

Ownership Structure and Corporate Risk Taking: Evidence from an Emerging Market

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December 2016

(Very preliminary; comments are welcome.)

Abstract

We investigate the impact of ownership structure on corporate risk-taking across Chinese firms between 1999 to 2008. We find a U-shape relationship between the largest shareholder's ownership and corporate risk taking. Specifically, when the largest shareholder's ownership is low, the largest shareholder discourages corporate risk taking due to the dominance of the management entrenchment effect, but if the largest shareholding rises past a threshold, it encourages corporate risk taking instead, due to the dominance of the incentive alignment effect. We also find government ownership deters corporate risk-taking, while foreign ownership encourages corporate risk-taking.

1. Introduction

Corporate risk taking is an important policy aiming at improving the efficiencies in the utilization of assets and the resulting profitable opportunities, returns, and firm growth (Jensen and Meckling (1976); Delong and Summers (1991); John, Litov and Yeung (2008); and Faccio, Marchica, and Mura (2010)). Ownership structure has long been shown as a vital factor in shaping corporate risk taking (e.g. Amihud and Lev (1981); May (1995); Tufano (1996), Boubakri *et al.* (2013))¹. However, the relationship between a complete ownership structure and corporate risk taking remains unexplored, and current empirical findings on this remain mixed.² This paper sheds additional light on this issue from a new and more comprehensive angle—we use a complete measure of ownership structure to investigate corporate risk-taking, thus avoiding the omitted variable problem in ownership structure common in previous papers. Motivated by theory about the incentive effect versus the entrenchment effect of larger shareholders, a non-linear relationship between the largest shareholder's ownership concentration and risk taking is hypothesized and established for a sample of Chinese publicly traded companies. This paper also provides new evidence on the benefits of the involvement of foreign capital in an emerging market.

Claessens *et al.* (2002) pioneer in studying the incentive effect versus the entrenchment effect of the largest shareholders. Their study of 1,301 publicly traded corporations in eight East Asian economies reveals that firm value increases with the cash-

¹ For instance, Galai and Masulis (1976), Smith and Stulz (1985), and Aggarwal and Mandelker (1987) argue for the potential link between ownership structure and corporate risk taking. Mosen and Downs (1965) and Mosen *et al.* (1968) provide theoretical explanations for this link.

² For instance, some studies find ownership concentration significantly decreases risk taking (May (1996); Tufano (1996)) while others find ownership concentration significantly increases risk taking (Paligorova (2010)) or there is no significant relationship between them (John *et al.* (2008)). Another limitation of the literature is that other dimensions of ownership that are not prevalent in the U.S. have not been carefully examined. As shown by La Portal *et al.* (1999), in many countries other than the U.S., firms are typically controlled by families or the State.

flow ownership of the largest shareholder, consistent with a positive incentive effect. But firm value falls when control rights of the largest shareholder exceed its cash-flow ownership, consistent with an entrenchment effect. The important question that remains is: what are the channels through which ownership structure affects the firm value? Existing literature on this question is scarce. For example, Fan and Wong (2002) explain such effects through the lens of the informativeness of accounting earnings, while Xiao and Zhao (2014) explain such effects through the angles of related-party loan guarantees and legal violations. In this paper, we examine such effects through the perspective of risk taking. Specifically, we hypothesize and confirm that when the largest shareholder's ownership is low, the largest shareholder discourages corporate risk taking due to the dominance of the management entrenchment effect, but when the largest shareholding rises past a threshold, it encourages corporate risk taking instead, due to the dominance of the incentive alignment effect.

In addition to examining the effect of the largest shareholder's ownership on risk-taking, we also investigate the impact of foreign ownership on risk taking. An, Huang, Li and Xiao (2014) study 48,548 firms in 72 countries from 2000 to 2008 and find a significantly positive relationship between foreign institutional ownership and corporate risk taking. Our result that foreign ownership enhances risk-taking among Chinese firms is consistent with their results. Our result is also consistent with other papers in the literature that show that foreign ownership can benefit invested firms, especially in emerging markets, such as providing more effective risk sharing (Merton (1987)) and volatility reduction (Li *et al*, (2011)). The improved firm level corporate governance by the involvement of foreign owners, such as the commitments and monitoring from large foreign shareholders, can increase the information transparency and reliability of firms, and thus boosting investors' confidence. So it is expected that managers in firms with foreign shareholders are more trusted by investors and thus more confident to take risky projects. In addition, foreign shareholders may

