The Relationship between Ownership Structure and Corporate Performance: An Empirical Study Based on Listed Companies of Shenzhen Stock Exchange

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Abstract

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This paper studies the relationship between ownership structure and corporate performance. After the reform of the Chinese financial system, ownership structure has become an important factor related to corporate performance. The study uses panel data regression analysis method to investigate the relationship between ownership structure and performance. In particular, this research analyzes whether firm performance is positively correlated with the largest share stockholder and the largest ten shareholders. It also analyzes the effect of the legal person shares and the index Z on firm performance. This study uses A-share companies of Shenzhen Stock exchange in 2012.

Data: August 26, 2013

Table of Contents

Chapter 1 Introduction

1.1 Background

As Berls and Means (1932) study the relationship between stock ownership concentration and firm performance, relationships between ownership structure and firm performance have become a popular academic study. Over the past three decades, relationships between ownership structure and corporate performance can be separated into three different categories. First of all, Jensen & Mechkling (1976), and Shleifer, & Vishny (1986) find that the concentrated ownership and firm value have a positive relationship. Secondly, Barhram (2008) provides evidence that high concentrated ownership has a negative effect on firm performance. Finally, Mork, Shlerifer and Vishny (1988) indicate that the relationship between stock ownership concentration and firm performance is nonlinear.

Berl and Means (1932) define corporate governance as a reaction to the agency problems resulting from the separation of ownership and operation. Some studies show that because of the separation of ownership and operation, many issues have been exposed, such as stock market manipulation, tax evasion, false financial reporting and fraudulent dealing. Corporate governance is designed as an effective mechanism to reduce the issues caused by the separation of ownership and operation. Although corporate governance mechanisms alleviate agency problems, the efficiency of corporate governance mechanism could be different due to the different ownership structures. For example, shareholders with a low

percentage of shareholdings have little or no incentives to monitor company management. They are willing to take a free ride instead of exerting monitoring behavior. On the other hand, shareholders with a high percentage of shareholdings have more incentives to monitor management because their share incomes depend on firm performance. Hence, understanding of the ownership-performance relationship could improve the efficiency of corporate governance and increase firm values.

1.2 Purpose of Study

Establishing efficient corporate governance has a positive effect on the modern market economy and the healthy movement of the security market. Corporate governance is an indispensable ingredient for sustainable growth and development in any economy and financial markets. It is not only relative to an individual or a company, but also relative to the stability of the financial system, economic growth, and the allocation of global capital. It is essential to study corporate governance of listed companies to see how this affects firm performance.

A-share companies of Shenzhen stock exchange in Guangdong province are used to investigate the effect of ownership structure on corporate performance. The ownership structure has two main dimensions: identity of owner and ownership concentration. The identity of Shares can be classified into four categories: the state shares, the legal person shares, the employee shares, and the tradable shares (Ping 2004). The ownership

concentration is defined as the percentage of shares held by shareholders. There are two regressive equations used to test the four different hypotheses in chapter 3. The expected outcome is to see if the hypotheses are consistent with theoretical analysis.

1.3 Need for Study

In China, shares are classified as state shares, legal person shares, employee shares and tradable shares. This study attempts to investigate the relationship between the legal person shares and firm performance. The state shares and the legal person shares are not tradable in either Shenzhen stock exchange or Shanghai stock exchange. The state shares are controlled by the central government and local governments. The legal person shares are owned by the domestic institutions. The employee shares are designed as an incentive for workers and managers of a company (Xu & Wang, 1999).

The tradable shares can be classified into tradable A-shares, tradable B-shares and H-shares. The tradable A-shares are only traded by domestic investors and domestic financial institutions. They cannot be traded in any foreign stock markets. The tradable B-shares are offered to foreign investors and some domestic investors and institutions. Additionally, the H-shares are listed on HongKong stock exchange (Xu & Wang, 1999).

1.4 Statement of Problem

This paper is designed to examine four hypotheses. First, the legal person share is

positively related to corporate performance. Second, the fraction of shares owned by the largest shareholder is positively related to firm performance. Third, the fraction of shares owned by the top 10 shareholders is positively related to firm performance. Fourth, Index Z, which is referred as a fraction of the largest shareholdings and the second largest shareholdings, has negative impact on firm performance.

