EFFICIENCY, CREDIT RISK AND FINANCIAL STABILITY IN NATIONAL BANKING SECTOR IN INDONESIA

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Abstract

The central role of banks as financial intermediaries makes banks have inherent risks, one of which is credit risk. Financial system stability in the banking system is crucial to maintain against an economic crisis that affects the stability of the country as a whole. Strict banking regulations aim to mitigate risks that may disrupt the bank's main activities, both funding and lending. The relatively good level of national banking efficiency greatly helps the banking sector to maintain financial system stability amidst the high credit risk faced. Banking efficiency is an indicator in measuring the overall performance of banking activities. The level of banking efficiency is a measure of how a bank manages its resources so that it can maintain its financial stability despite fluctuating economic conditions. This study used the population in the form of annual reports of national banks in Indonesia during the period 2015 to 2019. The results of this study show that the higher credit risk faced by banks, the lower their financial stability.

Keywords: Efficiency, Credit risk, Financial system stability

INTRODUCTION

Banking plays an important role in the economic life and financial system of a country (Hasan, 2011). The banking sector is an intermediation institution that bridges the surplus funds and those in need of funds so that the financial turnaround is expected to occur in a balanced manner (Sufian et al., 2016). The banking sector is a tightly regulated sector considering the central role of banks in the economy of a country (Dincer et al., 2011). The banking sector is expected to be able to perform efficiently and provide benefits and help the country to ensure an effective financial system conducive to economic growth and development. In general, the efficiency of banking performance will be measured by various ratios to inform how the bank's performance in playing its role as a financial intermediary (Halkos, 2004).

The corona virus disease (Covid-19) pandemic that has hit almost all countries in the world, including Indonesia, has hit various sectors including the economy. The national economy also weakened. Maintaining financial stability in the midst of the threat of recession becomes a challenge in itself. Financial stability is a condition that enables the national financial system to remain in its function in dealing with internal and external vulnerabilities so that both funding sources and financing allocations remain effectively and efficiently maintaining national economic growth (Bank Indonesia, 2014). Bank as one of the sectors that serves to maintain balance of payments balance plays an important role in maintaining economic stability of a country (Demirguc-kunt et al., 2018). The role of regulators to maintain economic stability is one of them is to issue a central bank policy to keep the inflation rate low in line with the decreasing domestic demand caused by the Covid-19 pandemic. The following is a graph of financial system stability index taken based on bank Indonesia data until the first half of 2020:
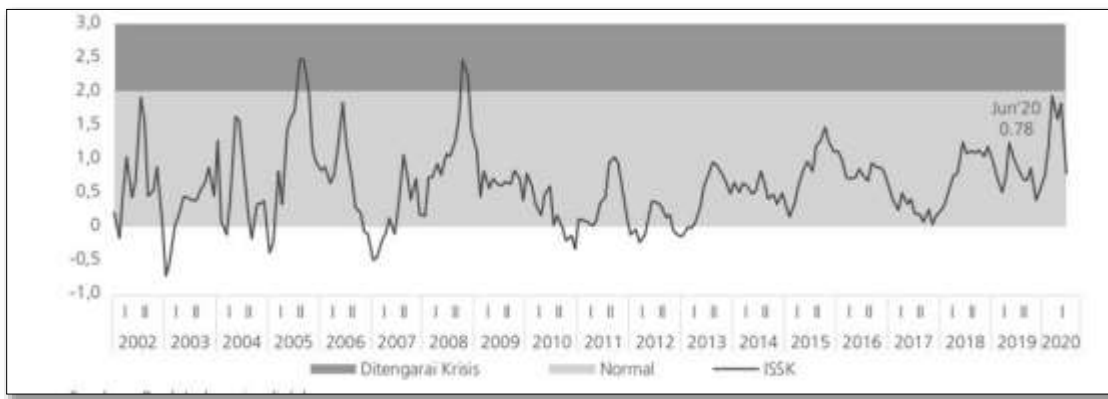
Source : Bank Indonesia, **processed data**

