Master thesis

Spring semester 2009

Supervisor: Stefan Sundgren

Author: Meng Meng Zhou

Does Ownership Affect Performance?
- Evidence from Chinese listed companies
Abstract

The relationship between ownership and firm’s performance is one that has received considerable attention in the corporate governance field. However, the evidence on the nature of the association has been decidedly mixed. In the context of China, this thesis brings together various aspects of corporate governance and firm’s performance and investigates whether variations across firms in observed ownership concentration and ownership structures results in variations in observed firm’s performance.

In this study, I use quantitative method to examine the association between ownership and firm’s performance in listed companies in Shanghai stock exchange and Shenzhen stock exchange. This study is based on a sample of 95 Chinese listed companies. I use two measures of performance- namely, Tobin’s q and ROA.

The main results show that ownership concentration of the five largest shareholders (TOP5) generates a positive and significant effect on ROA by using both OLS and 2SLS model. Ownership concentration, measured as Concentrated dummy generates a positive and significant effect on Tobin’s q through OLS model, and it generates a positive and significant effect on ROA by using 2SLS model.

Keywords: ownership concentration, firm's performance, ownership structure
Acknowledgements

First of all, I would like to thank my supervisor Stefan Sundgren for his guidance and support, and he has always provided me with valuable suggestions and good advice throughout the whole process. It has been a constructive and pleasant experience working with him.

I will also express my thanks to Dai Jing, who was my colleague from previous accounting firm. He has helped me to sort out many issues related to my thesis in the past couple of months.

Finally, I wish to thank my family for unconditional and invaluable support throughout the thesis.

Umeå, Jun 2009,

Mengmeng Zhou
List of Contents

1. Introduction ........................................................................................................... 7
   1.1 Problem background ....................................................................................... 7
   1.2 Research Question and research purpose ...................................................... 8
   1.3 Disposition ..................................................................................................... 8

2. Research Methodology .......................................................................................... 11
   2.1 Choice of subject .......................................................................................... 11
   2.2 Preconceptions .............................................................................................. 11
   2.3 Research Approach ....................................................................................... 11
   2.4 Research Strategy ......................................................................................... 12
   2.5 Choice of theories ......................................................................................... 13
   2.6 Selection of sources and criticism ................................................................. 13
   2.7 Validity .......................................................................................................... 13
   2.8 Reliability ..................................................................................................... 14

3. Theoretical Framework and Literature Review ................................................. 15
   3.1 Corporate governance and agency problem ................................................... 15
   3.2 Principle of proportionality .......................................................................... 16
   3.3 Corporate governance in Chinese listed company ......................................... 16
       3.3.1 Corporate governance feature of listed companies in China.............. 16
       3.3.2 Corporate governance structure in Chinese listed companies ............ 17
   3.4 Ownership structure and ownership characteristic in Chinese listed companies .......................................................... 17
       3.4.1 Ownership structure ........................................................................... 20
       3.4.2 Ownership characteristic ................................................................. 22
   3.5 Firm’s performance-Tobin’s q and ROA ......................................................... 22
   3.6 Ownership and firm’s performance .............................................................. 23
   3.7 The association between ownership and firm’s performance from prior studies .......................................................... 25
4. Empirical Study .......................................................................................................................... 29

4.1 Sample and data collection ................................................................................................. 29
4.2 Dependent variable/ Tobin’s q and ROA ............................................................................. 29
4.3 The measurement of ownership concentration ..................................................................... 31
4.4 Control variables .................................................................................................................. 31
4.5 Regression model ................................................................................................................ 35

5. Analysis and results ............................................................................................................... 38

5.1 Descriptive statistics .......................................................................................................... 38
5.2 Correlation .......................................................................................................................... 39
5.3 The main results .................................................................................................................. 40
5.3.1 Ownership concentration measured by TOP 5 ............................................................... 40
5.3.2 Ownership concentration measured by concentrated dummy ........................................ 42
5.3.3 Ownership structure ....................................................................................................... 43

6. Conclusion and Recommendation ....................................................................................... 44

References ................................................................................................................................ 45

Appendix 1: Summary Descriptive Statistics ............................................................................. 50
Appendix 2: Descriptive statistic on concentrated and non-concentrated firms ......................... 51
Appendix 3: Descriptive statistic on state-owned and privatized-owned firms ................................ 52
Appendix 4: Pearson correlation matrix ...................................................................................... 53
Appendix 5: ................................................................................................................................ 54
Appendix 6: OLS-Estimates and 2SLS-Estimates ................................................................. 55
Appendix 7: Logistic regression .................................................................................................. 56
Appendix 8: OLS-Estimates and 2SLS-Estimate ......................................................................... 57
Appendix 9: Logistic regression ................................................................................................ 58
Appendix 10: OLS-Estimates and 2SLS-Estimates ............................................................... 59
Chapter 1   Introduction

In the introduction, I present the background to the research, research question and the purpose with the study. The outline of the thesis is given in the end.

1.1 Problem background

The relation between ownership and corporate performance has been an important and debated subject within the corporate governance framework, for that it has received considerable attention previously. As the relation indicated by traditional agency theory is that ownership is an important determinant of performance (Hu and Izumida, 2008). Although the impact of ownership on performance has been extensively examined in corporate governance field, the feedback effect of performance on ownership was conducted mainly under the US context. The ongoing debate goes back to the Berle and Means (1932), who proposed that an inverse correlation should be observed between the diffuseness of shareholdings and firm’s performance. Arguably, Demsetz (1983) suggested that the ownership structure of a corporation should be thought of as an endogenous outcome of decisions that reflected the influence of shareholders. Other early studies in the US highlighted a positive relationship between ownership concentration and firm value for low level of ownership (Chen et al, 2005). Lately, quite a number of authors have examined the relationship between ownership and performance for the markets outside the US. However, there is a little evidence on the association between ownership concentration and performance in Asian countries (Hu and Izumida, 2008). Concentrated ownership is a ubiquitous feature of companies in much of the world outside the Anglo-Saxon countries (Hu and Izumida, 2008). In order to obtain a generalization of the relation between ownership and performance for concentrated companies, the case of China is particularly representative.

China has been enacting vigorous economic reforms in the past quarter-century, resulting in rapid growth in its economy and worldwide attention as a powerful and influential country. I have noticed that many state-owned companies which were operating profitably, were privatized and listed on the stock market. China’s stock market was established in 1990, since then it has developed rapidly as a booming market. Stock market development in China appears advanced relative to the overall level of economic development throughout the past two decades. According to Chen et al (2009), today there are more than 1500 firms listed on Shanghai and Shenzhen stock exchange markets in China. China’s market capitalization is the sixth largest in the world, and many companies have become world leaders. In spite of these successes, the profitability of listed firms has been poor and this trigged the attention towards firms’ sustainability and financial problems (Chen et al, 2009).
China is characterized by concentrated ownership and control structures that are prevalent around the world. To my best knowledge, Chinese corporate ownership is concentrated among stable shareholders, these stable shareholders who have held shares in a long-term may focus on improving relationship with each other and emphasize on maintaining stable development rather than focusing on the return of equity or on the control rights of a firm. As I noticed, privatization is the way by which these former centrally planned economies transit to market economies and it also means to enhance the functionality of the poorly run state-owned companies by shifting the ownership from public sector to private sector (Ng et al, 2008). After privatization, these listed firms are basically categorized as state controlled and privately controlled on the stock market. Now whether state-control firm outperform privatize-control firm is an issue to argue. For instance, Ng et al (2008) argued that there was an ideal assumption of state ownership for market performance, since the government supported politically and also business connections, provided through state ownership, were valuable and necessary to enhance performance. Nevertheless, privatized firms could better motivate than government officials to monitor, discipline and reward their agent-managers to enhance firm’s performance. Evidence on the privatization experience was positive and previous study overwhelmingly showed performance could be improved through privatization (Wei and Varela, 2003). As far as I am concerned, state-owned firms are more likely to have highly concentrated ownership structure, while privatized firms are probably more dispersed, thus, whether concentrated ownership can better boost performance than dispersed ownership, is another issue to discuss. Putting them together, the underlying questions are proposed: Does ownership concentration affect listed company’s performance in China? Does ownership structure have impact on company’s performance?

To answer these questions, this study seeks to investigate whether there is an evidence to support the notion that variations through firms in observed ownership concentration, ownership structure results in variations in firm’s performance in the context of Chinese stock market. This study extends the previous studies by using the latest data of year 2007, to better present the current trend of this issue, since most of previous studies have adopted earlier data.

In my review, prior studies have investigated the relationship between ownership structure, ownership concentration and company performance among a variety of countries and areas, such as US, Canada, UK, Czech Republic, Greek, Italy, Chile, Australia, Japan, China and Hong Kong. Prior studies have presented mixed results on this topic, for instance, some studies showed there was significant and positive association between ownership concentration and company performance; others found no significant relation between these two variables. So it made me interested to be aware of what has really happening in China regarding on this issue. Based on Chinese data, this study investigates the intricacies of ownership-performance relation.
1.2 Research Question and research purpose

- What is the effect of ownership concentration on the performance of listed Chinese firms?
- What is the association between ownership structure and listed firm’s performance in China?

The main purpose of this study is to examine the association between ownership concentration and firm’s performance as well as to examine whether ownership structure has impact on firm’s performance in China. Also, I want to examine the different impact on firm’s performance by using Tobin’s q and return on assets (ROA), represents as market performance and accounting performance, respectively. In addition, the adoption of OLS and 2SLS regression models enables me to analyze and compare the different outcomes.

1.3 Disposition

Chapter one: Introduction
This chapter discusses problem background and research questions in this thesis. Also it provides guideline of the purpose of this study.

Chapter two: Research Methodology
This chapter describes the approach and method, used in this study. It also provides the information about data collection and analysis.

Chapter three: Theoretical Framework and Literature Review
This part presents theories which I used in this thesis, including corporate governance main issue, ownership structure and characteristic in China, and performance measurement. Ultimately, an overview of prior empirical study will be outlined.

Chapter four: Empirical study
In this chapter, I use the data collected from annual reports to do the research regarding to Chinese listed companies. This data will help me to analyze the association between ownership concentration, ownership structure and firm’s performance of Chinese listed firms.

Chapter five: Analysis and results
In this part, I will compare and analyze the data collection from chapter four by using the OLS and 2SLS regression model in order to find out the relation between different variables.
Chapter Six: Conclusion and recommendation
Finally, I will draw the conclusion and present the personal reflection of this study and connected to research questions, and provide some further research recommendation.
Chapter 2  Research Methodology

In the research methodology part, I go through the choice of subject and what preconception I had when I started with this study. Further, I present the research approach and research strategy I use. A discussion of the credibility of the study including reliability and validity is included.

2.1 Choice of subject

Choice of the subject is selected from both Corporate Governance and Accounting field by personal interest. More importantly, the inspiration of choosing this subject mainly comes from prior study which was conducted by me last spring: “Board composition and voluntary disclosure- a quantitative study of Chinese and Swedish listed companies.” From the previous thesis, I have noticed that ownership in Chinese listed companies is highly concentrated, so it proposes a question on how the linkage between ownership and company’s performance. Having studied Corporate Governance course, I have read some earlier literature on ownership and company’s performance, therefore, it is a fascinating and interesting subject to explore. There is a vast literature on ownership and firm valuation and performance. To my knowledge, prior studies mainly focus on western countries on discussing the relationship between ownership and company’s performance. There are merely a few studies have documented the Chinese companies in this field. Therefore, it will open a new opportunity of research for exploring the association between ownership and company’s performance for Chinese listed companies.

2.2 Preconceptions

As preconception might vary from person to person, it could affect particular researcher’s choice of subject, methodology, theoretical framework and so on. Fisher et al (2007) discussed that explorers would have preconceptions, but these preconceptions were only useful to help them explore one place rather than another. The author is the student of Master’s program in accounting, and this thesis is done from real figure from annual reports and I believe individual preconceptions will not be biased, affecting the results of the research.

2.3 Research Approach

Generally speaking, there are two research approaches: the deductive approach and the inductive approach. Saunders et al (2007) described deductive approach as a testing theory, which involved the development of a theory that was subjected to a rigorous test. With respect of deductive approach, the researchers aim to test their developed theory and hypothesis by exploring the abstract or general idea. Deductive
approach entails a process from theory to findings (Bryman and Bell, 2007). Therefore, it is very normally used in scientific studies focusing on quantifiable data. Inductive approach, however, is reverse of deductive approach. Regarding to inductive approach, it contains a process from finding to theory (Bryman and Bell, 2007). For inductive approach, the empirical data will be observed and analyzed in order to develop new theory or make predictions (Saunders et al, 2007). Hence, deductive approach is a way of testing theory, while inductive approach is a way of building theory (Saunders et al, 2007).

The principle orientation in this thesis is deductive approach. It starts with study on prior studies, followed by data collection, and it ends up with findings. The whole process is in terms of deduction process by Bryman and Bell (2007). Deductive approach is an appropriate method for this thesis.

2.4 Research Strategy

Qualitative and quantitative methods are the choices for analysis under business and management circumstances. Bryman and Bell (2007) described quantitative research as a strategy that emphasized quantification in the collection and analysis of data. Further, quantitative research is more likely dealing with issue of design, measurement and sampling (Bryman and Bell, 2007). By contrast, the way Bryman and Bell (2007) explained qualitative method as a strategy that usually emphasized words rather than quantification in the collection and analysis of data. Generally speaking, the characteristic of qualitative method in a sense helps researchers to better achieve their goals by interviewing and follow-up questionnaire.

This thesis has adopted quantitative method since it is associated with capturing the relation between variables and analyzes the data. This study was conducted with regression models by applying OLS (ordinary least square), Logistic regression and 2SLS (two-stage least square) methods. Having accounted for the possible endogeneity of ownership, I use 2SLS approach to test firm’s performance. Logistic regression allowed me to test models to predict categorical outcomes with two categories (Pallant, 2005). The dependent variable of ownership concentration (Concentrated dummy) and ownership structure (SOS) are categorical in this study, logistic regression is suitable to use under this circumstance.

