

The Relationship between Largest Shareholder's Ownership and Firm Performance:
Evidence from Mainland China

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Abstract

The Relationship between Largest Shareholder's Ownership and Firm Performance:
Evidence from Mainland China

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There is limited research on understanding the relation between concentrated ownership structure and firm performance in the Chinese market. In this paper, I analyze this relationship using data from the small firm and growth enterprise markets in China. I conduct several cross-sectional tests using Tobin's q and ROA as measures of firm performance. I find a significant cubic relationship between Tobin's q and the largest shareholder's ownership level while unaffiliated block-holders consistently show a negative effect on firm value. My results show that firm value first declines when family ownership is between 0 and 25.9 percent, then rises in the 25.9-54.2 percent range, and again falls when family ownership is greater than 54.2 percent. Furthermore, I find a non-linear relation between ROA and the largest shareholder's ownership level. I also examine the effect of firm age and industry. While firm age is not related to firm performance in general, a positive relation is found for older firms. Finally, significant results with profitability are found for firms in the service industry.

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1. Introduction

In 1932, Adolph Berle and Gardiner Means showed that widely held corporations were prevalent in the United States in their book, *The Modern Corporation and Private Property*. In these corporations, managers control the corporation but the ownership of capital is dispersed among small shareholders. Their book has fixed the image of the modern corporation for decades as one run by professional managers unaccountable to shareholders (La Porta et.al, 1999). However several recent studies have shown that while widely-held corporations are dominate in the U.S., the U.K. and Japan, concentrated ownership is more popular in Western Europe and the rest of Asia. In particular, family-controlled firms account for up to 60%-70% of all companies in Western Europe and the rest of Asia. Besides the UK and the United States, family firms are at least as common as widely held nonfamily corporations around the world (La Porta et al., 1999; Claessens et al., 2000; Faccio and Lang, 2002; Anderson and Reeb, 2003; Villalonga and Amit, 2006). Based on the study by La Porta et al. (1999), family control is the most common ownership structure around the world. Claessens et al. (2002a) report the ownership characteristics for 2980 listed companies in nine Asian economies. According to this study, a typical Asian corporation shares are tightly held by one or several members of a family. In addition, the same family or individual very often also controls a business group consisting of several to numerous public and private companies. These firms are the foremost

example of the corporation modeled by Shleifer and Vishny (1986), one with a large shareholder and a fringe of small shareholders.

The impact of ownership structures on firm performance have been researched extensively in the theoretical and empirical literatures. Concentrated ownership can imply potential drawbacks. Villalonga and Amit (2004) point out that the classic owner-manager conflict described by Berle and Means (1932) or Jensen and Meckling (1976) in individual- and family controlled firm is mitigated due to the large shareholder's greater incentives to monitor the manager. However, a second type of conflict between large shareholder and small shareholders appears, because large shareholders tend to represent their own interests but not those of other shareholders or employees of the company. In order to maximize their own utility, large shareholders could use their control rights to pursue personal benefits and expropriate minority shareholders (Andres, 2008).

Villalonga and Amit (2004) further argue that when the large shareholder is an individual or a family, it has greater incentives for both expropriation and monitoring, leading to the second agency problem becoming more important compared to the classic agency problem between managers-owners. This entrenchment perspective suggests that such behaviors might intimidate outside investment and negatively affect the firm's value.

Demsetz (1983), on the other hand, argues that ownership structure should have no effect on firm value because ownership concentration is the endogenous outcome of profit-maximizing decisions by current and potential shareholders.

According to the incentive alignment hypothesis, because concentrated ownership mitigates the conflicts of interest between owners and managers, it should have a positive effect on firm value (Berle and Means,1932; Fama and Jensen,1983a). In addition, McConaughy et al. (1998) discover that founding families are more motivated to improve firm performance than non-family firms suggesting that family firms are more efficiently managed than widely-held firms.

Consistent with the above arguments, Anderson and Reeb (2003) find that one-third of the firms in the S&P 500 index are family firms. They find that not only do family firms outperform non-family firms but there also exists a nonlinear relationship between family holdings and firm performance. Chahine (2007) finds a cubic relationship between the first-year abnormal return and family ownership using a sample of 163 French IPOs from 1996 to 2000. This finding supports both the alignment-of-interests (Fama and Jensen, 1983) and the family-interest-protection (Shleifer and Vishny, 1997) hypotheses. While a positive family effect shows up between the 30.7 and 67.1 per cent ownership level, families are not necessarily able to effectively monitor at lower levels, and might be entrenched above a certain level of ownership.

By using a panel data on 275 German exchange-listed companies, Andres (2008) confirms that family ownership is more beneficial than other block-holder ownership. For a large sample of firms from eight East Asian economies, Claessens et al. (2002) find that relationship between firm value and the cash flow ownership of the largest

shareholder is significantly positive, suggesting a positive incentive effect of large shareholdings.

Although there is a growing body of research on ownership and firm performance around the world, little is known about Chinese firms with concentrated ownership. China is now the world's largest and fastest-growing emerging economy. Behind China's remarkable GDP growth is the private sector with 85% of the firms having a concentrated ownership. However, for historical and political reasons, a Chinese concentrated ownership firm has been seen as a less efficient organization for a long time. To the best of my knowledge, this is the first study to examine the relationship between the largest shareholder's ownership level and firm performance of small to medium size concentrated ownership firms in mainland China.

This study follows the framework of Anderson and Reeb (2003). Using a sample of 448 concentrated ownership firms from Small and Medium Enterprise Market and Growth Enterprise Market in 2011, I observe a cubic relationship between the largest shareholder's ownership and firm performance using Tobin's q and ROA as measures of firm performance. I conduct several cross-sectional OLS regressions and find that there is a significant cubic relationship between Tobin's q and the largest shareholder's ownership level. At the same time, a non-linear relationship between ROA and largest shareholder's ownership level is also found to be significant while unaffiliated block-holder consistently shows a negative effect on firm value. Since most firms in my sample are from the manufacturing and service industries, I include industry dummies as well as classify firms into these industries to examine the

industry impact on the relationship between ownership level and firm performance. I also include firm age dummy as well as classify the sample into young firms and old firms to see whether there is a firm age effect. My results show that only in the case of old firms, firm age has a positive effect on firm value. The firm value first decreases, then increases and finally declines again as the largest shareholder's ownership increases. Consistent with Chahine (2007), my results support both the alignment of interest hypothesis (Fama and Jensen, 1983) and the entrenchment hypothesis (Shleifer and Vishny, 1988). Between the 25.9 and 54.2 per cent ownership level, because conflicts of interest between owners and managers are mitigated, agency cost is reduced, I find concentrated ownership has a positive effect on value. At lower levels, owners are not necessarily able to provide effective monitoring, while above 54.2 percent the owners are more concerned about their own wealth maximization and entrenchment sets in (Chahine, 2007).

The remainder of this paper is organized as follows: Section 2 reviews the related literature about the impact of concentrated ownership and explains the hypotheses. Section 3 describes the data selection and sample statistics. Section 4 reports the analysis and empirical results, and the conclusions are presented in section 5.

2. Literature Review and Hypotheses

2.1 The Potential Benefits of Concentrated Ownership

Ross (1973) defined the conflict of interest due to the separation of ownership as the principal-agent problem. In order to align the interests of managers with those of owners, different activities and operating systems are designed. The costs produced during these activities and systems were first called “agency costs” by Jensen and Meckling (1976). According to Jensen & Meckling (1976), there would be no conflict of interest and no agency problem if managers and owners have the same interests. However, in reality the two parties both have their own interests and their interests are not always aligned. Furthermore, since the manager is in charge of the firm, he/she possesses more or better information about the decision situation, or the consequences of actions than the owner (Ross, 1973). So in widely held firms, it is more likely that managers serve their own interests rather than acting for shareholders. In a concentrated ownership firm, the manager usually is the owner or manager is strongly monitored by the owner, thus asymmetric information and agency costs are reduced.

Fama and Jensen (1983a) suggest that owner-management could be the substitution of the costly control mechanisms that widely-held firms use. In addition, if it is a family firm, family members can easily communicate with each other in the long run; therefore in terms of monitoring and disciplining related decision agents, this gives family owners more advantages than owners of widely-held firms, leading to owner-management being a more efficient form.

Concentrated shareholders have strong economic incentives to monitor managers and decrease agency costs (Demsetz and Lehn, 1985). This incentive is particularly strong for founding-family ownership. In order to start a company, founding-families usually invest most of their private wealth and they are not well-diversified. Therefore, founding families are a unique type of shareholders who have more concerns over firm survival and strong incentives to monitor management. If the monitoring activity requires specific knowledge or technology, due to families' long-term presence in the firm, they might also have an advantage than hired managers.

