

Does The Market Concentration Good For South East Asia Banking Industry?

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Abstract:

This research aims to determine the effect of market concentration and liquidity risk on profitability and credit risk in the twenty largest banks in ASEAN in 2018. The independent variable used in this research uses market concentration using the Herfindhal-Hirschman Index (HHI) proxy and liquidity risk using a loan to deposit ratio (LDR) proxy. The dependent variable used is profitability which uses the return on assets (ROA) proxy and non-performance loan (NPL) as the proxy of credit risk. The findings show that market concentration has a negative impact on bank profitability. This study also support the argument on concentration – fragility relationship on Singapore, Thailand, and Malaysia. Moreover, this study reveals that the liquidity risk has no impact on the bank profitability and also the credit risk. The implication of this study, it is noted the competition is good for ASEAN banking industry. The competition forces bank to operate efficiently and prudently.

Keywords: Market Concentration, Liquidity Risk, Profitability, Credit Risk

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1. Introduction

Increasing economic growth in the ASEAN region is the main focus for the economy in the western hemisphere. Based on IMF or World Bank data sources, economic growth in the ASEAN region has greatly affected the economies in the Western Hemisphere. The banking industry certainly has a major role in the development of the economy. Banks have an important role in the economic progress in a country. At present, one of the main challenges for both developed and developing countries is to assess the ability of the banking industry in the country. Banks are institutions that work by collecting funds from the public in the form of savings, current accounts, or deposits (Kasmir, 2014). For this task, banks

become financial institutions that are needed by the people of a country. Then research in banking industry is still relevant for developing countries (Arafat, Warokka, Buchdadi, & Suherman, 2013; Chou & Buchdadi, 2018).

In term of South East Asia Region, the competition among the becomes harder. It is noted in 2014, three banks in Malaysia merged (Setyowati, 2014). The three banks are CIMB Group, RHB Capital, and Malaysia Building Society (MBSB). The merger of these three banks is an effort made by Malaysian banks in anticipation of the MEA (ASEAN Economic Community). Furthermore, in Indonesia in 2019, the biggest state commercial bank, PT Bank Mandiri (Persero) Tbk, will begin to plan to expand the banking business

expansion in ASEAN. This step is one of the steps faced in the intense banking competition that occurs in ASEAN. Laos and Cambodia are targeted where financial market projects have high potential in the future. However, this step will only be carried out in the next two years (Baihaqi, 2019). Both of these strategies are one example of the intense banking competition in ASEAN. Banks compete to increase profitability and reduce credit risk. Many researchers and policy makers have made analyzes of the factors that affect profitability and credit risk. This is certainly closely related to the role of banks in developing the national economy and building financial stability in a country.

One of the important variable in banking industry is market concentration. It is mentioned the higher market concentration, the better bank stability (Bogdan & Marius, 2015; Hourvouliades & Davcev, 2014) or the worse the bank stability (Bogdan & Marius, 2015; Shijaku, 2017). It is also stated that the higher market concentration, the better bank profitability (Dietrich & Wanzenried, 2011; Vinh, 2017; Yao, Haris, & Tariq, 2018) or the worse bank profitability (Sahile, Tarus, & Cheruiyot, 2015).

Moreover, bank profits are determined by how much credit is channeled. This means that the greater the credit extended, the greater the bank's profits. According to Kasmir (2004), banks will suffer losses if they are unable to extend credit, while funds are pooled in large numbers. This is in line with the research of Dewi, Herawati, and Sulindawati (2015), finding a significant positive effect between the loan to deposit ration (LDR) variables on the ROA variable. But in the research of Lubis, Isyuardhana, and Dillak (2017a) and Soares and Yunanto (2018), found a significant negative effect between the LDR variable on the ROA variable. While, studies conducted by Meyrantika and Haryanto (2017) and Chou and Buchdadi (2016), found no significant effect between LDR variables on ROA.

To develop the banking industry in ASEAN, we conducted a study to examine its performance

proxied by the profitability and credit risk variables. The study choose market concentration and the loan to deposit (LDR) ratio as the determinant variables due to capturing the banking industry in ASEAN in facing the MEA (ASEAN Economic Community) This study also provides information about how to improve business operations and shows investors how to choose the right bank.