The purpose of using both OLS and 2SLS regression model is to measure the impact of ownership on firm’s performance by including a number of variables. Ownership concentration, ownership structure, industry, firm size, leverage, proportion of independent directors to total number of directors on board and growth rate are considered as variables. According to the above condition, quantitative method is applied in this study.
2.5 Choice of theories

Fisher et al (2007) suggested that it is necessary to give a more detailed description of the theory chosen. Their account of the theory should be structured thematically. By considering this point, my theoretical part is briefly based on three objectives. One objective is to establish an understanding of corporate governance issue in China. Second, I present ownership and its characteristic in Chinese listed companies. Finally, I will study whether there is an association between ownership and firm’s performance.

2.6 Selection of sources and criticism

The majority of sources in this thesis consist of scientific articles that I have found in the database Business Source Premier and Emerald at the library of Umeå University. As Fisher et al (2007) pointed out, Business Source Premier was a good all-round database and Emerald included all the journals published by MCB Press. The majority of academic articles come from Journal of Corporate Governance, Journal of Banking and Finance, Journal of Business Finance and Accounting, Journal of Corporate Finance. These journals are academically prestigious. With highest credibility, these articles have been examined, reviewed, and published in scientific journals. All of these articles were issues by good reputation publishers around the world.

I have found quite a number of researches done regarding to ownership and firm’s performance. Nevertheless, it is impossible to cover all studies published in this topic, so I have to limit this selection to articles that I found interesting, reliable and relevant to this subject.

The information gathered from company’s official websites and Dazhihui stock software is accurate, transparent, reliable and relevant.

2.7 Validity

As Bryman and Bell (2007) mentioned, validity is an important criterion in the research, and “Validity is concerned with the integrity of the conclusions that are generated from a piece of research.” Validity is a way of a measurement of whether the researcher is observing, identifying, or measuring the data coinciding with what he/she should do (Bryman and Bell, 2007). Saunders et al (2007) also stated that validity is concerned with whether the findings were really about what they appeared to be about. According to Ball and Foster (1982), there were four types of validity: internal validity, construct validity, statistical conclusion validity and external validity. Internal validity “refers to the approximate validity with which we infer that a relationship between two variables is casual or that the absence of a relationship implies the absence of cause” (Ball and Foster, 1982). Construct validity relates to the possibility that the operations, meant to represent a particular cause or effect construct
can be construed in terms of more than one construct. Statistical conclusion validity is concerned with the distinction between the validity of conclusions drawn from individual experiments and those drawn from the literature (Ball and Foster, 1982). External validity “refers to the approximate validity with which we can infer that the presumed causal relationship can be generalized to and across alternate measures of the cause and effect and across different types of persons, settings, and times ” (Ball and Foster, 1982).

This study is not concerned with external validity but rather with internal validity, construct validity and statistical conclusion validity. This paper examines if each explanatory variable could impact firm’s performance, as well as it examines the association between explanatory variables. All of the financial data was extracted from firm’s annual reports, and they had a high level of credibility and accountability. The stock price for sample companies were collected through Dazhihui stock software and it is reliable stock software. I believe the data is valid.

2.8 Reliability

Reliability is defined as “the extent to which data collection technique will yield consistent findings, similar observations would be made, conclusions reached by other researchers or there is transparency in how sense was made from the raw data” (Saunders et al, 2007). Reliability comes up with, whether the results of a study are reliable, particularly whether they are in connection with quantitative research (Bryman and Bell, 2007).

All the financial data was collected from published annual reports and stock price was extracted from Dazhihui software, and the model I used has been tested by prior researchers and it is a reliable and well-established model. Regression analysis is the process of calculating a regression coefficient and this model used several independent variables and one dependent variable (Saunders et al, 2007). The OLS (ordinary least square) regression, Logistic regression and 2SLS (two-stage least square) regression models have been tested and adopted by previous researchers for certain times, therefore, these models are reliable to use. With using SPSS as statistic software, I think the all processing of data is accurate, controllable and reliable.
Chapter 3  Theoretical Framework and Literature Review

In this chapter I present the theoretical framework, on which this study is based. I present an introduction to the agency problem and the principle of proportionality in corporate governance field, and further provide corporate governance in China as well as its ownership characteristics. Finally, this chapter ends with prior empirical studies regarding this subject.

3.1 Corporate governance and agency problem

The function of corporate governance is for holding management accountable for a company's performance (OECD, 1998). The major concern of corporate governance is the separation of ownership and control, which is agency problem. Agency problem deals with the conflict between owner and manager. Most owners are unwilling to take part in a firm’s day-to-day business activities, so they hire managers for managing the daily work. Therefore, it triggers a problem with separation of ownership and control (Kim and Nofsinger, 2007). The owners are the principal and the manager act as an agent who is supposed to work for the owner. Manager may work less than what the owner assumed when the manager was hired. Also, managers may use the firm’s assets for their private interests if owners cannot monitor the managers’ behavior effectively (Kim and Nofsinger, 2007).

Solution to this problem is inclined to come in two categories, incentives and monitoring. The incentive solution is to tie the wealth of the executive to the wealth of the shareholders, so that executives and shareholders want the same thing, which is called aligning executive incentives with shareholder desires (Kim and Nofsinger, 2007). The incentive solution comprises a bonus related to short run performance and a stock option (Becht et al, 2002). The second solution is to build mechanism for monitoring the behavior of managers (Kim and Nofsinger, 2007).

Ownership structure has received important attention from finance and investment field, and the agency theory proposes that concentrated ownership will result in more effective monitoring. Therefore, ownership is a component of corporate governance field (Perrini et al, 2008). In firms, with concentrated ownership, the traditional agency problem shifts from the typical conflict between management and shareholders to conflicts between controlling and non-controlling groups of owners (Nielsen, 2006). One of features of these firms is the organization of ownership, and control structures work as important incentive devices (Nielsen, 2006). Firms with concentrated ownership have to face the potential expropriation of minority shareholders by the controlling shareholders, and minority expropriation is more probably to take place whenever the controlling owners have adequate control rights, but only a small fraction of the cash flow rights (Nielsen, 2006).
3.2 Principle of proportionality

Within the harmonization of European firm laws, recent policy initiatives a “principle of proportionality” through proposals, those regulate mechanisms by opposing a proportional distribution of ownership and control. The intention of “principle of proportionality” is to have proportional distributions of cash and control rights among investors in public listed firms (Nielsen, 2006). The idea established in a sample of Asian firms by Claessens et al (2002) conclude that there is a negative impact on firm’s value from disproportional ownership structure. Firms with a proportional ownership structure, on average, have a higher firm value than firms with a disproportional ownership structure, observed by Nielsen (2006).

From corporate governance point of view, ownership concentration provides two impacts on the governance of firms: An incentive effect that makes the monitoring of management more efficient and an entrenchment effect which makes it easier for opportunistic owners to behave in a manner that enriches themselves at the cost of other owners (Nielsen, 2006). Broadly speaking, firms with proportional ownership structures seem to create more value than firms in which ownership of control is more concentrated than ownership of cash flow (Claessens et al, 2002). Therefore, the present evidence proposes that firms wishing to maximize firm value are supposed to follow the “principle of proportionality” (Nielsen, 2006).

3.3 Corporate governance in Chinese listed company

3.3.1 Corporate governance feature of listed companies in China

In recent years, corporate governance has received considerable attention in China (Liu, 2006). China, as one of the important participants in the global economy, has established its own corporate governance system for publicly listed companies. Qu and Leung (2006) stated that from the year of 1987 Chinese government allowed state-owned companies to become separate legal entities. As a consequence of companies’ reform, a certain amount of the state-owned companies were transformed into listed companies through corporatization (Qu and Leung, 2006). It also mentions that an important focus of company’s reform, within China, has been the development and modernization of the corporate system.

In 1992, China Securities Regulatory Commission (CSRC) was formed in order to regulate the capital market behavior as well as to protect the interest of individual shareholders. China has opened stock markets of Shanghai and Shenzhen stock exchanges in 1990 and 1991, respectively. With the rapid growth of China’s stock market, the listed firm’s poor corporate governance has become a problem of its further development (Liu, 2006). From 1999, Chinese stock market had followed the principle of “mechanism reform before IPO”, which means company that want to apply for IPO is supposed to be corporatized and need to be operated well for one year.
To some extent, such regulations of CSRS enhance the development of corporate governance in China. Yet, China has combined modern corporation concepts with culture during the process of state-owned reforms, although a large number of listed companies have made a great progress in shaking off shortcomings of stated-owned companies, still there are lots of carry-over problems from the original state-owned firms. As a consequence, corporate governance in China merely has the form of modern corporate governance (Wei and Geng, 2008).

There are some distinguished features of Chinese listed firm’s corporate governance. With respect to corporate governance, Wei and Geng (2008) pointed out that the most distinctive difference between China and other developed countries was that in China equity ownership of listed companies were heavily concentrated in the hands of large state-owned shareholders. Liu (2006) also mentioned that the corporate governance adopted by the Chinese publicly listed companies could be best described as a control-based model due to the fact that in most cases, the state tightly controlled the listed companies through concentrated ownership.

The second feature is that state shareholding has triggered some agency problems. As Li et al (2008) stated, about 80% of all the listed companies still maintained residual state ownership in the end of 2005, on average, the percentage of state shareholding for all the companies was 35%. For the state-shares, the final shareholder is the public of People’s Republic of China. The fact is though the government hold the control rights of the state share, the dividend and gains have to hand in to Financial Department (Li et al, 2008). Hence, the government cannot benefit from the enhancement on corporate governance. Under this circumstance, the state-owned companies would incur inefficiency of monitoring (Lin, 2001). It is a phenomenon that the top managers of the state shareholding companies pursuit political relationship with government official rather than enhancing performance (Li et al, 2008).

The third feature is about insider controlling problem. Excessive concentration of non-tradable shareholdings has prevented from the emergence of market for corporate control (Li et al, 2008). The nomination and evaluation of management are determined by the controlling shareholders, which may trigger the collusion between the controlling shareholders and management (Li et al, 2008).

3.3.2 Corporate governance structure in Chinese listed companies

Compared with two-tier supervisory and management boards in Germany and insider-dominated boards in Japan, corporate boards in China are basically one-tier, although all companies have a so-called supervisory board according to Wei (2007). In China, the corporate governance structure has the elements of shareholding meeting, board of directors, the independent directors and supervisory committee. I will present the detailed information as following:
The shareholder annual general meeting

According to the China Securities Regulatory Committee (CSRC, 2003), the shareholders provided the following comprehensive decision-making powers at the annual general meeting: to make decisions regarding corporate policies on business operation and investment plans; to elect and replace directors and determine their remuneration; to elect and replace shareholder supervisors and determine their remuneration; to examine and approve the board of directors’ and board of supervisors’ reports; to examine and approve the corporate fiscal financial budget and final account plans; to examine and approve the corporate profit distribution and making up of loss plans; to make resolutions on the increase or reduction of the corporation’s registered capital; to decide whether to issue corporate bonds; to make decisions regarding corporate mergers, divisions, dissolution and liquidation and to amend the corporate constitution (CSRC, 2003).

The board of directors

According to the China Securities Regulatory Committee (CSRC, 2003), the board of directors carries out the following duties: convene the shareholder annual general meeting, and report to the meeting; carry out decisions made at the shareholder annual general meeting; decide operation plans and investment projects of firms; set annual budget and allocation plans; set profit allocation and loss makeup plans; set plans of increasing or decreasing registry capital and issuing corporate bonds; draw out plans of mergers, division and dissolution; decide inside management structure arrangements; hire or fire managers, and according to nomination of managers, hire or fire deputy managers, financial directors and decide their compensation and decide basic regulations of firms (CSRC, 2003).

The independent directors

The independent directors have rights to perform duties in addition to having the functions and powers vested in the directors in accordance with the Company Law of the People’s Republic of China. These duties including:

1. Independent directors propose to the board of directors convening the extraordinary general meeting.
2. Independent directors propose to the supervisory committee convening the extraordinary general meeting in case the board of directors objects such proposal.
3. Independent directors propose convening the board of directors meeting.
4. Independent directors employ audit or consulting agency for performance of duties.
5. Independent directors give independent opinions on such matters as the remuneration plan or incentive plan for the directors and management personnel.
of the company.

(6) Independent directors issue independent opinions on the major affiliated transactions, and submit a report to the dispatched offices of the CSRC of the local district where the company’s domicile and principal place of business are located whenever deemed necessary.

(7) Where the board of directors of companies establishes special committees on related transactions or on the senior management personnel’s remuneration, such committees shall be chaired by the independent directors.

(8) The independent directors shall submit the work report at the annual general meeting. In case the independent directors fail to perform their duties, they shall bear the relevant responsibilities (CSRC, 2003).

According to CSRC (2003), a third of the board is occupied by independent directors.

The supervisory committee

Listed companies should establish the supervisory committee, which can supervise the corporate finance, the legal compliance of directors’ and management personnel’s performance of duties and should be accountable to shareholders’ meeting. According to CSRC (2003), supervisors shall perform the following duties: examine corporate financial affairs; supervise directors’ and executives’ breaches of statutes or corporate constitution in performing their duties; demand that directors and executives redress misconduct damaging the corporate interest; propose special meetings of the shareholders and other duties as stipulated in the corporate constitution. Supervisors also have the power to audit the board of directors’ meeting. The board of supervisors includes shareholder representatives and certain employee representatives, with the percentage of representation of each group to be stipulated in the corporate constitution. The employee representatives are elected by the corporate employees in democratic elections. In order to secure the impartiality of supervisors, the law requires that directors, executives or financial officers may not concurrently serve as supervisors (CSRC, 2003).