counterbalance the anti-risk-taking influence of different stakeholders of a firm, especially in a weak corporate governance country. First, many managers avoid even positive NPV risk taking activities for their career safety concerns. For instance, to reduce risks, they may conduct value-destroying industrial diversification at the cost of the firm (Hirshleifer and Thakor (1992); John *et al.* (2008)). Second, dominant insiders may demand conservative firm investment policies. Dominant insiders with large ownership positions control firm resources and have concentrated interests in firms, such as equity investments and private benefits (John *et al.* (2008)). For dominant insiders in countries with weak investor protection, as these countries usually have poorly-developed stock markets, risk diversification of dominant owners is generally difficult (Stulz (2005); John *et al.* (2008)). Third, governments in countries with weak investor protection are more likely to push firms to take lower risk investments due to their social concerns, such as stability and employment (John *et al.* (2008); Fogel *et al.* (2008)) and rent seeking. Firms with concerns of rent extraction by the government are effectively charged an extra tax, thus are discouraged from choosing higher risk projects (John *et al.* (2008)). Fourth, banks may influence firms to take less risky projects, given their market power as external financiers in countries with weak corporate governance (Morck and Nakamura (1999); John *et al.* (2008)).

This paper investigates the impact of ownership structure on corporate risk taking across Chinese firms between 1999 to 2008. We find a U-shape relationship between largest shareholding and corporate risk taking. We also find that government ownership deters corporate risk taking, while foreign stockholding encourages firm risk taking, presumably due to more sophisticated investment skills and more diversified portfolios of foreign institutional investors. The empirical results are robust when we control for market to book, firm size, tangibility, leverage and firm profitability.

This paper contributes to the literature in the following ways. First, to the best of our

knowledge, we are the first to document a U-shape relationship between the largest shareholding and corporate risk taking. By examining a complete ownership structure, our study reconciles the contradictory findings of previous studies on the relationship between the largest shareholding and corporate risk taking. Compared with previous studies, our empirical finding is more consistent with theoretical predictions. In addition, the finding that government ownership decreases risk taking provides another channel for government ownership to lower firm value (Wei, Xie and Zhang, 2005). Second, to the best of our knowledge, our paper is the first to investigate the impact of foreign shareholding on corporate risk-taking among Chinese firms. This complements current literature on emerging economies' capital market liberalization. Third, this paper extends the current literature which mainly focuses on U.S. data³ to the largest emerging market with weak legal protection for minority shareholders—China (Allen, Qian and Qian, 2005). Compared to the US, China has an ownership structure where 66% of the largest shareholdings are government-related (Gul *et al.*, 2010). The findings in such an influential emerging economy can shed light on the research in this area for economies with corporate ownership structures different from those prevalent in the US. For example, as Carney and Child (2013) show, the state has become increasingly important as an owner of firms in nine East Asian economies between 1996 and 2008: Japan, South Korea, Hong Kong, Singapore, Taiwan, Indonesia, Malaysia, the Philippines, and Thailand. Faccio and Lang (2002) find that Austria, Finland, Italy and Norway, the State controls more than 10% of the listed firms, especially the largest firms.

The remainder of this paper is organized as follows. Section 2 provides the literature review; Section 3 introduces the hypotheses; Section 4 discusses the data and methodology; Section 5 provides the empirical results; and Section 6 concludes.

³ A notable exception is Boubakri *et al.* (2013) who examine how state and foreign ownership affect the risk-taking of 381 newly privatized firms from 57 countries.

2. Literature Review

Corporate risk taking has increasingly attracted attention from the academia and policy makers, and has been investigated in recent literature from the perspectives of ownership structure, managerial incentives, and corporate governance/creditor rights. In terms of ownership structure, well-diversified large shareholders may influence a firm to invest in more risky projects for higher profits, but on the other hand, they may also push a firm to take conservative projects if their ownership is highly concentrated because this can better serve their incentives for private benefits of control (John et al. (2008); Paligorova (2010)). According to agency theory, managers will always have the incentives to take less risky projects and even avoid risky projects enhancing firm value, for their career and reputation concerns, unless they are pushed by well-diversified, risk-loving large shareholders (Holmstrom and Ricart I Costa (1986); Hershleifer and Thakor (1992); John *et al.* (2008); and Paligorova (2010)).

