

Foreign Shareholdings Impact on Credit Risks of Acquired Local Bank in Indonesia

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Abstract

The research investigate the impact of foreign shareholding originated from developed and developing countries on the credit risks of acquired local banks in Indonesia during 2007-2017 by including Corporate Governance as a moderating variable. This research used data of 29 commercial banks acquired by foreign shareholders. A panel regression model with generalized least square is applied to examine the effects of percentages of foreign shareholdings on credit risks of the acquired local banks. This research concludes that foreign shareholdings decrease credit risks of acquired local banks only if the foreign shareholders is majority shareholders and originated from developed countries. The minority shareholders from developing countries increase credit risks. Furthermore, increase in the size of the board of directors has no impacts on credit risks. Finally, the presence of foreign director originated from more developed countries strengthening the effect of percentage of foreign shareholdings on decreasing the credit risks of the acquired local banks.

Overall, the originality of this research is the findings that both the percentages of foreign shareholdings and its country of origin are two combined factors that cannot be separated in affecting credit risks of its acquired local bank and the fact of significant positive moderating effect of foreign director originated from developed countries. As policy consideration, monetary authority need to perform strict due diligence on prospective foreign shareholders specifically originated from developing countries, to encourage investing by shareholders from more developed countries and advise banks to maintain the existence of foreign director.

Keywords: *credit risks, foreign shareholdings, corporate governance, agency theory, resource-based theory.*

JEL Classification: C51, G 21, G34

INTRODUCTION

There are two reasons explaining the vital role of studies in banking's risks. First, banks are the backbone of economic growth in the economy development of the country by sectors due to inadequate risk management of the banks can inflict major losses for the banks and eventually lowering economic growth of the country. Second, globalization tends to motivate banks specifically in the developing countries to increase foreign shareholdings in its local banks due to the needs of higher capital funding, technology, management expertise allocating the funds effectively to various economic sectors. Misallocation of funds by banking sectors due to inadequate risk management of the banks can inflict major losses for the banks and eventually lowering economic growth of the country. Second, globalization tends to motivate banks specifically in the developing countries to increase foreign shareholdings in its local banks due to the needs of higher capital funding, technology, management expertise, better corporate governance for the purpose of improving local banks performance. However, the impact of foreign shareholdings specifically in the developing countries is inconclusive as the regulation of shareholdings is various.

Research on foreign shareholdings impacts on the banking sectors in Indonesia as part of the developing countries which has relatively high economic growth and more liberate in accepting foreign shareholdings for the advancement of the banking industry will provide insight for the above matter.

In recent years, the relationship between ownership and credit risks in the banking industry has been developed in the plethora of empirical studies (Zhu, 2009, Milhajek, 2006, Aymen, 2014, *Zhong et al.*, 2007 and Salhi & Boujelbene, 2012). However, previous studies only study impacts of foreign shareholding in general and not disaggregate the foreign shareholders country of origin that has different level of economic, technology and managerial skills advancement.

The phenomena of increasing foreign shareholding in the banking industry in Indonesia and the unclear effect or its impacts on credit risks of the bank are used as a basis of the research to be executed. In 2016 percentage of foreign shareholdings originated from developing countries i.e. India, Qatar & Kuwait, and China, was respectively 1.38%, 1.75% and 3.97% and its non-performing loan was respectively 6.86%, 15.82% and 1.3%. Whereas percentage of foreign shareholdings from developed countries i.e. Japan & Korea (combined), Singapore & Malaysia (combined), Europe & Australia (combined) and USA were respectively 8.21%, 6.82%, 6.96% and 4.30% and its non-performing loan was respectively 0.32%, 0.98%, 0.6% and 0.8%. (Bank Indonesia, 2016)

The year 2016 was chosen as the economic growth of Indonesia in 2015 is the lowest during the past 6 years which is 4.79% and the bank's credit growth was also decreased from 35.69% at the end of 2014 and turn down to 10.44% in the end of 2014 and the impacts was suffered by the banks at the end of the following year which is at 2016.

There is a phenomena that higher concentration of shareholdings originated from Japan, Korea, US, and Europe, tends to have higher efficiency. Previous studies such as *Zhong et al.*, 2007 and Salhi & Boujelbene, 2012 found that higher foreign shareholders concentration by disregarding country of origin reduce credit risks. The second phenomenon derived from table abovementioned is that countries grouped as developed countries i.e. Japan, Korea, etc tend to have lower credit risks compared to that originated from developing countries i.e. India, Kuwait, Qatar.

Previous studies mentioned earlier only study impacts of foreign shareholdings on bank's credit risks in aggregate regardless of studying the impacts of foreign shareholdings based on its different proportion/concentration of shareholding and level of country economic development. The previous study also did not incorporate corporate governance in its models whereas based on agency theory it has a significant role to minimize the agency cost and eventually increase company or bank performance including reduction of shareholders risks. (Dhawadkar, 2000).

