"Ownership Structure and Risk Taking in Conventional banks: A Theoretical framework"

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Abstract:

In this article, we examine risk taken by family, company and state traded owned banks in a diversified international sample of countries. Using non-performing loans and Z–score as risk indicators to measure the credit risk and the insolvency risk. We further investigate whether ownership structure and concentration impact bank risk taking across different institutional environments. Past studies on banking sector had tended to focus either on measuring the performance or assessing the market structure of banks. Thus, this study attempts to fill the gap in

literature by testing the impact of ownership structure on risk taking of banks as the relationship between ownership structure and risk-taking behavior is still a debated open question.

Keywords: Risk taking; Ownership structure; Concentration, Emerging market.

الملخص:

يهدف هذا البحث إلى تحليل سلوك المخاطر في البنوك سواء كانت هذه البنوك ذات ملكية عائلية، او مؤسسية، اوحكومية مملوكه للدولة (وذلك للبنوك المتداولة في الأسواق المالية)، وذلك استنادًا إلى عينة دولية متنوعة من البلدان النامية. وتوظف الدراسة كلًّا من نسبة القروض المتعثرة ومؤشر Z–score كمؤشرات لقياس مخاطر الائتمان ومخاطر الإعسار على التوالي. كما تسعى إلى استكشاف ما إذا كانت هيكل الملكية ودرجة تركّزها تؤثران في سلوك المخاطر لدى البنوك عبر ملكيات مؤسسية مختلفة. وبخلاف الدراسات السابقة التي انصبّ تركيزها في الغالب على تقييم الأداء المصرفي المالي أو تحليل هيكل السوق في القطاع المصرفي، يسعى هذا البحث إلى سدّ فجوة في الدراسات السابقة من خلال اختبار أثر هيكل الملكية على مستوى المخاطرة. وبذلك، تُسهم الدراسة في إثراء النقاش الأكاديمي القائم حول العلاقة بين هيكل الملكية وسلوك المخاطِر للبنوك، وهي علاقة ما تزال محلّ جدل وبحث مفتوح.

الكلمات المفتاحية: سلوك المخاطرالمصرفية؛ هيكل الملكية؛ تركّز الملكية؛ الأسواق الناشئة.

1. Introduction

As profit-orientated companies, banks seek to increase their profit by offering high-risk instruments while leveraging their trading portfolios. The Basel Committee on Banking Supervision (BCBS) highlighted the significant influence of bank risk on market risk, so it is important to examine the effects of the ownership profiles concerning family-owned, company-owned and state-owned banks on risk taking. Because of the different motivations underlying changes in bank ownership, it is important to distinguish the nature of the changes, which may generate differences in the level of risk taking.

Barry, Lepetit and Tarazi (2011) found that family-owned banks may be more averse to risk taking due to their goal of transferring the firm to the next generation. This may also be due to their inability to diversify their wealth outside the bank. Nevertheless, they may end up taking more risk due to managerial and capital constraints. Company-owned banks are prone to participate in related lending, which could be both advantageous and risky. While insider lending may be a rational response to overcome asymmetric information issues, tunneling could also lead to inefficient capital allocation and higher risk. In addition, corporate owners often invest in firms for strategic reasons, for example, to delegate part of their activities or to take advantage of potential synergies and spillover effects between the owner and the controlled firm

(Hammami and Boubaker, 2015). Thus, corporate-controlled banks may also have a preference for low risk.

According to the agency theory, Lassoued, Sassi and Ben Rejeb Attia (2017) stated that shareholders in public banks have more diversified portfolios and will push for higher risk taking in exchange for higher expected returns. Moreover, because public banks have easier access to capital markets to finance their growth opportunities, they have more incentives to take risks. Higher risk taking can also emanate from bank managers personal incentives to do so due to the bonuses and stock options they benefit from (Samet et al., 2018)

So, it became a crucial contemporary issue in the research of financial institutions and markets to foster the understanding of banks' ownership structure and their impact on bank risk-taking behavior.