In terms of corporate governance and investor protection, stronger investor protection is expected to have a positive impact on corporate risk taking (La Porta, *et al.*, 2000), while poor country-level corporate governance usually leads to more conservative investment policies. This is because countries with poor corporate governance usually have poorly-developed capital markets, fewer diversification opportunities and more costly bankruptcies that exacerbate the investment concentration problems (Stulz (2005); John *et al.* (2008)). In other words, the dominant shareholders of the companies in these countries tend to be more risk-averse due to their concentrated positions in the firms. Hovakimian and Kane (2000) also document that restrictions on banking activities can reduce bank risk. Creditor rights are argued to have a negative impact on risk taking, because of the more costly bankruptcy in those countries associated with stronger creditor rights (Acharya *et al.* 2011). This is particularly possible for firms in countries with poor corporate governance, due to the more

influential roles of non-equity stakeholders, such as banks, labor unions, and so on (John *et al.* (2008)).

Previous studies of corporate risk taking either focus on a developed country (Wright *et al.* (1996) for US; Gadhoun and Ayadi (2003) for Canada), or on a particular industry across the world (Anderson and Fraser (2000), Gonzalez (2005), Laeven and Levine (2009) for banking; Joan and Starks (1993) and Downs and Sommer (1999) for insurance companies), or on a sample across the countries for a limited period (Paligorova, 2010), or on the managerial incentives (Coles, Daniel, and Naveen (2006); Low (2009)). This paper contributes to the literature by being the first to investigate this issue by employing a complete set of ownership structure in the largest and fast growing emerging economy—China. Examining China on this issue is important for the following reasons. First, China's ownership structure is different from that in the US. A majority of Chinese firms are partially privatized, with a high concentration ratio for the largest shareholders, often controlled by government, for example, 66% of largest shareholders are government related (Gul *et al.*, 2010). From the perspective of the government, its shareholding is highly concentrated in a firms across industries. Therefore, its shareholding is not well diversified, so there is an incentive for the government shareholders to restrain high-risky projects. Before 2006, the stock market in China was a segmented market, and a large number of shares were non-tradable, of which the largest shareholders are often government-related. This provides a unique opportunity to investigate the constraints of property rights on risk taking decisions, and further investigate the impact of change of this constraint policy on firm risk taking. In addition, there is a presence of foreign shareholders in the form of B- and H-shares, who possess better investment skills and resources and are generally more sophisticated institutional investors (Kim and Yi, 2009). Due to their diversified portfolios, we can expect their shareholdings in Chinese firms strongly encourage risk taking. Moreover, the strong

policy restraints applied by the Chinese government to foreign capital strengthen the need for taking higher-risk projects. Second, corporate governance in China in general is poor (Allen, Qian and Qian, 2005), characterized by the low quality of accounting disclosure, low transparency of firm operations and the poor quality of information on the stock markets. In addition, the government plays dual roles in the Chinese stock markets as both the regulator and an important shareholder. In such an environment, it is easy for the controlling shareholders to prevent the firms from taking higher risks.

3. Hypotheses

Previous studies find that ownership structure can have an impact on corporate risk taking. May (1995) documents the links between manager personal wealth (equity ownership) and firm risk taking. Tufano (1996) finds that the firms with lower outside block holdings involve in higher level of risk management. Anderson and Reeb (2003) show that the firms with founder families are operated with higher risk. Gadhoun and Ayadi (2003) show that ownership structure and managerial ownership can influence the Canadian firms' decisions to take risks. Barth *et al.* (2004) document the restrictions on bank ownership of non-financial firms makes banking crisis more likely. John *et al.* (2008) do not find a significant relationship between ownership structure and corporate risk taking. Laeven and Levine (2009) document the significant impact of the largest shareholder cash flow rights on bank risk, including the interactions between the largest shareholder cash flow rights and capital requirement, capital stringency, activity restriction and shareholder rights. Paligorova (2010) documents a significant relationship between corporate risk taking and ownership structure based on a sample of firms across the world, in particular for a business group. Huang *et al.* (2013) show that the removal of the constraints on property rights (transferability) of the controlling shareholders can encourage corporate risk taking in Chinese firms.