The research aims to find evidence about the phenomenon where higher portion of foreign shareholdings in local banks and entering of foreign shareholders in shareholdings of local bank originated from more developed countries decrease credit risks of the acquired local banks in Indonesia for the best of our knowledge is still scanty. Therefore, research related to impact of foreign shareholdings on bank's credit risks in the Indonesian economy and their relationship would contribute to the literature. In the study, the role of corporate governance observed whether the variable has tendency to become a moderating factor to strengthen or to weaken the impacts of foreign shareholdings on the credit risks of the acquired local banks.

The research questions to be addressed in this study is first, whether the percentage or portion of foreign shareholdings affects the bank's credit risks. The second question to be answered is whether the country economic development of the foreign shareholders affects the credit risks of the acquired local banks and the third question to be answered is whether corporate governance represents as moderating factor by strengthening or weakening the relationship between foreign shareholdings and bank's credit risks.

In this paper, we will develop a formal model to analyse the impacts of foreign shareholdings concentrations on bank's credit risks based on the country of origin of investing banks by including corporate governance as a moderating factor. The model is tested using recently available data from the Indonesian banking directory.

Based on the background abovementioned the objectives of this research is to study the effect of foreign shareholdings on acquired local bank's credit risks by first, analysing the percentage of foreign shareholdings according to their countries of origin to evaluate the validity of the resource-based theory and the agency theory. Based on agency theory the structure of shareholdings may

reduce agency problem and eventually reduce shareholders's risks. (Jensen and Meckling, 1976). Based on agency theory, credit risks perception is affected by structure of shareholdings of the firms or banks. The diversified shareholdings tend to motivate of risk taking whereas management tend to avoiding risks in decision making to protect its own profit interest (Shleffer & Vishny, 1986). The degree of shareholdings tends to affect foreign participation in decision making and governance and one of the main reasons for foreign shareholders for investing in local banks. So, having majority shares is vital (Whitley and Kristensen, 1996; Gedajlovic, Yoshikawa, and Hashimoto, 2004; Chibber and Majumdar, 1999; Wahyuni and Prabowo, 2012). Gedajlovic, Yoshikawa, and Hashimoto (2004) found foreign shareholders only share minor contribution profitability and risk management of 247 largest Japanese firms.

Second, in regard to resource-based theory, the foreign shareholders, who are from different countries of origin, would contribute differently in terms of its management competence and financial resources. Based on resource-based theory, competitive company should have foreign shareholders owning superior resources such as technology, equity, management skills, and international transactions expertise. Thus, foreign shareholders should originate from country that more developed than the host countries (Chan, 2016). Since foreign shareholders of the local bank in Indonesia may originate not only from developed nations but also from other developing countries, it is important to categorize their countries of origin as resources allocation may be differently allocated.

The third objective is to examine the impacts of corporate governance in moderating the relationship between Foreign shareholdings and credit risks of the acquired bank whether it is strengthening or weakening the relationship. This is because the purpose of encouraging foreign shareholdings in the domestic banking sector is to enhance the governance of the banks so as to achieve better performance.

So, briefly purpose of this research is to bridging the abovementioned research gap which previously did not study the impacts of different portions of foreign shareholdings, different level of country economic development, technology, expertise and organization skills of the foreign shareholders on bank's credit risks, and lack to incorporate the functioning of corporate governance as a useful factor to provide insight on how foreign shareholdings affect acquired bank's credit risks.

The research would contribute the followings; First, to assess the applicability of agency theory and resource based-theory in explaining the impacts of foreign shareholdings from a different country of origin on the credit risks of acquired local banks in Indonesia.

Second, policy maker or monetary authority will have a 'screening tools' to decide which countries are eligible or acceptable to acquire local banks based on the financial performance, technological advancement, management expertise and its contributions for reducing the risks of the banking industry in Indonesia. Nevertheless, policy maker or monetary authority need to be vigilant in issuing the regulations by avoiding excessive strict regulation such as strictly limited the foreign shareholdings portions as eventually, it will inhibit the potential income and weakening the credit risk management of the banks.

Third, policy maker or monetary authority may decide whether the foreign shareholders is majority shareholder or controlling shareholder in order to safeguard the smoothness of implementation of its risk management and management expertise to reduce the credit risks of the banks. Fourth, results of this study may be used as reference to confirm whether the portion of foreign shareholdings need to be restricted at certain level of percentage in Indonesia considering that foreign shareholders are very concern on its status as controlling shareholders to safeguard their authority in directing the management strategy, usage of skills, technology required to strengthening the bank performance including reducing credit risks..

LITERATURE REVIEW

Empirical results show the firm credit risks can be affected by the ownership structure of the company. Here we present a plethora of empirical results on relationship between ownership structure and credit risks.

Zhu (2009) studies on banks in China during 2002-2005 found that foreign shareholdings moderately affecting on credit risks. Foreign shareholdings of over 15% in then banks may decrease credit risks.

Milhajek (2006) found that foreign shareholdings in emerging market countries will reduce credit risks due to the availability of transfer of expertise, technology, and management know how from foreign banks.

Studies by Aymen (2014) on 19 Commercial Banks in Tunisia during 2002-2010 found significant negative co-relation (1% confidence level) between foreign shareholdings and credit risks. 1% increase in foreign shareholdings will reduce credit risks by 0.54%

Zhong et al (2007) and Salhi and Bouljebene (2012) found that increase in foreign shareholdings will decrease credit risks.