Ward (1988) argues that it is easier for families to create a working environment that encourages trust and loyalty which can lead into lower turnover and recruitment costs. The long-term presence of family shareholdings also creates a reputation that helps family firm's relationship with customers and external suppliers of capital. In line with these arguments, Tagiuri and Davis (1996) also suggest that the presence of family ownership helps in generating loyalty and increasing trust.

Perotti (1995) finds that government-owned firms are negatively related with firm accounting measures. On the contrary, family firms have significantly better performance compared to both widely-held corporations and firms with other block holders, because families do not seem to use their controlling position to expropriate minority shareholders.

The free-rider problem suggests that in widely-held firms, shareholders are not well informed and are reluctant to invest their personal resources in monitoring activity (Grossman and Hart, 1980; Holmstrom, 1982). However, Shleifer and Vishny,

(1997) note that compared to small shareholders, large shareholders have enough of a stake to monitor management, besides the fact that large shareholders have higher incentive to decrease agency costs and also the power to do so.

Morck et al. (1988) find that having founding family members among the top two officers increases firm value. They report that having a family member among the top two executives would improve firm performance, if the benefits exceed the costs; this is especially true in younger firms.

According to La Porta et al. (1999), the controlling shareholders have strong incentives to monitor managers. At the same time, they put the corporate resources together to maximize profits whereby the value of minority shares is enhanced.

Morck and Yeung (2003) argue that because managers who have a large ownership in their firms are less likely to take actions that will reduce the value of the firm, agency problems might be minimized in narrowly held firms.

Recent evidence shows that using both accounting performance and market value, founding-family firm outperforms widely-held company (Anderson and Reeb, 2003a; Villalonga and Amit, 2006). In the U.S, the performance of corporations run by their founders also exceeds the average performance of nonfamily firms (McConnaughey et al., 1998; Palia and Ravid, 2002; Anderson and Reeb, 2003; Adams, Almeida and Ferreira, 2003; Falenbrach, 2003,).

Anderson and Reeb (2003) report that families are present in one-third of the S&P 500 firms. In addition, family firms are found to perform better than nonfamily firms.

The authors reveal a nonlinear relation between family holdings and firm performance.

They point out that when family members serve as CEO, performance is better than that with outside CEOs. Overall, their findings support their hypothesis that minority shareholders are better off with family ownership, suggesting that family ownership is an effective organizational structure.

By using a dataset of 275 listed German companies from 1998–2004, Andres (2008) finds that the owner-manager agency problem described by Jensen and Meckling (1976) can be successfully mitigated by large controlling families. His results suggest that compared to a dispersed shareholder structure, family firms are more profitable. The positive effect of reducing owner-manager conflicts seems to outweigh the agency cost brought by expropriation from large shareholders. However, only when the founding-family is still active on the executive or the supervisory board, the performance of family firms is better. When the founder serves as CEO, the benefit of family involvement is found to be strongest. Andres, (2008) provides an interpretation of these findings suggesting that as the families serve as board members, families may feel more responsible for other shareholders. Family firms seem to have similar agency problems no different from other firms if the family is just a common large shareholder without board representation, particularly for family firms with control-enhancing mechanisms.

By using a sample of 1672 non-financial firms from 13 Western European countries, Maury (2005) shows that family control is associated with 7% higher valuation (Tobin's q) and 16% higher profitability (return on assets) than non-family firms. If the family holds at least one of the top two officer positions, it is defined as active

family control. Both active family control and passive family control are associated with higher firm valuations, but the benefit is mainly because of high shareholder protection. The author also finds that active family control strongly increases profitability, whereas passive family control is associated with almost the same profit rates as nonfamily firms. However, when shareholder protection is low, the increased profitability the active family control brings cannot transfer into higher valuations. The findings indicate that although family management does not increase firm value and thus may not benefit minority shareholders, it may significantly increase the efficiency and profitability of the firms.

Based on existing studies, I state my first hypothesis as follows:

H1: Consistent with the alignment-of-interest theory, the concentrated ownership firm performance is positively related to the largest shareholder's ownership.

2.2 The Potential Costs of Concentrated Ownership

Morck, Shleifer, and Vishny (1988) document that due to having a large controlling shareholder, minority shareholders might bare potential agency costs. In a corporation with a large controlling shareholder and many small shareholders, since the large shareholder has greater incentives to monitor the manager, the classic owner-manager conflict can be reduced. However, the conflict between the larger shareholder and minority shareholders appears. The large shareholder can extract private benefits at the expense of the minority shareholders by using his/her controlling position in the

firm. Furthermore, if the largest shareholder is an individual or a family, the incentives for expropriation and monitoring the manager will be greater, consequently damaging firm value.

La Porta et al., (1999) point out that because dividends remove corporate wealth from insider control, they play an important role in limiting insider expropriation. They also report that in Common Law countries with strong legal protection of minority shareholders, higher dividends are paid by corporations. Faccio et al., (2001) find that in Western Europe and East Asia, the salient agency problem is expropriation of outside shareholders by controlling shareholders since in both regions "crony capitalism" is pronounced. They conclude that multiple large shareholders dampen expropriation in Europe, but exacerbate it in Asia according to the evidence that dividend rates are higher in Europe, but lower in Asia. The authors find that expropriation arises when the corporation is affiliated to a group of corporations, which are controlled by the same shareholder. And this situation is found to be true for about half the corporations in Western Europe as well as in East Asia. Insiders can expropriate corporate wealth by setting unfair terms for internal market sales of goods and services to transfer assets and control stakes. Thus, the controlling shareholders can receive high returns from projects that bring negative returns to the corporation.

Barclay and Holderness, (1989) posit that because of the presence of high family stake, the probability of bidding by other outside investors is lower and consequently it leads to a lower market valuation. In line with this argument, Shleifer and Vishny (1997) suggest that risk reduction strategies is one of the largest costs that large

family shareholders can impose on minority shareholders. Families may invest in projects that create uncorrelated cash flows relative to the firm's core business in order to reduce risks. Such strategies are not necessarily beneficial to small shareholders who might diversify their portfolios otherwise. In the meantime, families might seek less risky firm financing and are likely to use less debt. Thus the firm is less likely or unwillingly to raise external funds for investment projects and also let go the potential advantage of a higher debt tax shield. Both risk reduction strategies are costly to well-diversified minority shareholders.

Schulze, Lubatkin and Dino (2002) posit that in contrast to Fama and Jensen (1983), the agency costs of concentrated ownership are not eliminated by family owner-management. Owner-control hampers family firms' ability to compete in the factor markets for management and other employees.

Another disadvantage the concentrated ownership might bring is that founders may remain in control of the firm even though they are no longer competent. Morck et al. (2000) argue the fact that family tends to select managers and members of the supervisory board who are related will increase entrenchment and lower firm value. Since owners are generally unwilling to let go their control of the firm plus the liquidity is limited, owner-control firms tend to be either unable or unwilling to use equity as compensation. In addition, owner-control firms are also less attractive to applicants as top positions are usually occupied and/or reserved for owners or members of their families (Morck, 1996). In general, better qualified workers can be attracted by higher paying jobs and risk-takers can be attracted by

pay-for-performance contracts (Besanko et al.,1996). Families are often accused of reserving executive positions and higher paying jobs in the firm to the offspring, thereby depriving value-creation potential of outside shareholders and miss the best managers on the market. Thus, owner-controlled firms face a risk of hiring less talented agents and/or agents who might hide information to get hired. A potential risk might rise as moral hazard agents who willingly hide information to get hired are also likely to engage in other opportunistic actions once they are under contract (Mohlo, 1997). In addition, because of the risk that the owners might holdup or not appropriate the product of their labors, employees tend to withhold effort. This will increase the costs of monitoring agent behavior.

Theoretically family management can impose a positive effect on firm value since family management reduces the classical owner-manager agency problem. However, this benefit may be offset by the costs of family management, if outside professional managers are better than family founders or their heirs (Burkart et al., 2003). Evidence from Claessens et al., (2002), Lins (2003) and Gompers, Ishii and Metrick (2004) provide evidence supporting that control-enhancing devices such as dual-classes shares and pyramids families structures adopted to maintain control of the companies are associated with lower value creation.

Maury (2005) finds consistent results with Fama and Jensen (1983) that family control can reduce the owner-manager agency problem. However he also finds that family control gives rise to conflicts of interest between minority shareholders and the

controlling family. This paper gives further evidence that family control can increase firm value in a well-regulated economy, whereas family control may expropriate minority shareholders when transparency is low. It also finds that no matter whether it is active or passive family control, valuations are similar, whereas the value benefits from family control tends to decline when minority shareholders legal protection is weak.

Based on existing studies, I state my second hypothesis as follows:

H2: Consistent with the entrenchment theory, the concentrated ownership firm performance is negatively related to the largest shareholder's ownership.