Chapter 2 Literature Review

Empirical studies so far have presented various results related to the relationship between ownership structure and corporate performance. Berl and Means (1932) introduced the implications of the separation of ownership and operation. They provided evidence about the impact of ownership structure on the efficiency of corporate governance. Later, Jensen and Meckling (1976) studied the impact of ownership structure on firm performance. In conclusion, scholars have studied the effect of concentrated ownership on firm performance and the relationship between the identity of shareholders and firm performance. They find that that the relationship between ownership structure and firm performance could be positive, negative, or nonlinear.

2.1 Positive effects of the concentration of ownership

Jensen and Mechkling (1976) explore how the firm value and concentrated ownership has a positive correlation. In their agency theory, it shows the solution of eliminating the agency relationship is to reduce the agency cost between the stockholders and the managers. They argue that the shareholder can provide appropriate incentives for the manager in order to prohibit the aberrant activities of the manager. Giving a proportion of shares to managers can guarantee that managers will make certain decisions which would not harm the shareholders.

Shleifer and Vishny (1986) indicate that the greater percentage of ownership large shareholders have the more profits can gain. They think that when large shareholders own more shares, they are willing to monitor the operations of companies. Claessens, Djankov and Lang (1999) also find the concentrated ownership and firm value have a positive relationship.

2.2 Negative effects of the concentration of ownership

Although large shareholders have the power to limit the aberrant activities of the managers, some studies show that because of the concentration of ownership, the large shareholders seriously interfere with the management of a company. As a result, the motivation of managers is lower and finally the firm value will decrease. Bahram (2008) uses Tobin Q and ROE as dependent variables to examine 50 Iranian listed companies of Tehran stock exchange from the period of 2001-2003. The outcome of analysis shows that the dispersed ownership positively affects the corporate performance.

2.3 A nonlinear relationship between concentrated ownership and firm performance

Mork, Shlerifer and Vishny (1988) use Tobin Q as a firm's performance indicator to examine how the relationship between concentrated ownership and firm performance is nonlinear. The study indicates that when the board shareholdings is located at 0~5%, Tobin Q and board shareholdings have a positive relation; when the board shareholdings is

located at 5~25%, the Tobin Q and board shareholdings have a negative relation; when the board shareholdings is located at 25~100%, the board shareholding and the Tobin Q become positive again.

A sample of 1173 firms for 1976 and 1093 firms for 1986 is used to investigate the relation between Tobin Q and ownership structure. The outcome implies that the Tobin Q and the structure of equity ownership are positively relative until insider ownership reaches 40% to 50%. After insider ownership is beyond 40~50%, the Tobin Q and the structure of equity ownership is negative relation (Mork, Shleifer & Vishny, 1988).

Additionally, Short and Keasey (1999) provide evidence of a nonlinear relationship between manager shareholding and firm performance. Their study explores that as the percentage of manager shareholding is below 15.58% or above 41.84%, firm performance and manager shareholding have a positive relationship; as the percentage of manager shareholding is located at 15.8~41.84%, firm performance and manager shareholding have a negative relationship.

Summary

All theoretical and empirical studies do not have a consistent result for the relationship between corporate performance and concentrated ownership. The previous studies demonstrate that the concentration of ownership and corporate performance have a

positive, negative or nonlinear relationship. Different levels of ownership concentration have different impacts on firm performance. Generally, the stock ownership concentration can be divided into three categories such as high concentration, high decentralization and moderate concentration (Xiong 2008).

The high concentration means that a majority of shares are held by one stockholder or several big stockholders. Other shareholders have a minority of shares. The absolute controlling shareholders have power to control the operation of a company, and to influence company policy and regulation. The high decentralization means that there are no big shareholders. The percentage of shareholdings of individual shareholder is small, and each shareholder has limited influences on corporate governance. Under this situation, the largest shareholder is not able to control over the company. A disadvantage of the dispersed ownership is that the efficiency of corporate management is low. Any important decisions are made by a meeting of shareholders, so the agency cost is increased. Moreover, moderate concentration is designed to balance the power of large shareholders. A disadvantage of moderate concentration is that the largest stockholder cannot control over a company and cannot make decisions based on his or her own profit maximization. (Xiong 2008).

In order to solve the problems of corporate governance, an ownership concentration which is formed by several large shareholders and some small shareholders is considered as a

moderate structure of ownership. The advantages of this ownership structure are clarified

as follows. First of all, the large shareholders have power to control corporate management

and are able to discover existing problems in a company. They have motive and ability to

monitor and restrict the actives of the managers. Secondly, because large shareholders keep

in balance mutually, the issues of insider control can be avoided. Finally, several large

shareholders also can solve the issue of free ride of minority stockholders caused by the

dispersion of ownership (Xiong, 2008).