Audit committees, nomination committees and remuneration committees

Listed companies are recommended to establish the audit committees, nomination committees and remuneration committees according to shareholder meeting. All of the committees’ members are comprised of board members; in particular, at least one independent director is professional accountant in audit committee (CSRC, 2003).
3.4 Ownership structure and ownership characteristic in Chinese listed companies

3.4.1 Ownership structure

Nowadays, company ownership structure, in line with corporate governance, has become a central theme of the enterprise reforms that started in the late of 1970s. China has become the fastest growing economy in the world within this recent decade. The past 20 years have witnessed China’s economic miracle: with average annual growth at around 9 percent and GDP quadrupled (Ding et al, 2007). It is generally accepted that this great economic success because of China’s economic reform. Within this period, one of the most impressive phenomena has been the relative decline of state-owned companies and the rise of private sectors (Ding et al, 2007).

Wei (2007) addressed that most of the Chinese listed companies generally had three types of shareholders: the state, the legal persons and individual investors. Under the Chinese Law, shares held by the state and legal persons are non-tradable. Shares held by the individual investors are tradable publicly in Shanghai and Shenzhen stock exchanges at the moment of writing (Wei, 2007). One of the distinct features of the Chinese listed companies is that merely about one-third of total shares issued, owned by Chinese individual investors and overseas investors, could be traded relatively freely on the stock market (Liu, 2006; Qu and Leung, 2006). Ng et al (2008) stated that Chinese stock exchange markets were not that efficient because of the large amount of non-tradable shares, which were state shares and legal persons’ shares. It is important to notice that a legal person is an artificial entity in China through this entity the law allows a group of natural persons to act as if it were a single composite individual for certain purposes, or in some jurisdictions, for a single person to have a separate legal personality other than their own (Wei, 2007). This legal fiction does not mean that these entities are human beings, it rather means that the law recognize them and allows them to act as natural persons for some purpose, such as lawsuits, property ownership, and contracts (Wei, 2007).

State share are not publicly listed and are not tradable, and these shares are held by state asset administration bureaus, state investment companies or the parent companies of the state-owned listed companies (Yu, 2005). Only about one third of shares are tradable shares, and this is a major obstacle to the development of the Chinese stock market. State shares have been established in China to delegate holdings in the state-owned enterprises (SOEs) by the central government, local governments or solely government-owned companies (Sun et al, 2002). State-owned shares held by the government and are prohibited from trading in public according to Xiao and Yuan (2007). Apart from this, state shares are not tradable on the stock market but are transferable to domestic institution through approval of China’s Securities Regulatory Commission (Sun et al, 2002).
Legal persons’ shares, however, are regarded as private, not tradable. But they can be exchanged (Yu, 2005). These shares are distributed to other state owned companies or other shareholding companies (Ng, et al, 2008). Legal persons’ shares, owned by separate legal entities are also not allowed to be traded on stock market in China (Xiao and Yuan, 2007). As Sun et al (2002) addressed that legal persons’ shares were shares, owned by domestic institution and they were partially owned by the central and local government. Like state shares, legal person shares may not be traded on the stock market, but are transferable to domestic institutions upon approval from the CSRC.

Figure 1 shows the ownership structure of a typical listed company in China.

![Figure 1](image)

Figure 1. Typical Chinese listed company ownership structure

From the historical perspective, economic reform in China had been involved the corporatization of state-owned enterprises (SOEs) before 1990s (Wei and Geng, 2008). At that moment, while the government gave more autonomy to managers related to the corporatized SOEs, it was unwilling to give up ownership rights (Wei and Geng, 2008). As a consequence, the performance of SOEs was below expectations by the government. To tackle these problems, SOEs were partially privatized and shares in them were sold to the public, thus makes a new arena for those companies listed on the Shanghai and Shenzhen stock exchanges since 1990 (Wei, 2007). Due to this fact, one of the key features of majority of Chinese’s privatized state owned companies is that the state keep a significant ownership stake after listing, therefore privatized companies are basically partially privatized (Chen et al, 2009).

Individual investors’ shares are tradable, which publicly trade on Shanghai and
Shenzhen stock markets. In these markets, there are two main types of tradable common stock shares: A and B share. “A” share is issued to domestic investors traded in Chinese currency on the stock market (Wei, 2007). These can be sold to foreign individuals and entities, in denominations of US dollars and Hong Kong dollars respectively, are “B” share (Xiao and Yuan, 2007). In addition to “B” share, the “H”, “L” and “N” type of shares allow Chinese companies to raise foreign capital overseas. “H” share is issued to foreign investors on the Securities Exchange of Hong Kong. “L” and “N” share are issued by Chinese companies and traded on the London Stock Exchange and the New York Stock Exchange, respectively (Ng et al, 2008).

3.4.2 Ownership characteristic

To better understand the ownership structure of Chinese listed companies, I need to consider the classification of shares, and I noted that there was a concentration of ownership with the largest shareholder stake in a listed company averaging 45 percent (Qu and Leung, 2006). Liu (2006) indicated that Chinese listed company had a feature of highly concentrated ownership structure, with 44.8 percent of shares holding by the largest shareholder, on an average. The rationale was to ensure the largest owner of the company was state-owned or state-controlled (Qu and Leung, 2006). Ding et al (2007) had examined Chinese ownership that the five largest shareholders on average account for 58.5 percent of the total equity in the year of 2003. This percentage could be easily compared with 25.4 percent and 33.1 percent in United States and Japan, respectively (Prowse, 1992). Strikingly, the largest shareholder in Chinese listed company held more than 42 percent on average of total shares, and this highly concentrated ownership influenced the nature of the agency problem in Chinese listed companies (Ding et al, 2007).

In line with Liu (2006), Xu and Wang (1999), Wei and Geng (2008) and Ke and Isaac (2007), reported that the most prominent characteristic feature of Chinese listed companies was they had heavily concentrated ownership structures. Further, a distinct feature has been found by Chen et al (2009), which mentioned Chinese listed companies had a single dominant shareholder whose ownership far exceeded that of the second largest shareholder. In corporate governance field, ownership structure has influenced the firms’ value maximization. However, concentrated ownership may give the largest shareholder a discretionary power use the company’s resources for personal gain at the expense of other shareholders (Liu, 2006).

3.5 Firm’s performance-Tobin’s q and ROA

The impact of performance on owner’s decision to concentrate their holding is ambiguous based on prior studies. To measure firm’s performance, it is difficult to choose an ideal performance indicator for listed firms. Having scrutinized empirical studies of ownership performance relationships, two measures of firm’s performance are typically used: (1) Tobin’s q, a stock market performance measure; and (2) ROA
(return on asset), an accounting performance measure (Hu and Izumida, 2008).

Tobin’s q is by far the most extensively used measure of firm’s performance in the corporate governance literature. To my knowledge, the first significant study to apply this measure was Morck et al (1988), then other recent studies have followed including: Anderson and Reeb (2003), Kapopoulos and Lazaretou (2007), Demsetz and Villalonga (2001), Hu and Izumida (2008), Welch (2003), Sánchez-Ballesta and García-Meca (2007), Lefort and Urzúa (2008), Klein et al (2005), Sheu and Yang (2005), Palia and Lichtenberg (1999), Tam and Tan (2007), Barontini and Caprio (2006), Chiang and Lin (2007). Tobin’s q is measured as the firm’s market value divided by assets, valued either at book or replacement value (Demsetz and Villalonga, 2001). ROA is the ratio of the earnings before interest and income tax to total assets (Demsetz and Villalonga, 2001). In comparison, Tobin’s q is likely future profitability of the firm and it is forward looking, while ROA is more inclined to look at an estimate of what management has accomplished, and it is backward looking (Demsetz and Villalonga, 2001).

3.6 Ownership and firm’s performance

Recent studies on the association between corporate ownership and firm’s performance have started to acknowledge the diverse of ownership, to potentially reflect diverging interests of different types of owners (Perrini et al, 2008). From the initial discussion about the endogeneity of ownership conducted by Demsetz (1983), which claimed that an optimal ownership level was possible to vary with certain firm’s characteristics, which determined the performance, such as firm size, industry classification, and investor protection. These factors also had significant impact on ownership structure (Demsetz, 1983).

Ng et al (2008) suggested that privatized firms were supposed to outperform the government owned firms, since control and income rights given to private firms enabled them to maximize profit goals. Qi et al (2000) examined the association between ownership and Chinese firms by using a sample of Shanghai Stock Exchange from 1991 to 1996, afterwards concluded that state equity ownership was negatively related to operating performance. On the other hand, Sun et al (2002) found there was a concave relationship between state equity ownership and market performance over the period 1994-1997.

With corporate governance mechanism, agency theory suggests that owners wish to maximize their profit, nevertheless, their agents (managers) might have neither the desire nor the incentive to do so (Sánchez-Ballesta and García-Meca, 2007). Conceptually, it is expected to see ownership concentration affect firm’s performance directly. The main concern is that large shareholders are active monitors in companies and their monitoring helps improve the profitability of the firm, thus, ownership concentration may have positive effects on the incentives to increase profits (Só
nchez-Ballesta and García-Meca, 2007). On the other side, high concentration of ownership, according to agency theory, may become ineffective for taking value-maximizing decisions (Sánchez-Ballesta and García-Meca, 2007). Empirical evidence (Morck et al, 1988; Claessens et al, 2002) showed that, because of the benefits of a better monitoring, when ownership increased, firm value increased as well. However, when ownership was too concentrated the value of the firms started to decrease. These empirical studies supported the positive-alignment effect over lower ranges of ownership, and the negative entrenchment effect over higher ranges of ownership (Sánchez-Ballesta and García-Meca, 2007).

Earle et al (2005) also addressed that in theory concentrated ownership might improve performance by using the way of increasing monitoring, but it might in the opposite direction due to that large shareholders exercise their control rights to make individual profit, sometimes expropriating smaller investors. Following Earle et al (2005), Perrini et al (2008) proposed that an increase in ownership concentration should lead to a reduction, related to the costs deriving from the separation between ownership and control theoretically. Nevertheless, by using its control for large shareholder, they may extract private benefits at the expense of small shareholders, thus, this may increase the risk that large shareholder pursue interests other than those of the small shareholder (Perrini et al, 2008). It is widely accepted that higher degree of control by external shareholders improves productive performance through improving the incentive for increased monitoring by large shareholders (Grosfeld and Hashi, 2007). Moreover, some strong owners impose control on managers, which maybe too severe, by restraining their initiative and incentives to acquire information and take managerial risks, therefore, high concentrated ownership also might increase the risk of the owner in control (Grosfeld and Hashi, 2007).

The study of Hu and Izumida (2008) suggested that concentrated ownership had the potential to limit the agency problem, and it helped to improve performance. Arguably, earlier study Grossman and Hart (1986) mentioned that shareholders with a heavily concentrated in the company might show more enthusiasm and willingness to be active decision-making, partly because they internalize the benefits of their monitoring effort. Welch (2003) investigated the Australian market where ownership was multi-dimensional and institutional shareholding, results indicated that higher proportions of institutional shareholding were associated with stronger firm’s performance. Regarding to King and Santor (2008), concentrated ownership could have a negative effect on firm’s performance as following scenarios: (1). Low levels of control may reduce the likelihood of a takeover and entrench poor managers. (2). Either managers or controlling shareholders might maximize their private benefit but lead to suboptimal policies for the firm.

Based on the above arguments, whether there is a positive or negative association between ownership and firm’s performance is expected.
3.7 The association between ownership and firm’s performance from prior studies

It has been a debated question in research on the possible impact of ownership and corporate performance by prior studies, but evidence on the nature of the association has been decidedly mixed. The choice of prior studies covers the research area from Asia, part of Europe and Australia.

Table 2 presents the summary of previous studies on examining the relationship between ownership and firm’s performance.

Hu and Izumida (2008) looked at the relation between ownership concentration and corporate performance by using a panel of 666 manufacturing firms listed on the Tokyo Stock Exchange from 1980 to 2005, they found that ownership concentration had an important effect on contemporary and subsequent firm’s performance (Hu and Izumida, 2008). More specifically, a U-shaped relation between ownership concentration and performance was consistent with the expropriation effect and monitoring effect of large shareholders. By extending prior literature, this study sheds light on providing a general understanding for economies with concentrated ownership and further evidence of the international diversity of corporate governance (Hu and Izumida, 2008).

Grosfeld and Hashi (2007) examined the changes in ownership concentration in companies included in two mass privatization programmes in Poland and the Czech Republic. Their findings revealed interesting differences between the two countries: in Czech Republic, the increase in ownership concentration was less likely in poorly performing firms, in comparison, Poland’s quality of past performance did not affect investor’s willingness to increase their holdings (Grosfeld and Hashi, 2007). This contrasting result might reflect the difference in the quality of laws and regulations in Poland and in the Czech Republic (Grosfeld and Hashi, 2007).

Kapopoulos and Lazaretou (2007) investigated the relation between corporate ownership structure and firm’s performance in Greek firms. They assessed the impact of the structure of ownership on corporate performance, measured by profitability, using data for 175 Greek listed firms (Kapopoulos and Lazaretou, 2007). Empirical findings proposed that a more concentrated ownership structure positively related to higher firm profitability. Also, they found that higher firm profitability required a less diffused ownership (Kapopoulos and Lazaretou, 2007).

Claessens and Djankov (1999) estimated the association between ownership concentration and corporate performance in the Czech Republic. It changed the ownership of firms in a short period of time, and firm characteristics had only a limited influence on the resulting ownership structure (Claessens and Djankov, 1999). This study employed a sample of 706 Czech firms over the period of 1992
through 1997, and they found that the more concentrated ownership, the higher the firm profitability and labor productivity (Claessens and Djankov, 1999).