2.3 Empirical Studies of Ownership Level and Firm Performance

Berle and Means (1932) suggest that diffuseness of shareholdings should be inversely correlated to firm performance. Demsetz (1983) challenges this view by arguing that the ownership structure of a corporation should be an outcome of the influence of shareholders and of trading on the market for shares. Whether concentrated or diffused, the ownership structure are affected by the profit-maximizing decisions of shareholders; consequently no systematic relation between ownership structure and firm performance should be found. In support of their argument, Demsetz and Lehn (1985) find no significant relation between ownership structure and accounting profits.

Morck et al. (1988) examine the relationship between managerial ownership and

market valuation. A non-linear pattern is found. From 0% to 5% ownership levels, market value increases, then declines between 5% and 25%, and finally increases again as ownership exceeds 25%. With a US sample of 1,173 firms in 1976 and 1,093 firms in 1986, McConnell and Servaes, (1990) investigate the relation between Tobin's q and the structure of equity ownership. A significant curvilinear relation between q and corporate insiders' ownership is found. As insider ownership reaches approximately 40% to 50%, the curve slopes upward and then slopes slightly downward. A significant positive relation between q and institutional investors' ownership is also found. The results support the hypothesis that corporate value is a function of the structure of equity ownership.

Demsetz and Villalonga (2001) find no significant relation between ownership structure and firm performance. This finding supports the view that diffused ownership structure yields advantages that can offset some agency problems it may cause. Their findings support the Demsetz (1983) theory that ownership structures are outcomes for the firms and are shaped by the market. They argued that the ownership structures differ across firms because of the different circumstances firms face, such as economies of scale, regulation and the stability of the economic environment. There should be no systematic relation between firm performance and ownership structure if these structures were the outcomes of perfect market control.

For a large sample of firms from eight East Asian economies, [Claessens et al. \(2002\)](#) find that the relationship between firm value and the cash flow ownership of the largest shareholder is significantly positive, suggesting that large shareholdings

impose a positive effect on firm value. They measure ownership (cash flow rights) and control (voting rights) of firms separately. They document that the larger the largest owner's equity stake, the higher the firm value; the larger the wedge between the largest owner's control and equity stake is, the lower the firm value is. The significant relationship between ownership structure and firm value indicates that investors are aware of the potential agency costs of concentrated ownership; they therefore discount equity prices accordingly.

By studying ownership and valuation of 1433 firms in 18 emerging markets, half of which are in Asia, Lins (2002) confirms that firm value decreases when the controlling management group's control rights exceed cash flow rights. Lins also finds that firm value is positively related to large non-management block-holders. Both effects are significantly pronounced in low shareholder protection countries. He interprets these results as follows: in emerging markets, large non-management block-holders can act as a substitute for institutional governance mechanisms.

Anderson and Reeb (2003) discover that family firms outperform nonfamily firms up to about 60 percent ownership. They find that both accounting and market-based performance first increase and then decline at around 30% ownership. Their findings also support Holderness and Sheehan (1988), who discover a tendency that high ownership family firms have lower performance than diffusely held firms.

In a cross-country study, by finding a negative effect of block-holder ownership on firm performance in Continental Europe, Thomsen et al. (2006) provide some

evidence for the existence of a conflict of interest between large investors and minority shareholders.

Using a sample of 163 French IPOs from 1996 to 2000, Chahine (2007) shows a cubic relationship between the first-year abnormal return and family ownership. This finding supports both the alignment-of-interests (Fama and Jensen, 1983) and the family-interest-protection (Shleifer and Vishny, 1997) hypotheses. While families show a positive effect between the 30.7 and 67.1 per cent ownership level, families are not necessarily able to effectively monitor at levels lower than 30.7 percent, and might be entrenched above 67.1 percent ownership.

Andres (2008) confirms that family ownership is more beneficial than other block-holder ownership by using a panel data on 275 German exchange-listed companies.

3. Sampling and Data Collection

3.1 The Sample

For my investigation, I use a sample of 448 concentrated ownership firms from Small and Medium Enterprise Market and Growth Enterprise Market in 2011. Largest shareholder's ownership level, firm-specific control variables, board structure and non-family block-holdings are manually collected from nonutility/nonbanking firms' prospectus and annual reports.

The Small and Medium Enterprise Market was created in 2004 to allow small firms with capital under or about 15.1 million U.S. dollars to go public, and is often seen as a transition before reaching the main exchange A-share market, whereas the Growth Enterprise Market was created in 2009 on the model of the NASDAQ to attract start-up companies especially in high-technology industries. Most IPOs in the two markets are firms where the CEO is the founder.

Originally, there were 1057 firms in these two markets in 2011. Since my goal is to study the relationship between private concentrated ownership firms and firm performance, I first deleted firms which are owned by the state and firms that are widely held. Furthermore, in order to get a clean data, I delete firms in which the largest shareholders are not natural persons. The final sample consists of 448 observations.

3.2 Measuring Largest Shareholder's Ownership and Firm Performance

The sample consist of firms with owners who have actual controlling influence and families firms. In order to identify family firms, I follow the standard of Villalonga and Amit (2004); the founding family holds at least 20% equity ownership and (or) the presence of a family members on the board of directors or on the top position in the firm. Since my sample firms are relatively young (the oldest firm age is 33), this determination is straightforward, because the prospectus and annual reports denote the founder and the actual controller of the firm, his/her immediate family members and their holdings. When there is more than one founder, because there were two or more cofounders of the firm, I consider as the founding family or founder the one with the largest ownership or largest voting stake. When there is more than one founder and they all hold the same ownership level, I consider the one who holds the CEO position in the firm. Tobin's q and return on assets (ROA) are my primary performance measures. Tobin's q is a proxy of firm value while ROA measures profitability.

I estimate Tobin's q as the market value of equity plus book value of total liability divided by the replacement cost of total assets. Market value is estimate as stock price on December 30 (December 31st was Saturday) multiplied by number of total shares outstanding plus market value of debt. Replacement cost of total assets is estimated as the book value of total assets. Data on ROA is collected from annual reports in two ways. In one approach, I use net income scaled by the book value of total assets. In the second approach, I use earnings before interest, tax, depreciation, and amortization (EBITDA) divided by the book value of total assets.

3.3 Control Variables

Several control variables are introduced into the analysis to control for firm characteristics. From annual reports, I identify all block holders with at least a five percent equity stake in the firm. Unaffiliated block holdings are defined as equity ownership of shareholders with no relation with the firm other than their equity holdings. I specifically control for outside directors in the analysis and identify these as board members who only serve as directors and have no other affiliation with the firm.

Growth opportunities are measured as the ratio of research and development expenses to total sales and compound annual growth rate in sales. I control for debt in the capital structure by dividing long-term debt by total assets. Firm size is the natural log of the book value of total assets. Firm age is measured as the natural log of the number of years since the firm's inception. Old firm dummy is a dummy that equals one when the firm age is 13 (mean age) or more. Industry impact is also considered by including a manufacturing/service dummy that equals one when the firm is in manufacturing/service industry and 0 otherwise. Data on the size and composition of the board of directors are collected from annual reports.

3.4 Summary Statistics

Table I presents three panels of descriptive information for my sample. Panel A provides means, medians, standard deviations, and maximum and minimum values

for the key variables in my sample. Panel B provides a simple correlation matrix for the variables in the sample. Panel C provides the industry distribution.

Table I Descriptive Data for All Firms

Panels A, B, and C provide summary statistics for the data employed in my analysis. The data set is comprised of 448 concentrated ownership firms from Small and Medium Enterprise Market and Growth Enterprise Market in 2011. To proxy for firm growth opportunities, I use compound annual growth rate and R&D/sales which is research and development expenses divided by total sales. Leverage is LT Debt/total assets measured as the book value of long-term debt divided by the book value of total assets. Firm size is the value of total assets. Firm age is the number of years since the firm's inception. Performance is measured as Return on assets before interest, tax, depreciation, and amortization (or net income) divided by total assets. Tobin's q is the market value of total assets divided by the replacement cost of assets. Board independence is outside directors defined as the fraction of independent directors serving on the board divided by board size. Unaffiliated blockholdings equals the fractional equity stake of nonaffiliated owners holding at least five percent of the firm's outstanding shares. Controller's Ownership is the fractional ownership level of founder's or the actual controller's holding of the firm's outstanding shares. Number of observations is 448. Panel B provides the correlation data for variables used in the analysis. Panel C displays the industry descriptions of firms used in the analysis.