Figure1
Indonesia Financial System Stability Index

The financial system stability index is one of the indiaktor used to describe the current performance of a comprehensive financial system because it is considered representative enough to represent the condition of financial performance. Financial stability is regulated and supervised by institutions such as the Financial Services Authority. Economic conditions are often uncertain, a crisis of course must be prevented and addressed by redesigning and reviewing a series of macropudensial policy frameworks (Nair & Anand, 2020). The banking sector has a vulnerability to international economic shocks, rising bad credit ratios and crises, so these vulnerabilities are considered to be a challenge for the bank's financial stability (Gupta & Kashiramka, 2020).
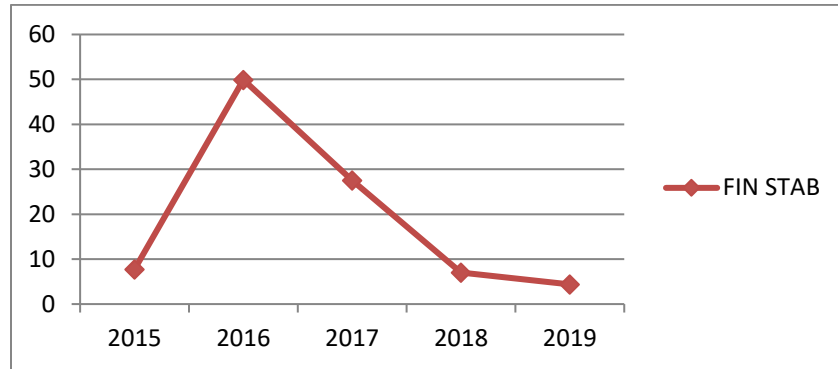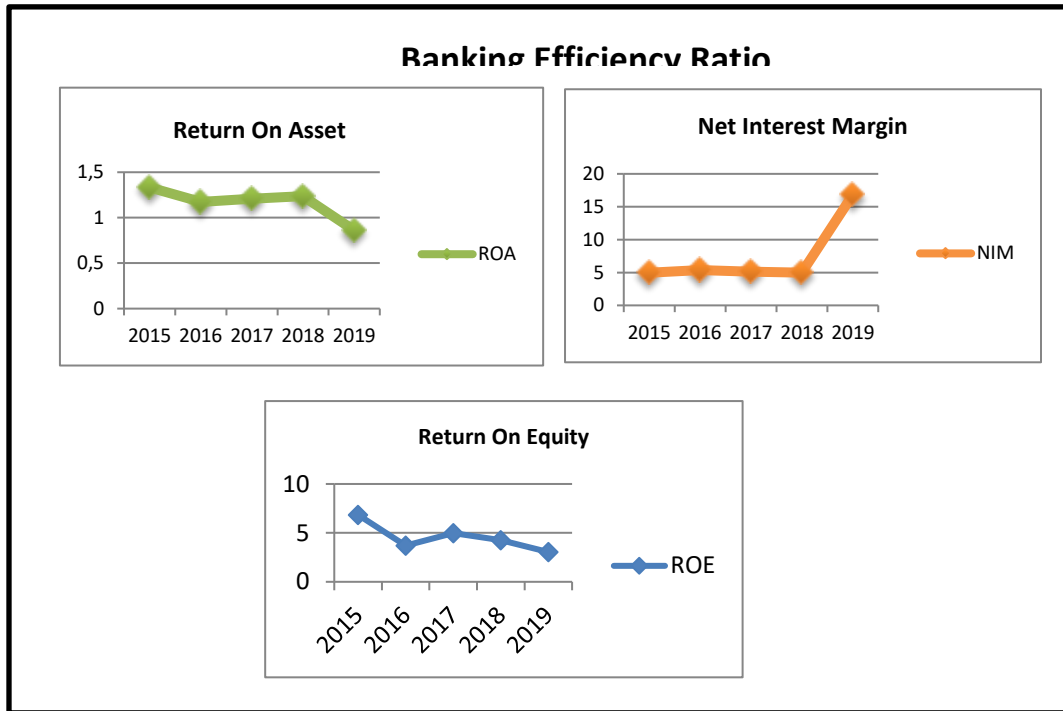
Source: processed data

