The impact of ownership structure on bank risk taking – theoretical outlook

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Abstracts: Ownership structure plays a more relevant role in determining corporate governance because it influences the motivation of executives and hence firms' effectiveness. This paper focuses on the main theories of the relationship between ownership structure and bank risk taking. Moreover, this paper summaries the literature review on impact of ownership structure on bank risk taking, generally in the world and particularly in Vietnam. Based on the systematization of the theoretical and empirical studies related to the impact of ownership structure on bank risk taking, the paper will help researchers, policy makers and bank managers understanding this relationship more clearly. And from the understanding, they can change or re-structure bank ownership effectively to limit the risks in Vietnamese banking system.

1 Introduction

Globalization and free trade is an indispensable trend that has created significant changes in all economic sectors of almost all countries around the world and Vietnam is not an exception. In the process, Vietnam has integrated more closely, has made extremely significant changes in many fields, and gradually removing the barriers to the domestic market. As a consequence, the financial market as well as the others markets are challenged by integration.

The Vietnamese banking system has experienced major changes since the 1990s and has obtained certain achievements. The number, scale, quality and ownership structure of banks have great changes, notably the degree of privatization of the banking sector and the appearance of foreign banks. This has created favorable conditions for the banking system to enter the period of international economic integration following the modern tendency.

However, the operation of the banking system has had still obstacles; especially the bad debt ratio is still relatively high. The system still has high probability of default, especially for small-sized-banks with weak operation and low profitability. One of the potential causes of this turbulent situation relates to the widespread cross-ownership of banks and the effects of different patterns of ownership, according to experts in the banking sector.

The empirical evidence on relationship between ownership and bank risk taking are documented with different approaches around the world. To date, however, the potentially important relationship between ownership and risk bank taking has not been studied comprehensively in the context of Vietnamese commercial banks. Meanwhile, Vietnamese commercial banks' ownership structure is rather diversified and has changed dramatically in recent years. In order to create the scientific basis for investigating the effect of ownership structure on the risk of Vietnamese commercial banks, systematizing the theoretical study, nationally and internationally empirical evidence on ownership structure, risks faced by commercial banks as well as the impact of ownership structure on bank risk taking is essential.

The aim of the paper is introducing the main theories of the relationship between ownership structure and bank risk taking. In addition, the paper summarizing the literature review on impact of ownership structure on bank risk taking, generally in the world and particularly in Vietnam. Based on the systematization of the theoretical and empirical studies related to the impact of ownership structure on bank risk taking the paper will discuss about the results and help policy makers and bank managers understanding the relationship between ownership structure and bank risk taking.

2 Material and methods

2.1 Material

Materials used in the research are secondary data sources, papers around the worlds and Vietnam. For international papers usually through electronic databases, such as sciencedirect.com, onlinelibrary.wiley.com, springer.com, papers.ssrn.com ...

Database for testing the impact of ownership structure on bank risk taking in Vietnamese commercial banks are collected from financial statements of 39 commercial banks that operated in the Vietnam banking industry during the years

2007-2015. The raw data are provided by Stoxplus, a company focusing on gathering and analysing financial data in Vietnam. Moreover, due to lack of some information, we also found some bank's financial statements to implement and check the data from the Stoxplus.

2.2 Methods

To test the relationship between ownership structure and Vietnamese bank risk taking, the Stata software is applied in this study. Descriptive statistics are used to describe the basic features of the data in this study. They provide simple summaries about the sample and the measures and assist in exploring the data and identifying any potential data errors. The clear scenes from descriptive statistics will somehow provide the probable answers to the results of regression analysis (Jiang, 2007). In addition, multiple regression analysis on the panel data is conducted to investigate the degree and direction of the variables' relationships.

Especially, the paper has applied an outlier rule to the variables which allows to drop some variables that are either not available or contain extreme values for certain indicators. Outlier detection is very important in many fields of study, since an outlier indicates the bad behavior of the dataset (Alwadi, 2015). The variables are winsorized at the 1st and 99th percentiles to eliminate outliers so they are closer to within the normal distribution curve. Furthermore, the multivariate panel regression analysis framework based on the Ordinary Least Square (OLS), the Fixed Effect (FE), the Random Effect (RE) models adopted to examine the determinants of banks profitability. Then some tests are conducted to approach the panel data modelling and choose which model is better.