Panel A: Summary Statistics for the Full Sample

	Mean	Median	Standard Deviation	Max.		Min.
Growth Rate(%)	18.30	16.89	0.12	71.73	█	-12.59
R&D/sales(%)	4.48	3.50	0.05	36.43	█	0
LT debt/total assets(%)	10.30	0.00	0.19	95.58	█	0
Total assets(million US dollar)	275.62	176.73	89.93	18916.78	█	31.44
Firm age(years)	12.88	12.00	4.24	33.00	█	3
Return on assets(EBITDA)(%)	8.59	8.14	4.77	25.38	█	-33.59
Return on assets(net income)(%)	7.52	7.28	4.38	24.68	█	-32.16
Tobin's q	3.13	2.34	2.36	24.73	█	0.02
Outside directors(%)	33.26	30.38	0.05	0.57	█	0.2
Nonfamily blockholdings(%)	12.87	10.33	0.13	63.03	█	0
Controller's ownership(%)	38.77	37.79	0.15	74.93	█	8.98
Number of firms	448					

Panel B: Correlation Data

	ROA EBITDA	ROA	Tobin's Q	Controller's Ownership	Nonfamily Blockholdings	Outside Director	Growth Rate	R&D/ SALES	LT DEBT/ TA	Ln TA	Ln age
ROAEBITDA	1.000										
ROA	0.963	1.000									
Tobin's Q	0.366	0.399	1.000								
Controller's Ownership	0.085	0.073	0.037	1.000							
Unaffiliated blockholdings	-0.016	0.012	-0.077	-0.271	1.000						
Outside Director	0.013	0.044	0.047	0.131	-0.009	1.000					
Growth Rate	0.379	0.364	0.266	0.065	0.022	-0.021	1.000				
R&D/SALES	-0.135	-0.013	0.134	-0.196	0.124	0.017	0.051	1.000			
LT DEBT/TA	-0.008	-0.089	-0.039	-0.047	-0.084	0.024	-0.037	-0.127	1.000		
Ln TA	-0.001	-0.072	-0.203	0.013	-0.036	-0.100	0.120	-0.185	0.154	1.000	
Ln age	0.189	0.271	0.136	0.116	0.160	0.045	0.302	0.188	-0.164	-0.326	1.000

Panel C: Industry Description

Industry Description	Firms	Percent Firms in Industry
Agriculture, Forestry and Fishing	8	2%
Construction	10	2%
Finance, Insurance and Real Estate	2	0%
Manufacturing	353	79%
Mining	7	2%
Public Administration	3	1%
Retail Trade	6	1%
Sanitary Services and Social Service	1	0%
Service	58	13%

Compound annual growth rate and the ratio of research and development (R&D) expenses to total sales are proxies for firm growth opportunities. I find that the average of growth rate is 18.27 percent while R&D expenditures represents 3.5 percent of sales (Panel A). Because 313 out of 465 firms have no long-term debt, the median value is 0. Compared to well established firms in the A share market, firms from Small and Medium Enterprise Market and Growth Enterprise Market are

younger and smaller, thus the average total asset of my sample is 275.62 million U.S. dollars and average firm age is nearly 13 years.

In terms of performance, the average firm has a return on assets, based on EBITDA (net income) of 8.5 percent (7.62 percent). Tobin's q, our measure of market performance, has a mean value of 3.17 with a wide range from a maximum value of 26.08 to a minimum value of 0.02.

Outside directors is proxy for Board independence. Outside directors is defined as the percentage of independent directors serving on the board divided by board size. According to *Guidance About Independent Directors of Listed Companies of China 2001*, at least one third of the listed firms' board members should be independent directors. The average percentage of outside directors is 25.26%, suggesting that the regulation was not complied with very strictly.

Unaffiliated block holdings is the fractional ownership level of nonaffiliated owners holding at least five percent of the firm's outstanding shares. The median value of 10.29% suggests that outside block holders do not have a large presence.

Panel B provides a correlation matrix for some of the key variables. Founding-family presence is positively associated with both accounting and market measures of firm performance. In addition, a negative relation between family ownership and the presence of unaffiliated block holders is found. Unaffiliated block holders are also

negatively related to ROA. Because firm age and family ownership are negatively correlated, I also examine the impact of firm age to firm performance.

From Panel C, our analysis suggests that 79% of the sample firms are from the manufacturing sector. This is consistent with the records from Chinese Family Business Report (2011) in which 60.4% of the manufacturing firms are family firms. Service sector constitutes 13% of the sample. Except for two firms from the real estate industry, all firms are non-financial firms.

4. Methodology and Empirical Results

4.1 Multivariate Analysis

The main research focus is the relation between founding-family ownership and firm performance. I also classified the data into young firms and old firms to examine the impact of firm age on firm performance. Since 353 out of 448 firms are in the manufacturing industry and 58 firms are from service industry, I also conduct a regression for manufacturing and service firms separately to see whether there is an industry effect on the relation between family ownership and firm performance. The methodology essentially consists of cross-sectional OLS regressions which take a general form as follows:

$$\text{Firm Performance} = \delta_0 + \delta_1 (\text{Controller's Ownership}) + \delta_2 (\text{Control Variables}) + \varepsilon \quad (1)$$

where, Firm Performance = ROA based on EBITDA and net income, and Tobin's q;
Controller's Ownership = the fractional ownership level of founder's or the actual

controller's holding of the firm's outstanding shares; the square of the fractional ownership level of controller and the cube of the fractional ownership level of controller. In addition, I include several control variables in the analysis that have been found to affect firm performance (Anderson and Reeb, 2003). The control variables include unaffiliated block holdings, fraction of independent directors serving on the board, compound annual growth rate, research and development expenses divided by total sales, long-term debt divided by total assets, firm size, firm age, firm age dummy and industry dummy variables.

4.2 Empirical Results of Firm Performance Measures

Table II presents the results using Tobin's q, ROA (EBITDA) and ROA (net income) as the dependent variables. In columns 1 and 2, I regress Tobin's q with the largest shareholder's ownership level; columns 3 and 4 likewise show regression results with ROA (EBITDA) as the dependent variable and columns 5 and 6 show the regression results of ROA (net income).

Previous research suggests that the relation between family ownership and firm performance could be nonlinear if the family incentive changes as holdings increase (e.g. Anderson and Reeb (2003)). Consistent with prior literature, a significant cubic relationship between the controller's ownership and Tobin's q is found. When I modify my regression specification by excluding the cube of controller's ownership, the ownership level becomes insignificant. The two inflection points of the cubic relationship are 25.9 percent and 54.2 percent respectively. The coefficients of

controller's ownership, the square of controller's ownership and the cube of controller's ownership are -40.836, 48.265 and -16.761, respectively, suggesting that firm performance first declines when family ownership is between 0 and 25.9 percent, then rises in the 25.9-54.2 percent range, and falls again when family ownership is greater than 54.2 percent. This cubic relationship is inconsistent with Anderson and Reeb (2003) but similar to the findings of Chahine (2007). This finding supports both the alignment-of-interests (Fama and Jensen, 1983) and the entrenchment theories (Shleifer and Vishny, 1997). When the largest shareholder's ownership is between 25.9 and 54.2 percent, the alignment of interest influence reduces asymmetric information and agency costs, the cost of damaging firm value is larger than the personal benefits the controlling shareholders can gain from expropriation, and thus owners are more incentivized to maximize firm value. At ownership level lower than 25.9 percent, the owners are not necessarily able to provide effective monitoring, while above 54.2 percent the owner is likely to be concerned more about their own wealth maximization at the cost of firm value as entrenchment sets in (Chahine, 2007).

Table II Cubic Relationships between Controller's Ownership and Firm Performance

This table displays regression results of firm performance on controller's ownership based on the full sample. Controller's Ownership is the fractional ownership level of founder's or the actual controller's holding of the firm's outstanding shares; the square of the fractional ownership level of controller and the cube of the fractional ownership level of controller. Unaffiliated block holdings equal the fractional equity stake of nonaffiliated owners holding at least five percent of the firm's outstanding shares. Outside directors are defined as the fraction of independent directors serving on the board divided by board size. Growth rate is the annual growth rate and R&D/sales is research and development expenses divided by total sales. LT Debt/total assets is measured as the book value of long-term debt divided by the book value of total assets. Firm size is the natural log of the book value of total assets. Firm age is the natural log of number of years since the firm's inception. Number of observations is 448.

