Ownership Volatility and Firm Performance: Evidence from the Korean Firms

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Abstract

This paper investigates the relationship between ownership volatility and firm performance in Korea. Using the five year ownership volatility variables from 2005 till 2009, the paper shows a positive relationship between foreign ownership volatility and the firm performance of sample firms in Korea. Further, we perform a factor analysis out of ownership volatility variables and investigate the relationship between the common factors of ownership volatility variables and the firm performance of sample firms in Korea. We find a positive relationship between the common factors and the firm performance. The paper contributes to the prior literature by investigating the role of ownership volatility on firm performance.

1. Introduction

It has been an established theory since Berle and Means (1932) that ownership structure is well distributed to minority shareholders even though managers have the control of a firm. However, many studies have shown that the concentration of ownership increased in countries like Germany, Japan, Italy and even in the United States since 1980's.

The effect of ownership structure on corporate governance is that the increased ownership of managers leads to reduced incentive for wealth transfer and more incentives for majority shareholders than minority shareholders to monitor the managers. Specifically, the increase in managerial ownership causes reduction in conflict with outside large shareholders and creates higher firm performance (Berle and Means, 1932; Jensen and Meckling, 1976). The increase in managerial ownership makes managers be in a definite position and managers sacrifice the value of outside shareholders (Fama, 1980; Demsetz, 1983). Grossman and Hart (1988) and Harris and Raviv (1988) perform a study on the best fitted cash flow right and control right of firms. Shleifer and Vishney (1986) and Burkart, Gromb and Panunzi (1997) study the costs and benefits of majority shareholders.

Demsetz and Lehn (1985) and Morck, Shleifer and Vishiny (1988) show the relationship between the ownership structure of a firm and firm performance. Morck, Shleifer and Vishiny (1988) find that the relationship between ownership and Tobin's Q or Accounting rate of return is nonlinear. Also, they find that firms managed by family have lower Tobin's Q than firms managed by others.

Kang and Stulz (1996) tried to find the relationship between the variability of foreign investors' ownership and investment by using the Japanese firm data. This paper shows a so-called 'home-bias' phenomenon by investigating the ownership variability of foreign investors in Japan from 1975 to 1991. The paper finds that foreign investors usually invested in large firms, and sought for the portfolio with higher volatility than the market portfolio in Japan. So, they did not earn higher return but monthly return volatility was higher than that of the market portfolio in Japan.

La Porta, Lopez and Shleifer (1999) investigate the corporate ownership around the world. The paper uses ownership data of large firms in 27 leading countries to identify the ultimate dominant shareholder. The paper finds that firms in countries with high level of shareholder protection are typically dominated by their family or the country they are in. Stock market control by financial institutions rarely occurs in these countries. Majority shareholders have more control rights than cash flow rights, and this is realized by pyramidal governance structure, participation in the management, cross shareholdings and tunneling problem. It is the opposite with Berle and Means (1932) who asserted the universality of the widely held corporation

Holderness, Kroszner and Sheehan (1999) show that officers and directors of public firms have tended to increase their ownership in recent years in spite of the separation of ownership and management (Berle and Means, 1932). But, increased managerial ownership does not necessarily mean the substitution of other corporate governance mechanisms. They argue that

lower volatility and greater hedging opportunity due to the development of the financial market seem to clearly explain the increased managerial ownership.

More recently, Burkart, Panunzi, and Shleifer (2002) and Anderson and Reeb (2003) find that firms more involvement of family firms lead to better financial performance. Using listed companies in Germany, Andres (2008) finds that firms with family ownership perform better than any other type of firms within their sample. Isakova and Weisskopf (2014) finds that family firms outperform widely-held corporation and companies with non-family blockholders using Swiss listed companies from 2003 till 2010. Cornett, Marcus, Saunders and Tehranian (2007) find that higher institutional ownership leads to better operating performance.

2. Hypothesis

From related literature, we can conclude that there is an effect of ownership structure on firm performance as a corporate governance mechanism. Also, different countries have different ownership structure, and the effect of ownership structure on firm performance is different around the world. However, we cannot find much literature of the effect of ownership volatility on firm performance. Also, we cannot find much literature of ownership volatility during financial crisis and its effect on firm performance. Elyasiani and Jia (2010) finds a positive relationship between firm performance and institutional ownership stability. Also, Li, Nguyen, Pham and Wei (2011) find a negative relationship between large foreign ownership and stock return volatility using 31 emerging markets. However, there is no paper which addresses the effect of ownership volatility on firm performance. So, using Korean data, we examine the relationship between ownership volatility and firm performance. The reason why we use Korean data is because Korean firms are sensitive to the trading volume of foreign investors, domestic institutions and domestic big individuals.   For example, Choe, Chung and Lee (2008) find that foreign investors, domestic institutions and domestic big individuals play dominant roles in stock price movement from 1997 till 2000. Especially, the role of domestic big individuals becomes distinct in later years. More recent report by Korea Exchange show that firms with increased foreign and institutional ownership realize higher operating performance than that of average Korean Exchange Firms from 2009 till 2011. So, we will focus on the ownership volatility, instead of trading volume, of these entities and its effect on firm performance in this paper.