Generalized method of moments (GMM) model is performed in order to validate the results and fix some disadvantages of FE model. The study uses a two-step GMM panel estimator with heteroskedasticity-robust standard errors introduced by Hansen (1982). Baum, Schaffer, & Stillman (2003) suggest that GMM makes use of the orthogonality conditions to produce consistent and efficient estimates in the presence of heteroskedasticity. Two-step GMM results in more asymptotic efficient estimates than one step.

3 Literature review

3.1 Theories on the relationship between ownership and bank risk taking

Studies on the impact of ownership structure on the bank's performance and risk taking are based on two main theories: Agency Cost, Public Choice Theory

3.1.1 The agency cost

The agency cost occurs when there is a lack of agreement between the manager's purposes and the aims of the firm owners. The representative is the owner of the company, because the owner tends to be less able to monitor regularly, resulting in asymmetric informative status, thereby causing adverse selection and moral hazard.

One of the earliest studies of agency cost is the study by Jensen & Meckling (1976). In this study, the agency cost is defined as the sum of costs including controlling costs, negotiation costs and loss of interest. In detail, the controlling cost is paid to the controllers to alert shareholders when the management makes profit for themselves. The cost of contracting aims to prevent bad consequences that may arise from dishonest actions by executives. Benefit losses are the losses that occur due to the difference between the actual decisions of the executives and the decisions to maximize the benefits to the shareholders.

Another theoretical study on the agency cost and ownership structure was made by Fama & Jensen (1983). This study concludes that in a company there is a separation between ownership and control, or in other words, the true owner of the company does not participate in the management of the company. The agency cost will appear due to information asymmetry between the manager and the shareholders… Managers have more information about the company's situation and they will use the management right to profit themselves. In addition, there are many empirical studies exploring the effects of ownership levels of institutional investors on the agency cost.

Brickley, Lease, & Smith (1988); Agrawal, A., & Mandelker (1990) argues that because individual characteristics are compared to individual shareholders, institutional investors are fully capable and motivated to act as controllers in the company, thus reducing the cost of representation. Agency theory also assumes that the first source of conflict between managers and shareholders comes from their perceptions of risk. According to Jensen & Meckling (1976), shareholders with diversified portfolios seem to accept more risk for higher expected returns, but the managers do not prefer risks in order to ensure safety in their own benefit and position. Moreover, controlling shareholders enjoy significant benefits; they have many incentives to monitor managers, to gather information and thus increase the company's profitability by implementing risky projects Shleifer & Vishny (1986).

3.1.2 Public choice theory

According to James Madison (1788), "In shaping a man-made government, the greatest difficulty bases on, in first and foremost, ensuring that the government controls those who are governed; and next, must ensure that the government is in control of itself." Public choice is a process in which the will of individuals is combined in a collective decision.

The theory of public choice believes that private companies are better performing than state firms in the view of government functions. According to this theory, because the perfect effect does not exist in the political environment, it is difficult for government officials to act for the benefits of social members (Vickers & Yarrow, 1989). In an inefficient political environment, government officials and lawmakers tend to seek to maximize their benefits.

State-run managers often focus more on how to maximize their power and prestige while government officials are more interested in political goals such as supporting rates rather than the companies' economic efficiency. Vining & Boardman (1992) found that, in western countries, the performance of state firms improved significantly after privatization, so they believed that state-owned companies' risk is higher than that of non-state-owned companies.

Shapiro & Willig, (1990) believed that managers in state-owned firms can pursue both social welfare and personal gain or any goals when the political environment is imperfect. The more politically the environment is, the more likely it is for state employees to pursue personal benefits. Shleifer et al (1996) also recognized that governmental behavior often occur in state agencies. Government officials who have control over state-owned companies can gain more benefits than performing government-mandated tasks. In short, public choice theory studies the behavior of decisions made by politicians based on assumptions about self-interest, maximizing utility, and thereby identifying the purpose of politicians that they are not necessarily maximizing profits, but rather maximizing personal and political utility, which makes state banks less efficient and riskier than private banks.

In sum, these theories show the relationship between the ownership structure and the bank's risk. It is noteworthy that both of these theories emphasize public sector tend to present lower performance and higher risk than private companies.

3.2 International literature review

Risk in banking business is a constant concern for policy makers as a stable banking system is a prerequisite to ensuring the stability of the financial system and generally, the stability of the whole economic system. Major risks in commercial banking system can lead to financial crisis and financial system collapse. According to the agency theory, risk is largely influenced by ownership structure. In fact, controlling shareholders have the incentive and power to influence the company's decision in order to maximize benefits by increasing the risk Shleifer & Vishny (1986) and they can offset losses by multiplying diversify the portfolio.