So, we try to answer a research question in this article by investigating the determinants of risk-taking behavior in the emerging countries banking industry during the 2010-2015 period, with special emphasis on both dimensions of ownership structure, namely (nature of the owners and ownership concentration) under specific ownership profiles concerning family-owned, company-owned and state-owned banks. Our problem statement is:

What is the impact of ownership structure profiles on bank risk-taking behavior?

2. Literature review and hypothesis development

In addition to the importance of these issues, our aim in this section is to review the theoretical and empirical literature in conventional banking systems in emerging countries by investigating the impact of ownership concentration and the nature of ownership on banks risk-taking behavior.

2.1. Studies on determinants of bank risk-taking and ownership concentration.

In this section we present some recent studies that attempt to address the impact of ownership concentration on bank risk-taking

In order to control the impact of ownership concentration on bank efficiency and risk, Dong, Girardone and Kuo (2016) use two measures. The first measure is the percentage of shares held by the largest shareholder. This shareholder has superior control rights, so it controls the bank's decision-making and operations. The second measure is the Hirschman-Herfindahl index (HHI) of the second to the tenth largest shareholders holdings. As an aggregate, it represents a 'combined' block shareholder of ownership concentration that fulfils the very important function of counterbalancing the power of the first largest shareholder as

they have incentives to monitor and restrain it directly (Dong, Girardone and Kuo, 2016).

Therefore, the higher the concentration of shareholding in the hands of these large shareholders, the higher could be the efficiency of the banking firm, thanks to greater controls and potentially higher competitive pressures (Karyani and Utama, 2015).

According to Dong, Girardone and Kuo (2016) they estimate that board characteristics may have an incremental impact on efficiency and risk taking for those banks with high ownership concentration. They define a dummy variable, Concentration, which is equal to 1 if a bank's Herfindahl index is greater than the median value over all banks and zero otherwise (ownership-concentrated vs ownership-dispersed). The Herfindahl ownership index that captures the level of ownership concentration for the ten largest shareholders is calculated as the sum of the squared ownership shares of the first- to tenth-largest shareholders of the bank. Statistically significant coefficients will indicate a difference between the impacts of the board characteristics for banks with high and low ownership concentration.

In a similar fashion, using the dummy State control, they include the interactions terms between state-controlled banks and the board characteristics into a model to test whether these latter have an incremental effect on bank efficiency and risk taking for these specific types of banks. Their findings are that the

incremental effects of board governance structures for banks characterized by concentrated ownership when significant are usually positive, whereas results for risk are always insignificant (Dong, Girardone and Kuo, 2016)

Battaglia and Gallo, (2016) investigate the ownership concentration effect on bank risk-taking; they test the impact of religiosity and ownership structure on the risk profile of banks, which issued securitization. employing GMM estimation using unique database on asset securitization of 672 commercial banks (4889 year-observations) in 22 countries (from 2003-2012), which have dual banking system. They find that banks with higher securitization activity have consistently shown a riskier profile by being significantly less adequately capitalized and offering higher ratio of net loans to total assets.

Garcia-Marco and Robles-Fernandez (2008) found that ownership concentration in Spanish banks affected negatively risk-taking level. However, Haw, Hu and Wu (2010) study a sample of listed commercial banks in East Asia and Western Europe, found evidence indicating that banks with concentrated ownership exhibited higher risk measured by return volatility and insolvency risk.

El-Tamimi and Jellali (2013) highlighted that ownership concentration of UAE conventional national banks is negatively associated with bank risk-taking. Private ownership of UAE

national banks is negatively associated with bank risk-taking, yet government ownership is positively associated with bank risk-taking as Lassoued et al., (2017) found out.

As shown from the above studies, we conclude that ownership concentration could have a positive or negative relationship with risk.