Studies concentrated to study firms behaviour during financial crises support positive role of foreign shareholdings.

Harrison and Mc Millan (2003) study impact of foreign direct investment on local credit constrains suffered by local companies in Ivory Coast Africa and the result is that the local firms acquired by foreign firms has no constraints whereas local owned firms is having credit constrains.

The above studies conclude that the role of foreign shareholders is to be a buffer of economic challenges. How its implemented for banks acquired by foreign shareholders under conditions of limited finance capital and liquidity need to be further explored.

Desai et al (2007) found that affiliated of US multinational companies in emerging market was having better performance than that of local firms. Alfaro and Chen, (2007) found that affiliation with multinational companies makes firms to become resilience to financial crises in 2007 specifically those having financial relationship with its parents companies

The foreign investor's country of origin is important because the resource-based theory suggests that bank performance improves due to superior resources. This assumes that investors who help the complexity to reduce credit risks are from the more advanced countries that having better risk management expertise. Foreign shareholders originated from countries that more or less the same level of development is unlikely to achieve expected results.

Corporate Governance which is based on agency theory is functioning to minimize the agency problem and eventually improve company performance. Organization for Economic Co-operation and Development (OECD) defines corporate governance as "a system to direct and control the corporation". Corporate Governance is any structured system of allocating power in a corporation that determined how and by whom the company is to be governed (Frederick, et al., 1992). Corporate Governance is the overall control of activities in a corporation. It is concerned with the formulation of long-term objectives and plans and the proper management structure (organization, systems, and people) to achieve them (Steiner, 1997).

The effect of corporate governance on the company or bank performance is mixed (Beisland et al., 2014). The effects are highly dependent on contextual factors as well as the measures of corporate governance and firm performance. Bhagat and Bolton (2008) conclude that evaluation of corporate governance by using one variable econometric wise is more accurate as the error of estimation of one variable is smaller than using multivariable or index. No index or variables that can accurately explain the relationship between corporate governance and firm performance as it depends on context and specific characteristic of the firm of different nuances. It is better to use one single variable such as the presence of foreign director as a focus of the study is on foreign shareholdings. The effectiveness of corporate governance on Banks mostly depend on the composition of the board of directors and its Shareholdings. Overall, the board of directors is a tool to overcome the weakness of managers. (Adjaoud er al.2007).

Hermalin and Weisbach (2003) conclude that board of directors is the heart of governance. Factors affecting the board of directors is numbers of director, the availability of independent/ foreign director. Appointment of foreign director as a member of the board of directors is a sign for

improvement of governance which motivates foreign shareholders to own the Bank or company (Kim, et al, 2010).

Research done by Switzer and Wang (2013) on commercial banks in US found that the bigger size of board of directors will decreased credit risks. Pathan (2009) found that smaller size board of directors of the banks tend to increase credit risks. Adam and Mahran (2003), found that bigger size of board of directors will increase firms performance but also increasing business risks. Reducing of size of board of directors may also ease manipulation made by president director.

The study to be done attempt to fill the research gap by examining the potential effect of foreign shareholders' concentration and origin on bank's credit risks.

METHODOLOGY

We incorporate the percentage of foreign shareholdings of the local banks to examine its influence on credit risks.

This study will use non-performing loan (NPL) as measurement for credit risks. Credit is categorized as non- performing loan if not settled within 90 days maturity. NPL ratio is the main indicator for Banks to measure the portion of problem loan against all credit extended by the Bank. It is also a measurement of soundness of the Bank in terms of liquidity.

Higher NPL will increase the cost of loan losses provision, reduce bank's credit quality, and reduce the capacity for extending credit in the future. Increase in NPL at certain level will cause trouble for the Banks. NPL as proxy for credit risks has been extensively utilized in previous studies in various countries such Fainstein and Novikov (2011) in Baltic States, Charles and Kenneth, 2013, Abiola and Olausi, 2014 in Nigeria, Ranjan and Dhal 2003 in India, Louzis, Vouldis and Metaxas, 2011 in Greece and Mileris, 2012 in European Union countries.

Espinoza and Prasad (2010) found NPL ratios increased as the economic growth slowing down but the higher NPL in the future may be caused by higher economic growth in the past. Karim, Chan and Hassan, 2010 tend to indicate that high NPL will reduce cost efficiency that also reduce bank's efficiency. Thus, credit risks indicated by NPL is not solely affected by economy condition but also internal factors that affect efficiency at the same time.

Studies by Rokhim and Susanto (2013) on 119 commercial banks in Indonesia shows that increase in foreign shareholdings tend to increase credit risks. Higher competition due to penetration of foreign Banks in the banking industry motivate Banks to extend credit to lower quality borrower. Study done by Andriani and Wiryono (2015) on 69 commercial Banks during 2002-2012 found that using ordinary least square (OLS) is not effective as the regression results is violating almost all classical assumptions. General least square (GLS) is more appropriate to be used. Study by Chaibi and Ftiti (2015) using panel data on commercial Banks in France and Germany during 2005-2011 found that almost all macroeconomics variables affecting NPL except inflation.