Agency theory assumes that the first source of conflict between managers and shareholders comes from their perceptions of risk. According to Jensen & Meckling (1976) shareholders with diversified portfolios seem to accept more risk for higher expected returns, but managers do not like risks to ensure safety in the market position and personal interests. Moreover, controlling shareholders enjoy significant benefits; they have many incentives to monitor managers, to collect information Shleifer & Vishny (1986) and thus increase the company's profitability by implementing risky projects.

The research by Saunders, Strock, & Travlos, (1990) is the first study to examine the impact of ownership structures on the risk of US commercial banks. This study investigates the relationship between ownership structure and risk. The research indicated that banks are controlled by shareholders perform more risky behaviors than banks controlled by managers during the period 1979-1982 involving the process of decentralization (also known as non-management). After a study by Saunders et al. (1990), there is a series of studies examined the effect of ownership structure on risk.

Fraser & Zardkoohi (1996) used data from the savings and loan industry between 1976 and 1986 to examine two risk-related hypotheses. The ownership structure hypothesis holds the view that the activities of stock associations are more risky than the mutual associations, and the deregulation hypothesis denotes that savings and lending regimes are more risky in an unregulated environment.

Anderson & Fraser (2000) used the data of 150 commercial banks listed in industrial countries from 1987 to 1994 to provide evidence that ownership of managers was a significant factor in the commercial banks risk taking. Ownership of managers is correlated with the general risk and specific risk of commercial banks in the late 1980s when commercial banks are less regulated by regulations and in case of the banking sector is in financial crisis. However, the provisions of the law of 1989 and 1991 aimed to reduce the risk as well as bring significant improvements in the brand value of the banks, the manager’s ownership is inversely correlated with the the general risk and specific risk of commercial banks in the early 1990s. In contrast, systemic risk did not relate to the ownership of managers in both periods.

Iannotta, Nocera, & Sironi (2007) used a database of 181 banks in 15 European countries for the period 1999-2004 to study the relationship between ownership and profitability as well as risk of European commercial banks. The study uses a measure of ownership concentration that represents different ownership structures and divides banks into four types of ownership: state-owned banks, private-owned banks, mutual banks and savings banks. Based on the empirical results of the study, the authors draw some conclusions. Firstly, state-owned commercial banks have lower credit quality and higher default risk than other types of banks. Second, public banks have better loan quality and lower bankruptcy risk than other banks. Third, while the concentrated ownership structure does not affect the profitability of commercial banks, the highly concentrated ownership structure correlates with better credit quality, asset risk and default risk.

Garcia-Marco & Robles-Fernndez (2008) analyzed data from 1993-2000 of 127 financial institutions including 50 savings banks and the rest were commercial banks. The authors analyze the factors that influence the risk of Spanish financial intermediaries, with particular emphasis on the ownership structure and the size of the different units. In addition, the separate legal system of Spanish savings banks may lead to risky behavior different from commercial banks. In particular, they can invest in high-risk projects. However, other theories suggest that commercial banks controlled by major shareholders may face greater risks in certain situations. In this study, the authors tested these hypotheses using the active table data model (1993-2000) for commercial banks and Spanish savings banks. The study examined whether the difference in risk behavior was related to different ownership structures or related to other factors such as the size of the organizations. In general, small-scale institutions appear to be at lower risk. As the size and ownership structure variables interact in the model, Spanish medium-sized commercial banks appear to have a higher level of risk. The empirical results of this study also show that the high concentration of shareholders has a negative impact on risk.

Shehzad, de Haan, & Scholtens (2010) examined the impact of concentrated ownership on two of the bank's risk indices, the bank's NPL and capital adequacy ratios[49]. The authors used information based on the balance sheet of 500 commercial banks from more than 50 countries for the period 2005-2007. They found that concentrated ownership leads to decrease significantly bank's NPL ratio, supervisory conditions, and shareholders' benefits. In addition, the concentration of owners affects the minimum capital adequacy ratio (CAR) based

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[49] Non-performing loans (NPL): The ratio of non-performing loans to total loans to measure a bank's loan quality

Capital Adequacy Ratio (CAR)): The ratio of a bank's capital to its risk on shareholder protection. When the right to protect shareholders and supervisory control is low, concentrated ownership reduces the bank's risk.

