“The effect of Lerner Index and income diversification on the general bank stability in Indonesia”

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THE EFFECT OF LERNER INDEX AND INCOME DIVERSIFICATION ON THE GENERAL BANK STABILITY IN INDONESIA

Abstract

The purpose of this study is to examine the effect of market power and income diversification on the General Bank stability in Indonesia. This research uses a data sample of 20 general banks listed on the Indonesia Stock Exchange for the period of 2011–2014. Data analysis technique used is Multiple Linear Regression. It can be concluded simultaneously that market power and revenue diversification have significant effect on bank stability and, partially, market power has a positive and significant effect on a bank stability. Income diversification has a positive non-significant effect on bank stability.

Keywords market power, revenue diversification, bank stability, Indonesia Stock Exchange

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INTRODUCTION

Basically, banking sector is the internal part of financial system. In Indonesia, financial system is still focusing on banking sector which has a crucial role in the financing activity of the real sector. Banking industry is one of the most important components of the country's economy. Generally, the stability of banking system is reflected by banking's health condition and the proceeding of banking intermediation function in mobilizing society' saving to distribute in the form of credit or another form of financing for the business world (Warjiyo, 2006; Khaldun & Muda, 2014). The stability of a country's financial system must be maintained in order to avoid an economic crisis that affects the stability of the country as a whole, as well as its security and welfare. The economic crisis that once hit Indonesia in 1997–1998 became an example of seeing how the devastating are effects of financial system instability. Similar to family finances, the stability of the country's financial system is influenced by many factors, including internal factors such as the performance of the banking sector with liquidity risk, credit risk and market risk, non-bank financial institutions, financial markets and financial infrastructure, and influenced by external factors that are world economic factors. In addition to economic factors, the stability of the financial system is strongly influenced by non-economic factors, namely the political situation and security of the country. Therefore, in order to maintain the financial system stability, state security, a conducive climate should be kept so investors feel safe to keep investing and can invite new investors to invest in Indonesia.

The liquidity difficulties of a bank can be systemic, meaning it can correlate with other banking/financial institutions or economic system in whole, which can result in mistrust of the banking community and will disrupt the financial system stability. The causes of the bank's general liquidity difficulties are the bank's failure to manage and supervise credit, failure to manage administration and operational costs, decreasing public interest in saving or investing in the bank as a result of the declining public trust with the bank's performance in managing the trust (Rini & Absah, 2017). In this research, the stability of bank is proxied by Z-score as the measurement of bank stability. Some previous researches tried to determine the factors that affect bank's stability. The amount of bank's market power will impact the increase in bank stability. A bank with more efficient market power, sufficient resources, sufficient scale and economic scope can do low cost activities and enjoy high profit margin (Nurzaimah et al., 2016). Besides market power, income diversification can also affect bank's stability. Income diversification is one of the banking's efforts to increase bank's profitability (Mahdaleta et al., 2016; Lutfi et al., 2016). Research related to income diversification in the banking industry has been done in the USA and some European countries (Baele et al., 2007; Laeven & Levine, 2007; Chiorazzo et al., 2008; Sanya & Wolve, 2011; Brighi & dan Venturelli, 2014), as well as Asia and Africa (Vennet, 2002; Acharya et al., 2006; Deng et al., 2007; Elyasiani & Wang; 2012; Sawada, 2013; Zhou, 2014; Alhassan, 2015; Sianipar, 2015). Sianipar (2015) found that income diversification is capable of lowering non-systematic risks and total bank risks. Non-interest income sources able to lower risk is income fee. Diversification can reduce non-systematic risk, improve profitability and decrease cost inefficiency, but not significantly increase the market value of banks. In the world of banking, income diversification is considered to develop rapidly, because the technology advances ease the customers to do transaction (Muda et al., 2017). Besides, the technology advances can decrease the cost of financial transaction process and facilitate getting the information. The technology advances cause the increasing of non-interest income from bank's service. Based on the background, researches are interested in studying the effect of market power and income diversification on the commercial bank listed on the Indonesia Stock Exchange.