Figure 2
Financial Stability of Indonesia's Banking Sector

Conditions during the current pandemic are no different when banks also face various economic conditions that have fluctuated sharply enough that the country is required to maintain the stability of banks, especially during and after the financial crisis (Saksonova, 2014). Banking regulation is designed to mitigate risks that arise due to banking activities that channel funds in the form of credit so that banks have adequate management information systems to strengthen a healthy and stable banking system (Repullo & Suarez, 2013) given the instability of market conditions can affect the entire financial system so that it will affect the function of banks as financial intermediaries (Khan et al., 2016).

National banking financial stability showed a significant decline since 2016. Financial stability of banks is influenced by several factors such as internal and external factors. Internal factors that can affect financial stability between lai are market risks, credit risks, liquidity risks, financial markets and financial infrastructure, while external factors can be influences arising from world economic conditions (Gupta & Kashiramka, 2020).

Source: processed data

Figure 3
INDONESIA'S NATIONAL BANKING EFFICIENCY

Efficiency is one way to assess the performance of banking profitability (Diamond & Rajan, 2001). Indicators to assess efficiency are often carried out using the Net Interest Margin (NIM), Return on Asset (ROA) and Return On Equity (ROE) indicators and the result is that efficiency is also inseparable from the bank's performance in managing its assets, so that the more banks have a large total asset, the greater the level of efficiency (Halkos, 2004). The ups and downs of national banking efficiency can be caused by external factors such as rising bank Indonesia's benchmark interest rate and tight competition for third party funds (Ditta, 2019). The banking sector has never escaped credit risk given its function as a financial intermediary. The most common credit risk is the occurrence of bad loans or in banking terms called non performing loans.
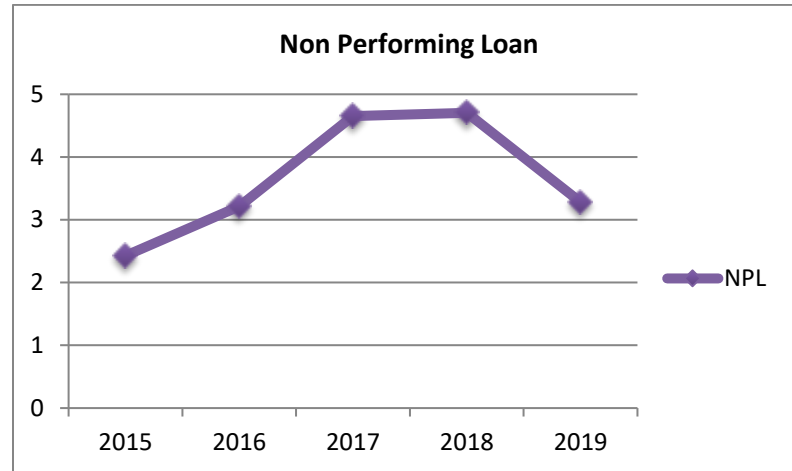
Source: processed data

Figure 4
NATIONAL BANKING CREDIT RISK

The graph of non-performing loans has experienced a significant spike in 2016 to 2017. Although the trend of non-performing loans has decreased, this remains to be seen because credit risk will always be inherent in every banking activity (Konstantakis et al., 2016). National banking financial stability will be disrupted if credit risk is not managed properly, so it is feared that banks will experience liquidity difficulties (Keeton, 1987).

Based on the explanation above, the researchers wanted to test whether credit efficiency and risk will affect financial stability of banks considering the central role of banks as financial intermediaries and one of the buffers of the country's economy but since 2016, financial stability of banks shows a significant downward trend. In this study, researchers used net interest margin (NIM), Return On Asset (ROA) and Return On Equity (ROE) as a measure of banking performance efficiency and used non-performing loans (NPLs) as credit risk factors.