Chapter 3 Methodology

This paper focuses only on listed firms on Shenzhen stock exchange that issue only A-shares. Based on the previous literatures, when ownership concentrated ratio is high, big shareholders are benefits from the share income and private income. They are motive to monitor the activities of managers and collect company information. As a result, more revenue is generated by a company and big shareholders have more income. According to the previous studies, different level of ownership concentrations will have different impacts on firm performance. Berl & Means (1932) and Jensen & Meckling (1976) demonstrate the high concentrated ownership have positive impact on firm performance Therefore, the study is aimed to investigate the relationship between the ownership structure and corporate performance, as well as the relationship between legal shares and firm performance.

3.1 Sample selection

There are about 1397 listed companies trading their shares on Shenzhen stock exchange in year 2012. In order to keep data validation and pertinence, few steps have been taken as follow: (1) excluding the ST type companies because ST type companies' business performance is bad or have been specially treated (Wang 2011). (2) Excluding companies that issue not only A-shares but also issue other types of shares such as B-shares. (3) Eliminating the companies whose time to market is beyond year 2012.

Finally, there are 266 companies left for the study. The dataset used for this study is taken from Shenzhen stock exchange (www.szse.cn) and a Chinese web site called Hexun which provides financial reports and information of listed companies in China (www.Hexun.com).

3.2 Variables description

The variables used for the study are the dependent variables, independent variables and control variables. Most scholars use Tobin Q as the index of corporate performance. However, the state shares and the legal person shares are not tradable in China's stock market. Moreover, most shares are not able to flow into secondary market. Thus, the efficiency of the stock market is low. Using Tobin Q as the index of corporate performance is no proper for the China security market (Xiong, 2008).

The dependent variables, price to book ratio (P/B) and return on equity (ROE), are used as the index of a firm's performance. The independent variables are the legal person shares (LS) and the ownership concentration ratio (CR). The ownership concentration is measured by the percentage of shares held by stockowners. The concentration ratio CR1 and CR10 respectively represent two different percentages of shareholdings by the shareholders. In addition, the index Z is a concentration ratio between the largest shareholder and the second largest shareholder. When the index Z is large, it indicates that

the largest shareholder has more control power than the second largest shareholder. As the index Z gets larger, the board is dominated by the largest shareholder. The control variables are the natural logarithm of total assets (SZ), leverage (LEV). The calculations of each variable are shown in Table 1 in appendix A.

3.3 Models

In this paper, there are four hypothesizes that will be tested by two regressive functions.

1) The legal person share ratio is positively related to corporate performance.

The simulation model is

$$ROE = \alpha + \beta_1 LS + \beta_2 SZ + \beta_3 LEV + +\varepsilon \quad (3.1)$$

Where

ROE is the index of the performance of firms

LS is the legal person share proportion

SZ is the natural logarithm of total assets

LEV is the leverage ratio (D/A)

ε is the error term

2) The percentage of shareholdings of the largest shareholder is positively related to firm performance.

3) The sum of percentage of shareholdings of the 10 largest shareholders is positively related to firm performance.

4) The index Z is negatively relate to firm performance

The simulation model is

$$ROE = \alpha + \beta_1 CR_1 (Z \text{ or } CR_{10}) + \beta_2 SZ + \beta_3 LEV + \varepsilon \quad (3.2)$$

Where

ROE is the index of the performance of firms

CR1 is the percentage of shareholdings of the largest shareholder

CR10 is the sum of percentage of shareholdings of the largest 10 shareholders

ε is the error term

SZ is the natural logarithm of total assets

LEV is the leverage ratio (D/A)

3.4 Descriptive Statistics

3.4.1 Variable descriptive statistics

Table 2   Variables descriptive statistics, 2012

Variable	Maximum	Minimum	Mean	Std. Deviation	Observation
LS (%)	0.79	0	0.03	0.11	266
CR1 (%)	78.97	8.29	36.31	15.08	266
CR10 (%)	90.02	16.75	61.87	14.77	266
Z	241.81	1	9.53	20.69	266
LEV	94.78	2.39	35.72	21.81	266
SZ	25.4	19.08	21.52	1.14	266
ROE	47.47	-35.78	6.99	7.73	266

● All values calculated by the statistic software, Stata.

For 2012, there are total 28 listed companies that have the legal person shares. The proportion of the companies that have the legal person shares is 10.52%. This indicates that the participation of the legal shares is low. The standard deviation of LS is very small, so the difference of having the legal shares between each company is small.