2.2. Studies on determinants of Bank risk-taking and nature of ownership structure.

In this section we present some recent studies that attempt to address the impact of nature of ownership structure on Bank risk-taking. This could be categories into three types of owners to stand on their incentives to take risk.

These categories of owners in our study concern: Individual/family investors (family), financial and non-financial company (company), and publicly owned banks (state).

Several studies have shown that state-owned banks are often associated with greater risk taking (e.g. Iannotta, Nocera, & Sironi, 2013). Therefore, (Dong, Girardone and Kuo, 2016) include the variable State control which is set equal to one for banks who's largest (controlling) shareholder is a government agency or state-owned enterprise, and zero otherwise. Performance is the dummy variable, which is set equal to one for banks with CEO performance-related compensation scheme, and zero otherwise, and List is a dummy that indicates whether a

bank's shares are publicly traded on a stock exchange. This variable is included in order to capture the fact that listing status may improve a bank's efficiency and reduce excess risk taking. They find that the nature of controlling shareholders (i.e. state-owned vs non-state-owned banks) appears to impact cost efficiency more than profit efficiency and risk.

The effect of state ownership has been examined in many economies like Argentina (Berger, Clarke, Cull, Klapper and Udell, 2005) Europe (Iannotta et al., 2007) and Asia (Cornett, Khaksari and Tehranian, 2010). These studies conclude that state-owned banks exhibit more risk than private banks.

Many studies have investigated several types of owners. For example, Barry et al., (2011) highlights that higher equity stakes of either individuals/families or banking institutions were associated with a decrease in risk taking in European banks, but institutional investors and non-financial companies seem to impose the riskiest strategies.

Angkinand and Wihlborg (2010) examine a sample of banking systems of 32 countries from 1997 to 2003. They found evidence indicating that a large state ownership in the banking system was associated with greater risk-taking as measured by nonperforming loans, whereas foreign ownership was not associated with risk but with higher risk-taking as measured by Z-score.

Iannotta et al., (2007) examined 181 large banks in 15 European countries. They found that public sector banks were characterized by poorer loan quality and higher insolvency risk than other types of banks.

Cornett et al., (2010) examined banks of 16 Asian countries during the period 1989-2004 and found that state-owned banks had greater credit risk compared to privately-owned banks prior to 2001. This indicator deteriorated after the 4-year period, after the beginning of the Asian financial crisis for state-owned banks and privately-owned banks. However, state-owned banks caught up with privately-owned banks in the post-crisis period of 2001-2004.

These studies support the argument that the different types of nature of ownership structure have a significant effect on risk taking positively or negatively.

2.3. Hypotheses development

This section aims to present research hypotheses development. Risk-taking is expected to be more pronounced in firms with concentrated ownership than in firms with dispersed ownership structure. Empirically, the relationship between ownership concentration and risk is ambiguous. Several studies (e.g. Laeven & Levine, 2009) showed that concentrated ownership control is associated with greater risk. In contrast, Scholtens (2010) find that if ownership concentration increases,

the credit risk decreases. Based on the above discussion, hypothesis 1 is as follows:

Hypothesis 1 (H1): There is a significant statistical relationship between bank risk-taking and ownership concentration on conventional banks.

Agency problems related to separation of ownership and control come into the spotlight while bank type is the prime issue of discussion. Theoretically, publicly held banks ensure greater dispersion of ownership, which enhances separation between shareholders and managers and increases information asymmetry and consequently creates divergence in incentives, whereas privately held banks drive less separation between shareholder and manager and hence, their incentives are closely aligned to those of shareholders. However, the incentive mechanism is seen different in nationalized and state-owned banks. Particularly, political or social mission drives incentive mechanism in nationalized and state-owned banks (Iannotta, Nocera, and Sironi, 2013). Further, private or family ownership might have different objectives in terms of growth and risk-return strategies. Private equity is less liquid than other types of ownership (e.g. public), which restrains their faster growth opportunities and more risk-taking.