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

a. Net Interest Margin (NIM)

Net interest margin is the difference between interest income derived from lending activities and interest expenses incurred for customers conducting savings activities (Bank Indonesia, 2012). Indonesian banks still rely heavily on interest income as the largest source of income so it is not surprising that the net interest margin ratio in Indonesia is among the highest (Ditta, 2019). The commercial bank industry needs to improve operational efficiency but by reducing operating costs derived from interest income by applying various standards in credit risk management which means banks have minimized the occurrence of excessive credit risk (Tarus et al., 2012). Based on the description, the hypothesis is:

        H1 : Net interest margin affects financial stability

b. Return on Asset (ROA)

Return on assets is one of the ratios used to measure a company's ability to make a profit (Brigham, E.F., & Davis, 2006). Return on assets in the banking sector is an indicator of profitability assessment by measuring the efficiency of banks in managing their assets (Bank Indonesia, 2012). Based on the description, the hypothesis is:

> H2 : Return on assets affects financial stability

c. Return on Equity (ROE)

Return on equity is defined as a comparison of net income available to common shareholders with common equity (Brigham, E.F., & Davis, 2006). This ratio represents the percentage of net income when measured from the owner's capital, where the higher the percentage of this ratio, the better. Return on Equity is an indicator of bank profitability used to measure bank efficiency in managing capital (Bank Indonesia, 2012). Based on the description, the hypothesis is:

> H3 : Return on equity affects financial stability

d. Non Performing Loan

The central role of banks as financial intermediaries cannot be separated from credit risk when banks conduct credit disbursement activities to those in need of funds (Yurttadur, et al, 2019). Non performing loans are said to be non-performing loans because they are considered uncertain in their returns (Bank Indonesia, 2012). The trend of increasing non-performing loans can also pose a vulnerability to the financial condition and performance of banks (Konstantakis et al., 2016). Macroeconomic financial stability can be disrupted if the commercial banking bad credit ratio shows a high number (Keeton, 1987). Based on the description, the hypothesis formulated is:

> H4 : non performing loan affects financial stability

Conceptual Framework
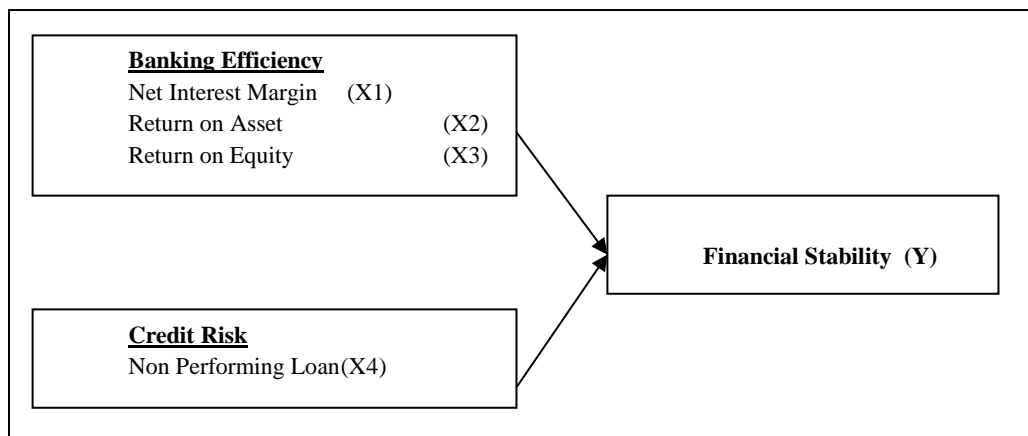
RESEARCH METHODOLOGY

This research will test the level and risk of credit to national banking financial stability. This type of research is a descriptive quantitative research that reveals the amount of influence or relationship between variables expressed in numbers (Ghozali, I. & Ratmono, 2013). This research uses secondary data and panel data in the form of a combination of data that is cross section and time series (Ghozali, I. & Ratmono, 2013).