Earle et al (2005) studied the impact of ownership concentration on firm’s performance using panel data for firms listed on the Budapest Stock Exchange for the period of 1996 to 2000. They applied the regression model by using two different specifications of dependent variable and for specifications of concentration (Earle et al, 2005). The results indicated that increased concentration in the hands of a single large blockholder was associated with improved corporate performance that increased ownership by other blockholders did not improve performance and may even decreased it, and there was no evidence of nonmonotonicity in the impact of any measure of concentration on performance (Earle et al, 2005).

The study of Welch (2003) examined the relationship between ownership structure and corporate performance in Australian listed companies. This study adopts the models advanced by Demsetz and Villalonga (2001), capturing the association between ownership and performance when ownership was considered as multi-dimensional endogenously determined variable. Results indicated nonlinear relationship between managerial share ownership and firm’s performance.

In the context of Italian capital market, Perrini et al (2008) aimed at investigating the association between ownership structure and firm’s performance. Using panel data for the period 2000-2003, they concluded that the ownership concentration with the top five largest shareholders was beneficial to firm’s performance, and managerial ownership was beneficial only in non-concentrated firms.

In the context of China, Ng et al (2008) observed the evidence on the relationship between state ownership and performance in China’s privatized firms was convex, concave and linear. By using a larger sample of 4315 firms from the year 1996 to 2003, results showed a convex association between state ownership and performance. Both ownership structure and ownership concentration had impact on firm’s performance (Ng et al, 2008).

Ke and Isaac (2007) scrutinized the effect of ownership structure on corporate performance of China’s listed property companies. They used the data from all the listed property companies on China stock market through 2000 to 2002. Their goal was to study ownership concentration, types of controlling shares and their relation to corporate performance. The methodology they adopted was the conventional ordinary least square (OLS) model. The result showed that ownership concentration had a positive association with corporate performance. Also that state shareholding was positively associated with corporate performance (Ke and Isaac, 2007).

By using a sample of 276 Chinese listed companies from 1999 to 2002, Wei (2007) found that relation between state owned shareholding and corporate performance was
not U-shaped, or inverted U-shaped but in fact non-linear, when the percentage of state-owned share was small, there was no negative relation. However, when the proportion was above 50%, state-owned shareholdings had significant negative influence on company performance. Also, when non-state-owned shareholdings were relatively small, they presented a significant and positive impact on company’s performance (Wei, 2007).
<table>
<thead>
<tr>
<th>Authors</th>
<th>Country</th>
<th>Time period</th>
<th>Sample size</th>
<th>Performance Measures</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grosfeld and Hashi (2007)</td>
<td>Poland and Czech Republic</td>
<td>From 1996 to 1999</td>
<td>652 Czech firms, 512 Polish firms</td>
<td>ROA</td>
<td>The increase in ownership concentration was less likely in poorly performing firms in Czech Republic, while in Poland the quality of past performance did not affect investors’ willingness to increase their holdings.</td>
</tr>
<tr>
<td>Kapopoulos and Lazaretou (2007)</td>
<td>Greece</td>
<td>The year of 2000</td>
<td>175 firms</td>
<td>Tobin’s q</td>
<td>A more concentrated ownership structure positively relates to higher firm profitability.</td>
</tr>
<tr>
<td>Claessens and Djankov (1999)</td>
<td>Czech Republic</td>
<td>From 1992 to 1997</td>
<td>706 firms</td>
<td>Profitability, labor productivity</td>
<td>The more concentrated ownership, the higher the firm profitability and labor productivity.</td>
</tr>
<tr>
<td>Earle et al (2005)</td>
<td>Hungary</td>
<td>From 1996 to 2000</td>
<td>All listed firms</td>
<td>Return on equity (ROE) and operating efficiency (OE)</td>
<td>There is no evidence of nonmonotonicity in the impact of any measure of concentration on performance.</td>
</tr>
<tr>
<td>Welch (2003)</td>
<td>Australia</td>
<td>From 1999 to 2000</td>
<td>114 firms</td>
<td>Tobin’s q</td>
<td>A nonlinear relationship between managerial share ownership and firm performance has been found.</td>
</tr>
<tr>
<td>Perrini et al (2008)</td>
<td>Italy</td>
<td>From 2000 to 2003</td>
<td>297 firms</td>
<td>Tobin’s q</td>
<td>Ownership concentration with the top five largest shareholders is beneficial to firm performance, and managerial ownership is beneficial only in non-concentrated firms.</td>
</tr>
<tr>
<td>Ng et al (2008)</td>
<td>China</td>
<td>From 1996 to 2003</td>
<td>4315 firms</td>
<td>Tobin’s q</td>
<td>Both ownership structure and ownership concentration affect firm performance</td>
</tr>
<tr>
<td>Ke and Isaac (2007)</td>
<td>China</td>
<td>From 2000 to 2002</td>
<td>All the listed property firms</td>
<td>Earning per share (EPS), Market-to-book Value (MBV), Market-to-sales (MBS)</td>
<td>Ownership concentration has a positive association with firm performance. State-owned shareholding and corporate performance is not U-shaped, or inverted U-shaped but in effect non-linear, when the percentage of state-owned share is small, there is no negative relation.</td>
</tr>
</tbody>
</table>
Chapter 4  Empirical Study

In this chapter, I present sample and data collection, measurement of firm’s performance and select control variables through this study. The motivation of selecting control variables has provided thereafter.

4.1 Sample and data collection

The sample used in my study comprises of data from 95 public companies for the year 2007, listed both on Shanghai Stock Exchange and Shenzhen Stock Exchange of China. I chose a random sample of Chinese listed companies from both stock markets. Initially, I had a total observation of 1539 listed firms both from Shanghai and Shenzhen stock exchange. Further, companies that only issue B share or H share for foreign investors were excluded, due to the fact that these companies use different accounting standards unlike other firms which issue shares for domestic investors. Companies with the financial sectors such as banks and insurance were excluded, since they have to follow special accounting standard and follow other disclosure requirement in China. Public Utility firms were also excluded, for almost all Chinese public utility firms are highly controlled by the state, a high ownership concentration in those companies would influence on my results. Having excluded firms on the above basis, I obtained a total of 95 companies’ observation for my study. Listed firms followed Chinese accounting standards (PRC GAAP), and there were not substantial differences between Chinese Accounting Standards (PRC GAAP) and International Accounting Standards (IFRS).

Data was obtained from two different sources. The information of companies’ financial data and ownership structure was hand-collected from annual reports and financial ratios were calculated by the author. To obtain the Tobin’s Q, I collected the stock price for these companies through Dazihui stock software, which has the same function as DataStream. Tobin’s Q was finally calculated by the author, using stock price and other financial data obtained from annual reports.

The sample was distributed across 6 sectors of economic activities as I categorized after collecting all the data. The companies range from different industry sectors, with 49 companies in manufacturing, 13 companies in real estate, 8 companies in foreign trade, 11 companies in tourism, 9 companies in media and culture, 5 companies in retailing.

4.2 Dependent variable/ Tobin’s q and ROA

Tobin’s q

As previous chapter addressed, the function of Tobin’s q is for measuring company’s
performance from market dimension. Tobin’s $q$ is a ratio to compare the value of the stocks of a firm listed on stock market with the value of a firm’s equity book value. It was developed by James Tobin. According to Penman (2007), firm’s equity book value represents shareholders’ investment in the firm, book value is also assets minus liabilities, that is, net assets (Penman, 2007). Here lies the concept of Tobin’s $q$: The worth of book value depends on the future earnings that the net assets are likely to generate (Penman, 2007). The logic behind the ratio is that price, in the numerator of the Tobin’s $q$, is based on the expected future earnings that investors are buying. Therefore, the higher the expected earnings related to book value, the higher the Tobin’s $q$ (Penman, 2007). This study adopted the Tobin’s $q$ as following:

$$\text{Tobin’s } q = \log \left( \frac{\text{year-end of stock price}}{\text{year-end of book value of equity/number of shares}} \right)$$

Regarding to the unavailability of market value of equity for Chinese listed companies, I used stock price (A share) as numerator instead of market value of equity. To obtain better symmetric distribution of firm’s performance measures, the raw data was converted to log values by using the transformation.

**ROA**

As previous chapter addressed, the function of ROA is for measuring firm’s performance from accounting dimension. ROA, according to Eng and Mak (2003), is used to measure profitability of the company. Penman (2007) address that a common measure of the profitability of operations is the return on asset ratio (ROA), it defined as following:

$$\text{ROA} = \frac{\text{operating income}}{\text{total asset}}$$

Empirically, Hu and Izumida (2008) employed ROA as an accounting performance measure to study ownership concentration and corporate performance in Japan, and they revealed that there was a positive causal relation from ownership concentration to ROA. Chen et al (2005) used ROA as a firm’s performance indicator to examine the association between ownership concentration, firm’s performance and dividend policy in Hong Kong. By using ROA as a firm accounting performance, Wei (2007) studied the ownership structure, corporate governance and company performance in Chinese listed companies. In the context of China, Chen et al (2009) introduced ROA to represent firm’s profitability, to study whether ownership did matter in China’s listed firms. In recent study King and Santor (2008), ROA was a representative of firm’s productivity and profitability, and they found larger firms with higher growth had higher ROA. To study the linkage on founding-family ownership and firm’s performance, Anderson and Reeb (2003) used ROA as accounting measure of performance, and they concluded that both young and old family firms exhibited a significant and positive association to ROA, on an average, family firms
outperformed than non-family firms.

### 4.3 The measurement of ownership concentration

Measure of ownership concentration is the percentage of shares controlled by top five shareholders. A certain amount of previous studies have applied this definition, so I also define as:

\[
\text{Ownership concentration} = \text{the percentages of shares controlled by top five shareholders}
\]

Xu and Wang (1999) used this percentage of shares controlled by top five shareholders, as ownership concentration measurement, to study the association between ownership structure and corporate governance in Chinese stock companies. Hu and Izumida (2008) employed the percentages of a firm’s common equity owned by the five largest shareholders as ownership concentration, and they found ownership concentration variable was positively and significantly correlated with the levels of Tobin’s q in Japan. Perrini et al (2008) also employed the fraction of shares owned by the five largest shareholders as ownership concentration measurement, and their results showed that ownership concentration of five largest shareholders generated a positive effect on Tobin’s q in Italian market. Claessens and Djankov (1999) studied the relationship between ownership concentration and corporate performance in the Czech Republic, they used the percentages of shares controlled by top five shareholders. Their findings indicated that ownership concentration seemed to determine enterprise performance. Welch (2003) as well as Demsetz and Villalonga (2001) also addressed the fraction of shares owned by the five largest shareholders in their studies to examine ownership structure and corporate performance.

As addressed in previous chapter, Chinese listed companies have the characteristic of highly concentrated ownership. To give a more accurate picture of the ownership concentration, this study has also applied concentrated ownership dummy variable, which was used to control firms that have single shareholder who owns more than 50 percent of the shares (Perrini et al., 2008).

\[
\text{Concentrated ownership dummy} = \text{Dummy variable equals one if the controlling shareholder has more than 50\% of the shares}
\]

### 4.4 Control variables

Having scrutinized prior studies, I selected some control variables that were commonly used in order to make this study more practical and effective. In line with several previous studies investigating the determinants of ownership concentration, I expected the following factors to influence two dependent variables: state-owned
ownership, privatized-owned ownership, proportion of independent directors to total number of directors on board, industry, firm size, leverage and growth rate.

**Ownership structure**

A certain amount of earlier and recent studies have examined the relationship between ownership structure and company performance, thus ownership structure has impact on company performance. In this study, I selected state-owned ownership and privatized-owned ownership as ownership structure indicator according to Chinese listed company’s circumstance. Since most listed companies on Chinese stock market could be categorized as state-owned or privatized-owned.

Ng et al (2008) mentioned that performance was supposed to have a positive relationship with state ownership because it was in the government’s interests to own high performing state-owned firms, and the state could benefit both from economical and political dimensions. In the context of China, Wei (2007) categorized ownership structures as state-owned enterprise and non-state-owned enterprise. In this study, ownership structures are categorized as state-owned and privatized-owned, when the largest owner is the state, this firm is classified as state-owned firm.

State-owned ownership dummy = 1 for state-owned, 0 for privatized-owned

**Proportion of independent directors to total number of directors on board**

Ownership structure is the foundation of corporate governance structure for a firm. Broadly speaking, different types of ownership structure are associated with different corporate governance structure. Initially, the establishment of independent directors aimed internal control. Independent directors are those members who meet the criteria like: he or she is not otherwise employed by the company, do not participate in the business by the company, and is not a family member (Becht et al, 2005). Lim et al (2007) mentioned that independent directors are professional managers with expertise and they can make decision for the company. Subsequently, shareholders wish, by hiring independent directors, to supervise and restrict insiders. Under this circumstance, the more the ownership is dispersed, the more shareholders have stronger desire to employ more independent directors to supervise insiders. Thus, the number of independent directors is associated with ownership concentration, while ownership concentration links with firm’s performance, therefore, the number of independent directors, to some extent will influence on firm’s performance.

In this study, the proportion of independent directors to total number of directors is adopted.
**Industry**

Industry has become a significant factor on studying the association between ownership concentration and firm’s performance. Ownership concentration, however, may vary across industries. Some particular industries are more likely to have dispersed or concentrated ownership than others (Grosfeld and Hashi, 2007). Different types of activities require different extents of monitoring. In some industries closer monitoring may bring about gains to shareholders, therefore, it is better to take the type of industry into account (Grosfeld and Hashi, 2007).

The study of Demsetz and Villalonga (2001) categorized their sample into three industries: utilities industries, media industries and finance industries. Both Demsetz and Lehn (1985) and Welch (2003) showed that the ownership structure of media firms, for given values of other variables, were more highly concentrated than manufacturing, financial and utility firms. The study of Claessens and Djankov (1999), provided a variety of sector-specific characteristics affecting firm’s performance, such as agribusiness, furniture and wood, products, transport, mining, construction, food, apparel, chemicals, metals and machinery. Ultimately, they concluded that agribusiness, construction and machinery had negative and significant impact on firm’s performance. Xu and Wang (1999) broke down the samples by sectors, such as manufacturing, retailing, utility, real estate and conglomerate, to study the association between ownership structure and firm’s performance in Chinese listed companies.