Based on previous studies, our research will also use NPL as proxy of credit risks. NPL ratios also shows an indication of possibility for the Bank to become bankrupt.

Robustness check

Robustness check in this research will utilize Z-score that also used by World Bank in its Global Financial Development database to measure the soundness of the financial institutions (Boyd and Nicolo, 2005). It is also used to measure the bank capabilities in risks taking during period before crisis (Laeven dan Levine, 2009, Foos et al., 2009, Altunbas et al., 2011 and Demirguc-Kunt and Huizigna, 2010). Z-score defined as sum of ROA of bank i at time t , and capital adequacy ratio (CAR) bank i at time t divided by standard deviation of ROA_{t1} to t_n . Z-score measure the probability of the bank to become bankrupt. Higher Z-Score means Banks is facing lower risks and more stable. Z-score is more complex than NPL as NPL is only measuring credit risks whereas Z-score not only measuring credit risks but also covers liquidity and market risks due to non-credit activities. According to its founder, Hannan and Hanweck (1988), Boyd and Runkle (1993) and

Boyd et al (1993), default Banks happened due to Bank's losses exceeding its equity. According to Rajhi & Hassairi (2013) Z-score is the measurement of distance-to-default, the higher the Z-score, the more stable the Banks.

Sample and Data

The sample for this study consists locally controlled commercial banks acquired by foreign shareholders in Indonesia and the data is sourced from Directory of Indonesian Banking 2007-2017. Our data set covers twenty-nine domestic commercial banks acquired by foreign shareholders, which yields a sample of 319 observations. Our sample starts from 2007 that is, the years in which many local banks were acquired by foreign shareholders after the issuance of government regulation to ease the maximum limit or cap of foreign shareholding in the local/domestic bank to 99% in 1999. This ensures that all the domestic commercial banks are banks acquired by foreign shareholders as before 2007 most of the local banks is still owned by domestic shareholders, therefore, this is a balanced panel because we try to maintain as many banks as possible in this study to derive a better representation of how the foreign shareholdings affect credit risks. We also filter the sample to include only banks with at least 10 years data so as to obtain a smoother and better estimation of the credit risks. The data, as well as the percentage of foreign shareholdings, are extracted from various banks' financial statements downloaded from Directory of Indonesian Banking sourced from Bank Indonesia, the central bank of Indonesia. Data on the macroeconomic variables is obtained from the Indonesia's Central Bureau of Statistics.

There are three main independent variables and five control variables that affect the efficiency of the bank. The main independent variables are percentage of shareholdings of (i) developed countries (Japan, Korea, Singapore, Taiwan, France, United Kingdom, Germany, Netherlands, Australia and Malaysia), (ii) China, and (iii) developing countries (India, Qatar, Kuwait,) The moderating variables are (iv) number of member of the board of directors (CGD), and (v) number of total foreign director (CGF).

China is standalone or separated from both group because even though China per capita income is categorized as a developing country but the capital and financial capacity and level of technological advancement have levelled off the developed countries. Malaysia is categorized as a developed country in this study due to its knowhow index or proportion of high skills worker based on WEF-Global Human Capital Report 2017 is more or less in the same level as that of the developed countries and even exceeding Australia.

The other five control variables are (i) capital adequacy ratio, (ii) Asset, (iii) inflation growth, (iv) growth of GDP, and (v) return on assets of the previous one year (t-1). Return on assets is estimated as a ratio of earning before tax divided by bank's average assets.

The main focus of this study is to design model that can explain the effect foreign shareholding concentration based on its country of origin which is strengthened or weakened by corporate governance proxy by number/size of board of directors (BOD) and the number of foreign director (CGF). As differs from the previous study by Rokhim (2013) which study the effect of the increase in foreign shareholding on the performance of commercial banks in aggregate by including the banks with minor or without foreign shareholdings, the study to be executed is only focusing on banks acquired by foreign shareholders to obtain more accurate results.

It is expected that first, a higher percentage of foreign shareholding or majority shareholders will contribute significant impacts on credit risks. Second, foreign shareholders from developed countries with better resources (technology, equity, management skills, international transactions expertise) will reduce credit risks as shareholders originated from countries with the same level of economic development with that of the host country tends not to reduce credit risks. Capital adequacy ratio (CAR) based on studies by Abba, (2013) is to ensure whether firms have sufficient capital to cover the risks that they confront. Monetary authorities utilized capital adequacy ratio (CAR) as benchmark of safety and stability for financial institutions as capital overcome losses (Abdel-Karim, 1964). Besides shareholdings percentage variables, the model also employs corporate governance as a moderating variable which is proxy by numbers of the member of BOD and numbers of foreign

director. Based on previous research, agency theory and resource-based theory, both variables are part of resources representing management skills which strengthening and weakening the bank performance including credit risks.

Based on previous study assets affects credit risks negatively. Higher assets of banks tend to reduce credit risks. This is consistent with ‘to big to fail’ concept concluding that bigger assets banks tend to become more risks taking (Kane, 2000; Mishkin, 2006). We control for bank size by using the natural logarithm of the individual banks’ total assets. Other macroeconomic variables used is inflation growth as it is required to control prices of assets due to inflation. GDP growth variable is an indicator of macroeconomics cycle which affecting bank performance specifically credit extended. Higher GDP growth implies better country economic growth; hence, higher GDP growth enable Banks to extend higher credit amount that may possibly increase NPL in the future. Impact of Global Financial Crisis in 2007-08 is controlled by using dummy variable (D).