Hypothesis: *There is a positive relationship between ownership volatility and firm performance for Korean Exchange Listed Firms.*

3. Data and Variable Construction

We collect data on a sample of firms from the Korea Investor's Network for Disclosure System (KINDS) spanning from 2005 till 2009. Ownership data for controlling shareholders or second largest shareholders as well as yearly industry classifications are obtained from the TS2000 on-line Database. We hand collect foreign and institutional ownership data from the Korea information service website (http://www.kisinfo.com/KoreanStockMarket/index.htm).

After we collect the ownership data, we create the ownership volatility variables by calculating the standard deviation of ownership from 2005 till 2009 as follows.

$$Managerv = \sqrt{\frac{\sum_{i=2005}^{2009} manager_i - \overline{manager}}{(n-1)}} \qquad (1)$$

$$Institutionv = \sqrt{\frac{\sum_{i=2005}^{2009} institution_i - \overline{institution}}{(n-1)}} \qquad (2)$$

$$Foreignv = \sqrt{\frac{\sum_{i=2005}^{2009} foreign_i - \overline{foreign}}{(n-1)}} \qquad (3)$$

where *managerv*, *institutionv*, and *foreignv* represents the volatility of managerial ownership, institutional ownership and foreign ownership, respectively. Also, $\overline{manager}$, $\overline{institution}$, and $\overline{foreign}$ represents the average value of managerial ownership, institutional ownership and foreign ownership, respectively. Financial information is retrieved from Fn DataGuide Database. They are the number of shares outstanding, market price per share, total assets, total debt and growth rate in sales. After we obtain data from the database, we construct size, leverage and growth variables as follows.

$$Tobinq = \frac{The\,number\,of\,shares\,outstanding * market\,price\,of\,a\,share + total\,debt}{total\,assets} \text{ at t} \qquad (4)$$

$$Size = \log(\text{total assets}) \text{ at t-1} \qquad (5)$$

$$Leverage = \text{total debt/total assets at t-1} \qquad (6)$$

$$Growth = \text{growth rate in sales at t-1} \qquad (7)$$

where tobinq, log and t-1 represents the Tobin's Q measure, the natural logarithm and one year before Tobin's Q measure date. Since we measure Tobin's Q at the end of year 2009, size, leverage and growth variables are measured based on the year 2008 data. Final sample consists of 703 observations after we exclude missing observations.

4. Empirical Results

Table 1. Descriptive Statistics

Variable	N	Mean	Median	Stdev	Minimum	Maximum
tobinq	642	1.02	0.88	0.56	0.35	7.33
managerv	685	0.04	0.02	0.06	0.00	0.64
institutionv	685	0.03	0.00	0.04	0.00	0.34
foreignv	685	0.02	0.00	0.03	0.00	0.40
size	703	26.66	26.32	1.66	22.58	32.27
leverage	703	0.48	0.48	0.24	0.01	2.03
growth	688	0.15	0.12	0.36	-0.96	2.58

Table 1 reports the previous five year ownership volatility and firm characteristics of Korean Exchange listed firm sample. The sample period is from 2005 till 2009 for ownership volatility variables. We use the year 2009 sample for tobinq. Finally, the sample period for size, lever and growth is 2008. Previous five year ownership volatility is highest for managerial ownership (mean=0.04, median=0.02) and lowest for foreign ownership (mean=0.02, median=0). Tobin's Q is close to 1, on average, but its median value is less than 1. Size, which is measured by previous year's log of total asset, is 26.66, on average. It is translated into 378.70 billion Korean won ($315.56 million using the exchange rate of 1,200 Korean won/$). The median value of size is 26.32. It is translated into 269.55 billion Korean won ($224.62 million using the exchange rate of 1,200 Korean won/$). Leverage, which is measured by previous year's total debt-to-total assets ratio, is 0.48 or 48 percent, on average. Growth, which is measured by previous year's growth rate in sales, is 0.15 or 15 percent, on average. The median value of growth is 0.12 or 12 percent.

Table 2. OLS regressions of ownership volatility on Tobin's Q

Dependent	tobinq			
Intercept	-0.05	-0.03	0.08	0.16
	(-0.12)	(-0.08)	(0.19)	(0.39)
managerv	-0.16			-0.26
	(-0.41)			(-0.68)
institutionv		0.80		0.76
		(1.53)		(1.44)
foreignv			1.44	1.36
			(2.07)**	(1.96)**
size	0.04	0.04	0.03	0.03
	(2.54)**	(2.45)**	(2.10)**	(1.83)*
leverage	0.12	0.12	0.13	0.15
	(1.09)	(1.10)	(1.24)	(1.35)
growth	0.06	0.06	0.07	0.06
	(0.83)	(0.89)	(0.97)	(0.81)
N	703	703	703	703
R-squared	0.02	0.02	0.02	0.03

We set up an ordinary least squares (OLS) regression model as follows.