In this study, the companies were categorized into 6 different industry sectors: manufacturing, real estate, foreign trade, tourism, media and culture, and retailing.

**Firm size**

We took for granted that ownership in larger firms was less likely to be highly concentrated. Moreover, the concern for diversification also suggests that owners will be careful and refrain from committing a larger fraction of their wealth to one firm (Grosfeld and Hashi, 2007). Welch (2003) stated that in modeling the association between ownership structure and corporate performance, it was necessary to control for firm size to account for the possibility that performance and ownership were related. From another point of view, larger, older and better-known firms may be perceived by dominant shareholders are less likely to go bankrupt. As previous study (Demsetz and Lehn, 1985) mentions that firm size was inversely related to ownership concentration. Firm size was expected to have a negative impact on ownership concentration because of wealth limitations and risk diversification (Hu and Izumida, 2008). Ng et al (2008) mentioned that size could offer important performance explanations, and it was expected to be negatively related to firm’s performance since larger state-owned firms had more government bureaucracy, bigger agency costs, and more trouble adapting to a rapidly changing economic and political environment. Thus, the overall impact of firm size on ownership concentration might not be clear.
Firm size = Log of total asset

This measure has been used in a number of prior studies. Farooque et al (2007) found that firm size had significantly negatively associated with performance. Klein et al (2005) stated that firm size was consistently negatively related to firm’s performance. King and Santor (2008) also pointed out that larger firm’s exhibit higher Tobin’s q ratios as compared to smaller firms. Kapopoulos and Lazaretou (2007) suggested that the firm size, as measured by the book value of total assets, was inversely related to performance, as they expected. Hu and Izumida (2008) found that firm size was positively and significantly correlated with Tobin’s q.

**Leverage**

Penman (2007) defined leverage as a degree to which net operating assets were financed by common equity. It takes the form of a loan or debt, the intention is to earn a greater rate of return than the cost of interest. The effect of leverage on ownership concentration may be ambiguous (Grosfeld and Hashi, 2007). According to Demsetz and Lehn (1985), highly leveraged firms were more risky and risk-averse owners might prefer to avoid excessive concentration in such companies. King and Santor (2008) argued that a firm with a controlling shareholder was supposed to exhibit higher financial leverage; it increased their voting control for a given level of equity investment and reduced the risk of a hostile takeover. In the study of Ng et al (2008), they proposed that leverage was the total debt ratio serving as a control for any possible leverage effect, under the heavy financial risk and debt servicing costs circumstances, debt posed for firms in a rapidly changing environment, it was expected that leverage would have a negative association with market performance.

Leverage = total debt/total asset.

Leverage has been used in prior studies (Tam and Tan, 2007; Chen et al, 2009; King and Santor, 2008; Grosfeld and Hashi, 2007; Ng et al, 2008; Chen et al, 2005). Hu and Izumida (2008) suggested that there was a negative relationship between leverage and performance measures, which was interpreted as the agency cost of debt finance resulting from the conflict of interests between bondholders and shareholders. Perrini et al (2008) concluded that leverage was related negatively to firm valuation.

**Growth rate**

Stock of companies with high sales growth should be priced higher than in an efficient market. Sales growth can capture that growth firms have higher market ratios. Growth rate has been substantially used in previous studies (Klein et al, 2005; Short and Keasey, 1998; Barontini and Caprio, 2006; Ke et al, 2007; Perrini et al, 2008; Xu and Wang, 1999; Wiwattanakantang, 2001; Chen et al, 2005). Hu and Izumida...
(2008) found that sales growth had a significant and negative effect on firm’s performance. However, Klein et al (2005) pointed out that growth and performance were positively related.

In this study, growth rate is defined as the percentage increase in sales from previous year.

4.5 Regression model

In this study, OLS (Ordinary Least Square) regression model is adopted to examine the association between ownership concentration and firm’s performance. OLS regression model has become a basic principle of conventional regression analysis (Bickel, 2007). It has been extensively used in prior studies with respect to our subject (Barontini and Caprio, 2006; Wei, 2007; Farooque et al, 2007; Short and Keasey, 1999; Chen et al, 2009; Claessens and Djankov, 1999). Further, 2SLS (two-stage least square) has been used to capture the association between ownership and firm’s performance for recent years, since ownership is considered as endogenous. The “first stage” involved an OLS regression of the endogenous variable on the set of exogenous variables to get predicted values of the endogenous variables. In the “second stage”, the task was to estimate structural equation, in which I was interested, using the predicted value from the first stage in place of the actual value. During recent years, it has turned out to be a popular trend to estimate the association between ownership and company’s performance by using both OLS and 2SLS. The intention is to make a comparison and detect whether different methods might impact on the results. A number of researchers have adopted by using both regression model regarding this issue (Kapopoulos and Lazaretou, 2007; Perrini et al, 2008; Welch, 2003; Demsetz and Villalonga, 2001). Logistic regression is also adopted because that the dependent variable of Ownership concentration (Concentrated dummy) and ownership structure (SOS dummy) is categorical.

The main goal is to explore if ownership is systematically related to firm’s performance. To deal with this issue, the econometric model is a simultaneous system of two equations, in which ownership concentration is the dependent variable in the first equation, and firm’s performance is the dependent variable in the second equation. Hence, in the first stage of the experiment I estimate the relation between ownership concentration (TOP5) by using firm characteristics, and in the second stage, using the fitted values of ownership concentration (TOP5) derived from the first stage to estimate the firm’s performance. The equations I used in this study were based on the combination of prior research and my own specification. The 2SLS estimated equations are as follows:

\[ TOP5_i = \alpha_i + \beta_1SOS_i + \beta_2IND_1 + \beta_3IND_2 + \beta_4IND_3 + \beta_5IND_4 + \beta_6IND_5 + \beta_7SIZE_i + \epsilon_i \]  
(1)
Firm performance = \alpha + \beta_1 \text{TOP5} + \beta_2 \text{IND}_1 + \beta_3 \text{IND}_2 + \beta_4 \text{IND}_3 + \beta_5 \text{IND}_4 + \beta_6 \text{IND}_5 + \beta_7 \text{SIZE}_i + \beta_8 \text{LEV}_i + \beta_9 \text{GROWTH}_i + \beta_{10} \text{BC}_i + \epsilon_i \ (2)

This study also adopts OLS regression model to test the association between ownership concentration (TOP5) and firm’s performance. The OLS estimated equation is as following:

Firm performance = \alpha + \beta_1 \text{TOP5} + \beta_2 \text{IND}_1 + \beta_3 \text{IND}_2 + \beta_4 \text{IND}_3 + \beta_5 \text{IND}_4 + \beta_6 \text{IND}_5 + \beta_7 \text{SIZE}_i + \beta_8 \text{LEV}_i + \beta_9 \text{GROWTH}_i + \beta_{10} \text{BC}_i + \epsilon_i \ (3)

The next step is to examine the relation between ownership concentration measured by concentrated dummy and firm’s performance. I estimate the relation between ownership concentration (Concentrated dummy) with using firm characteristics in the first stage, in the second stage, fitted value of ownership concentration (Concentrated dummy) obtained from the first stage to examine the firm’s performance. Equations are as following:

Concentrated = \alpha + \beta_1 \Sigma_2 \text{IND}_1 + \beta_3 \text{IND}_2 + \beta_4 \text{IND}_3 + \beta_5 \text{IND}_4 + \beta_6 \text{IND}_5 + \beta_7 \text{SIZE}_i + \epsilon_i \ (4)

Firm performance = \alpha + \beta_1 \text{Fit-Concentrated} + \beta_2 \text{IND}_1 + \beta_3 \text{IND}_2 + \beta_4 \text{IND}_3 + \beta_5 \text{IND}_4 + \beta_6 \text{IND}_5 + \beta_7 \text{SIZE}_i + \beta_8 \text{LEV}_i + \beta_9 \text{GROWTH}_i + \beta_{10} \text{BC}_i + \epsilon_i \ (5)

Equation (4) is run by logistic regression.

The association between ownership concentration (Concentrated dummy) and firm’s performance is examined by OLS regression equation as following:

Firm performance = \alpha + \beta_1 \text{Concentrated} + \beta_2 \text{IND}_1 + \beta_3 \text{IND}_2 + \beta_4 \text{IND}_3 + \beta_5 \text{IND}_4 + \beta_6 \text{IND}_5 + \beta_7 \text{SIZE}_i + \beta_8 \text{LEV}_i + \beta_9 \text{GROWTH}_i + \beta_{10} \text{BC}_i + \epsilon_i \ (6)

The final step is to examine the relation between ownership structure (SOS dummy) and firm’s performance. By applying the same procedure as stated above, equations are displayed as following:

SOS = \alpha + \beta_1 \text{Concentrated} + \beta_2 \text{IND}_1 + \beta_3 \text{IND}_2 + \beta_4 \text{IND}_3 + \beta_5 \text{IND}_4 + \beta_6 \text{IND}_5 + \beta_7 \text{SIZE}_i + \epsilon_i \ (7)

Firm performance = \alpha + \beta_1 \text{Fit-SOS} + \beta_2 \text{IND}_1 + \beta_3 \text{IND}_2 + \beta_4 \text{IND}_3 + \beta_5 \text{IND}_4 + \beta_6 \text{IND}_5 + \beta_7 \text{SIZE}_i + \beta_8 \text{LEV}_i + \beta_9 \text{GROWTH}_i + \beta_{10} \text{BC}_i + \epsilon_i \ (8)

The association between ownership structure (SOS dummy) and firm’s performance is examined by OLS regression equation as following:
Firm performance_{i}=\alpha+\beta_{1}\text{SOS}_{i}+\beta_{2}\text{IND}_{1}+\beta_{3}\text{IND}_{2}+\beta_{4}\text{IND}_{3}+\beta_{5}\text{IND}_{4}+\beta_{6}\text{IND}_{5}+\beta_{7}\text{SIZE}_{i}+\beta_{8}\text{LEV}_{i}+\beta_{9}\text{GROWTH}_{i}+\beta_{10}\text{BC}_{i}+\epsilon_{i}(9)

Where:

TOP5 = the percentages of shares controlled by top five shareholders

BC= Proportion of independent directors to total number of directors on board

SOS dummy = 1 for state-owned, 0 for privatized-owned

Concentrated dummy= dummy variable equals one if the controlling shareholder has more than 50% of the shares

IND_1 = 1 for tourism firms, 0 for media and culture firms, 0 for real estate firms, 0 for foreign trade firms, 0 for retailing firms, 0 for manufacturing firms

IND_2 = 1 for media and culture firms, 0 for tourism firms, 0 for real estate firms, 0 for foreign trade firms, 0 for retailing firms, 0 for manufacturing firms

IND_3 = 1 for real estate firms, 0 for tourism firms, 0 for media and culture firms, 0 for foreign trade firms, 0 for retailing firms, 0 for manufacturing firms

IND_4 = 1 for foreign trade firms, 0 for tourism firms, 0 for media and culture firms, 0 for retailing firms, 0 for manufacturing firms

IND_5 = 1 for retailing firms, 0 for tourism firms, 0 for media and culture firms, 0 for real estate firms, 0 for foreign trade firms, 0 for manufacturing firms

SIZE = log of total asset

LEV = total debt/ total asset

Growth= the percentage increase in sales from previous year.

Fit-TOP5= fitted TOP5 variable from stage 1 regression

Fit-Concentrated= fitted Concentrated variable from stage 1 regression

Fit-SOS= fitted SOS variable from stage 1 regression

Firm performance = measured by Tobin’s q/ROA
Chapter 5   Analysis and results

In this part, I analyze and discuss the results based on this paper, evidence from Chinese listed companies, including descriptive statistics, correlation test, and main results from regression analysis.

5.1 Descriptive statistics

Overview

Descriptive statistic is used to describe a set of cases upon which observation were made. It can describe the characteristics of your sample in the method section of your report (Pallant, 2005). As shown in Appendix 1, descriptive statistic was reported sample companies for China in terms of independent and control variable for the year of 2007, broken down by Tobin’s q, ROA, the number of independent directors to total number of directors on board (BC), Ownership by the 5 largest shareholders(TOP5), leverage (LEV), firm size (SIZE) and growth rate (Growth). Appendix 1 also provided means, medians, standard deviations, and maximum and minimum values for the key variables in my sample.

As observed in Appendix 1, Tobin’s q values ranged from -0.04 to 1.41, with an average value of 0.73. The average ROA was 0.72, with a standard deviation of 0.53. The proportion of independent directors on board (BC) ranged from a minimum of 14% to a maximum of 57%. Ownership by the 5 largest shareholders ranged from a minimum 18% to a maximum 85% around a mean value of 50%, which implicated that ownership concentration was significantly high and differed quite widely across firms. Across the 95 Chinese listed companies, the mean percentage of leverage (LEV) was 49%, roughly from the highest point 87% to the lowest point 3%. Sales of growth rate (Growth) had the mean value of 23%. The firm size (SIZE) values ranged from 8.60 to 11.01, with an average value of 9.56.