a. Population and Sample

This study used the population in the form of annual reports of national banks in Indonesia during the period 2015 to 2019. The data used comes from the annual report of national banks, whether published on the Indonesia Stock Exchange or not. Samples in this study were selected using purposive sampling method, namely the determination of samples based on criteria set by researchers (Sekaran, 2013). The sample criteria selected in this study are:

1) Indonesia's national banking annual report, whether published on the Indonesia Stock Exchange or not.
2) Financial statements are prepared in Rupiah

Table 1
Criteria Sample

Criteria Used	Total Company
The appropriate banking company criteria to be researched (5 years)	400
Companies with incomplete annual report data	(180)
Number of samples	220

b. Variable Measurement

This study used financial stability dependent variables and used independent variables are banking efficiency and credit risk. Banking efficiency variables are projected with net interest margin (NIM), return on assets (ROA) and return on equity (ROE) as well as variable credit risk proxies with non-performing loans (NPLs).

Table 2
Variable Measurement

Variable	Operational Definition	Measurement	Refference
Independent Efficiency			
Net Interest Margin	Difference between interest income and interest expense as part of the bank's total productive assets	NIM = interest income - interest expense	Bank Indonesia (Banking Ratio Format)
Return On Asset	Ratio of profit before tax to the average value of assets within the same time period	ROA = (profit before tax / total asset) x 100%	Bank Indonesia (Banking Ratio Format)
Retun On Equity			

	ratio of net income after tax compared to shareholders' equity	ROE = (net income after tax / shareholder equity) x 100%	Bank Indonesia (Banking Ratio Format)
Credit Risk			
Non Performing Loan	credit whose collectibility is classified as being less smoothly doubtful or stuck in accordance with the provisions of Bank Indonesia and the financial services authority	NPL Gross = collectivity credit is not smooth, doubtful, bad: total credit given	Bank Indonesia (Metadata Financial Soundness Indicators)
Dependent			
Financial Stability	level of financial stability of the company amidst economic contraction both externally and internally	Financial Stability = (Total Aset t - Total Aset t-1) / Total t-1	Skousen *et al* (2008)

c. Research Design

This research will test whether or not there is a difference between the level of efficiency and credit risk of banks and financial stability. The theoretical equations of the design of this research are:

$$FinStab_{it} = α + β1ROA_{it} + β2ROE_{it} + β3NIM_{it} + β4NPL_{it} + μ_{it}$$

Where:

i : Show the company.

t : Shows the time sequence (2015-2019).

α : Important coefficient or constants.

β : Shows the direction and influence of each.

μ : Interference factor or cannot be observed.

RESULT AND DISCUSSION

a. Descriptive Statistics

The statistical descriptive test results for financial stability variables of Indonesian banks with the level of efficiency and credit risk experienced by banks are presented in the following table:

Table 3

Descriptive Statistics on Banking Efficiency and Credit Risk with Financial Stability in Indonesia

Variabel	Obs	Mean	Median	Max	Min	Std.dev
ROA	220	1.162318	1.450000	4.62000	-15.89000	2.156545
ROE	220	4.605500	6.265000	29.89000	89.03000	13.44026
NIM	220	7.619864	4.865000	477.0000	0.390000	32.43098
NPL	220	3.656045	2.790000	74.46000	0	7.050220
FINSTAB	220	0.431482	0.040137	19.59053	-1.0000	2.027521

From the descriptive statistics above, it can be seen that the return on asset ratio shows an average figure of 1.16 which means 1.16% of the effectiveness of asset management that has a role in the ability of banks to generate profit and this ratio is still below the required average of at least 1.5% . The return on equity ratio shows an average of 4.60 which means that the management of banking capital only reaches 4.6% in its ability to generate profit. The nim value of national banks shows an average of 7.61. Indonesia's net interest margin ratio is relatively high because of the high efficiency of Indonesian banks in lending. The ratio of non-performing loans shows an average of 3.65% meaning that the credit risk faced by banks is in the range of 3.65% which has the potential to become un collectible credit. National banking financial stability stood at 43.14% although in 2017 financial stability declined significantly but the national banking system remained quite good amid the contraction of the national economy.