Credit risks variable will be estimated using NPL. Based on variables definitions abovementioned, the credit risks function of the bank with foreign shareholdings can be explained as $NPL = f(\text{Dev, China, Deving, CGF, CGD, CGFDev, CGFDeving, CGFChina, CGDDev, CGFDeving, CGDChina, ASSET, CAR, INF, rGDP, D})$,

The hypotheses derived for the of the research is that percentages of foreign shareholdings is negatively correlated to the credit risks of the acquired bank, second, the more developed the country of origin of the foreign shareholders, the lower the credit risks of the acquired local bank and third, corporate governance tends to strengthen the correlation between foreign shareholdings and credit risks of the acquired local banks

Model Specification

In this study the new model is designed which is a modification and development of model used by Rokhim, 2013 which analyse the effects of foreign shareholdings ratios on profitability, efficiency and risks, and by using the model used by Rachdi (2013) which study the effect of corporate governance on credit risks. As opposed to studying by Rokhim (2013), this research will add corporate governance as moderating variables.

Thus, to analyse the effect of foreign shareholdings on credit risks of the acquired local banks, the hypotheses abovementioned is tested by applying the following model.

$$\begin{aligned} NPL_{it} = & \beta_0 + \beta_1 Dev_{it} + \beta_2 Deving_{it} + \beta_3 China_{it} + \beta_4 CGD_{it} + \beta_5 CGF_{it} \\ & + \beta_6 CGDDev_{it} + \beta_7 CGDDeving_{it} + \beta_8 CGDChina_{it} + \beta_9 CGFDev_{it} \\ & + \beta_{10} CGFDeving_{it} + \beta_{11} CGFChina_{it} + \beta_{12} ROA_{it-1} + \ln \beta_{13} ASSET_{it} + \beta_{14} CAR_{it} \\ & + \beta_{15} INF_t + \beta_{16} rGDP_t + \beta_{17} D + \epsilon_{it} \end{aligned}$$

Whereas:

- NPL_{it} is the credit risks of bank i at year t.
- Dev_{it} is percentage ratio of foreign shareholding of developed countries in bank i at year t.
- Deving_{it} is percentage ratio of foreign shareholding of developing countries at bank i at year t.
- China_{it} is percentage or proportion ratio foreign shareholding of China in bank i at year t.
- ASSET_{it} is the number of assets of bank i at time t.
- CAR_{it} is the ratio of the capital on risk-weighted asset of bank i at year t.
- CGD_{it} is numbers of the member of board of directors (BOD) of bank i in year t.
- CGF_{it} is numbers of foreign director of bank i in year t.
- CGDDev/Deving_{it} is moderating variable of numbers of BOD in bank i in year t.
- CGFDev/Deving_{it} is moderating variable of foreign director of bank i in year t.

INF_t is inflation growth in year t.

rGDP_t is GDP growth in year t.

D is the dummy variable to see the efficiencies of the acquired local bank after Global Financial

Crisis D= 0 (2007-2008) and D=1 (2009-2017).

RESULTS AND DISCUSSIONS

In general, the variables in this study is presented in a statistical description detailed in table 1 to provide a general understanding of all variables to enable easy comprehension and informative for readers. The statistical description includes maximum and minimum average, and the standard of deviation of each variables used in the regression model.

Table 1 : Descriptive Statistics

	rGDP	ln ASSET	INF	NPL
Mean	5.703480	13.06456	6.411661	2.714182
Median	6.010000	13.12130	6.590000	2.140000
Maximum	6.490000	16.53544	11.06000	37.59000
Minimum	4.630000	8.284685	3.020000	0.000000
Std. Dev.	0.717070	0.845179	2.887017	3.581641

	China	CGFChina	CGFDev	CGFDeving	CGF	CGDChina
Mean	0.033503	0.106736	140.2556	74.81759	3.504702	0.285901
Median	0.000000	0.000000	0.000000	0.000000	3.000000	0.000000
Maximum	0.986100	3.944400	44112.00	23748.00	11.00000	9.861000
Minimum	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
Std. Dev.	0.177654	0.581572	2469.688	1329.612	2.066309	1.532210

	CGDDev	CGDDeving	CGD	CAR	Dev	Deving
Mean	329.4113	274.7985	10.14107	31.74069	0.627585	0.229404
Median	7.915200	0.000000	9.000000	19.70000	0.920000	0.000000
Maximum	102928.0	87076.00	21.00000	206.6100	0.997000	1.000000
Minimum	0.000000	0.000000	4.000000	9.410000	0.000000	0.000000
Std. Dev.	5762.485	4875.218	3.595355	30.91938	0.438050	0.389798

Sources: Calculated by using EViews 10.0 based on data from the Indonesian Banking Directory

Table 1 shows that the average CAR is 24.90% and the highest is 206.61% which is CAR of BNP Paribas in 2009. The high CAR of the bank is due to a decrease in credit extended to the borrower to become IDR 80.1 Billion which in the previous year the credit extended to borrower reached IDR 952 billion. The lowest CAR belongs to J Trust Bank in 2011 amounting 9.41% but generally, all CAR is above minimum CAR requirement of 8% as required by the central bank.