We develop two testable hypotheses in the following subsections:

3.1 Large shareholders have a nonlinear impact on corporate risk taking

Jensen and Meckling (1976) and Paligorova (2010) argue that large shareholders (concentrated shareholders, interchangeable in this paper) can have an impact on corporate risk taking. There is no consensus on the role of large shareholder in influencing corporate risk taking. On one hand, due to managerial entrenchment effect, large shareholders may protect the existing private benefits by taking a conservative approach to investment policy, because managers can engage in relationship-investment making their replacements difficult for outside investors (Shleifer and Vishney (1989); Wright et al. (1996); Gul *et al.* (2010)). Also, controlling shareholders can extract private benefits by diverting the firm resources at the expense of outside shareholders, including forgoing positive NPV projects and conducting suboptimal investments (Wurgler (2000); and John *et al.* (2008)). John *et al.* (2008) argues that the private benefits by the insiders or managers of diverting firm resources are less detectable in firms with high cash flows, which may result in conservative corporate investment decisions or forgoing value enhancing projects. The expected diversion is more severe in countries with poor corporate governance (Shleifer and Wolfenzon (2002)). This issue is potentially more severe in China with relatively less effective corporate governance system, which results in a lack of the mechanisms to constrain the private benefits of controlling shareholders and managers. On the other hand, incentive alignment effect argues that shareholding concentration can make controlling shareholders commit not to expropriating minority shareholders' interests (Gomes (2000)). Empirical research has shown that ownership concentration can make the expropriation less likely (Mitton (2002); Lins (2003)). This implies that controlling shareholders will be less likely to forgo positive NPV projects.

Recent literature also examines the role of poor corporate governance in China in influencing corporate risk taking. More specifically, in a country with poor corporate

governance such as China, the controlling shareholders with large stakes choose to take conservative investments, due to their significant private benefits and cash flow rights in controlling a firm (Morck, Wolfenzon, and Yeung (2005), Stulz (2005) and John et al. (2008)), and the significant influence exerted by non-equity shareholders (banks, for instance) for the safety of their own investments (Tirole (2001) and John *et al.* (2008)). The role of bank lending in China is very important, and banks with significant market power often influence firm to adopt conservative projects (John *et al.* (2008)). Labor unions in China are also relatively strong, which generally deter risk taking projects as well (John et al. (2008)). In addition, Chinese government may influence firms to adopt conservative investment policies due to political concerns, such as concerns for unemployment and social stability (Fogel, Morck, and Yeung (2008)), and rent-seeking behaviors (John *et al.* (2008)). On the other hand, the poor corporate governance environment in China may encourage high risk taking by “tunneling” in a pyramid structure from low cash flow rights units to high cash flow rights units, as pointed out by Johnson *et al.* (2000) and John *et al.* (2008).

In summary, in the context of China with large shareholders controlling almost every important corporation decision (Gul *et al.*, (2010)), the entrenchment effect dominates the incentive alignment effect, so a negative impact of large shareholding on corporate risk taking decision is expected. This is in particular possible due to the poor corporate governance environment in China. However, when the dominant shareholding is large enough, the firm is close to a firm wholly owned by the controlling shareholder, the incentive alignment effect may dominate entrenchment effect. Thus a positive impact is expected after the shareholding of the largest shareholder reaches a threshold. This argument is consistent with Fan and Wong (2002), and Gul *et al.* (2010).

In addition, if the largest shareholder is government related, the entrenchment effect is more dominant, because the corporate governance is likely to be more inefficient (Shleifer

and Vishney (1994) and Shleifer (1998)). So a negative impact is expected if the large shareholding is government related.

Moreover, we hypothesize that the managers, especially in government controlled firms, may not have incentives to take many risks, if they are well protected politically. However, on the other hand, those firms may take substantial risks, if their managers do not have to be responsible for their risk taking behaviors. So it is an empirical issue whether government controlled firms have more risk-taking or less, compared with privately-controlled firms publicly listed in China.