b. b. The Simultaneous Significance Test (F-Test)

F test or simultaneous test is carried out with the aim of knowing the influence of independent variables that together on dependent variables (Ghozali, I. & Ratmono, 2013). The results of F test in this study are shown in the following table:

Table 4
F-Test Model and Coefficient Determination National Banking Sector

Dependent variable	R Squared	Adjusted R Squared	F Statistic	Prob (F-Statistic)
Financial Stability	0.322001	0.136734	1.738036	0.005679

Simultaneous test results showed the value of Prob (F-statistic) in Financial Stability (FS) dependent variables showed a value of $\alpha < 0.05$ of 0.05 of 0.005679 which means that the four independent variables are the level of efficiency that is proxyed with ROA, ROE and NIM as well as credit risk proxies with NPL ratios affect financial stability dependent variables by 0.1367 or 13.67% and the rest are influenced by other factors.

c. Regression Analysis Result

Table 5
Regression Analysis Result

Variabel	Coefficient	Std. Error	t-Statistic	Prob.
Financial Stability				
ROA	0.195252	0.261309	0.747207	0.456000
ROE	-0.030949	0.037878	-0.817062	0.415000
NIM	-0.001175	0.004382	-0.268233	0.788800
NPL	0.146945	0.023258	6.318013	0.00100*

*Significant 5%

Based on the results of the regression test above, credit risk variables are proxies with non-performing loans (NPLs) that have an influence on the financial stability of national banks.

Variable efficiency levels that are proxied with roa, ROE and NIM ratios have no influence on the financial stability of national banking. If you look at the NPL trend that also experienced a significant spike in 2017, so this of course affects the financial stability of banks considering one of the factors that affect financial stability is the credit risk that in this study is projected with the ratio of non-performing loans (Nair & Anand, 2020). Credit risk is one of the risks of concern considering the central function of banks as financial intermediaries that raise funds and channel funds to the public so that credit risk and liquidity risks and market risks become internal factors determining financial stability (Noman et al., 2018).

High regulations applied to the banking sector are very strict governing all banking activities with the aim of mitigating the risks inherent in any banking activities such as the high risk of bad loans (Khan et al., 2016). The country's economy, which shows a significant contraction or not, makes the banking sector must stand firm as a buffer for the country's economy (Noman et al., 2018) so that the financial stability of the banking industry should not be shaken so that it can cause adverse impacts on the country's economy macro (Demirguc-Kunt et al., 2018). The distribution of funds in the banking sector in the form of credit is realized or not affected by the macro economy, if the inflation rate is high, the purchasing power of the public decreases then the debtors who have businesses will also have an impact on the income obtained so that loans to banks are at risk of becoming hard-to-collect credit even into bad loans (Hsieh & Lee, 2020). Indonesia's national banking efficiency is still in a good category even though the national banking still relies most of its life on interest income (Ditta, 2019), as well as the ability of banks to earn good profit from capital and asset management is still classified as profitable, therefore despite the downward trend in financial stability, the banking financial condition persists from the good of banks in generating profit (Saksonova, 2014).

CONCLUSION

Financial stability of banks is crucial given the central role of banking in a country's economy. Financial stability is one of the benchmarks of how banks can survive in all economic conditions of a country. Banks have inherent risks related to their function as financial intermediaries, namely credit risk, liquidity risk and market risk. The results of this study showed that when the NPL trend increases, the financial stability of banks decreases, but because the efficiency of national banks fall into the good category, the national banking system still persists and manages its profitability well. This research is only limited to measuring financial stability based on only one risk inherent in banking activities so that researchers expect for further research to be able to consider other risks so that each of these risks can be compared to the impact on financial stability of banks.

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