Moreover, the mean value of the percentage of shareholdings of the largest shareholder is 36.31. There are 21% companies whose the percentage of shareholdings of the largest shareholder is larger than 50%. Also, the mean value of index Z is 9.53. The result shows

that the largest shareholder has a power to influence board decisions, since the ratio of shareholdings between largest shareholder and the second largest shareholder is large.

The mean value of the sum of percentage of shareholdings of the largest ten shareholders is 61.87%. It indicates that the top 10 shareholders have absolute control power over company. When a stock ownership concentration is high, there is an agency problem between the top 10 shareholders and the minority shareholders. As a result, controlling shareholders may against the interests of minority shareholders because large shareholders can easily control the decision based on their profit maximization. The mean value of LEV is 35.72%, so the financial condition of each company is not risk.

Chapter 4 Results and Analysis

4.1 Pearson's correlation coefficients between related variables.

Table 3　The correlation coefficients of variables, 2012

	CR1	CR10	LEV	ROE	LS	SZ	Z
CR1	1.0000						
CR10	0.5666* 0.0000	1.0000					
LEV	0.0234 0.7041	−0.2308* 0.0001	1.0000				
ROE	0.1626* 0.0079	0.1739* 0.0044	0.1154 0.0602	1.0000			
LS	0.1239* 0.0435	0.0266 0.6654	0.1919* 0.0017	0.0372 0.5454	1.0000		
SZ	0.1474* 0.0161	−0.0077 0.9009	0.5929* 0.0000	0.1892* 0.0019	0.2910* 0.0000	1.0000	
Z	0.3757* 0.0000	−0.0756 0.2189	0.1725* 0.0048	0.1244* 0.0427	0.0502 0.4153	0.1386* 0.0238	1.0000

- 5% significance level for displaying with a star.

From Table 3, the upper numbers denote correlation coefficients of each variable. The numbers below each correlation coefficient are the significance value. The outcome of analysis shows there is not significant linear relationship between LS and ROE because 0.0372 is smaller than 0.5454.

However, CR1 and CR10 have significant positive correlations with ROE. The index Z also has significant positive correlations with ROE. There is not significant correlation between ROE and LEV.

4.2 Hypothesis one: The relationship between the legal shares and firm performance

Figure 1 The regression result of LS and ROE

Source	SS	df	MS		Number of obs =	266
					F(3, 262) =	3.28
Model	572.771893	3	190.923964		Prob > F =	0.0216
Residual	15269.5007	262	58.280537		R-squared =	0.0362
					Adj R-squared =	0.0251
Total	15842.2726	265	59.7821607		Root MSE =	7.6342

ROE	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
LS	-1.373132	4.449418	-0.31	0.758	-10.1343	7.388037
SZ	1.302239	.5253131	2.48	0.014	.267866	2.336612
LEV	.0019587	.0267138	0.07	0.942	-.0506423	.0545598
_cons	-21.0643	10.76705	-1.96	0.051	-42.26527	.1366711

The regression result shows that the legal shares have no impact on firm performance. The first hypothesis, the legal person shares ratio is positively related to corporate performance, is failed. According to the previous theoretical analysis, the owners of the legal person shares have incentives to participate corporate governance. Generally, the legal person shares have a positive relation with firm performance. However, the empirical analysis does not support this hypothesis. The possible reasons may be due to the average value of LS is low. There are only 28 observations having the legal person shares in a total of 266 observations. These small observations cannot represent the fact that the relationship between the legal person shares and firm performance.

4.3 Hypothesis two: The percentage of shareholdings of the largest shareholder is positively related to firm performance.

Figure 2 The regression result of CR1 and ROE

```
   Source |       SS           df       MS            Number of obs  =      266
----------+----------------------------------         F(  3,    262) =     5.04
    Model | 864.297927         3   288.099309         Prob > F       =   0.0021
 Residual | 14977.9747       262   57.1678422         R-squared      =   0.0546
----------+----------------------------------         Adj R-squared  =   0.0437
    Total | 15842.2726       265   59.7821607         Root MSE       =   7.5609

------------------------------------------------------------------------------
      ROE |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
----------+-------------------------------------------------------------------
       SZ |   1.071418   .5141582     2.08   0.038      .05901    2.083826
      LEV |   .0066145   .0265351     0.25   0.803    -.0456347    .0588636
      CR1 |   .0711984   .0312329     2.28   0.023      .009699    .1326978
    _cons |  -18.88839   10.40714    -1.81   0.071    -39.38066    1.603887
------------------------------------------------------------------------------
```

The figure 2 shows that the percentage of shareholdings of the largest shareholder is positively related to firm performance. The CR1 has a significant positive correlation with ROE. Based on the theoretical analysis, the largest shareholder is the major investor. The largest shareholder has power to control corporate management and discover existing problems in a company. The largest shareholder has motive and ability to monitor and restrict the aberrant actives of the managers. Since the firm performance directly affects the share income of the large shareholders, the large shareholders have also motive to enforce profit maximization. The result is consistent with the second hypothesis which the relationship between CR1 and firm performance is positive.