	Tobin's q		ROA(EBITDA)		ROA(NET INCOME)	
	1	2	3	4	5	6
Intercept	18.973** (4.671)	17.030** (4.366)	21.174** (2.626)	21.623** (2.800)	24.070** (3.215)	24.390** (3.403)
Controller's ownership cube	-40.836** (-1.677)		9.444 (0.195)		6.719 (0.149)	
Controller's ownership square	48.265 (1.566)	-2.939 (-0.701)	2.995 (0.049)	14.837** (1.788)	5.902 (0.104)	14.327** (1.860)
Controller's ownership	-16.761 (-1.396)	2.513 (0.720)	-6.823 (-0.286)	-11.281 (-1.633)	-7.535 (-0.340)	-10.707** (-1.669)
Unaffiliated blockholdings	-1.734** (-1.992)	-1.930** (-2.232)	0.285 (0.165)	0.33 (0.193)	0.675 (0.421)	0.707 (0.445)
Outside director	1.381 (0.695)	1.486 (0.747)	0.819 (0.207)	0.795 (0.202)	2.695 (0.735)	2.677 (0.732)
Growth rate	5.698** (6.418)	5.820** (6.564)	15.53** (8.809)	15.502** (8.832)	13.503** (8.251)	13.483** (8.276)
R&D/SALES	4.613** (2.010)	4.633** (2.014)	-16.668** (-3.658)	-16.673** (-3.663)	-5.358 (-1.267)	-5.361 (-1.269)
LT DEBT/TA	0.025 (0.045)	0.087 (0.158)	0.001 (0.001)	-0.013 (-0.012)	-1.375 (-1.354)	-1.386 (-1.369)
Ln TA	-0.786** (-4.664)	-0.796** (-4.716)	-0.619** (-1.849)	-0.617** (-1.846)	-0.827** (-2.661)	-0.825** (-2.660)
Ln age	0.306 (1.025)	0.307 (1.024)	-0.293 (-0.494)	-0.293 (-0.494)	-0.407 (-0.739)	-0.408 (-0.741)
R squared	0.152	0.147	0.181	0.181	0.163	0.163
Adjusted R square	0.133	0.129	0.162	0.164	0.144	0.146
F value	7.854	8.379	9.664	10.757	8.535	9.502
Number of observations	448	448	448	448	448	448

Results using return on assets (ROA), calculated with earnings before interest, tax, depreciation, and amortization (EBITDA) are in columns 3 and 4, and those with ROA using net income as the dependent variable are in columns 5 and 6. Contrary to the notion that the presence of family ownership or concentrated ownership structure harms firm performance, I find evidence that the controller's ownership has a positive effect on accounting and market performance above certain ownership level. The results indicate that the relation between firm performance and controller's ownership is nonlinear. The inflection point where the relationship between performance and controller's ownership begin to increase is at 30.9 percent using ROA calculated with EBITDA and 32.5 percent using ROA calculated with net income. This non-linear relationship might indicates that when the controller's ownership is under about 30 percent, in order to maximize their own utility, controllers will use their control rights to pursue personal benefits and expropriate other shareholders, therefore negatively affecting profitability (Andres, 2008); while above certain ownership level, concentrated shareholders have strong economic incentives to monitor managers and decrease agency costs and have more efficient investment than widely-held firms, consequently increasing profitability.

With respect to the control variables, unaffiliated block holdings is negatively related to firm value. This finding suggests that unaffiliated block-holders might extract private benefits at the expense of the minority shareholders and consequently damage firm value. This finding is consistent with Anderson and Reeb (2003) and Villalonga

and Amit(2004). There is a slightly positive relationship between unaffiliated block holders and ROA but it is insignificant, suggesting non-affiliated block holders do not affect firm's profitability. Proxies of growth rate are positively related to firm value and profitability consistently. This finding indicates that the faster the firm grows, the higher the firm value is. On the other hand, firm size is negatively related to firm value and profitability consistently.

4.3 Empirical Results of Firm Age Impact

Table III, Table IV and Table V present results of the impact of firm age on Tobin's q, ROA (EBITDA) and ROA (net income), respectively. Prior literature suggests that superior firm performance and market valuations are caused by founders who can bring value-adding skills to the firm. However, as the founder as well as the firm continues to age, the founder might have less to contribute to firm productivity and efficiency (Anderson and Reeb, 2003). Anderson and Reeb (2003) show that the better performance of family firms is mainly attributable to the young firms. They classified family firms as "Young" and "Old" based on whether the firm is under or over 50 years of age and found that young firms have a bigger positive impact on firm performance than older firms. However, by their standard even the oldest firms in my sample can be classified as young firms. Compared to the large well-established firms in the S&P 500, my sample consists of small size firms or start-up firms from a growing emerging market. Thus I classify my sample into young and old firms

samples according to the median firm age of my sample firms. The results show that, contrary to prior research, firm age is not significantly related to firm performance.

Table III presents results of regressions using Tobin's q as dependent variable. In column 1, where I regress firm value on ownership level for the young firm sample, the relation between controller's ownership level and firm performance disappears. It is possible that these firms are too young to be stable enough to show specific relation. Proxies of growth rate are positively related to firm value indicating that the faster the firm grows, the higher the firm value is.

Column 2 shows results for the sample of old firms. It is interesting to note that even in the old firm sample which contains 220 firms, the relationship between Tobin's q and controller's ownership level disappear as well. However firm age tends to have a positive effect on firm value. This finding suggests that when a firm reaches a certain age, the unique skills the founder brings begin to become a value-added element to the firm and contribute to the firm value. Growth rate is positively related to firm value indicating it contributes to firm value as well.

In column 3, results of the regression for the full sample are shown. In order to examine the impact of firm age, I introduce a firm year dummy which equals to one when the firm age is older than 12 years and 0 otherwise. The coefficient of age dummy is positive but insignificant indicating that firm age does not affect firm value.

Table IV and Table V present results for the impact of firm age on ROA (EBITDA) and ROA (net income), respectively. For these accounting measures of performance, the age effect is insignificant as well.

Column 1 of Table IV presents the results of the young firms sample. Only growth rate and R&D/Sales are significant. Growth rate has positive effect on ROA (EBITDA) while the research and development expenses are negatively related to ROA (EBITDA). This might be due to the fact that in the short term, the R&D expenses increase the operating cost.

Column 2 of Table IV presents the results of the old firms sample. Although firm age does not have any significant effect, the relationship between ROA (EBITDA) and the largest shareholder's ownership level is stronger. This finding is economically significant. It could be interpreted that in the old firms sample, when using profitability as a measure of performance, instead of firm age, controller's ownership level has a more powerful impact. A "U" shape curve between ROA (EBITDA) and largest shareholder's ownership is found indicating that as the ownership level increases the ROA (EBITDA) first declines and then increases with the ownership level. Proxies of growth rate have similar results as the young firms sample. Notice that firm size becomes negatively significant in the old firms sample, while in the young firms sample this effect is not present. It is possible that since young firms usually are growing fast, there is more uncertainty about their returns resulting in the

lack of a definitive pattern. However, compare to young firms, returns for older firms are more stable and this is reflected in the firm size variable.

Column 3 of Table IV presents results of the full sample. In the full sample, the relationship between ROA (EBITDA) and controller's ownership level is significant after including the old firm dummy. But firm age dummy still shows no effect on firm accounting performance. The result is very similar to result of the old firms sample, except that only the controller's ownership square becomes significant. The U shape curve remains between ROA (EBITDA) and controller's ownership level indicating that ROA first declines and then increases as the controller's ownership level increase. Proxies for growth rate show the same effect as they do in the old firm sample. Firm size is negatively related to ROA (EBITDA), indicating that the larger the firm size is the less return the firm receives.

Table III Age Impact on Firm Value

This table displays results for regressions of Tobin's q on controller's ownership for the young firms sample, old firms sample and the whole sample, respectively. Controller's Ownership is the fractional ownership level of founder's or the actual controller's holding of the firm's outstanding shares; the square of the fractional ownership level of controller and the cube of the fractional ownership level of controller. Unaffiliated blockholdings equals the fractional equity stake of nonaffiliated owners holding at least five percent of the firm's outstanding shares. Outside directors defined as the fraction of independent directors serving on the board divided by board size. Growth rate is the annual growth rate and R&D/sales is research and development expenses divided by total sales. LT Debt/total assets

	Tobin's q		
	1	2	3
Intercept	19.815** (3.417)	20.508** (3.289)	20.061** (5.119)
Controller's ownership cube	-53.808 (-1.401)	-45.696 (-1.353)	-41.159** (-1.686)
Controller's ownership square	68.277 (1.366)	50.427 (1.229)	48.782 (1.579)
Controller's ownership	-26.076 (-1.307)	-15.818 (-1.027)	-17.003 (-1.413)
Unaffiliated blockholdings	-2.064 (-1.579)	-1.416 (-1.233)	-1.718** (-1.971)
Outside director	3.476 (1.173)	-1.275 (-0.489)	1.139 (0.575)
Growth rate	4.824** (3.285)	6.619** (5.875)	5.579** (6.302)
R&D/SALES	12.244** (2.765)	1.992 (0.731)	4.583** (1.993)
LT DEBT/TA	-0.172 (-0.231)	0.308 (0.368)	0.025 (0.045)
Ln TA	-0.695** (-2.964)	-1.014** (-3.857)	-0.796** (-4.723)
Young firm Ln age (age <=12)	-0.605 (-1.118)		
Old firm Ln age (age >=13)		1.559** (2.010)	
Old firm dummy			0.048 (0.226)
R squared	0.146	0.202	0.15
Adjusted R square	0.107	0.164	0.131
F value	3.717	5.299	7.737
Number of observations	228	220	448

Table IV Age Impact on ROA EBITDA

This table displays results for regressions of ROA (EBITDA) on controller's ownership based on the young firms sample, old firms sample and the whole sample respectively. Controller's Ownership is the fractional ownership level of founder's or the actual controller's holding of the firm's outstanding shares; the square of the fractional ownership level of controller. Unaffiliated blockholdings equals the fractional equity stake of nonaffiliated owners holding at least five percent of the firm's outstanding shares. Outside directors defined as the fraction of independent directors serving on the board divided by board size. Growth rate is the annual growth rate and R&D/sales is research and development expenses divided by total sales. LT Debt/total assets measured as the book value of long-term debt divided by the book value of total assets. Firm size is the natural log of the book value of total assets. Young Firm Ln age is the natural log of number of years since the firm's inception of young firm sample in which the firm age is less than 13. Old Firm Ln age is the natural log of number of years since the firm's inception of old firm sample in which the firm age is equals to or greater than 13. Old firm dummy equals one when firm age is greater than or equal to 13 years. Number of observations of the young firm sample is 228. Number of observations of the old firm sample is 220. Number of the observations of the complete sample is 448.