1. LITERATURE REVIEW

1.1. Banking

According to Act of Indonesia No. 10, 1998, banking is anything related to a bank, comprising institutions, business activities, and procedures as well as processes in such business activities conducting. Meanwhile, bank is a corporate entity that mobilizes funds from the public in the form of deposits and channels them to the public in the form of credit and/or other forms in order to improve the living standards of the society.

1.2. Banking stability

According to Crockett (1997), financial stability is related to two elements: monetary stability and financial stability. Monetary stability is price stability which refers to currency stability, whereas financial stability is a stability which refers to the financial institution stability. The stability between these two sectors must be controlled because both of them affect each other. If there is a disturbance between these two sectors, it will give negative effect on the economic growth (Tarmizi et al., 2016, 2017). For example, high inflation can cause the increase in interest rate and will lead to the increase in non-performing loans. The worse case is that it will spark the fall of banking and other financial institutions. Otherwise, if there is a disturbance in the banking stability, it will affect monetary system and disturb price stability. The indicator to measure banking stability is Z-score.

1.3. Income diversification

Bank's income diversification is bank's activities to gain income which are not only from the interest income but also non-interest income which comes from financial services served by bank to its customers such as credits, e-banking, trans-

fer cost, trading, commission, and other services. Income diversification in banking sector can be seen as the increase in share of fee, net trading profit, and other non-interest income (Mahdaleta et al., 2016).

1.4. Market power

Market power is a company's capacity to sell its products at the price higher than its marginal cost (Kachtouli & Hamza, 2014; Sirojuzilam et al., 2016). It can be concluded that the higher the market share is, the higher the market power will be. The ownership structure can affect bank performance because different types of ownership will give managers different incentives to efficiently allocate resources (Muda et al., 2017). In other words, the ownership structure can affect the technical efficiency of banking. Banking market share as measured by asset ownership is expected to have a positive effect on bank efficiency, because banks with larger market share tend to be more efficient than other banks. The greater asset owned by a bank is expected to further improve the efficiency of the bank, because banks with greater asset value tend to be able to pay lower input costs than their competitors and can increase the return to scale through fixed cost allocation. With the result that it can establish low interest rate for deposits and high interest rate for credit, and it will lead to higher profit. Market power is measured by Lerner index.

1.5. Conceptual framework

1.6. Research hypothesis

Based on the conceptual framework, the hypothes in this research is market power and income diversification affect the general bank's stability which is listed on the Indonesia Stock Exchange. This research aims to analyze the effect of market power and income diversification on the general bank's stability which is listed the Indonesia Stock Exchange.

2. RESEARCH METHODS

2.1. Research design

The research was undertaken using a quantitative explanatory approach with a causal ex post facto method, i.e. to determine the causal relationship between the research variables or survey explanatory which is a study decribing the relationship between several variables and other variables (Muda & Rafiki, 2014; Maksum et al., 2014; Tarmizi et al., 2016, 2017). The research was undertaken using a quantitative explanatory approach with a causal method, i.e. to determine the causal relationship between the research variables. Therefore, based on the explanation or confirmation of describing the causal relationship and hypothesis testing (Lubis et al., 2016; Muda & Dharsuky, 2015; Muda et al., 2016, 2017). The data analysis techniques used are: (i) descriptive statistical tests; (ii) classical assumptions test and hypothesis test with (a) F test (simultaneous); (b) T test (partial; (c) determination test, and (4) R2 test (coefficient of determination).