$$Tobinq_i = \beta_0 + \beta_1 * managerv_i + \beta_2 * institutio\,nv_i + \beta_3 * foreignv_i$$
$$+ \beta_4 * size_i + \beta_5 * leverage_i + \beta_6 * growth_i + e_i \tag{8}$$

where subscript i represent a firm within our sample, β represents regression coefficients and e represents an error term. Table 2 reports the OLS regression results of ownership volatility on Tobin's Q after controlling for firm characteristic variables. The dependent variable is Tobin's Q. The independent variables are managerial, institutional and foreign ownership volatility after controlling for log of total assets, debt-to-assets ratio and growth rates in sales. The results partially support our hypothesis. The positive coefficient of foreign ownership volatility suggests that firms with high foreign ownership volatility tend to have higher profitability, measured by Tobin's Q. We have consistently positive coefficients from this variable with or without managerial and institutional ownership volatility variables. However, we do not find any statistically significant relationship between managerial or institutional ownership volatility and Tobin's Q. For control variables, we have consistent positive relationships between log of total assets and Tobin's Q across all the regression results in Table 2.

Table 3.

Panel A: Factor Pattern Matrix obtained from Principal Component Analysis

	Factor1	Factor2
managerv	0.24	-0.12
institutionv	0.34	0.006
foreignv	0.19	0.14

Panel B: Variance Explained by Each Factor

Factor1	Factor2
0.2118	0.0359

Table 3 reports the factor pattern matrix and the variance explained by each factor from the principal component analysis. The analysis captures the common variation among ownership volatility variables which is not captured by individual variable. Two factors have been obtained from the minimum eigenvalue criterion. From panel A, we can see the unique variance contribution of each factor on the variance of ownership volatility variables. *Managerv* has a loading of 0.24 in Factor 1 and a loading of -0.12 in Factor 2. *Instiutionv* has a loading of 0.34 in Factor 1 and a loading of 0.006 in Factor 2. *Foreignv* has a loading of 0.19 in Factor 1 and a loading of 0.14 in Factor 2. From panel B, the first factor accounts for 21.18 percent from the total variation. The second factor accounts for 3.59 percent from the total variation. Two factors account for the total of 24.77 percent of the total variation of ownership volatility variables.

Table 4. OLS Regressions of factors on Tobin's Q

Dependent Variable: Tobin's Q							
Intercept	Factor1	Factor2	Size	Leverage	Growth	N	Adjusted R^2
0.19	0.09	0.24	0.03	0.15	0.06	703	0.02
(0.46)	(1.66)*	(1.94)**	(1.86)*	(1.33)	(0.86)		
Standardized Coefficient Estimates							
Intercept	Factor1	Factor2	Size		Leverage	Growth	
0	0.0662	0.0808	0.0778		0.0547	0.0350	

The OLS regression results of factors on Tobin's Q are summarized in Table 4. As we can see from the regression results, we find positive relationships between two factors and Tobin's Q after controlling for size, leverage and growth opportunity. The results are consistent with our hypothesis. If we factor out the common variation from ownership volatility variables and run a regression of factors on Tobin's Q, common variation factors increase the profitability of firms in our sample. From standardized coefficient estimates, we can find that one standard deviation change in factor1 increases Tobin's Q by 6.62%. For factor 2, one standard deviation change in factor 2 increases Tobin's Q by 8.08%. For control variables, one standard deviation change in size increases Tobin's Q by 7.78%. Factor1 and size are statistically significant within one percent significance level. Factor2 is statistically significant within five percent significance level.

Conclusion

The relationship between ownership, as one proxy of corporate governance, and firm performance has been widely discussed in corporate finance literature. However, little has been discussed about the relationship between ownership volatility and corporate governance in prior literature. Using five year ownership volatility of Korean firms in our sample spanning 2005 to 2009, we investigate the relationship between the volatility and the firm performance of the sample firms in 2009. Consistent with our hypothesis, we find a positive relationship between foreign ownership volatility and firm performance. Further, we investigate the relationship between common factors from three ownership volatility variables and firm performance. Consistent with our hypothesis, we find a positive relationship between two common factors and firm performance. This paper has two contributions to the prior literature. It is the first paper to investigate the ownership volatility and its relationship with firm performance in Korea using both OLS regression technique and factor analysis. Second, it sheds light on the role of ownership volatility on firm performance in other financial markets.

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Appendix I: Definition of variables

Variables	Definition
Tobin Q	Proxy for firm valuation defined as (the number of shares outstanding*market price of a share+total debt)/total assets in 2009
Size	The natural log of total asset in 2008
Leverage	Total debt/total asset in 2008
Growth	Annual growth in sales in 2008
Managerv	The standard deviation of five year ownership of large shareholders from 2005 to 2009
Foreignv	The standard deviation of five year foreign ownership from 2005 to 2009 (If the ownership is above 5%, then we assign the ownership; otherwise we assign zero)
Institutionv	The standard deviation of five year institutional ownership from 2005 to 2009 (If the ownership is above 5%, then we assign the ownership; otherwise we assign zero)