2. Literature review and Hypothesis development

Some previous research has examined various factors that affect profitability and credit risk. Bank profitability can be proxied in various ways such as ROA, ROE, ROI, EPS, and NPM. According to Chou and Buchdadi (2018), ROA is an indicator that is widely used in research around banking companies to measure banking profitability. And to measure credit risk can be proxy by non performing loan (NPL), Performing Loans, and loan loss reserve. non performing loan (NPL) is one of the ratios that is often used to measure credit risk. Therefore, in this research, we use profitability with ROA proxy and credit risk with NPL proxy.

Various external and internal factors are proposed to examine their effects on profitability and credit risk. External factors that commonly used is the Market Concentration variable. The Herfindhal-Hirshman Index (HHI) is an index often used in banking in measuring market concentration (Lapteacru, 2010). In addition, mostly the research used liquidity risk variables as internal factors. Loan to Deposit Ratio (LDR) is a tool used to measure liquidity risk. In this research, we use market concentration with HHI proxy and liquidity risk with LDR proxy to test the effect on profitability and credit risk.

Next, we develop a hypothesis by considering the results of previous studies on market concentration and liquidity risk in measuring profitability and credit risk. So the hypothesis development is built in the following sections:

2.1 The effect of market concentration on profitability

When the level of market concentration in an industry is high, it indicates less competition among the companies in industry (Vinh, 2017). So, companies will enjoy higher market profits on an economy of scale, which is receiving greater profits. This means that the greater market concentration in an industry will bring greater profitability as well. Some studies found Studies conducted by Fidanoski et al. (2018) and Vinh (2017) found a significant positive effect impact HHI variables on ROA variables. But in study of Pahlavi and Ruslan (2019), it revealed that HHI has a significant negative effect on ROA. In contrast to the research conducted by Raei et al. (2016) found no significant effect between HHI variables on ROA.

2.2 The Effect of Liquidity Risk on profitability

Bank profits are determined by how much credit is channeled. This means that the greater the credit extended, the greater the bank's profits. According to Kasmir (2004), banks will suffer losses if they are unable to extend credit, while funds are pooled in large numbers. The study of Dewi, Herawati, and Sulindawati (2015) found a significant positive effect between the LDR variables on the ROA variable. But in the research of Lubis, Isyuardhana, and Dillak (2017a) and Soares and Yunanto (2018), it found a significant negative effect between the LDR variable on the ROA variable. In contrast, a study conducted by Meyrantika and Haryanto (2017) and Chou and Buchdadi (2016), found no significant effect between LDR variables on ROA.

2.3 The Effects of Market Concentration on Credit Risk

A high level of market concentration will increase returns on borrowing. So, that it will reduce credit risk. This means that the greater market concentration will bring a decrease in credit risk (Tabak, Fazio, & Cajueiro, 2011). This is in line the argument noted by Simpasa and Pla (2016) who found a significant negative effect between HHI variables on NPL variables. However, some research found a significant positive effect between HHI variables on NPL (Bogdan & Marius, 2015;

Shijaku, 2017). While, research conducted by Khoirunnisa (2014) found that there was no significant effect between HHI variables on NPL.

2.4 The Effects of Liquidity Risk on Credit Risk

The magnitude of the risk borne by the bank can be seen from the increasing amount of credit extended by the bank (Astrini, Suwendra, & Suwarna, 2014). This means that the greater the amount of credit disbursed compared to deposits received from the public will carry greater credit risk. In addition, Kamaludin, Darmansyah, and Usman (2015) also found a significant positive effect between LDR and NPL variables. However, research conducted by Dewi and Ramantha (2015) found a significant negative effect between the LDR variables against NPLs. While, research conducted by Santosa, Sudarto, and Sunarko (2014) found no significant effect between LDR variables on NPL.

3. Research Method

3.1 Definition of Variables

Tables 1. Definition of Variables

No	Variable	Concept	Indicator
1	Profitability Proxy: ROA	The ratio between a company's income and total assets	$ROA = \frac{\text{Net Profit}}{\text{Total Asset}} \times 100\%$
2	Credit Risk Proxy: NPL	The loan amount is default or close to default	$NPL = \frac{\text{Non Performing Loan}}{\text{Total Credit}} \times 100\%$
3	Market Concentration	Total market share	