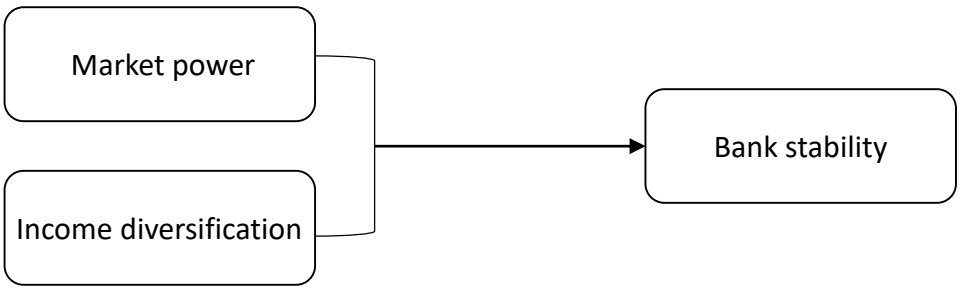

Figure 1. Conceptual framework

Table 1. Definitions and measurements of research variables

No.	Variable	Indicator	Measuring scale
1	Bank stability (Y)	$Z = \frac{ROA + \frac{E}{TA}}{\sigma_{ROA}}$	Ratio
2	Market power (X1)	$Index\ Lerner = \frac{P_{TA_{it}} - MC_{TA_{it}}}{P_{TA_{it}}}$	Ratio
3	Income diversification (X2)	$NII = \frac{Net\ Non - Interest\ Income}{Net\ Operating\ Income}$	Ratio

2.2. Research population and sample

The population used in this research is all of the general banks which are listed on the Indonesia Stock Exchange during 2007–2014, which consists 40 companies. According to the criteria, there are 20 companies who become sample.

2.3. Data analysis technique

To process and analyze data, researchers use statistic program, SPSS for windows. The data analysis method in this research are descriptive statistic and multiple linear regression.

3. RESULTS AND DISCUSSIONS

3.1. Descriptive analysis

Descriptive statistic is statistic science which learns about the way to gather, to organize, and to serve a research data. The purpose is to ease people to read and to understand the data. This is the output of SPSS, which is the whole data used in this research.

Table 2 showed that the amount data used in this study is 319 data taken from publication of semiannual financial statement of a general bank which is listed on the Indonesia Stock Exchange during 2007–2014.

a. The minimum of Lerner variable is –0.09, achieved by Bank Himpunan Saudara 1906, the maximum is 0.29, achieved by Bank Danamon, the average is 0.08 and the standard deviation is 0.05 with the amount of data as much as 319.

b. The minimum of Nii variable is –0.12, achieved by Bank Danamon, the maximum is 0.33, achieved by Bank Victoria International, the average is 0.2 and the standard deviation is 0.4 with the amount of data as much as 319.

c. The minimum of Zscore variable is –0.48, achieved by Bank Bumi Arta, the maximum is 3.87, achieved by Bank Central Asia, the average is 1.31 and the standard deviation is 0.53 with the amount of data as much as 319.

Tabel 2. Descriptive statistics

Source: results of the researcher's processed data (2016).

Variable	N	Minimum	Maximum	Mean	Std. deviation
Zscore	319	–0.48	3.87	1.3105	0.53547
Lerner	319	–0.09	0.29	0.0853	0.05888
Nii	319	–0.12	0.33	0.0206	0.04089
Valid N (listwise)	319	–	–	–	–

3.2. Simultaneous significance test (F-test)

Then, to test the market power, income diversification together (simultaneously to the bank stability), we use F-test. The steps to do F-test are:

1. Formulating the hypothesis

H_0: $b_1 = b_2 = 0$ *means simultaneously market power and income diversification has insignificant effect to the general bank stability which listed in Indonesia Stock Exchange.*

H_1: $b_1 \neq b_2 \neq 0$ *means simultaneously market power and income diversification has significant effect on the general bank's stability which is listed on the Indonesian Stock Exchange.*

2. Formulating the test criteria (Gusnardi et al., 2016; Dalimunthe et al., 2016)

If $F_{count} > F_{table}$, then H_1 will be accepted and H_0 will be rejected

If $F_{count} \leq F_{table}$, then H_0 will be accepted and H_1 will be rejected.

3. Data analysis

The result of F-test can be seen in Table 3.

According to the table, it can be seen that the F_{count} is 5.659 higher than F_{table}, with significance level 0.004, lower than 0.05. Because of it, regression model can be used to predict Zscore, in the other words, Lerner variable and Nii have signifficant effect on the Zscore.

3.3. Partial significance test (T-test)

T-test is done to find out whether each independent variable, that is Lerner and Nii, affects Zscore partially. T-test is also done to find out whether suggested hypothesis is accepted or rejected, if $t_{count} < t_{table}$, then H_1 is rejected and H_0 is accepted, if $t_{count} > t_{table}$, then H_1 is accepted and H_0 is rejected (Yahya et al., 2017). If the significance level is below 0.05, then H_1 is accepted and H_0 is rejected. The effect of both independent variables on Zscore is partially shown in Table 4.