The above analysis leads to the following hypotheses:

Hypothesis 1a: When the largest shareholder's ownership is below a threshold, as its ownership rises, the firm takes fewer risks. When the largest shareholder's ownership is above a threshold, as its ownership rises, the firm take more risks.

Hypothesis 1b: The state ownership of a firm is negatively associated with the firm's risk-taking.

3.2 Foreign shareholders encourage corporate risk taking

In addition to the tradable A-shares available to domestic investors by all Chinese firms, Chinese firms also issue B- and H-shares to foreign investors. B-shares are traded in Shanghai and Shen Zhen Stock Exchanges, and H-shares are traded in Hong Kong Stock Exchange. The accounting information for firms with B- and H-shares is more accurate based on the Big 4 auditors (Gul *et al.* (2010)), and foreign investors are more sophisticated institutional investors with more investment experiences, better ability to process available information (Kim and Yi (2009) and Gul *et al.* (2010)). Also, the firm's foreign ownership exhibit better information environment including corporate transparency (Kang (1997)). Besides, foreign investors are perceived to have more diversified investment portfolios, because they are not constrained to invest only in Chinese stock markets and they can invest

internationally, which gives them advantage over Chinese domestic investors. This implies that foreign investors are more likely to influence their invested Chinese firms to take more risky projects.

Current literature has mixed findings on the role of foreign capital in influencing local capital market. Some studies document a positive impact of foreign investment on firm level volatility (Bae *et al.*, 2004; An *et al.*, 2014), and other studies document a negative impact (Li *et al.*, 2010), while some other studies reveal no significant effects (Kim and Singal, 2000; Umutlu *et al.*, 2010). The finding of this paper that foreign shareholding can encourage firm risk taking implies efficiency improvement by the globalization of capital markets, which is regarded as a key benefit of having foreign shareholdings. Such a finding sheds additional light on the debate of the benefits versus costs of foreign capital in emerging economies. This supports the view of Li *et al.* (2010) and An *et al.* (2014). Theoretically, this may be explained by Merton's (1987) model, which argues for the risk-sharing effect between foreign capital and domestic capital. More specifically, the reduced risk exposure due to the involvement of foreign capital can encourage firms to afford more risk taking.

Based on above analysis, it is expected that the foreign ownership, proxied by B- and H-shares, would have a positive impact on corporate risk taking.

Hypothesis 2: Firms with foreign ownership take more risks than firms without foreign ownership.

4. Data and Sample

We consider all A-share companies listed in the Shanghai and Shenzhen exchanges. Consistent with prior literature, we also delete financial firms.

The dependent variables is Std_roa (the standard deviation of annual industry adjusted ROA over 5 years) following Faccio *et al.* (2010) and John *et al.* (2008). The results are not sensitive to the use of ROA without industry adjustment. The sample period is from 1999 to

2004 because of the 5-year requirement.

5. Results

Table 1 present the summary statistics, and Table 2 presents the panel regression results using Std_roa (the standard deviation of annual industry adjusted ROA over 5 years), a widely-used measure of risk-taking, as the dependent variable. We include year and industry fixed effects in all models. We also cluster the standard errors at the firm level. We winsorize all variables at the 1% for both tails and for each year.

Table 1. Summary Statistics

Variable	Mean	Standard Deviation	Q1	Median	Q3	Observations
Risk-taking	0.044	0.055	0.013	0.023	0.050	6679
Blockholding	0.098	0.298	0.000	0.000	0.000	6679
ln(HHI)(2nd to 10th largest shareholders)	-5.730	2.627	-7.435	-5.087	-3.530	6588
State Ownership	0.783	0.412	1.000	1.000	1.000	6667
Duality	0.133	0.339	0.000	0.000	0.000	6672
Board independence	0.180	0.157	0.000	0.222	0.333	6628
Top 1	0.439	0.172	0.293	0.431	0.583	6672
Top 2	0.222	0.156	0.086	0.186	0.340	6672
Market to book	1.453	0.548	1.093	1.285	1.627	6522
ln(Assets)	21.018	0.883	20.430	20.939	21.562	6679
ROA	0.032	0.071	0.0133	0.040	0.066	6679
Tangibility	0.297	0.173	0.166	0.271	0.408	6679
Leverage	0.464	0.205	0.325	0.453	0.587	6679