Concentrated and non-concentrated firms

As shown in Appendix 2, I partition the sample in concentrated and non-concentrated firms. As addressed in previous chapter, concentrated is defined as the firms where the controlling shareholder has more than 50 percent of shares. The results documented that there was not substantial differences in the performance, the number of independent directors, firm size and leverage, depending on the level of concentration. On average, the numbers of non-concentrated firms were twice bigger than concentrated firms across my observation, resulting in 33 concentrated firms and 62 non-concentrated firms. Having scrutinized these 33 concentrated firms, 30 concentrated firms of these firms demonstrate that state was the largest owner. It was interesting to notice that concentrated firms had higher growth rate than non-concentrated firms, with mean of 31% compared with 18%.
State-owned firms and privatized firms

Appendix 3 provided descriptive statistics for my sample, broken down by state-owned firms and privatized-owned firms. It has shown that there were a large number of state-owned firms compared with privatized-owned firms, resulting in 73 state-owned firms and 22 privatized firms. The results documented that there was not substantial differences in the performance, the number of independent directors, firm size and leverage, depending on the level of concentration. However, privatized-owned firms had lower growth rate than state-owned firms, with mean of 27% compared with 6%

5.2 Correlation

The function of correlation analysis was used to describe the strength and direction of the linear relationship between two variables (Pallant, 2005). It has been suggested by Bryman and Cramer (2007) that Pearson is a powerful method dealing with data, which means they can be used in a wide variety of contexts, and Pearson is very commonly used by researchers. Appendix 4 presented a Pearson correlation matrix between independent variables and dependent variables.

Appendix 4 showed that ownership concentration variable; TOP5 was positively and significantly correlated with Tobin’s q at 0.05 level, also, TOP5 was positively and significantly correlated with ROA at 0.05 level, which appeared to offer at least a rough support for the claim that ownership interacts with performance. This correlation statistics were consistent with prior study Perrini et al (2008). The higher concentrated the ownership, the more Tobin’s q the value was. This result is related to Ke and Isaac (2007), and they argued that one of the most effective ways of maximizing value by firms was through concentrated ownership of the firm share. The result also indicated that highly concentrated firms (Concentrated) had a significant and positive relation with ROA, at 0.05 level. When it comes to the firm size (SIZE), it was negatively and significantly correlated with Tobin’s q at 0.1 level, this was consistent with the evidence from Demsetz and Villalonga (2001), they argued that the larger the firm size, the larger was the capital sum which that investors require to own a given share of a firm. This result was also consistent with the proposal by Ng et al (2008). It mentioned larger state-owned firms were related to poorer performance since they had more government bureaucracy, much bigger agency costs and more trouble adapting to a fast changing economic environment (Ng, et al, 2008). However, firm size (SIZE) was positively significant correlated with firm’s performance, represented by ROA variable.

For other control variables, it was found that there was a significantly positive association between state-owned firms and highly concentrated ownership (at 0.05 level), which implicated state-owned firms have the possibility of highly concentrated characteristic. Further, the results also showed that there was a significantly positive
relationship between state-owned firms and firm size, which demonstrated that state-owned firms were larger. Ng et al (2008) also found out that firm size was positive and significantly related to state ownership; this could be expected as state-owned firms were larger than private firms, and hence, they were more likely to have more government ownership. The result was consistent with Wei and Varela (2003), who interpreted that large state-owned firms were economically significant at the national level. The result showed firm size (SIZE) was positive and significantly correlated to ownership concentration, which measured by the percentage of shares controlled by top five shareholders. This was inconsistent with the proposition from Hu and Izumida (2008), who claimed that firm size was supposed to have a negative influence on ownership concentration because of wealth limitations and risk diversification.

As shown in Appendix 4, leverage (LEV) was negatively related to Tobin’s q, not significantly. One possible explanation might the debt problem was a big issue in China and it has plagued specially in state-owned firms reform all along, the “triangular debt problem” of state-owned firms in China, which means the fact that a substantial number of state-owned firms are in debt to one another according to Sun et al (2002). However, leverage (LEV) was significantly associated with ROA, at 0.05 level. Another finding is leverage (LEV) determined firm size (SIZE); in particular, they were significantly and positively correlated at the 0.01 level. Hu and Izumida (2008) interpreted this as firm size had been empirically found to be positively related with debt in the less developed internal capital market but negatively associated with leverage in the highly developed internal capital market. The results showed that growth rate (Growth) was significantly and positively associated with ownership concentration predictor (TOP5) and firm size (SIZE), respectively. Additionally, the number of independent directors to total number of directors on board (BC) was positive and significant related with Tobin’s q at 0.1 level, it was also positive and significant correlated with IND_5.

5.3 The main results

5.3.1 Ownership concentration measured by TOP 5

First-stage regression

Now I discuss the central findings of the study presented there. As shown in Appendix 5, it reported the first-stage regression results between ownership concentration (TOP5) and a number of explanatory variables. The result was significant with an F value of 1.690. The coefficient of determination ($R^2$) was 0.12, and the $R^2$ value was the proportion of variance in the dependent variable that was explained by the regression model (Corston and Colman, 2000). It means the regression model explains 12% of the variance in the dependent variable.
The maximum variance inflation factor (VIF) was 1.253, representing that this model did not have problem with multicollinearity. VIF values above 10 indicated that the multiple correlations with other variables were high and lead to the possibility of multicollinearity (Pallant, 2005).

Beta under standardized coefficients represented values of each variable which have been converted to the same scale for comparison and these beta values were used for contracting a regression equation (Pallant, 2005). The absolute value of beta value indicated the unique contribution to explaining the dependent variable, when the variance explained by all other variables in the model was controlled for (Pallant, 2005). IND_3 was negatively and significantly related to ownership concentration (TOP5). The number of independent directors to total number of directors on board (BC) was positive related to ownership concentration (TOP5), not significantly. Firm size (SIZE) was positive and significant related with TOP5.

**Second-stage regression**

In the second-stage regression, ownership concentration (TOP5) in this regression was the fitted value of this variable from the first stage and ownership structure (SOS) was not included in this regression.

As presented in column II of Appendix 6, I reported the results based on equation (2). The dependent variables were based on Tobin’s q and ROA. The $R^2$ value varied from 0.147 (Tobin’s q) to 0.430 (ROA). The coefficients of the ownership concentration variable (Fit-TOP5) indicated that there was a positive and significant relation between ownership concentration and firm’s performance by using ROA q as an indicator, on the other hand, a negative relation between ownership concentration and Tobin’s q were found.

As shown in column II, the result showed positive and significant association between leverage (LEV) and firm’s performance by using ROA. The industry classification variable IND_4 and IND_5 were significantly positive for foreign trade firms and retailing firms by using ROA, not Tobin’s q.

**OLS regression**

As presented in column I of Appendix 6, I reported the result by using OLS regression to examine the association between ownership concentration and firm’s performance as equation 3 states. As expected, ownership concentration (TOP5) was significantly and positively related to Tobin’s q at 0.01 level, whilst this result was consistent with previous research Ke and Isaac (2007). Further, firm size (SIZE) was positively and significantly related to ROA at 0.01 level. Leverage (LEV) was significant and positive related to ROA, not Tobin’s q. The maximum variance inflation factor (VIF) was 1.451, means that this model did not have problem with
5.3.2 Ownership concentration measured by concentrated dummy

First-stage regression

As presented in Appendix 7, I reported the result by using Logistic regression to observe the association between ownership concentration measured by concentrated dummy and a number of explanatory variables. The result was based on equation (4). As shown in omnibus tests of model coefficients, the full model containing all predictors was statistically significant, p=0.087 (p<0.1), indicating that the model is able to distinguish between concentrated firms and non-concentrated firms. As shown in the table of variables in the equation, only state-owned firms (SOS) made a unique statistically significant contribution to the model (p= 0.037, p<0.05). The strongest predictor was state-owned firms (SOS), recording an odds ratio of 4.282. This indicates that state-owned firms (SOS) are over 4 times more likely to be concentrated ownership firms than those non-concentrated firms, controlling for all other factors in the model.

Second-stage regression

Ownership concentration (Concentrated dummy) in these regressions was the fitted value of this variable from the first stage and ownership structure (SOS) is not included in these regressions.

As presented in column II of Appendix 8, I reported the result based on equation (5). The coefficients of the ownership concentration variable (Fit-concentrated) implicated that there was a positive relation between ownership concentration (Concentrated) and performance, particularly; it was significantly related to ROA. Additionally, leverage (LEV) was statistically significant related to firm’s performance measured by ROA (t=2.446). IND_4 was positive and significant associated with ROA, not Tobin’s q. By comparison, IND_5 was positive and significant associated with Tobin’s q, not ROA.

OLS regression

As presented in column I of Appendix 8, I reported the result by using OLS regression to examine the association between ownership concentration
(Concentrated dummy) and firm’s performance as equation (6) states. Concentrated dummy determined firm’s performance by using Tobin’s q, and there was no significant relation between ownership concentration (Concentrated dummy) and ROA. Further, firm size (SIZE) was statistically significant related to firm’s performance (ROA, t=2.883). Leverage (LEV) was significant and positive related to ROA. The maximum variance inflation factor (VIF) was 1.427, means that this model did not have problem with multicollinearity.

5.3.3 Ownership structure

First-stage regression

As shown in Appendix 9, I reported the result by using Logistic regression to examine the relation between ownership structure and several explanatory variables. The result was based on equation (7). All predictors in the full model were statistically significant, p=0.038(p<0.05), indicating that the model can distinguish between state-owned firms and privatized-owned firms.

As shown in the table of variables in the equation, only two of the independent variables made a unique statistically significant contribution to the model (Concentrated, p<0.05, SIZE, p<0.05). The strongest predictor was firm size (SIZE), recording an odds ratio of 4.427. This indicates that firm sizes (SIZE) are over 4 times more likely to be state-owned firms than those privatized-owned firms.

Second-stage regression

Ownership structure (SOS) in this regression was the fitted value of this variable from the first stage and TOP 5 was not included in this regression. As presented in column II of Appendix 10, I reported the result based on equation (8). The coefficients of ownership structure variable (Fit-SOS) implicated that there was a positive relation between ownership structure (SOS) and performance by using both Tobin’s q and ROA, but not significantly. Further, leverage (LEV) was positive and significant related to ROA, and there was an indication that IND_4 was significantly positive with ROA as well as IND_5 was significantly positive related to Tobin’s q.

OLS regression

As shown in column I of Appendix 10, I reported the result by using OLS regression to examine the association between ownership structure (SOS) and firm’s performance as equation (9) states. Ownership structure (SOS) determined performance by using ROA, not Tobin’s q. Further, firm size (SIZE), leverage (LEV) was positive and significant associated with ROA. The maximum variance inflation factor (VIF) was 1.506, means that this model did not have problem with multicollinearity.
Chapter 6 Conclusion and Recommendation

This chapter provides the conclusion drawn from analyses and connected to the research question and theory part. The conclusion ends with recommendation for future research in this area.

This thesis brings together various aspects of corporate governance and firm’s performance and investigates whether variations across firms in observed ownership concentration and ownership structures results in variations in observed firm’s performance in the context of Chinese listed firms. This study is based on a sample of 95 Chinese listed companies. I use two measures of performance—namely, Tobin’s q and ROA. The results show that ownership concentration of the five largest shareholders (TOP5) generates a positive and significant effect on ROA by using both OLS and 2SLS model. Ownership concentration, measured as Concentrated dummy generates a positive and significant effect on Tobin’s q through OLS model, and it generates a positive and significant effect on ROA by using 2SLS model.

Further, Ownership structure (SOS) impacts on firm’s performance by using ROA, not Tobin’s q. In general, privatized-owned firms have lower growth rate than state-owned firms. I also found that concentrated firms had higher growth rate than non-concentrated firms.

Other drivers of firm’s performance are firm size, leverage, growth rate, the proportion of independent directors to total number of directors on board (BC) and industry classification. The results reveal that there is a significantly positive relationship between state-owned firms and firm size. The positive and significant relation between firm size and ownership concentration (TOP5) were found as well. The result shows leverage is determined firm size and growth rate is significantly and positively associated with ownership concentration (TOP5) and firm size.

There are some limitations in this thesis. On one hand, samples were comprised of 95 companies listed on Shanghai and Shenzhen stock exchange which merely represent small percentage of companies listed on the stock markets. Thus, the results might not be applied to all listed companies. On the other hand, companies were selected randomly and were distributes into 6 sectors, and the selected companies cannot cover all industry on the stock markets.