Tabel 4. T-statistics test

Source: results of the researcher's processed data (2016).

Model	Sum of squares	df	Mean square	F	Sig.
Regression	3.172	2	1.586	5.695	0.004[a]
Residual	88.009	316	0.279	–	–
Total	91.181	318	–	–	–

Note: a. Dependent variable: Zscore

From the analysis it can be concluded:

a. Lerner to Zscore shows significance $(0.006) < \alpha(0.05)$, and its t_{count} is 2.777, where its $t_{count}(2.777) > t_{table}(1.65)$, then H_1 is accepted and H_0 is rejected. Means there is significant effect between Lerner and Zscore.

b. Nii to Zscore shows significance $(0.108) > \alpha(0.05)$, and its t_{count} is 1.610, where $t_{count}(1.610) < t_{table}(1.65)$, then H_1 is rejected and H_0 is accepted. Means there is insignificant effect between Nii and Zscore.

Table 3. F-statistic test

Source: results of the researcher's processed data (2016).

Model	Unstandardized coefficients		Standardized coefficients	t	Sig.	Collinearity statistics	
	B	Std. error	Beta			Tolerance	VIF
1 (Constant)	1.167	0.053	–	21.971	0.000	–	–
Lerner	1.404	0.506	0.154	2.777	0.006	0.989	1.012
Nii	1.172	0.728	0.089	1.610	0.108	0.989	1.012

Notes: a. Predictors: (Constant), Nii, Lerner. b. Dependent variable: Zscore

4. DISCUSSION

The research result concluded that market power measured by Lerner Index has a significant and positive effect on the bank stability measured by Zscore and founded too in the previous research by Ariss (2010), Amidu (2013), Amidu and Wolfe (2013). The amount of bank's market power will be affected to the bank stability. Bank with big market power has high growth level along with high capital ratio. This result shows that bank with more efficient market power has sufficient resources, sufficient scale and economic scope so that it can do low cost production activity along with enjoying high profit margin (Amidu, 2013). This research's result indicates that income diversification has an unsignifficant and positive effect on the bank stability. This result is inconsistent with other research by Lepetit et al. (2008) stated that non-interest income tends to have higher risk comparing to bank traditional income, so that it will decrease the bank stability. The same result is also stated by Sufian and Habibullah (2010). In Indonesia, income diversification and capitalization can increase bank profit. The implementation plan of the ASEAN Economic Community (MEA) and ASEAN banking integration (ABIF) may cause competition in the banking sector in Indonesia is getting tougher (Muljawan et al., 2014). Therefore, Indonesian banks should always improve efficiency to maintain business continuity and product order and services marketed to compete. The main thing one should pay attention is the activity of credit due to lending of rate Indonesian banks is relatively higher than other countries in ASEAN. Based on SWOT analysis and comparison of several indicators with other countries in ASEAN, post-implementation of ABIF banking Indonesia is expected to compete in the Indonesian market with Indonesian banking prerequisites and should always improve capacity and performance, including efficiency aspects.

CONCLUSION AND SUGGESTION

Conclusion

Based on the research result and discussion, it can be conculed:

1. Simultaneously, market power and income diversification have a significant effect on the stability of the general bank listed on the Indonesia Stock Exchange.

2. Partially, market power has a significant and positive effect on the stability of general bank listed on the Indonesia Stock Exchange. Income diversification has an insignificant and positive effect on the general bank's stability which is listed on the Indonesia Stock Exchange.

Suggestion

Based on the conclusion, researchers give some suggestions:

1. To the banking management in Indonesia, from the result it can be seen that the increasing of bank's market power and income diversification can increase bank stability so that banking management in Indonesia can maintain and increase the market power and develop income diversification in order to keep growing and competing in Indonesia banking industry.

2. The role of Financial Services Authority and Bank Indonesia as regulator is really important to oversee and make policies which support the creation of healthy and efficient banking industry.

3. To the academics, this result can become an additional information to increase the wealth of the scientific literature in terms of research about the effect of bank's market power and income diversification on the bank stability.

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