve corporate governance.

Overall, the empirical studies show the Chinese stock market is an emerging market transformed from previously state-owned enterprises, still with prominent state control and influence. Naturally it displayed characteristics quite different from the 'normal' western markets: such as lack of fully developed rules and regulations, agent-agent problem rather than the usual agent-principal problems, separated ownership and control actually don't fare well in this system, and most important of all the still prominent and prevalent state ownership even after the latest ownership reform. That's what made further study of

Chinese market necessary, tried and tested theories for developed and mature markets might not necessarily hold true here. There is still a long way to go to make it a market-oriented market, though there are signs of loosening state control. It goes without saying, it would be interesting to do further following up research to ascertain the exact extent of ownership changes after the 2005-2006 reform, after this empirical study provided a full-scale detailed report.

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