The average number of the foreign director in local banks acquired by foreign shareholders is 3 or 4 person. The highest is 11 which is Danamon Bank, a local bank acquired by foreign shareholders from Singapore. The lowest is zero or no foreign director in the bank management/board as the bank is not yet acquired by foreign shareholders at that time. The highest number of member of BOD is Danamon Bank, a local bank acquired by shareholders from Singapore which has 21 members of the board of management in 2016. The lowest is Oke Bank in 2017 a bank acquired by South Korea shareholders, and J Trust Bank, a bank acquired by shareholders from Japan in 2007-08.

The descriptive statistic data abovementioned, indicated by the maximum values, shows that several observations value is exceeding far beyond the average value thus the ordinary least square regression become invalid due to a violation of classical assumptions such as heteroscedasticity, multicollinearity, and autocorrelation resulted from the extreme observations value. As we need to use

the observations considering the importance of the data for our study, another alternative method is applied to overcome the violations of the assumption abovementioned which is by using generalized least square.

The effect of percentage of foreign shareholding based on the level of country economics development on efficiencies is tested by using general least square (GLS) as using the ordinary least square (OLS) will produce the regression coefficients which having violations of classical assumption such as heteroscedasticity and autocorrelation. Except for multicollinearity, the regression model is still violating the classical assumptions so cannot be used as an efficient estimator (blue). Thus, the data should be processed using other regression techniques namely generalized least square (GLS) or weighted least square (WLS) as it is transformed using the weighting techniques (Wooldridge, 2010)

GLS is a least square techniques designed to overcome heteroscedasticity which is able to preserve the efficiency of the estimator without losing its unbiased and consistency characteristics. GLS is able to minimize residual square which has been weighted (weighted least square) so it can fulfill the standard assumptions of the Ordinary least square (OLS) resulting in the blue results estimations (Gujarati and Porter, 2012). If the efficiency estimator is more important than unbiased and consistency under the condition of heteroscedasticity, the estimated generalized least square (EGLS) is more appropriate to be used instead of ols. Therefore the EGLS method is used to eliminate the heteroscedasticity and autocorrelation (Gujarati, 2009). The method in which the residual is replaced by moment estimator is also applied here. This method is a variant namely panel corrected standard error (PCSE) (Beck and Katz, 1995).

Table 2: Estimation Results using EGLS

	NPL (1)	Probability (2)	Z-score (3)	Probability (4)
C	10.37821*** (5.702)	0.0000	66.52118*** (3.672)	0.0003
Dev	-0.443573* (-1.868)	0.0628	6.888806* (1.654)	0.0992
Deving	3.046040*** (2.622)	0.0092	-12.4329*** (-2.807)	0.0054
China	0.506245 (0.199)	0.8423	-287.7620 (-0.679)	0.4980
CGD	0.006919 (0.182)	0.8549	-0.150193 (-0.411)	0.6816
CGF	0.123568 (1.455)	0.1466	-0.256555 (-0.421)	0.6744
CGDDev	0.049040* (1.872)	0.0622	-0.766116* (-1.701)	0.0900
CGDDeving	-0.326698** (-2.377)	0.0181	1.309786*** (2.580)	0.0104
CGDChina	-0.571268 (-1.400)	0.1624	-49.9614*** (-3.421)	0.0007
CGFDev	-0.114436* (-1.872)	0.0621	0.639405 (0.915)	0.3609
CGFDeving	0.182582 (1.0387)	0.2998	-0.658185 (-0.863)	0.3890
CGFChina	1.174430 (1.605)	0.1095	49.25230* (1.920)	0.0559
In ASSET	-0.192061* (-1.673)	0.0955	-1.48029*** (-2.716)	0.0070
CAR	-0.017465*** (-4.426)	0.0000	0.683790*** (30.297)	0.0000

INF	-0.038263 (-1.234)	0.2180	0.000303 (0.003)	0.9973
rGDP	-0.904638*** (-7.369)	0.0000	-0.450469 (-1.535)	0.1260
D	-0.223466 (-0.909)	0.3642	-2.7918*** (-4.249)	0.0000
R square	0.270294		0.944561	
F statistic	0.231634		0.935659	
Prob.(Fstat.)	6.9916		106.0996	

***significant at $\alpha < \text{or} = 1\%$, ** significant at $\alpha > 1\%$ or $< 5\%$, and * significant at $\alpha > 5\%$ or $< 10\%$
 Source: Calculated by using E Views 10

In Appendix A, we perform multicollinearity test on above GLS to ensure no correlations among its independent variables. There is no correlation matrix of the independent variables above 0.80 meaning that there is no multicollinearity occurred in the model. The estimated model above has been cleared from violation of the classical assumption of multicollinearity and the heteroscedasticity which by using white-cross and panel corrected standard error (PCSE) the heteroscedasticity in standard error (SE) and covariant in previous regression can be disregarded (Wooldridge, 2005).