	ROA(EBITDA)		
	1	2	3
Intercept	15.252 (1.631)	285.153** (1.813)	21.002** (2.827)
Controller's ownership square	7.179 (0.637)	23.292** (1.826)	14.980** (1.803)
Controller's ownership	-4.687 (-0.517)	-18.442 (-1.696)	-11.353 (-1.643)
Unaffiliated blockhodings	-1.054 (-0.478)	1.859 (0.696)	0.318 (0.186)
Outside director	-2.436 (-0.485)	4.839 (0.754)	0.862 (0.220)
Growth rate	15.087** (6.989)	16.040** (5.388)	15.492** (8.859)
R&D/SALES	-14.635** (-2.494)	-20.706** (-2.884)	-16.566** (-3.638)
LT DEBT/TA	-1.149 (-0.711)	0.745 (0.478)	0.031 (0.028)
Ln TA	-0.226 (-0.559)	-1.169** (-2.042)	-0.617** (-1.849)
Young firm Ln age (age <=12)	-1.019 (-1.095)		
Old firm Ln age (age >=13)		2.506 (1.413)	
Old firm dummy			-0.259 (-0.615)
R squared	0.232	0.157	0.181
Adjusted R square	0.201	0.121	0.164
F value	7.337	4.373	10.774
Number of observations	228	220	448

Panel B displays results regressing ROA (EBITDA) on controller's ownership cube based on the young firm sample, old firm sample and the whole sample, respectively.

Pannel B			
	ROA(EBITDA)		
	1	2	3
Intercept	13.504 (1.384)	28.376** (1.927)	20.481** (1.927)
Controller's ownership cubic	40.926 (0.638)	-52.130 (-0.658)	11.184 (-0.658)
Controller's ownership square	-42.353 (-0.541)	90.872 (0.878)	0.962 (0.878)
Controller's ownership	13.225 (0.448)	-44.927 (-1.077)	-6.078 (-1.077)
Unaffiliated blockholdings	-1.233 (-0.554)	2.145 (0.792)	0.265 (0.792)
Outside director	-2.410 (-0.479)	4.768 (0.742)	0.887 (0.742)
Growth rate	15.164** (7.00)	15.987**	15.523** (5.361)
R&D/SALES	-14.961** (-2.537)	-21.451**	-16.558** (-2.947)
LT DEBT/TA	-1.088 (-0.671)	0.636 (0.405)	0.049 (0.405)
Ln TA	-0.237 (-0.584)	-1.166** (-2.042)	-0.620** (-2.042)
Young firm Ln age (age <=12)	-0.968 (-1.035)		
Old firm Ln age (age >=13)		2.441 (1.373)	
Old firm dummy			-0.264 (1.373)
R squared	0.233	0.159	0.181
Adjusted R square	0.198	0.119	0.162
F value	6.626	3.969	9.681
Number of observations	228	220	448

Panel B of Table IV presents the results including the cube of controller's ownership level. Compared to the square of ownership, results of Panel B are similar but weaker.

Results for the impact of firm age on ROA using net income are presented in Table V. Through all three regressions, the age effect remains insignificant. Column 1 of Table V presents results for the young firms sample. Only growth rate and debt in the capital structure are significant. It is easy to understand that the faster a firm grows the more returns it receives. Long term debt is negative and significant in this table. Sun (2001) points out that debt could increase agency cost. In order to pay the debt, managers may have the tendency to invest in projects with high risk. On the other hand, managers may also choose projects which is not profit maximizing but safe enough to pay the debt. Either way, more long-term debt in the capital structure could lead to lower profits. This might explain why long-term debt in the capital structure is negatively related to ROA using net income.

Results from column 2 and column 3 are very similar to results obtained in Table IV. Firm age does not significantly affect ROA (net income) for the old firms sample and the full sample. The "U" shape relationship between ROA (net income) and the controller's ownership level is strong and significant. The ROA (net income) first declines but then starts to increase as the controller's ownership level increases. Growth rate is consistently significant. In addition, firm size negatively affects ROA in the old firms sample and the full sample. This might be due to the fact that older

firms have more financing channels than young firms. Panel B of Table V presents results including the cube of controller's ownership level. Compared to the square of ownership, results of Panel B are similar but weaker.

Table V Age Impact on ROA Net Income

This table displays the regression results of ROA (Net Income) on controller's ownership based on the young firms sample, old firms sample and the full sample, respectively. Controller's Ownership is the fractional ownership level of founder's or the actual controller's holding of the firm's outstanding shares; the square of the fractional ownership level of controller. Unaffiliated blockholdings equals the fractional equity stake of nonaffiliated owners holding at least five percent of the firm's outstanding shares. Outside directors defined as the fraction of independent directors serving on the board divided by board size. Growth rate is the annual growth rate and R&D/sales is research and development expenses divided by total sales. LT Debt/total assets measured as the book value of long-term debt divided by the book value of total assets. Firm size is the natural log of the book value of total assets. Young Firm Ln age is the natural log of number of years since the firm's inception of young firm sample in which the firm age is less than 13. Old Firm Ln age is the natural log of number of years since the firm's inception of old firm sample in which the firm age is equals to or greater than 13. Old firm dummy equals one when firm age is greater than or equal to 13 years. Number of observations of the young firm sample is 228. Number of observations of the old firm sample is 220. Number of the observations of the complete sample is 448.

	ROA(Net Income)		
	1	2	3
Intercept	15.424** (1.864)	34.081** (2.563)	23.425** (3.397)
Controller's ownership square	5.469 (0.548)	24.043** (1.966)	14.462** (1.875)
Controller's ownership	-3.317 (-0.413)	-18.675** (-1.792)	-10.767** (-1.678)
Unaffiliated blockholdings	-0.407 (-0.234)	2.139 (0.696)	0.691 (0.434)
Outside director	0.407 (0.091)	4.948 (0.804)	2.812 (0.773)
Growth rate	13.051** (6.832)	14.221** (4.983)	13.501** (8.317)
R&D/SALES	-2.297 (-0.442)	-10.857** (-1.577)	-5.232** (-1.237)
LT DEBT/TA	-2.902** (-2.028)	-0.239 (-0.161)	-1.335 (-1.314)
Ln TA	-0.356 (-0.994)	-1.532** (-2.801)	-0.823** (-2.656)
Young firm Ln age (age <=12)	-0.918 (-1.114)		
Old firm Ln age (age >=13)		1.577 (0.928)	
Old firm dummy			-0.306 (-0.784)
R squared	0.224	0.14	0.163
Adjusted R square	0.192	0.103	0.146
F value	7.014	3.8	9.511
Number of observations	228	220	448

Panel B displays results regressing ROA (Net Income) on controller's ownership cube based on the young firms sample, old firms sample and the full sample, respectively.

Panel B

	ROA(Net Income)		
	1	2	3
Intercept	13.767 (1.595)	38.006** (2.693)	23.016** (3.191)
Controller's ownership cubic	38.810 (0.684)	-63.475 (-0.836)	8.766 (0.195)
Controller's ownership square	-41.502 (-0.598)	106.331 (1.072)	3.475 (0.061)
Controller's ownership	13.669 (0.524)	-50.924 (-1.275)	-6.633 (-0.299)
Unaffiliated blockholdings	-0.627 (-0.318)	2.488 (0.958)	0.648 (0.404)
Outside director	0.431 (0.097)	4.862 (0.790)	2.831 (0.777)
Growth rate	13.125** (6.851)	14.157** (4.955)	13.525** (8.299)
R&D/SALES	-2.605 (-0.499)	-11.764** (-1.687)	-5.226 (-1.235)
LT DEBT/TA	-2.844** (-1.981)	-0.373 (-0.248)	-1.321 (-1.295)
Ln TA	-0.366 (-1.021)	-1.529** (-2.794)	-0.825** (-2.659)
Young firm Ln age (age <=12)	-0.871 (-1.051)		
Old firm Ln age (age >=13)		1.498 (0.879)	
Old firm dummy			-0.311 (-0.793)
R squared	0.226	0.142	0.163
Adjusted R square	0.191	0.101	0.144
F value	6.344	3.485	8.544
Number of observations	228	220	448

4.4 Empirical Results of Industry Impact

China has been known for its manufacturing industry for a long time. Behind the powerful manufacturing capacity, Chinese Family Business Report (2011) records that in China, 60.4% of the manufacturing firms are privately-owned firms. Summary statistic of my sample firms tells a similar story: 79 percent of the sample firms are from the manufacturing industry while service industry constitutes 13 percent of the sample. In order to examine whether there is an industry impact on firm performance, a manufacturing industry dummy and a service industry dummy are included in the regressions. In addition, I classify the sample into manufacturing industry firms and service industry firms samples. There are 354 firms in the manufacturing firms sample and 58 firms in the service industry sample.