Further studies could be a study to examine this issue by using a broader sample of firms from both Chinese and European markets, and compare the results from each country.
References

Books


Articles


Tam, O.K., Tan, M.G.S (2007) Ownership, governance and firm performance in


**Working paper**


**Website**


Shenzhen Stock Exchange, including explanatory text, accessed 17/03/09 at [http://www.szse.cn](http://www.szse.cn)
Appendix 1: Summary Descriptive Statistics

<table>
<thead>
<tr>
<th>Variable</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tobin_q</td>
<td>95</td>
<td>-0.04</td>
<td>1.41</td>
<td>0.73</td>
<td>0.27</td>
</tr>
<tr>
<td>ROA</td>
<td>95</td>
<td>0.04</td>
<td>2.56</td>
<td>0.72</td>
<td>0.53</td>
</tr>
<tr>
<td>BC</td>
<td>95</td>
<td>0.14</td>
<td>0.57</td>
<td>0.36</td>
<td>0.06</td>
</tr>
<tr>
<td>TOP5</td>
<td>95</td>
<td>0.18</td>
<td>0.85</td>
<td>0.50</td>
<td>0.15</td>
</tr>
<tr>
<td>SIZE</td>
<td>95</td>
<td>8.60</td>
<td>11.01</td>
<td>9.56</td>
<td>0.55</td>
</tr>
<tr>
<td>LEV</td>
<td>95</td>
<td>0.03</td>
<td>0.87</td>
<td>0.49</td>
<td>0.18</td>
</tr>
<tr>
<td>Growth</td>
<td>95</td>
<td>-0.47</td>
<td>4.32</td>
<td>0.23</td>
<td>0.53</td>
</tr>
</tbody>
</table>

Valid N (listwise) 95

Note: Number of observation is 95.
### Appendix 2: Descriptive statistic on concentrated and non-concentrated firms

#### Descriptive Statistics

<table>
<thead>
<tr>
<th>Concentrated Firms</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tobin_q</td>
<td>33</td>
<td>0.30</td>
<td>1.41</td>
<td>0.78</td>
<td>0.28</td>
</tr>
<tr>
<td>ROA</td>
<td>33</td>
<td>0.13</td>
<td>2.56</td>
<td>0.88</td>
<td>0.60</td>
</tr>
<tr>
<td>BC</td>
<td>33</td>
<td>0.14</td>
<td>0.57</td>
<td>0.36</td>
<td>0.07</td>
</tr>
<tr>
<td>TOP5</td>
<td>33</td>
<td>0.43</td>
<td>0.85</td>
<td>0.63</td>
<td>0.08</td>
</tr>
<tr>
<td>SIZE</td>
<td>33</td>
<td>8.91</td>
<td>11.01</td>
<td>9.66</td>
<td>0.54</td>
</tr>
<tr>
<td>LEV</td>
<td>33</td>
<td>0.09</td>
<td>0.87</td>
<td>0.46</td>
<td>0.19</td>
</tr>
<tr>
<td>Growth</td>
<td>33</td>
<td>-0.34</td>
<td>4.32</td>
<td>0.31</td>
<td>0.77</td>
</tr>
<tr>
<td>Valid N (listwise)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>33</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Non-concentrated Firms</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tobin_q</td>
<td>62</td>
<td>-0.04</td>
<td>1.35</td>
<td>0.70</td>
<td>0.26</td>
</tr>
<tr>
<td>ROA</td>
<td>62</td>
<td>0.04</td>
<td>2.47</td>
<td>0.64</td>
<td>0.47</td>
</tr>
<tr>
<td>BC</td>
<td>62</td>
<td>0.30</td>
<td>0.50</td>
<td>0.37</td>
<td>0.05</td>
</tr>
<tr>
<td>TOP5</td>
<td>62</td>
<td>0.18</td>
<td>0.85</td>
<td>0.44</td>
<td>0.14</td>
</tr>
<tr>
<td>SIZE</td>
<td>62</td>
<td>8.60</td>
<td>11.00</td>
<td>9.50</td>
<td>0.54</td>
</tr>
<tr>
<td>LEV</td>
<td>62</td>
<td>0.03</td>
<td>0.83</td>
<td>0.51</td>
<td>0.18</td>
</tr>
<tr>
<td>Growth</td>
<td>62</td>
<td>-0.47</td>
<td>1.49</td>
<td>0.18</td>
<td>0.36</td>
</tr>
<tr>
<td>Valid N (listwise)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>62</td>
</tr>
</tbody>
</table>
## Appendix 3: Descriptive statistic on state-owned and privatized-owned firms

### Descriptive Statistics

<table>
<thead>
<tr>
<th>State-owned Firms</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tobin_q</td>
<td>73</td>
<td>-0.04</td>
<td>1.41</td>
<td>0.72</td>
<td>0.26</td>
</tr>
<tr>
<td>ROA</td>
<td>73</td>
<td>0.08</td>
<td>2.56</td>
<td>0.79</td>
<td>0.52</td>
</tr>
<tr>
<td>BC</td>
<td>73</td>
<td>0.14</td>
<td>0.57</td>
<td>0.37</td>
<td>0.06</td>
</tr>
<tr>
<td>TOP5</td>
<td>73</td>
<td>0.18</td>
<td>0.85</td>
<td>0.52</td>
<td>0.15</td>
</tr>
<tr>
<td>SIZE</td>
<td>73</td>
<td>8.60</td>
<td>11.01</td>
<td>9.63</td>
<td>0.53</td>
</tr>
<tr>
<td>LEV</td>
<td>73</td>
<td>0.03</td>
<td>0.87</td>
<td>0.48</td>
<td>0.18</td>
</tr>
<tr>
<td>Growth</td>
<td>73</td>
<td>-0.36</td>
<td>4.32</td>
<td>0.27</td>
<td>0.58</td>
</tr>
<tr>
<td>Valid N (listwise)</td>
<td>73</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Privatized-owned firms</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tobin_q</td>
<td>22</td>
<td>0.18</td>
<td>1.35</td>
<td>0.77</td>
<td>0.30</td>
</tr>
<tr>
<td>ROA</td>
<td>22</td>
<td>0.04</td>
<td>2.47</td>
<td>0.51</td>
<td>0.52</td>
</tr>
<tr>
<td>BC</td>
<td>22</td>
<td>0.30</td>
<td>0.44</td>
<td>0.35</td>
<td>0.04</td>
</tr>
<tr>
<td>TOP5</td>
<td>22</td>
<td>0.22</td>
<td>0.67</td>
<td>0.46</td>
<td>0.13</td>
</tr>
<tr>
<td>SIZE</td>
<td>22</td>
<td>8.69</td>
<td>10.55</td>
<td>9.33</td>
<td>0.49</td>
</tr>
<tr>
<td>LEV</td>
<td>22</td>
<td>0.21</td>
<td>0.82</td>
<td>0.54</td>
<td>0.19</td>
</tr>
<tr>
<td>Growth</td>
<td>22</td>
<td>-0.47</td>
<td>0.80</td>
<td>0.06</td>
<td>0.31</td>
</tr>
<tr>
<td>Valid N (listwise)</td>
<td>22</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Appendix 4: Pearson correlation matrix

<table>
<thead>
<tr>
<th></th>
<th>Tobin_q</th>
<th>ROA</th>
<th>BC</th>
<th>SOS</th>
<th>TOP5</th>
<th>Concentrate</th>
<th>SIZE</th>
<th>LEV</th>
<th>Growth</th>
<th>IND_1</th>
<th>IND_2</th>
<th>IND_3</th>
<th>IND_4</th>
<th>IND_5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tobin_q</td>
<td>1</td>
<td>0.009</td>
<td>0.182*</td>
<td>-0.048</td>
<td>0.213**</td>
<td>0.127</td>
<td>-0.177*</td>
<td>-0.095</td>
<td>0.043</td>
<td>0.155</td>
<td>0.026</td>
<td>-0.141</td>
<td>-0.048</td>
<td>0.279***</td>
</tr>
<tr>
<td>Sig (2-tailed)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ROA</td>
<td>0.093</td>
<td>0.930</td>
<td>0.077</td>
<td>0.646</td>
<td>0.038</td>
<td>0.220</td>
<td>0.086</td>
<td>0.358</td>
<td>0.681</td>
<td>0.133</td>
<td>0.805</td>
<td>0.173</td>
<td>0.647</td>
<td>0.006</td>
</tr>
<tr>
<td>Sig (2-tailed)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BC</td>
<td>0.182*</td>
<td>0.010</td>
<td>1</td>
<td>0.118</td>
<td>-0.016</td>
<td>-0.103</td>
<td>0.012</td>
<td>-0.080</td>
<td>-0.016</td>
<td>-0.014</td>
<td>-0.033</td>
<td>0.081</td>
<td>-0.180*</td>
<td>0.397***</td>
</tr>
<tr>
<td>Sig (2-tailed)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SOS</td>
<td>-0.048</td>
<td>0.224**</td>
<td>0.118</td>
<td>0.254</td>
<td>0.875</td>
<td>0.322</td>
<td>0.907</td>
<td>0.443</td>
<td>0.881</td>
<td>0.896</td>
<td>0.749</td>
<td>0.435</td>
<td>0.081</td>
<td>0.000</td>
</tr>
<tr>
<td>Sig (2-tailed)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOP5</td>
<td>0.213**</td>
<td>0.236**</td>
<td>-0.016</td>
<td>0.163</td>
<td>0.604***</td>
<td>0.191</td>
<td>-0.109</td>
<td>0.213**</td>
<td>0.006</td>
<td>-1.78**</td>
<td>0.004</td>
<td>-1.62</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sig (2-tailed)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Concentrated</td>
<td>0.038</td>
<td>0.021</td>
<td>0.875</td>
<td>0.114</td>
<td>0.000</td>
<td>0.059</td>
<td>0.292</td>
<td>0.038</td>
<td>0.991</td>
<td>0.957</td>
<td>0.085</td>
<td>0.966</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sig (2-tailed)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>#</td>
<td>-0.127</td>
<td>0.221**</td>
<td>-0.103</td>
<td>0.243**</td>
<td>0.604***</td>
<td>1</td>
<td>-1.34</td>
<td>-1.42</td>
<td>-0.85</td>
<td>-1.16</td>
<td>0.097</td>
<td>-0.73</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sig (2-tailed)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SIZE</td>
<td>-0.177*</td>
<td>0.335***</td>
<td>0.012</td>
<td>0.247**</td>
<td>0.195*</td>
<td>0.134</td>
<td>0.267**</td>
<td>-0.278***</td>
<td>0.194*</td>
<td>0.030</td>
<td>0.006</td>
<td>0.001</td>
<td>0.006</td>
<td>0.773</td>
</tr>
<tr>
<td>Sig (2-tailed)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LEV</td>
<td>-0.095</td>
<td>0.231**</td>
<td>-0.080</td>
<td>-1.152</td>
<td>-0.109</td>
<td>-1.42</td>
<td>0.267**</td>
<td>1</td>
<td>-0.145</td>
<td>-0.161</td>
<td>-0.230**</td>
<td>0.031</td>
<td>0.000</td>
<td></td>
</tr>
<tr>
<td>Sig (2-tailed)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Growth</td>
<td>-0.358</td>
<td>0.024</td>
<td>0.443</td>
<td>0.142</td>
<td>0.292</td>
<td>0.170</td>
<td>-0.009</td>
<td>0.992</td>
<td>0.161</td>
<td>0.120</td>
<td>-0.025</td>
<td>-0.006</td>
<td>0.768</td>
<td>1.000</td>
</tr>
<tr>
<td>Sig (2-tailed)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IND_1</td>
<td>-0.155</td>
<td>-0.181*</td>
<td>-0.014</td>
<td>-0.035</td>
<td>-0.001</td>
<td>-1.26</td>
<td>-0.278***</td>
<td>-0.074</td>
<td>1</td>
<td>0.117</td>
<td>-1.50</td>
<td>-0.085</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sig (2-tailed)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IND_2</td>
<td>-0.133</td>
<td>0.079</td>
<td>0.896</td>
<td>0.734</td>
<td>0.991</td>
<td>0.224</td>
<td>0.006</td>
<td>0.161</td>
<td>0.474</td>
<td>0.259</td>
<td>0.146</td>
<td>0.098</td>
<td>-0.144</td>
<td></td>
</tr>
<tr>
<td>Sig (2-tailed)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IND_3</td>
<td>-0.161</td>
<td>-0.256**</td>
<td>0.081</td>
<td>0.053</td>
<td>-0.178*</td>
<td>-0.116</td>
<td>0.194*</td>
<td>0.230**</td>
<td>0.056</td>
<td>-0.144</td>
<td>1</td>
<td>0.096</td>
<td>-0.008</td>
<td>-0.126</td>
</tr>
<tr>
<td>Sig (2-tailed)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IND_4</td>
<td>-0.173</td>
<td>0.012</td>
<td>0.435</td>
<td>0.608</td>
<td>0.085</td>
<td>0.262</td>
<td>0.059</td>
<td>0.025</td>
<td>0.588</td>
<td>0.146</td>
<td>0.094</td>
<td>0.223</td>
<td>0.345</td>
<td></td>
</tr>
<tr>
<td>Sig (2-tailed)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IND_5</td>
<td>-0.148</td>
<td>0.339***</td>
<td>-0.180*</td>
<td>0.077</td>
<td>0.004</td>
<td>-0.097</td>
<td>0.030</td>
<td>0.031</td>
<td>-0.111</td>
<td>0.098</td>
<td>-0.009</td>
<td>-0.162</td>
<td>0.098</td>
<td>0.011</td>
</tr>
<tr>
<td>Sig (2-tailed)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IND_6</td>
<td>0.173</td>
<td>0.012</td>
<td>0.435</td>
<td>0.608</td>
<td>0.085</td>
<td>0.262</td>
<td>0.059</td>
<td>0.025</td>
<td>0.588</td>
<td>0.146</td>
<td>0.094</td>
<td>0.223</td>
<td>0.345</td>
<td></td>
</tr>
</tbody>
</table>
| ** Significant at 0.01 level, * Significant at 0.05 level, * Significant at 0.1 level
Appendix 5:

Stage 1 regression - the relation between ownership concentration (TOP5) and firm characteristic full regression:

\[ \text{TOP5}_i = \alpha + \beta_1 \text{SOS}_i + \beta_2 \text{IND}_1 + \beta_3 \text{IND}_2 + \beta_4 \text{IND}_3 + \beta_5 \text{IND}_4 + \beta_6 \text{SIZE}_i + \epsilon_i \] (1)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Ownership concentration (TOP5)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Coeff</td>
</tr>
<tr>
<td>( R^2 )</td>
<td>0.120</td>
</tr>
<tr>
<td>Adjusted ( R^2 )</td>
<td>0.049</td>
</tr>
<tr>
<td>( F ) statistic</td>
<td>1.690</td>
</tr>
<tr>
<td>Significance</td>
<td>0.122</td>
</tr>
<tr>
<td>Intercept</td>
<td>-0.015</td>
</tr>
<tr>
<td>SOS</td>
<td>0.096</td>
</tr>
<tr>
<td>SIZE</td>
<td>0.192</td>
</tr>
<tr>
<td>( \text{IND}_1 )</td>
<td>-0.003</td>
</tr>
<tr>
<td>( \text{IND}_2 )</td>
<td>-0.032</td>
</tr>
<tr>
<td>( \text{IND}_3 )</td>
<td>-0.236</td>
</tr>
<tr>
<td>( \text{IND}_4 )</td>
<td>-0.053</td>
</tr>
<tr>
<td>( \text{IND}_5 )</td>
<td>-0.155</td>
</tr>
<tr>
<td>MAX VIF</td>
<td>1.253</td>
</tr>
</tbody>
</table>

The table shows standardized coefficients and \( t \) statistics for the respective independent variable in the model.