Based on table 2, it was found that coefficients of foreign shareholders originated from developed countries is significant in affecting credit risks of its acquired local bank. The increase of foreign shareholdings by 1% using will reduce credit risks of its acquired local banks by 0.44%. As for foreign shareholdings originated from China, no impact found on credit risks. Based on the result above, the first hypothesis mentioning whether the percentage of foreign shareholdings negatively correlated to the credit risks is accepted under the condition that the foreign shareholdings holds majority percentage of shareholdings and originate from the more developed countries. Conversely, small/minor percentage/portion of shareholdings from developed countries will lower its acquired local banks' credit risks.

Based on table 1, the average percentage of foreign shareholdings of developed countries of 62.8% which is relatively high is significantly reducing credit risks. This result is supported by a study by Zhu (2009), Aymen (2014), Zhong et al (2007) and Salhi and Bouljebene (2012) that shows increase in foreign shareholdings decrease credit risks of the banks.

In terms of foreign shareholders from developing countries as depicted in table 3, percentage/portion of its foreign shareholdings tend to significantly increase credit risks of the acquired banks. As seen in table 1, the average percentage/portion of foreign shareholdings from developing countries is relatively low of only 22.9% and tend to have weak controlling capacity resulting significant increase in credit risks. Therefore it is concluded from this study that the majority shareholdings or higher percentage of foreign shareholding have tendency to reduce credit risks of its local acquired bank but the foreign shareholdings should originate from country more developed from the hosting countries. This is due to foreign shareholders from more developed countries only financing good performing customers of low credit risks or 'cherry picking' whereas their counterparts from developing countries are allowing financing higher risks customers but with higher interest rate. Other factors is that foreign shareholders from more developed countries is having better managerial skills, expertise, technology, and performance as opposed to developing countries. This is also reflected by IMF 4Q, 2017 data showing that average NPL of banks in developed countries tend to be lower than in developing countries. In the example, average NPL of banks in Korea is 0.42%, Japan is 1.19% and Taiwan is 0.46% whereas the average NPL of developing countries i.e. India is 9.98%, and Kuwait is 5.44%. Nonperforming loans increased in most GCC countries in 2009 to 3.9 percent in Bahrain, 9.7 percent in Kuwait, 2.8 percent in Oman, 1.7 percent in Qatar, 3.3 percent in Saudi Arabia, and 4.6 percent in the U.A.E. (Khamis and Senhadji, 2010).

This result is also consistent with a study by Chan, 2016 on ASEAN banks concluded that the small percentages of foreign shareholdings originated from developed countries i.e. European countries,

and the USA has a small impact on the efficiency of its acquired local banks. The percentage or portion of shareholdings of European countries is 4.08% and from the US is 3.03%.

These findings are also the same with the study by Phung and Lee (2013) mentioning that percentage/portion of foreign shareholdings will increase company performance only if the foreign shareholders is majority shareholder or at least second highest shareholder. Our study findings overcome previous research gap which only analyses impacts of increase portion of foreign shareholdings in aggregate without differentiation of the impacts based on the level of country economic development. The study by Rokhim (2013) on commercial banks concluded that the increase in foreign shareholding in aggregate without differentiating based on country of origin in short run tend to increase credit risks of the whole banking industry. This is due to criteria used by Rokhim to categorize local bank owned by foreign shareholders is different as the minimum shareholdings are only 10% for foreign shareholders, whereas, in this study, the minimum foreign shareholdings are 50% as to ensure the majority shareholdings or authority in making strategic decisions including in the area of credit risks management.

Corporate governance proxy using the size of the board of directors has moderating effect on credit risks of the acquired local banks. The increase in the size of the board of directors of the banks acquired by foreign shareholders from developed countries tend to increase credit risks probably due to the tendencies of higher risks taking appetite of foreign directors originated from the developed countries. Whereas the increase in the size of Board of Directors acquired by foreign shareholders from developing countries tend to decrease credit risks due to smaller size of BOD and tend to avert risks. This result is supported by study of Adam and Mahran (2003), which found that bigger size of board of directors of companies in US will increase business risks. Conversely, Pathan (2009) found that smaller size of board of directors will increase credit risks, whereas Switzer and Wang (2013) found that bigger size of the board reduce credit risks of the Banks. Therefore mix results found from these studies as country of origin and expertise quality of the foreign directors is also affecting the results.

In terms of the role of foreign director in bank board categorized based on their country of origin, it was found that only the increase of number of Foreign Director in the acquired local bank from developed countries will significantly reduce the credit risks, whereas foreign directors originated from developing countries and china have not impact on reducing credit risks of the acquired Banks. These results show that foreign director originated from more developed countries is a significant moderating variable in strengthening the effect of foreign shareholdings on reducing credit risks of the acquired local banks.

Our findings shows bigger assets size has positive significant effects on reducing credit risks of the acquired local banks. This is consistence with 'to big to fail' concept explaining that big size Banks tend to be risk taking (Kane, 2000; Mishkin, 2006).