Table VI uses Tobin's q as the dependent variable to examine the industry impact on firm value. No connection between firm value and industry impact is found.

Column 1 in Table VI presents results of regressions using the complete sample with manufacturing dummy and service dummy. After including the manufacturing dummy and service dummy in the regression, the cubic relationship between firm value and controller's ownership level is still significant. Unaffiliated block-holders still shows a negative impact on firm value indicating that unaffiliated block-holders might expropriate minority shareholders thus harming firm value. Neither the manufacturing dummy nor the service dummy show any significant influence on the firm value.

Table VI Industry Impact on Firm Value

This table displays regression results for Tobin's q on controller's ownership based on the whole sample, the manufacturing firms sample and service firms sample respectively. Controller's Ownership is the fractional ownership level of founder's or the actual controller's holding of the firm's outstanding shares; the square of the fractional ownership level of controller and the cube of the fractional ownership level of controller. Unaffiliated blockholdings equals the fractional equity stake of nonaffiliated owners holding at least five percent of the firm's outstanding shares. Outside directors defined as the fraction of independent directors serving on the board divided by board size. Growth rate is the annual growth rate and R&D/sales is research and development expenses divided by total sales. LT Debt/total assets measured as the book value of long-term debt divided by the book value of total assets. Firm size is the natural log of the book value of total assets. Ln age is the natural log of number of years since the firm's inception. Manufacturing dummy equals one when it is a manufacturing firm. Service dummy equals one when it is a service firm. Number of the observations for the whole, manufacturing and the service samples are 448, 354 and 58, respectively.

	Tobin's q		
	1	2manu	3ser
Intercept	19.317** (4.702)	19.547** (4.145)	13.775 (1.137)
Controller's ownership Cube	-44.829** (-1.829)	-39.858 (-1.402)	-72.931 (-0.844)
Controller's ownership square	52.906** (1.708)	46.143 (1.292)	91.913 (0.893)
Controller's ownership	-18.273 (-1.516)	-15.478 (-1.119)	-34.725 (-0.923)
Unaffiliated blockhodings	-1.849** (-2.123)	-2.448** (-2.411)	0.492 (0.223)
Outside director	1.412 (0.711)	0.663 (0.311)	12.652 (1.669)
Growth rate	5.381** (5.977)	4.211** (4.020)	10.932** (3.814)
R&D/SALES	3.187 (1.320)	7.701** (2.368)	-4.500 (-1.031)
LT DEBT/TA	0.057 (0.105)	0.156 (0.263)	-2.048 (-0.666)
Ln TA	-0.779** (-4.628)	-0.786** (-3.961)	-0.696 (-1.662)
Ln age	0.277 (0.929)	0.138 (0.418)	0.932 (0.686)
Manufacturing dummy	-0.259 (-0.665)		
Service dummy	0.396 (0.814)		
R squared	0.159	0.132	0.339
Adjusted R square	0.136	0.106	0.198
F value	6.898	5.228	2.411
Number of observations	448	354	58

Column 2 in Table VI shows findings of regressions using the manufacturing firms' sample. The relation between Tobin's q and controller's ownership disappears; only

unaffiliated block-holders remain significantly related to firm value. Again, the negative effect the unaffiliated block-holders have may due to the fact that they can be entrenched and thus dampen firm value. Both growth rate and R&D/Sales are positively related to firm value. Although sometimes R&D/Sales are negatively related to profitability in my previous regressions, research and development expenses are helpful to increase firm value most of the time. In this case, investment in research and development appears to be especially important for the manufacturing firms to increase their firm value.

Column 3 in Table VI shows regressions results using the service firms' sample. In this regression only the growth rate is significant. However, besides growth rate, none of the control variables can explain what contributes to the firm value of service industry. Nor can I find any pattern between ownership structure and firm value in the service firm sample. Most firms in the service industry sample are computer and software-related companies. It might that high-technology industry has different industry characteristics from other traditional industries and variables which are suitable to explain the traditional industries are not really related to the service industry. In order to explain what can help to increase firm value for the service industry in China, new aspects and different elements are needed.

Table VII Industry Impact on ROA EBITDA

This table displays the regression results for ROA (EBITDA) on controller's ownership based on the whole sample, the manufacturing sample and service sample, respectively. Controller's Ownership is the fractional ownership level of founder's or the actual controller's holding of the firm's outstanding shares; the square of the fractional ownership level of controller. Unaffiliated blockholdings equals the fractional equity stake of nonaffiliated owners holding at least five percent of the firm's outstanding shares. Outside directors defined as the fraction of independent directors serving on the board divided by board size. Growth rate is the annual growth rate and R&D/sales is research and development expenses divided by total sales. LT Debt/total assets measured as the book value of long-term debt divided by the book value of total assets. Firm size is the natural log of the book value of total assets. Ln age is the natural log of number of years since the firm's inception. Manufacturing dummy equals one when it is a manufacturing firm. Service dummy equals one when it is a service firm. Number of the observations for the whole, manufacturing and service samples are 448, 354 and 58, respectively.

	ROA(EBITDA)		
	1	2manu	3ser
Intercept	20.256** (2.618)	23.285** (2.561)	2.488 (0.121)
Controller's ownership square	14.523** (1.759)	8.982 (0.943)	0.964 (0.032)
Controller's ownership	-10.755 (-1.565)	-6.178 (-0.783)	-4.168 (-0.179)
Unaffiliated blockholdings	-0.036 (-0.021)	-1.671 (-0.831)	6.006 (1.455)
Outside director	0.895 (0.228)	-0.238 (-0.056)	15.521 (1.095)
Growth rate	14.717** (8.321)	15.574** (7.469)	14.564** (2.787)
R&D/SALES	-20.912** (-4.390)	-28.494** (-4.394)	-23.275** (-2.846)
LT DEBT/TA	0.0475 (0.043)	0.115 (0.097)	-9.085 (-1.581)
Ln TA	-0.569** (-1.714)	-0.674** (-1.705)	-0.331 (-0.429)
Ln age	-0.366 (-0.622)	-0.516 (-0.781)	3.499 (1.376)
Manufacturing dummy	0.567 (0.744)		
Service dummy	2.391** (2.492)		
R squared	0.196	0.19	0.292
Adjusted R square	0.176	0.169	0.159
F value	9.7	8.99	2.202
Number of observations	448	354	58

Panel B displays results regressing ROA (EBITDA) on controller's ownership cube based on the whole sample, the manufacturing sample and service sample, respectively.

Panel B			
	ROA(EBITDA)		
	1	2manu	3ser
Intercept	19.866** (2.448)	23.321** (2.476)	-3.127 (-0.136)
Controller's ownership Cube	7.813 (0.161)	-0.839 (-0.014)	95.896 (0.588)
Controller's ownership square	4.737 (0.077)	10.026 (0.141)	-111.888 (-0.576)
Controller's ownership cube	-7.075 (-0.297)	-6.569 (-0.237)	35.251 (0.497)
Unaffiliated blockholdings	-0.072 (-0.042)	-1.668 (-0.822)	6.047 (1.454)
Outside director	0.915 (0.233)	-0.239 (-0.056)	15.027 (1.051)
Growth rate	14.744** (8.289)	15.572** (7.444)	15.291** (2.829)
R&D/SALES	-20.897** (-4.381)	-28.496** (-4.387)	-23.173** (-2.814)
LT DEBT/TA	0.058 (0.053)	0.113 (0.096)	-8.846 (-1.525)
Ln TA	-0.571 (-1.716)	-0.673** (-1.699)	-0.252 (-0.319)
Ln age	-0.366 (-0.621)	-0.516 (-0.779)	3.461 (1.351)
Manufacturing dummy	0.582 (0.757)		
Service dummy	2.401** (2.494)		
R squared	0.196	0.19	0.297
Adjusted R square	0.174	0.166	0.147
F value	8.874	8.067	1.989
Number of observations	448	354	58

Table VIII Industry Impact on ROA Net Income

This table displays the regression results for ROA (Net Income) on controller's ownership based on the whole sample, the manufacturing sample and service sample, respectively. Controller's Ownership is the fractional ownership level of founder's or the actual controller's holding of the firm's outstanding shares; the square of the fractional ownership level of controller. Unaffiliated blockholdings equals the fractional equity stake of nonaffiliated owners holding at least five percent of the firm's outstanding shares. Outside directors defined as the fraction of independent directors serving on the board divided by board size. Growth rate is the annual growth rate and R&D/sales is research and development expenses divided by total sales. LT Debt/total assets measured as the book value of long-term debt divided by the book value of total assets. Firm size is the natural log of the book value of total assets. Ln age is the natural log of number of years since the firm's inception. Manufacturing dummy equals one when it is a manufacturing firm. Service dummy equals one when it is a service firm. Number of the observations for the complete sample, manufacturing sample and the service sample are 448, 354 and 58, respectively.