Barry et al., (2011) demonstrate that a higher equity stake of either individual/ families is associated with a decrease in asset

risk and default risk. Based on the above discussion, hypothesis 2 is as follows:

Hypothesis 2 (H2): There is a significant statistical relationship between bank risk-taking and the nature of ownership structure on conventional banking sector.

3. Methodology:

3.1. Study Population and Sample

The population is consisted of all conventional-listed banks in 17 emerging countries during the study period from 2015 to 2023.

The sample is considered purposive sample because it concentrates on the conventional type of banks in emerging countries, additionally the sample is selected according to the availability of the required information. The final sample is comprised of 188 bank for 9 years with a total of 1326 bank-year observations.

Furthermore, the research depends on quantitative secondary data that are collected from the annual financial statements and the annual board meeting reports over the period from 2015 to 2023, which are available through "Bank Focus Database". The following table illustrates the number of bank-year observations in 17 different emerging countries during the study period.

Table (1): the Distribution of the Sample across Emerging Countries

Country	Banks	Freq.	Percent
Brazil	12	88	6.64
Chile	4	29	2.19
China	43	301	22.70
Egypt	4	28	2.11
Hong Kong SAR, China	8	59	4.45
India	24	181	13.65
Indonesia	23	167	12.59
Kuwait	3	21	1.58
Malaysia	6	47	3.54
Pakistan	9	51	3.85
Peru	5	34	2.56
Philippines	11	63	4.75
Qatar	4	29	2.19
Taiwan	8	54	4.07
Thailand	5	31	2.34
Turkiye	9	72	5.43
United Arab Emirates	10	71	5.35
Total	188	1326	100.00

3.2. Research Variables

Dependent Variable

The dependent variable risk is peroxided by the ratio of non-performing loans to total loans and Z-score.

Non-performing loans to total loans are used as a direct ex-post means of credit risk. Since a portion of non-performing loans will result in losses for the bank, a high value for this ratio is associated with higher credit risk (Srairi, 2013).

The second ratio, Z-score as proxy for distance to default, is equal to the mean of return on assets plus the capital asset ratio (equity capital/total assets) divided by the standard deviation of asset returns. The capital adequacy ratio formula is used to determine the minimum amount of capital necessary to cover the risk-weighted assets. The formula is simple: The bank's capital (Tier 1 and Tier 2) is divided by the risk-weighted assets. Then, this number is converted to a percentage. It is referred to as a measure of bank stability since it represents the inverse of the probability of insolvency of a bank. Thus, a higher value of Z-score is interpreted as a decrease in risk and indicates that the bank is more stable.

On the other hand, Srairi (2013) indicates that Z-score can be decomposed into two parts and incorporate two types of risk. The first part is considered as a measure of bank portfolio risk (ROA/SDROA) and the second is a measure of leverage risk (capital asset ratio/SDROA). Z-score considers risk of failure to be essentially dependent on the interaction of the income generating capacity, the potential size of return shocks, and the level of capital reserves available to absorb sudden shocks.

Independent Variables

Ownership structure is measured by two variables: ownership concentration and the nature of the owners (family, company, and state).

Bank-level control$_{1it}$ for credit risk model represents:

Size, loan growth following Srairi, 2013, loan growth is included as control variable to eliminate the impact of the change in loans to avoid its effect on credit risk and leverage ratio at time t.