*** Significant at 0.01 level
** Significant at 0.05 level
* Significant at 0.1 level
Appendix 6: OLS-Estimates and 2SLS-Estimates

Column I - OLS regression-the relation between ownership concentration (TOP5) and firm performance.

\[
\text{Firm performance}_i = \alpha + \beta_1 \text{TOP5}_i + \beta_2 \text{IND}_1 + \beta_3 \text{IND}_2 + \beta_4 \text{IND}_3 + \beta_5 \text{IND}_4 + \beta_6 \text{IND}_5 + \beta_7 \text{SIZE}_i + \beta_8 \text{LEV}_i + \beta_9 \text{GROWTH}_i + \beta_{10} \text{BC}_i + \epsilon_i \tag{3}
\]

Column II-2SLS regression-the relation between ownership concentration (TOP5) and firm performance.

\[
\text{Firm performance}_i = \alpha + \beta_1 \text{Fit-ownership top 5}_i + \beta_2 \text{IND}_1 + \beta_3 \text{IND}_2 + \beta_4 \text{IND}_3 + \beta_5 \text{IND}_4 + \beta_6 \text{IND}_5 + \beta_7 \text{SIZE}_i + \beta_8 \text{LEV}_i + \beta_9 \text{GROWTH}_i + \beta_{10} \text{BC}_i + \epsilon_i \tag{2}
\]

<table>
<thead>
<tr>
<th>OLS-Estimates (I)</th>
<th>2SLS-Estimates(II)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tobin’s q</td>
<td>ROA</td>
</tr>
<tr>
<td>R²</td>
<td>Coeff</td>
</tr>
<tr>
<td>Adjusted R²</td>
<td>0.117</td>
</tr>
<tr>
<td>F statistic</td>
<td>2.251</td>
</tr>
<tr>
<td>Significance</td>
<td>0.022</td>
</tr>
<tr>
<td>Intercept</td>
<td>1.995</td>
</tr>
</tbody>
</table>

Variables:
- TOP5: \(0.278\) \(2.649\) *** \(0.171\) 1.908 *
- Fit-ownership top 5: \(-0.132\) -0.0332 0.652 2.007 **
- SIZE: \(-0.174\) -1.491 0.271 2.726 ***
- LEV: \(0.019\) 0.181 0.201 2.243 **
- Growth: \(0.072\) 0.674 -0.008 -0.088
- IND_1: \(0.145\) 1.373 -0.107 -1.185
- IND_2: \(0.042\) 0.402 -0.188 -2.133 **
- IND_3: \(-0.016\) -0.144 -0.323 -3.530 ***
- IND_4: \(0.018\) 0.175 0.268 3.092 ***
- IND_5: \(0.284\) 2.536 ** 0.125 1.313
- BC: \(0.087\) 0.794 0.043 0.461

Max VIF: 1.451 1.451

The table shows standardized coefficients and t statistics for the respective independent variable in the model.
- *** Significant at 0.01 level
- ** Significant at 0.05 level
- * Significant at 0.1 level
Appendix 7: Logistic regression predicting the association between ownership concentration (Concentrated dummy) and a number of explanatory variables

Concentrated\_\textit{i} = \alpha_i + \beta_1 \text{SOS}_i + \beta_2 \text{IND\_1}_i + \beta_3 \text{IND\_2}_i + \beta_4 \text{IND\_3}_i + \beta_5 \text{IND\_4}_i + \beta_6 \text{IND\_5}_i + \beta_7 \text{SIZE}_i + \varepsilon_i \quad (4)

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>S.E.</th>
<th>Wald</th>
<th>df</th>
<th>Sig.</th>
<th>Odds Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SOS</td>
<td>1.454</td>
<td>0.696</td>
<td>4.364</td>
<td>1</td>
<td>0.037**</td>
<td>4.282</td>
</tr>
<tr>
<td>SIZE</td>
<td>0.155</td>
<td>0.467</td>
<td>0.110</td>
<td>1</td>
<td>0.740</td>
<td>1.167</td>
</tr>
<tr>
<td>IND_1</td>
<td>-1.203</td>
<td>0.877</td>
<td>1.882</td>
<td>1</td>
<td>0.170</td>
<td>0.300</td>
</tr>
<tr>
<td>IND_2</td>
<td>-1.145</td>
<td>0.877</td>
<td>1.882</td>
<td>1</td>
<td>0.192</td>
<td>0.318</td>
</tr>
<tr>
<td>IND_3</td>
<td>-1.073</td>
<td>0.739</td>
<td>2.106</td>
<td>1</td>
<td>0.147</td>
<td>0.342</td>
</tr>
<tr>
<td>IND_4</td>
<td>0.130</td>
<td>0.789</td>
<td>0.027</td>
<td>1</td>
<td>0.869</td>
<td>1.139</td>
</tr>
<tr>
<td>IND_5</td>
<td>-0.906</td>
<td>1.213</td>
<td>0.557</td>
<td>1</td>
<td>0.455</td>
<td>0.404</td>
</tr>
<tr>
<td>Constant</td>
<td>-2.911</td>
<td>4.442</td>
<td>0.430</td>
<td>1</td>
<td>0.512</td>
<td>0.054</td>
</tr>
</tbody>
</table>

*** Significant at 0.01 level
** Significant at 0.05 level
* Significant at 0.1 level
Appendix 8: OLS-Estimates and 2SLS-Estimates

**Column I - OLS regression** - the relation between ownership concentration (Concentrated dummy) and firm performance.

\[
\text{Firm performance}_i = \alpha + \beta_1 \text{Concentrated}_i + \beta_2 \text{IND}_1 + \beta_3 \text{IND}_2 + \beta_4 \text{IND}_3 + \beta_5 \text{IND}_4 + \beta_6 \text{IND}_5 + \beta_7 \text{SIZE}_i + \beta_8 \text{LEV}_i + \beta_9 \text{GROWTH}_i + \beta_{10} \text{BC}_i + \epsilon_i \tag{6}
\]

**Column II - 2SLS regression** - the relation between ownership concentration (Concentrated dummy) and firm performance

\[
\text{Firm performance}_i = \alpha + \beta_1 \text{Fit-Concentrated}_i + \beta_2 \text{IND}_1 + \beta_3 \text{IND}_2 + \beta_4 \text{IND}_3 + \beta_5 \text{IND}_4 + \beta_6 \text{IND}_5 + \beta_7 \text{SIZE}_i + \beta_8 \text{LEV}_i + \beta_9 \text{GROWTH}_i + \beta_{10} \text{BC}_i + \epsilon_i \tag{5}
\]

<table>
<thead>
<tr>
<th>Variables</th>
<th>OLS-Estimates (I)</th>
<th>2SLS-Estimates(II)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Coeff</td>
<td>t-Stat</td>
</tr>
<tr>
<td><strong>Tobin’s q</strong></td>
<td>0.176</td>
<td>0.419</td>
</tr>
<tr>
<td>Adjusted R²</td>
<td>0.078</td>
<td>0.350</td>
</tr>
<tr>
<td><strong>F statistic</strong></td>
<td>1.799</td>
<td>6.051</td>
</tr>
<tr>
<td>Significance</td>
<td>0.073</td>
<td>0.000</td>
</tr>
<tr>
<td>Intercept</td>
<td>1.992</td>
<td><strong>2.639</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Variables</th>
<th>Coeff</th>
<th>t-Stat</th>
<th>Coeff</th>
<th>t-Stat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concentrated</td>
<td>0.188</td>
<td>1.777</td>
<td>* 0.135</td>
<td>1.518</td>
</tr>
<tr>
<td>Fit-concentrated</td>
<td>0.120</td>
<td>1.069</td>
<td>0.065</td>
<td>0.688</td>
</tr>
<tr>
<td>BC</td>
<td>-0.145</td>
<td>-1.228</td>
<td>0.286</td>
<td>2.883</td>
</tr>
<tr>
<td>SIZE</td>
<td>0.025</td>
<td>0.232</td>
<td>0.209</td>
<td>2.282</td>
</tr>
<tr>
<td>LEV</td>
<td>0.098</td>
<td>0.899</td>
<td>0.006</td>
<td>0.062</td>
</tr>
<tr>
<td>Growth</td>
<td>0.171</td>
<td>1.560</td>
<td>-0.088</td>
<td>-0.960</td>
</tr>
<tr>
<td>IND_1</td>
<td>0.055</td>
<td>0.513</td>
<td>-0.177</td>
<td>-1.972</td>
</tr>
<tr>
<td>IND_2</td>
<td>-0.054</td>
<td>-0.502</td>
<td>-0.344</td>
<td>-3.797</td>
</tr>
<tr>
<td>IND_3</td>
<td>0.005</td>
<td>0.046</td>
<td>0.260</td>
<td>2.966</td>
</tr>
<tr>
<td>IND_4</td>
<td>0.244</td>
<td>2.158</td>
<td><strong>0.102</strong></td>
<td>1.071</td>
</tr>
<tr>
<td>Max VIF</td>
<td>1.427</td>
<td></td>
<td>1.427</td>
<td></td>
</tr>
</tbody>
</table>

The table shows standardized coefficients and t statistics for the respective independent variable in the model.

*** Significant at 0.01 level
** Significant at 0.05 level
* Significant at 0.1 level
Appendix 9: Logistic regression predicting the association between ownership structure (SOS dummy) and a number of explanatory variables

\[ \text{SOS}_i = \alpha_i + \beta_1 \text{Concentrated}_i + \beta_2 \text{IND}_1 + \beta_3 \text{IND}_2 + \beta_4 \text{IND}_3 + \beta_5 \text{IND}_4 + \beta_6 \text{IND}_5 + \beta_7 \text{SIZE}_i + \epsilon_i \]  
(7)

<table>
<thead>
<tr>
<th>Omnibus Tests of Model Coefficients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chi-square</td>
</tr>
<tr>
<td>------------</td>
</tr>
<tr>
<td>Step 1</td>
</tr>
<tr>
<td>Block</td>
</tr>
<tr>
<td>Model</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Variable</th>
<th>B</th>
<th>S.E.</th>
<th>Wald</th>
<th>df</th>
<th>Sig.</th>
<th>Odds Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concentrated</td>
<td>1.429</td>
<td>0.698</td>
<td>4.194</td>
<td>1</td>
<td>0.041**</td>
<td>4.173</td>
</tr>
<tr>
<td>SIZE</td>
<td>1.488</td>
<td>0.651</td>
<td>5.215</td>
<td>1</td>
<td>0.022**</td>
<td>4.427</td>
</tr>
<tr>
<td>IND_1</td>
<td>0.742</td>
<td>0.858</td>
<td>0.748</td>
<td>1</td>
<td>0.387</td>
<td>2.100</td>
</tr>
<tr>
<td>IND_2</td>
<td>1.395</td>
<td>1.157</td>
<td>1.455</td>
<td>1</td>
<td>0.228</td>
<td>4.037</td>
</tr>
<tr>
<td>IND_3</td>
<td>-0.416</td>
<td>0.758</td>
<td>0.302</td>
<td>1</td>
<td>0.583</td>
<td>0.659</td>
</tr>
<tr>
<td>IND_4</td>
<td>0.657</td>
<td>1.170</td>
<td>0.315</td>
<td>1</td>
<td>0.574</td>
<td>1.929</td>
</tr>
<tr>
<td>IND_5</td>
<td>-0.078</td>
<td>1.094</td>
<td>0.005</td>
<td>1</td>
<td>0.943</td>
<td>0.925</td>
</tr>
<tr>
<td>Constant</td>
<td>-13.416</td>
<td>6.151</td>
<td>4.757</td>
<td>1</td>
<td>0.029</td>
<td>0.000</td>
</tr>
</tbody>
</table>

*** Significant at 0.01 level
** Significant at 0.05 level
* Significant at 0.1 level
Appendix 10: OLS-Estimates and 2SLS-Estimates

Column I - OLS regression - the relation between ownership structure (SOS) and firm performance

Firm performance\(_i\) = \(\alpha + \beta_1\text{SOS}_i + \beta_2\text{IND}_1 + \beta_3\text{IND}_2 + \beta_4\text{IND}_3 + \beta_5\text{IND}_4 + \beta_6\text{IND}_5 + \beta_7\text{SIZE}_i + \beta_8\text{LEV}_i + \beta_9\text{GROWTH}_i + \beta_{10}\text{BC}_i + \varepsilon_i\)  (9)

Column II - 2SLS regression - the relation between ownership structure (SOS) and firm performance

Firm performance\(_i\) = \(\alpha + \beta_1\text{Fit-SOS}_i + \beta_2\text{IND}_1 + \beta_3\text{IND}_2 + \beta_4\text{IND}_3 + \beta_5\text{IND}_4 + \beta_6\text{IND}_5 + \beta_7\text{SIZE}_i + \beta_8\text{LEV}_i + \beta_9\text{GROWTH}_i + \beta_{10}\text{BC}_i + \varepsilon_i\)  (8)

<table>
<thead>
<tr>
<th>OLS-Estimates (I)</th>
<th>2SLS-Estimates (II)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tobin's q</td>
<td>ROA</td>
</tr>
<tr>
<td>R(^2)</td>
<td>Coeff</td>
</tr>
<tr>
<td>Adjusted R(^2)</td>
<td>0.147</td>
</tr>
<tr>
<td>F statistic</td>
<td>1.443</td>
</tr>
<tr>
<td>Significance</td>
<td>0.176</td>
</tr>
<tr>
<td>Intercept</td>
<td>1.853</td>
</tr>
</tbody>
</table>

Variables:
- SOS
- Fit-SOS
- BC
- SIZE
- LEV
- Growth
- IND_1
- IND_2
- IND_3
- IND_4
- IND_5

Max VIF 1.506

The table shows standardized coefficients and \(t\) statistics for the respective independent variable in the model.

*** Significant at 0.01 level
** Significant at 0.05 level
* Significant at 0.1 level