Proxy: squared
HHI

$$HHI = \sum_{i=1}^N S_i^2$$

Where, *market share* :

$$S_i = \frac{\text{Firms' Earnings}}{\text{Industries Earning}} \times 100\%$$

16	Bank Central Asia
17	Bank Investment and Development of Vietnam
18	Bank Negara Indonesia
19	Vietinbank
20	Vietcombank

4	Liquidity Risk Proxy: LDR	The ratio between loans disbursed and total deposits from bank creditors	$LDR = \frac{\text{Total Credit Given}}{\text{Total Third Party Funds}} \times 100\%$
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3.2 Data

The population used in this study is the twenty largest banks in ASEAN in 2018 (Forbes, 2018). This study uses a saturated sample method in which the number of samples is equal to the population. Samples were taken from the bank's financial statements from 2011 - 2018. The following is a list of names of twenty banks:

Table. 2 List of the twenty largest banks in ASEAN 2018

No	The twenty largest banks in ASEAN 2018
1	DBS Bank
2	OCBC Bank
3	United Overseas Bank
4	Maybank
5	CIMB
6	Public Bank Berhad
7	Siam Commercial Bank
8	Bankok Bank
9	Kasikombank
10	Bank Rakyat Indonesia
11	Krung Thai Bank
12	Bank Mandiri
13	RHB Bank
14	Hong Leong Bank
15	BDO Unibank

3.3 Equation Model

We use a panel data regression model to determine the effects of market concentration (HHI) and liquidity risk (LDR) on profitability (ROA) and credit risk (NPL). The panel data regression model estimation is as follows:

a. Model 1

$$ROA = \alpha_0 + \beta_1 HHI + \beta_2 LDR$$

b. Model 2

$$NPL = \alpha_0 + \beta_1 HHI + \beta_2 LDR$$

From the three panel regression data models: Common Effect Model (CEM), Fixed Effect Model (FEM), and Random Effect Model (REM). To estimate the panel data model from the results of the regression two tests were performed: Chow test and Hausman test. This method explains the type of research, variables and their size, population and sampling techniques, data types, and data analysis techniques. The study conducted a regression for the twenty largest banks, the three biggest banks of Singapore, the five biggest banks of Malaysia, the four biggest banks of Indonesia, the four biggest banks of Thailand, and the Three Banks of Vietnam. Whereas one Philippine bank was not regressed because of insufficient sample size.

4. Research and Discussion Results

4.1 Descriptive Statistics

The results of the descriptive statistical test are shown in table 3 which shows that the market concentration (HHI) of the twenty largest banks in ASEAN in 2018 was monopolistic competition.

Tabel 3. Descriptive

	ROA	NPL	HHI	LDR
Mean	1.4275	2.0418	0.0583	86.1837

Median	1.2067	1.9065	0.0581	86.7000
Maximum	4.2342	5.3333	0.0600	111.8082
Minimum	0.4651	0.3829	0.0572	61.7084
Std. Deviasi	0.7079	1.0845	0.0009	8.4726
Observasi	160	160	160	160

Besides, we conducted tests for normality, multicollinearity, and heteroskedasticity. Normality test results, we use the specifications provided by Jargue-Berra. The results showed that our data violated the normality test. Then we use the

assumption that if the amount of data is greater than 30, then the data will follow a normal distribution. This aspect is the limitation of our study. For the multicollinearity test and heteroscedasticity test, we found no violation on both phenomenon.

4.2 Discussion

Chow test and Hausman test

The regression model selection is taken to choose the best panel data model. The regression results for model 1 (Y = ROA) and model 2 (Y=NPL) is shown on table 4.

Table 4. The regression results

	20 Largest Banks	Singapore (3 banks)	Malaysia (5 Banks)	Indonesia (4 Banks)	Thailand (4 Banks)	Vietnam (3 Banks)
Model 1 Y=ROA						
Panel Model	Random Effect	Fixed Effect	Random Effect	Fixed Effect	Fixed Effect	Random Effect
N	160	24	40	32	32	24
Constanta	5.688 ***	1.888***	3.616**	14.626***	8.354***	6.561***
HHI	-70.545 (-3.569)***	-44.208 (-1.425)	-34.131 (-0.955)	-238.924 (-3.081)***	-110.252 (-3.054)***	-94.330 (-2.016)*
LDR	-0.001 (-0.444)	0.020 (0.019)	-0.006 (-0.760)	0.022 (1.910)*	0.005 (0.845)	-0.002 (-0.461)
F -test	8.088***	3.364**	2.044	19.297***	14.947***	2.093
Model 2 Y=NPL						
Panel Model	Random Effect	Random Effect	Random Effect	Fixed Effect	Fixed Effect	Random Effect
N	160	24	40	32	32	24
Constanta	2.235	-2.749	13.652***	-14.015*	-21,214***	13,888**
HHI	-8.817 (-0.175)	159.938 (2.962)***	-110.029 (-1.058)	312.302 (1.995)*	395.029 (3.524)***	-234.534 (-2.414)**
LDR	0.003 (0.389)	-0.062 (-1.845)*	-0.063 (-2.365)*	-0.026 (-1.110)	0.015 (0.799)	0.017 (1.085)
F -test	0.075	5.092**	10.974***	12.461***	8.647***	4.178**