The mixed results of the relationship between ownership structure and risk take into account the characteristics of shareholders. In fact, risky behavior depends on the shareholder's portfolio and their goals. Acceptance of risk will be clearer when controlling shareholders have the opportunity to diversify their portfolio and vice versa. Accordingly, empirical studies have examined some types of owners.

Barry et al. (2011) analyzed the data of 249 European commercial banks for the period 1999-2005 to examine the relationship between the ownership structure and the risk of private and publicly held commercial banks. They found that the ownership structure plays vital role in explaining the difference in risk mainly in private banks. Higher ownership ratio of individuals/ families or banking institutions is associated with a reduction in asset risk and default risk. In addition, institutional investors and non-financial companies take advantage of the highest risk strategies when they hold multiple shares. For public banks, changes in ownership structure do not affect risk. Market forces seem to fit the behavior of public banks, so the ownership structure is no longer a decisive factor in explaining the difference in risk. However, high levels of ownership of banking institutions in public banks are correlated with lower credit risk and default risk.

Chun et al. (2011) analyzed the effect of managerial ownership on risk-taking behaviors of Korean and Japanese banks during the late 1990s to early years 2000. Research illustrated that the ownership of managers does not affect the level of risk or profitability of Korean banks. Conversely, the increase in ownership of managers will increase the risk for Japanese banks. However, this does not bring higher profits for Japanese commercial banks. The study also shows that increasing the ownership ratio of managers in well-known commercial banks will not encourage risk-taking behavior. Their result confirms the role of brand value for risk-taking behaviors of banks which is consistent with previous studies that support the hypothesis of moral hazard based on data on the economies of the United States and other countries.

Mohsni & Otchere (2014) used a sample of 242 private commercial banks in 42 countries between 1988 and 2007 to analyze risk-taking behaviors of private commercial banks before and after privatization. This empirical study has shown that the risk of private banks is significantly reduced after privatization; however, these banks still have higher risks than other types of banks. This finding is in line with the assertion that after the privatization and elimination of government guarantees and grants, privatized banks became more cautious. Since other types of banks do not have a significant change in risk tolerance, the authors argue that the risk reduction of private banks is due to changes in the ownership structure of banks rather than industry factors. It can be seen that the higher proportion of private equity, which exceeds the average, pose a higher risk because private banks become more accountable to shareholders. The results show that there is a nonlinear relationship between state/private ownership of banks and risk. The results of further analysis are consistent with the U-shaped nonlinear relationship between private ownership and risk.

Zhu & Yang (2016) focuses on whether public ownership influences the commercial bank risk-taking. By using unbalance data on 123 Chinese commercial banks from 2002 to 2013, the authors found that the share of state ownership was generally correlated with the high level of risk. In addition, the study also found that commercial banks controlled by the central government had the highest credit risk, while commercial banks controlled by local governments had the lowest capital adequacy and liquidity ratios. The study also shows that foreign investors' acquisition has the effect of reducing the risk of state-owned commercial banks, and this effect is particularly important for central government-owned banks or local-owned banks. The authors also found that the risk-reduction effect depends on foreign ownership, participation in the business of foreign investors and the number of foreign members in the board of directors of commercial banks.

Zheng, Moudud-Ul-Huq, Rahman, & Ashraf (2017) applied the two-stage least square estimator (2SLS) to examine the two-way relationship between bank capital regulation and adopting risk behavior related to the impact of ownership structure. The authors used the statistical data of 32 commercial banks from a developing country, Bangladesh, from 2006 to 2014. The empirical findings of this study suggest that higher capital regulation increases the stability of banks, against credit risk, but higher credit risk often reduces the capital ratio. This study shows that different ownership structure has different effects on risk, such as private banks and Islamic banks are less risky and more stable than state-owned banks and other banks. This result is similar to the results of Srairi (2013). However, these banks are prone to high liquidity risk. On the other hand, banks with low levels of concentrated ownership tend to accept low risk and vice versa, banks with high concentration of ownership improve the bank's capital ratio.

Thus, through the overview of researches can be seen that there are not many authors concentrate deeply on the impact of ownership structure on the risk of commercial banks. These results above show converse opinions, and each study focuses on the different disaggregation of ownership structure.

3.3 The literature review in Viet Nam

Until now, the impact of ownership structure on risk of commercial banks has been concentrated in some countries in Europe, China, South Korea and some developing countries like Bangladesh. However, there is no study on this issue in Vietnam, except the study by Võ Xuân Vinh & Mai Xuân Đức (2017) on the influence of foreign ownership. Therefore, in this section, we will synthesize a number of research analyzes on risk of commercial banks as a basis for selecting dependent variables representing the risk types of commercial banks and specific control variables of commercial banks.