The results in Table 2 support our hypotheses. When the largest shareholder's ownership is less than around 47%, as the largest shareholder's ownership increases, the firm takes less risks, as the entrenchment effect dominates, while when the largest shareholder's ownership exceeds around 47%, as the largest shareholder's ownership increase, the firm takes more risks, as the incentive alignment effect dominates. We also find that firms issue H-shares or B-shares take significantly more risks, while higher state ownership is associated with less risk-taking.

Table 2. Panel Regression Results

The table reports the results from panel regressions, where the dependent variable, SD_{roa} , is the standard deviation of annual industry adjusted ROA, and the independent variables are as follows: $foreign_share$ is a dummy variable which equals one if the firm issues H-shares or B-shares; $state_share$ is the percentage of stocks owned by the state in the firm; $top1$ is the percentage of stocks owned by the largest shareholder in the firm; $top2$ is the square of $top1$; Bai is the natural logarithm of the sum of squares of the percentage ownership by the 2nd to the 10th largest shareholders (Bai, *et al.* 2004); $duality$ is a dummy variable that equals one if the board chairman and CEO are the same person; $board_i$ is board independence, measured by the proportion of independent directors on board; MTB is the market to book ratio; $ln(assets)$ is the natural logarithm of assets; ROA is return on assets; $tangibility$ is NPPE divided by asset; $leverage$ is book-value financial leverage. The table reports the coefficient estimates and p-values based on robust standard errors clustered at the firm level shown in parentheses. Year and industry dummies are included in all models. *** p<0.01, ** p<0.05, * p<0.1

	(1)	(2)	(3)
VARIABLES	SD_roa	SD_roa	SD_roa
top1	-0.0864*** (0.00967)	-0.0731** (0.0272)	-0.0857** (0.0100)
top2	0.0922*** (0.00950)	0.0753** (0.0372)	0.0910** (0.0102)
foreign_share	0.00777** (0.0486)	0.00787** (0.0465)	0.00758* (0.0512)
state_share	-0.000187*** (0.00120)	-0.000189*** (0.00129)	-0.000180*** (0.00163)
Bai		1.65e-05 (0.975)	
duality	-0.00129 (0.610)	-0.00177 (0.473)	

board_i	-0.00871	-0.00926	
	(0.404)	(0.376)	
MTB	0.00470***	0.00472***	0.00471***
	(3.92e-05)	(8.11e-05)	(3.51e-05)
ln(assets)	-0.00278*	-0.00285*	-0.00284*
	(0.0667)	(0.0632)	(0.0608)
roa	-0.254***	-0.253***	-0.254***
	(0)	(0)	(0)
tangibility	-0.0236***	-0.0245***	-0.0236***
	(9.73e-05)	(5.92e-05)	(8.60e-05)
leverage	0.0204***	0.0212***	0.0200***
	(0.000194)	(0.000109)	(0.000267)
Constant	0.126***	0.126***	0.127***
	(0.000151)	(0.000226)	(0.000137)
Observations	6510	6448	6553
R-squared	0.265	0.271	0.265

To address endogeneity, we plan to update our data and use the natural experiments of the split-share reform (Huang *et al.* (2013) and Liao, *et al.* (2014)). We expect to see qualitatively similar results.

6. Conclusions

We investigate the impact of ownership structure on corporate risk-taking across Chinese firms between 1999 to 2008. We find a U-shape relationship between the largest shareholder's ownership and corporate risk taking. Specifically, when the largest shareholder's ownership is low, the largest shareholder discourages corporate risk taking due to the dominance of the

management entrenchment effect, but if the largest shareholding rises past a threshold, it encourages corporate risk taking instead, due to the dominance of the incentive alignment effect. We also find government ownership deters corporate risk-taking, while foreign ownership encourages corporate risk-taking. To address endogeneity issues, we plan to update our data and use the natural experiment of the split-share reform (Huang *et al.* (2013) and Liao, *et al.* (2014)). We expect to see qualitatively similar results.

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