Sources: Data procesed; * p < 0.1, **p<0.05, ***p<0.01

The effect of market concentration on profitability

The findings show that market concentration has a negative impact on bank profitability. However, it is not robust as the negative relationship are only statistically significant in all data, Indonesia, Thailand, and Vietnam. While in Singapore and Malaysia it is found negative but

statistically not significant. Then, this study supports the finding of Pahlavi and Ruslan (2019) and supports Raei et al. (2016) for Singapore and Malaysia. It seems the competition is good for banking industry in ASEAN. The competition makes banks must be careful in determining the product and price to be given. Banks prefer to be efficient rather than price

competition because they tend to be more profitable (Sahile, Tarus, and Cheruiyot, 2015).

The Effect of Liquidity Risk on profitability

This study reveals that the liquidity risk has no impact on the bank profitability as it shown on table 4 most of the findings are not statistically significant. Only in Indonesia the finding support the study of Dewi, Herawati, and Sulindawati (2015) which found a significant positive effect between the LDR variables on the ROA variable. Then, this study confirm the study of Meyrantika and Haryanto (2017) and Chou and Buchdadi (2016) which found no significant effect between LDR variables on ROA. In addition, Menurut Alarussi dan Alhaderi (2018), bank profitability of malaysia banking is not depend on the liquidity. Probably, in ASEAN a high LDR of the bank will not guarantee greater efficiency in generating profits (Chou and Buchdadi, 2016)..

The Effects of Market Concentration on Credit Risk

This study support the argument on concentration – fragility relationship on Singapore, Thailand, and Malaysia (Bogdan & Marius, 2015; Shijaku, 2017). The competition forces the bank to manage the company prudently and efficiently. As the result, it will provide the better and more stable in credit risk. However, in case of Vietnam the bank seems enjoy monopolistic competition. Then, it supports the findings that the more concentration the bank, the more stable the credit risk (Simpasa & Pla, 2016; Tabak et al., 2011). Finally the whole data of ASEAN and the malaysia banking industri found no significant impact of HHI on NPL. To sum up, this study could not reveals the robust relationship between HHI and NPL.

The Effects of Liquidity Risk on Credit Risk

This study found a not robust impact of LDR on the NPL. It is found a significant negative impact of LDR on the NPL in Singapore and Malaysia. Probably, the banking system on both countries is quite well so the more loan distributed, it does not mean the increase of NPL. It is in line

with the previous research in Indonesia conducted by Dewi and Ramantha (2015). However, for the whole data, Indonesia banking, Thailand Banking, And Vietnam Banking, it could found a statistically significant impact of LDR on NPL.

5. Conclusions

This study shows a different regression of banking industri model in ASEAN. The findings show that market concentration has a negative impact on bank profitability. It seems the competition is good for banking industry in ASEAN. The competition makes banks must be careful in determining the product and price to be given. Banks prefer to be efficient rather than price competition because they tend to be more profitable. This study also support the argument on concentration – fragility relationship on Singapore, Thailand, and Malaysia. The competition forces the bank to manage the company prudently and efficiently. As the result, it will provide the better and more stable in credit risk.

This study reveals that the liquidity risk has no impact on the bank profitability. Probably, in ASEAN a high LDR of the bank will not guarantee greater efficiency in generating profits. Finally, this study found a not robust impact of LDR on the NPL. It is only found a significant negative impact of LDR on the NPL in Singapore and Malaysia. Probably, the banking system on both countries is quite well so the more loan distributed, it does not mean the increase of NPL. The limitation on this study that some model built are not so good in F test. Perhaps, it need future research with more sample to make a confirmation on the findings.

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