Nguyễn Thị Tuyết Nga (2016) used data from audited financial reports published on the website of 22 commercial banks in Vietnam and data collected from the World Bank's website over the period 2008-2015 to assess the impact of equity on credit risk at Vietnamese commercial banks. The research shows that when the rate of equity increases, the credit risk decreases. As a certain level, the bank is ineffective operation, thus loosening lending, causing credit risk to increase. Thus, this research only stopped at the conclusion that equity has an impact on credit risk, and has not studied deeply the impact of each type of ownership on the risk of commercial banks, as well as not yet studied in other types of risks such as bankruptcy risk, liquidity risk.

Man Duy Pham (2016) studied the relationship between size and risk of Vietnamese commercial banks, taking into account the impact of state ownership on scale efficiency based on theories in the banking field and empirical research. The author used the econometric model on the unbalanced sample of 30 Vietnamese commercial banks for the period 2006 – 2015 by using Z-score to measuring risk following Boyd et al. (1993). The results of the study indicated that bank size positively correlated with the bank's risk. In terms of ownership structure, there is no empirical evidence of the correlation between state ownership, bank size and bank risk, while foreign ownership is negatively correlated with the level of risk.

Vo Xuan Vinh and Mai Xuan Duc (2017) studied the influence of foreign ownership on the liquidity risk of Vietnamese commercial banks in the period 2009-2015. The author used two regression methods for panel data: fixed-effects regression model (FEM) and random-effects regression model (REM) with sample data including 35 commercial banks in Vietnam. The results show that the higher the foreign ownership, the lower the liquidity risk of commercial banks and vice versa. In addition, credit risk and liquidity risk in the previous year are in line with liquidity risk of commercial banks in the current year. The results of the study have important implications for providing additional empirical evidence to prove the role of foreign shareholders in managing liquidity risk and other activities in Vietnamese commercial banks.

4 Discussion

In conclusion, through the overview of researches can be seen that there are not many authors concentrate deeply on the impact of ownership structure on the risk of commercial banks. These results above show converse opinions, and each study focuses on the different disaggregation of ownership structure. Saunders et al.

(1990), Anderson and Fraser (2000) and Chun et al. (2011) focused on the impact of ownership on risk managers, but the results are not entirely consistent. According to Saunders (1990), commercial banks were controlled by shareholders who performed higher risk behaviors than commercial banks controlled by managers during the period 1979-1982. Meanwhile, Anderson and Fraser (2000) showed that ownership of managers is correlated with the general risk and specific risk of commercial banks in the late 1980s. However, in the early 1990s, the ownership of managers was negatively correlated with the general risk and specific risk of commercial banks. According to the results of Chun et al. (2011), managerial ownership does not affect the risk of Korean commercial banks, but the increase in managerial ownership will increase the risk for Japanese commercial banks. Garcia-Marco & Robles-Fernndez (2008), Shehzad et al. (2010), Haw et al. (2010), Zheng et al. (2017) mainly focused on the impact of concentrated ownership on bank risk taking. Although these studies performed in different countries at different timescales, it provided quite consistent results for the relationship between concentrated ownership and risk; the higher in concentrated ownership, the higher the risk.

In Vietnam, there are a few officially studies that clarify the impact of the ownership structure on the risk of commercial banks. Therefore, the understanding of the relationship between the ownership structure and bank risk taking in the countries of the world and the mechanism of the impact of the ownership structure on bank risk taking should be considered and investigated carefully. Especially, when the ownership structure of Vietnamese banks is changing rapidly and after the financial crisis, the Vietnamese banking system is still facing many risks.

The sustainable development of Vietnamese banking system in line with international standards is driven by the progress of international integration. In this period, banks have continually increased charterd capital to compete more fiercely with the aim of taking market share. However, Vietnamese commercial banks also confront certain obstacles. One of them is competitiveness among Vietnamese commercial and foreign banks. More specially, Vietnamese banking system has been influenced significantly by the recent financial crisis and economic recession that one of the most prominent feature is that NPLs increase dramatically while the risk management system is not sufficient to control loss-given-default for the small banks. In contrast, the large banks have taken advantage of extra income from debt loans. In other words, they trade-off between risk-taking and income.

Understanding the impact of ownership structures on bank risk taking will help policy makers and bank managers to change or re-structure bank ownership effectively to limit the risks in Vietnamese banking system.

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