4.4 Hypothesis three: The sum of percentage of shareholdings of the 10 largest shareholders is positively related to firm performance.

Figure 3 The regression result of CR10 and ROE

```
   Source |       SS           df       MS            Number of obs =      266
----------+----------------------------------        F(  3,    262) =     6.53
    Model | 1102.85375         3   367.617916        Prob > F       =   0.0003
 Residual | 14739.4188       262   56.2573238        R-squared      =   0.0696
----------+----------------------------------        Adj R-squared  =   0.0590
    Total | 15842.2726       265   59.7821607        Root MSE       =   7.5005

-----------------------------------------------------------------------------
      ROE |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
----------+------------------------------------------------------------------
     CR10 |    .100326   .0325139     3.09   0.002     .0363041    .1643479
       SZ |   1.006448   .5099567     1.97   0.049     .0023132    2.010583
      LEV |   .0254558   .0273392     0.93   0.353    -.0283768    .0792883
    _cons |  -21.78549    10.3163    -2.11   0.036     -42.0989   -1.472076
-----------------------------------------------------------------------------
```

From figure 3, the CR10 has a positive significant correlation with ROE. The regression result supports the hypothesis that the sum of percentage of shareholdings of the 10 largest shareholders is positively related to firm performance. In general, when the combined holding of largest 10 sharers is high, the advantages of this kind of ownership structure are clarified as follows. First of all, several large shareholders have positive effects on corporate management and corporate governance. In the internal governance, they are able to restrict private benefits and reduce information asymmetry (Najah, 2008). Secondly, because large shareholders keep in balance mutually, the issues of insider control can be avoided. Finally, several large shareholders also avoid the phenomenon of free ride of minority stockholders caused by the dispersion of ownership.

4.5 Hypothesis four: The index Z is negatively relate to firm performance

Figure 4 The regression result of Index Z and ROE

Source	SS	df	MS		Number of obs =	266
					F(3, 262) =	4.18
Model	723.39802	3	241.132673		Prob > F =	0.0065
Residual	15118.8746	262	57.7056281		R-squared =	0.0457
					Adj R-squared =	0.0347
Total	15842.2726	265	59.7821607		Root MSE =	7.5964

ROE	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
Z	.03771	.0229223	1.65	0.101	-.0074253	.0828454
LEV	-.0032352	.0267456	-0.12	0.904	-.0558989	.0494285
SZ	1.227544	.5099435	2.41	0.017	.2234346	2.231653
_cons	-19.67007	10.44441	-1.88	0.061	-40.23575	.8956077

Form the figure 4, the index Z is not significant. The p value is larger than the significant level 5%. The hypothesis is failed. As argue previously, if the index Z is high, the difference of control power between the first and second largest shareholder is bigger. Therefore, the largest shareholder may manipulate board decisions in order to benefit his or her profit maximization. If the decisions are made by the largest shareholder without taking others' suggestions, the possibility of making mistake is higher. Thus, the firm performance may be reduced.

Chapter 5 Conclusion

The relationship between ownership structure and corporate performance is various. Scholars so far do not have a consistent result for the relationship between corporate performance and ownership structure. Generally, previous studies conclude that the relationship between ownership structure and corporate performance could be positive, negative, non-linear or even they do not have a relationship between each other. In this paper, the outcome of the analysis shows that the legal person shares has not effect on corporate performance; the percentage of shareholding of the largest shareholder is positively related to corporate performance; the sum of the percentage of shareholdings of the largest ten shareholders is also positively related to corporate performance; the relationship between the index z and corporate performance is failed to define.

Appendix A

Table 1   Calculations of each variable

Variables	Calculation
ROE	Net income / shareholder equity
CR1	Shareholding of the largest shareholder / total shareholdings
CR10	Sum of shareholdings of the largest 10 shareholders / total shareholdings
LEV	Total debts / total assets
SZ	The natural logarithm of total assets
LS	The legal shares / total shareholdings

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