Findings shows the capital adequacy ratio (CAR) significantly reduce credit risks of the acquired local bank by foreign shareholders. This result is consistent with previous studies mentioned earlier among others study by Moon (2009) shows that increase in car tend to reduce NPL or credit risks of the Banks and Blum (2008) finding shows that increase in equity will increase liquidity of the banks and in the end reduce credit risks. In terms of inflation, this macro variable has no impact on credit risks.

GDP growth also has negative and significant effect on reducing credit risks of its acquired local bank by foreign shareholders. Increase of GDP growth by 1% will decrease credit risks by 0.9%. This results also supported by previous time series study made by Rivai (2018) on 118 commercial banks in Indonesia showing that higher GDP growth tend to decrease NPL or credit risks of the banks.

The dummy variable shows that global crises have no effect credit risks of the acquired local bank by foreign shareholders. It is understandable as local banks mostly acquired by foreign shareholders have no significant exposures with banks suffered by the crises.

Robustness Check

The last column (4) shows the robustness check using Z-score to replace NPL that denotes risk. Z-score reflects the probability of the banks' failure or bankruptcy. The higher the Z-score the smaller the probability of the bank's becoming failure/bankruptcy.

The increase in foreign shareholdings of majority shareholders from developed countries significantly increase the Z-score meaning less probability for the banks to become failure. Whereas the increase in foreign shareholdings of minority shareholders from developing countries significantly reduce Z-score meaning higher probability for the banks to become failure/ bankruptcy. This results is consistent with credit risks measured by NPL. Higher NPL consistent with lower Z-score and vice versa.

Bigger size of board of directors of banks acquired by foreign shareholders from developed countries tend to decrease Z-score whereas bigger size of board of directors of banks acquired by foreign shareholders from developing countries tend to increase Z-score. This results also consistent with that of credit risks measured by NPL. Higher credit risks consistent with lower Z-score vice versa.

The number of foreign directors in board of directors has no impact on Z-score meaning that the existence of foreign directors has no effect on probability of the Bank to become failure /bankruptcy.

In terms of assets, higher assets size of the banks tend to decrease Z-score. This result is not consistent with credit risks measure by NPL. The empirical results shows higher assets size tend to reduce NPL and should be follow by increase in Z-score. The inconsistent results may be due to the larger Banks has a tendency of being over protected by monetary authority that also fostered distortions toward more excessive risk-taking at the larger Banks and made the Banks more vulnerable to failures/bankruptcy.

In terms of equity, the Z-score is consistent with NPL. Higher equity of the banks tend to reduce credit risks and reduce probability of the Banks to become failure indicated by higher Z-Score. Whereas inflation and GDP growth have no impact on Z-score. The dummy variable of financial crisis of 2007-2008 has no impact on credit risks but in terms of Z-score, it has significantly affect the Z-score of the banks meaning that during financial crisis 2007-2008 the local banks acquired by foreign shareholders is relatively affected by the crises but not severe as no impacts found on credit risks.

Overall, the results demonstrate that the model is robust enough whereby in general the results is consistent from the usage of NPL in column (1), to the use of Z-score in column (4) as a measure of bank risks.

CONCLUSION AND SUGGESTION

This research is intended to provide new approach on how foreign shareholdings in Indonesia's banking industry affect the credit risks of its acquired local banks by analysing the foreign shareholdings percentage/portion and also analysing its country of origin that till date is still scant. Percentage of shareholdings is an application of agency theory whereas country of origin that has a different level of economic advancement, quality of managerial expertise is based on resources based theory. Findings of this research conclude that the percentage of foreign shareholdings and its country of origin are two factors that cannot be separated in affecting the credit risks of the acquired local bank whereas only foreign directors originated from developed countries has a capabilities in strengthening its effect on credit risks. Foreign shareholdings positively reducing the credit risks of acquired local banks only if the foreign shareholders is majority shareholders/controlling shareholder and is originating from countries more developed than Indonesia as the host country.

Findings recommend monetary authority or policymakers to balance the three criteria such as characteristic required from the foreign shareholders, the existent of the foreign shareholders within the acquired banks and the proper implementation of the banking regulations issued by the policymaker or monetary authority.

Specifically, credit risks can be reduced by encouraging foreign shareholders originating from countries that is more advanced than Indonesia as the host country. Policy maker need to perform strict due diligence on the performance of the country of origin of the foreign shareholders including managerial expertise of the candidature of the member of board of directors to obtain competence candidates. Furthermore, lower credit risks can be obtained only if the foreign shareholders is a majority shareholder/ controlling shareholders, and lastly, the monetary authority should not issue restrictive regulations such as excessive limitation on maximum percentage of foreign shareholdings that could inhibit in making strategic decisions related to risks management that eventually inhibit the process of reducing credit risks of the banks.

Other recommendations is that monetary authority should recommend banks acquired by foreign shareholders from developed countries to minimize numbers of its member of board of directors to reduce credit risks but the existence of foreign director from developed countries should be maintained to reduce credit risks of the acquired local bank.

For future studies, subject to the availability of the data, it is recommended to perform cross country analysis by including acquired local banks located in other countries to observe whether the different characteristics in terms of economic advancement, social and cultural similarities or differences of hosting country matters on efficiencies of the local banks acquired by foreign shareholders.

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