	ROA(Net Income)		
	1	2manu	3ser
Intercept	23.459** (3.264)	26.851** (3.133)	3.730 (0.206)
Controller's ownership square	13.903** (1.813)	11.247 (1.253)	-1.209 (-0.046)
Controller's ownership	-10.122 (-1.586)	-7.347 (-0.988)	-2.061 (-0.101)
Unaffiliated blockhodings	0.365 (0.231)	-0.387 (-0.204)	4.445 (1.225)
Outside director	2.774 (0.763)	1.716 (0.428)	10.323 (0.829)
Growth rate	12.743** (7.755)	13.428** (6.832)	13.197** (2.874)
R&D/SALES	-9.245** (-2.089)	-15.564** (-2.546)	-13.217** (-1.839)
LT DEBT/TA	-1.320 (-1.311)	-1.323 (-1.191)	-9.820** (-1.945)
Ln TA	-0.787** (-2.551)	-0.896** (-2.406)	-0.398 (-0.586)
Ln age	-0.477 (-0.872)	-0.826 (-1.326)	3.691 (1.652)
Manufacturing dummy	0.284 (0.401)		
Service dummy	1.978** (2.219)		
R squared	0.178	0.164	0.274
Adjusted R square	0.157	0.142	0.138
F value	8.592	7.529	2.021
Number of observations	448	354	58

Panel B displays results regressing ROA (Net Income) on controller's ownership cube based on the whole sample, the manufacturing sample and service sample, respectively.

	Panel B		
	ROA(Net Income)		
	1	2manu	3ser
Intercept	23.290** (3.089)	27.341** (3.080)	-4.696 (-0.235)
Controller's ownership cube	3.383 (0.075)	-11.548 (-0.215)	143.869 (1.012)
Controller's ownership square	9.665 (0.170)	25.617 (0.381)	-170.519 (-1.007)
Controller's ownership cube	-8.529 (0.218)	-12.728 (-0.489)	57.079 (0.922)
Unaffiliated blockholdings	0.349 (0.218)	-0.339 (-0.177)	4.508 (1.243)
Outside director	2.782 (0.764)	1.700 (0.423)	9.583 (0.768)
Growth rate	12.754** (7.720)	13.402** (6.798)	14.288** (3.030)
R&D/SALES	-9.239** (-2.085)	-15.593** (-2.547)	-13.063** (-1.818)
LT DEBT/TA	-1.315 (-1.302)	-1.345 (-1.204)	-9.461** (-1.87)
Ln TA	-0.788** (-2.549)	-0.891** (-2.385)	-0.279 (-0.405)
Ln age	-0.477 (-0.870)	-0.828 (-1.326)	3.632 (1.626)
Manufacturing dummy	0.291 (0.407)		
Service dummy	1.982** (2.218)		
R squared	0.178	0.164	0.29
Adjusted R square	0.155	0.14	0.139
F value	7.858	6.762	1.921
Number of observations	448	354	58

Although the service firms sample continues to show insignificance, the service dummy in the complete sample shows a relatively strong effect on profitability.

Table VII uses ROA (EBITDA) as the dependent variable to examine the industry impact on firms' accounting performance. Column 1 of Table VII reports results for the complete sample. The relationship between services dummy and ROA (EBITDA) is positive and significant. Besides the fact that the manufacturing dummy is insignificant, the value of coefficient of manufacturing dummy is also positive. However, the value of the coefficient for the service dummy is larger than the value of coefficient of manufacturing dummy. This indicates that the service firms, although it accounts for a lower percentage than the manufacturing firms in the whole sample, show stronger results. Compared to the manufacturing firms, high-tech companies from the service industry grow at a faster rate. A non-linear relationship between ROA (EBITDA) and controller's ownership level is also found, indicating that the ROA (EBITDA) first declines and then increases with the increase in controller's ownership. Growth rate continues to be related to ROA (EBITDA), while R&D/Sales is negatively related, similar to previously obtained results

Column 2 of Table VII the reports results of the manufacturing sample. I did not find a significant relationship between ROA (EBITDA) and controller's ownership level. Results of proxies for growth opportunities and firm size are similar to those of the complete sample.

Column 3 of Table VII reports the results of the service firms sample. Only the proxies for growth opportunities show significant impact on ROA (EBITDA). My conjecture about the disappearance of the relationship between ROA (EBITDA) and controller's ownership level is that the high-technology industry has its own characteristic which is different from traditional firms. It is, however difficult to explain why the relationship between ROA (EBITDA) and controller's ownership level is not significant for the manufacturing firms sample.

Table VIII uses ROA (net income) as the dependent variable to examine the industry impact on firms' accounting performance. Results of the complete sample and manufacturing sample are very similar to results of Table VII. However, because ROA (EBITDA) ignores the effect of capital structure effect, in the service firms sample using ROA (net income) as dependent variable, the effect of debt becomes significant. This is consistent with the results of the young firms sample. The negative effect of long-term debt indicates that as the long-term debt increases as a percentage of the total assets, the firm is less profitable. This significant effect may not only be due to the agency cost that long-term debt could cause, but also implies that the service sample possibly overlaps with the young firms sample. It is reasonable since the high technology industry is newer than the manufacturing industry in China. Panel B of Table VII and Table VIII present results including the cube of controller's ownership level. Compared to the square of ownership, results of Panel B are similar but weaker.

5. Conclusions

By using a sample of 448 concentrated ownership firms in 2011 from the Small and Medium Enterprise Market and Growth Enterprise Market, I document significant relationships between the largest shareholder's ownership level and firm performance measures. This study follows the framework of Anderson and Reeb (2003). I conduct several cross-sectional OLS regressions using Tobin's q and ROA as measures of firm performance. There is a significant cubic relationship between Tobin's q and the largest shareholder's ownership level. Unaffiliated block-holder ownership consistently shows a negative effect on firm value. I find that firm value first declines when family ownership is between 0 and 25.9 percent, then rises in the 25.9-54.2 percent range, and again falls when family ownership is greater than 54.2 percent. Both the alignment-of-interests (Fama and Jensen, 1983) and entrenchment theories (Shleifer and Vishny, 1997) are supported by my findings. The alignment of interest reduces asymmetric information and agency costs; the cost of damaging firm value is larger than the personal benefits the control shareholders can gain from expropriation, and thus owners are more incentivized to maximize the firm value in the range between 25.9 and 54.2 percent ownership level. At ownership level lower than 25.9 percent, the owners are not necessarily able to provide any effective monitoring, while above 54.2 percent the owner might be concerned more about their own wealth maximization and be entrenched. This finding is consistent with Chahine, (2007).

At the same time, I find a non-linear relationship between ROA and the largest shareholder's ownership level. At 30.9 percent (using ROA calculated with EBITDA) and 32.5 percent (using ROA calculated with net income), the relationship between performance and controller's ownership begins to increase. This non-linear relationship might indicate that under about 30 percent level of ownership, in order to maximize their own utility, controllers use their control rights to pursue personal benefits and expropriate other shareholders, therefore negatively affecting profitability (Andres, 2008); while above a certain ownership level, compared to shareholders of widely-held firms, concentrated shareholders have stronger economic incentives to decrease agency costs and invest more efficiently, consequently increasing profitability.

I also study the impact of firm age by including a firm age dummy in the regressions as well as by breaking my sample into young firms and older firms samples. Since firms from the Small and Medium Enterprise Market and Growth Enterprise Market are relatively younger, firms which are older or equal to 13 years are classified as old firms. Only in the old firm sample, firm age shows a positive effect on Tobin's q, suggesting that when firms reach a certain age, the impact of ownership on firm value is stronger.

Because manufacturing firms account for 79 percent of the sample firms and service firms account for 13 percent of my sample, I also conduct several regressions to examine whether there is an industry impact on firm performance. I do not find that

industry has any significant impact on firm value, in general, although a relation is found for the service firms with accounting measures of performance.

In conclusion, my evidence implies that concentrated ownership does have a significant relationship with firm performance. The pattern of the relationship varies with different firm performance measures. Both the entrenchment theory and the alignment of interest theory are supported by my findings.

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