Bank-level control$_{2it}$ for insolvency risk model represents:

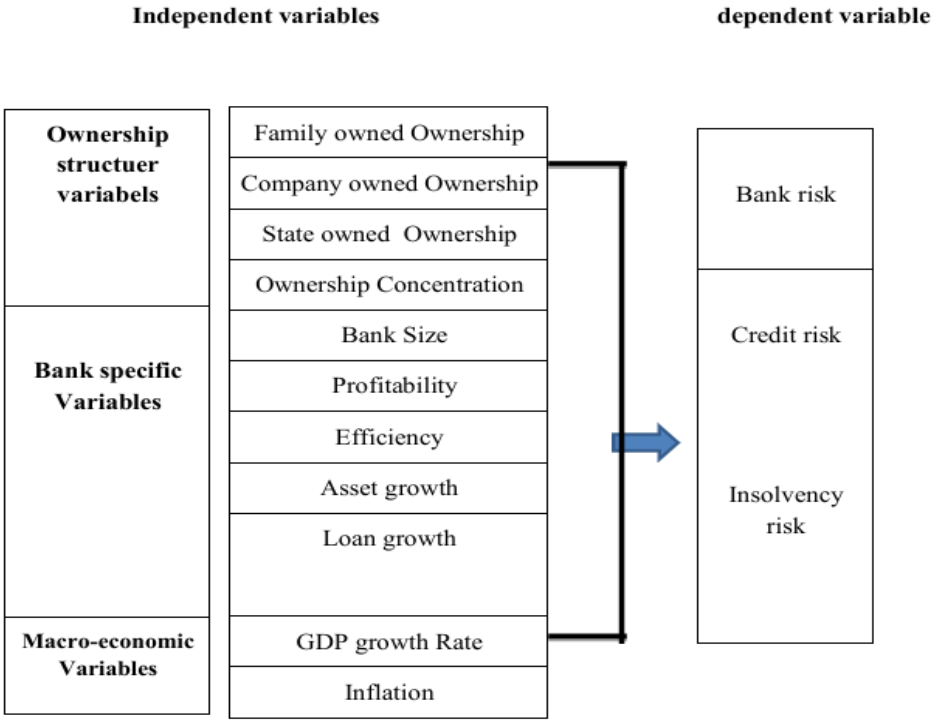
Size, Profitability (ROA), Asset growth, following Srairi, 2013, assets growth is included as control variable to eliminate the impact of the change in assets to avoid its effect on insolvency risk.

Country-level control following Forssbæck, J., 2011, this study includes two variables: Gross Domestic Product (GDP) and Inflation rate (INF).

There are three types of GDP; nominal, real, and per capita. Nominal GDP is the value of all goods and services produced in a country at current prices. Real GDP is the value of all goods and services produced in a country, adjusted for inflation. Per capita GDP is the value of all goods and services produced in a country

divided by the population. Accordingly, the GDP per capita is adopted in this study. The macroeconomic variables are closely related to risk-taking behaviors and banks' credit decisions.

3.3. Research diagram is shown as follows:



The research framework Figure (1)

Source: developed by the researcher.

4. Research Objectives

1. Examine the impact of different types of ownership structure on the level of bank risk taking behavior.
2. Examine the effect of ownership concentration on bank's risk-taking behavior.
3. Investigate the differences in terms of risk among banks which were acquired by a different type of ownership over the period of the study.

5. Research Importance

5.1The Theoretical Importance

Identify the impact of key variables on risk taking behavior of banks listed in emerging markets, derived from previous studies and the current study.

5.2 The Empirical Importance

1. For banks' financial managers and senior management: current study will help in determining the effect of the main factors that affecting risk taking behavior of banks, gives them a clear understanding for the impact of these factors and their relationship with risk management.
2. For shareholders and investors: current study will help in determining the relationship between risk taking behavior and ownership structure.

3. For creditors and financial institutions: current study helps in evaluating the bank's financial decisions, as well as to understand and identify funding needs for cash management and evaluate the credit status.

So, this study contributes to the literature on banking in several ways:

- Value added to the literature is about the impact of both different shapes (nature) of ownership structures (i.e. company, state and family-owned structure) and ownership concentration on risk taking.
- The study will be applied on a sample of conventional banks to stand on the main characteristics of them.
- This study provides a comparative analysis on risk management between ownership structure profiles.

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