

## ANALYSIS OF THE IMPACT OF CREDIT RISK AND OPERATIONAL RISK ON FINANCIAL STABILITY CASE STUDY ON STATE-OWNED ENTERPRISES IN THE BANKING SUB-SECTOR

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**Abstract.** Banks are business entities that collect funds from the public in the form of deposits and channel them to the public in the form of credit and/or other forms of improving the standard of living of the people. This study aims to determine the effect of credit risk and operational risk on Financial Stability. Financial Stability ratios measured using Financial Stability assets and credit risk and operational risk are measured by non-performing loans (NPL) and BOPO. Data obtained from published financial statements published by Bank Indonesia with a period of time from 2015 to 2024. The sampling technique used in this study was purposive sampling. The number of samples is 3 banking companies listed on the Indonesia Stock Exchange. The analytical method that will be used in this study is multiple linear regression to obtain a comprehensive picture of the relationship between one variable and another. Based on hypothesis testing using statistical *t* test and *f* test the results of the research show that Non Performing Loans (NPL) have a significant effect on Financial Stability, while BOPO does not have a significant effect on Financial Stability and simultaneously there is a significant influence of Non Performing Loans (NPL) and BOPO on Financial Stability..

### Introduction

A bank is a business entity that collects funds from the public in the form of savings and distributes them to the public in the form of credit and/or other forms in order to improve the standard of living of the people. In this case, a bank is an institution that functions as a financial intermediary between parties with excess funds and parties with a shortage of funds. The function of a bank as an intermediary institution makes banks have a strategic position in an economy, because with its activities, namely collecting funds from the public and distributing funds to people who need them, it will increase the flow of funds for investment, working capital or consumption, thus it can improve the national economy.

The banking industry is a risk-ridden industry, particularly involving the management of public funds by investing in various forms, such as providing credit, purchasing securities, and other investments. According to Sofyan (2003), banking performance can be measured using the average loan interest rate, the average deposit interest rate, and the bank's Financial Stability. Furthermore, his research states that the deposit interest rate is a weak and problematic performance measure, so his research concludes that Financial Stability is the most appropriate indicator for measuring a bank's

performance. The measure of Financial Stability used is Financial Stability, which is generally used In the banking industry, a higher ROA indicates better financial performance due to the higher return. An increased ROA indicates improved financial stability for the company, ultimately resulting in increased financial stability enjoyed by shareholders.

Banks, in carrying out their operations, are certainly not free from various risks. Bank business risk is the level of uncertainty regarding an estimated or expected outcome. According to Bank Indonesia Regulation Number 11/25/PBI/2009 of 2009, there are several risks in banking, namely credit risk, market risk, operational risk, liquidity risk, strategic risk, reputation risk, legal risk, and compliance risk. Regarding this research, the author will not discuss all banking risks that affect banking financial stability; only two variables will be discussed in this study: credit risk and operational risk.

Credit risk is the risk a bank will incur due to non-repayment of loans extended to debtors. The ratio used to calculate credit risk is the Non-Performing Loan (NPL), which is the ratio of total non-performing loans to total loans extended to debtors. An increasing NPL indicates worsening banking performance (Nugraheni and Hapsoro, 2007). This indicates that NPL negatively impacts ROA..A bank is said to have a high NPL if the number of non-performing loans exceeds the amount of loans granted to debtors. A high NPL will increase costs, both for providing reserves for productive assets and other expenses. In other words, the higher a bank's NPL, the more it will disrupt its performance.

Operational risk is the risk caused by the malfunctioning of a bank's internal processes, human error, technological system failure, or external issues. Operational risk generally uses the BOPO (Operational Expenses to Operating Income) as a research indicator. BOPO demonstrates the bank's management's ability to control operational costs relative to operating income. According to Attar (2014), the implementation of operational risk management, as measured by BOPO, negatively impacts financial performance, as measured by ROA. The negative impact demonstrated by BOPO indicates that higher operational expenses, which nearly equal or exceed operating income, will reduce bank profits, thus affecting ROA.

From the various studies that show the influence of NPL, BOPO on Financial Stability, the author is interested in conducting research and re-analyzing credit risk and operational risk. The formulation of this research problem is as follows: (1) How does credit risk (NPL) affect the bank's Financial Stability? (2) How does operational risk (BOPO) affect the bank's Financial Stability? (3) How does credit risk (NPL) and operational risk (BOPO) simultaneously affect the bank's Financial Stability?

## Financial Stability

Harahap (2015:304) defines Financial Stability as the company's ability to earn profits through all existing capabilities and resources such as sales activities, cash, capital, number of employees, number of branches and so on. Financial Stability according to Dendawijaya (2009:118) Financial Stability or so-called profitability is the ability of a company to generate profits during a certain period.

## Financial Stability Ratio

Financial Stability Ratio according to Sawir (2009) is a ratio used to measure the effectiveness of a company in utilizing all available resources indicates the company's

economic profitability. This ratio is one of the ratios used to assess the earnings aspect. This ratio is used to measure the ability of bank management to generate profits (profit before tax) generated from the average total assets of the bank in question (Almilia and Herdiningtyas, 2005). This ratio is formulated as follows (Bank Indonesia Circular Letter No. 6/23/DPNP dated May 31, 2004)

## Credit Risk

According to Irham Fahmi (2014:18) credit risk is a form of inability of a company, institution, agency or individual to fulfill its obligations in a timely manner both at maturity and after maturity and in accordance with applicable rules and agreements. According to Ferry and Sugiarto (2006:79) credit risk is defined as the risk of loss in connection with the borrower (counterparty) being unable and unwilling to fulfill the obligation to repay the borrowed funds in full at maturity or afterward.

## Credit Risk Measurement (NPL)

Credit is the largest source of income and profit for banks, but credit is also a type of investment activity that is often the main cause of banks facing credit problems because if credit is not managed properly it will become non-performing loans. Almilia and Herdiningtyas (2005) stated that the worse the quality of bank credit which causes the number of non-performing loans to increase, the higher the possibility of a bank being in a problematic condition. This ratio is formulated as follows: Bank Indonesia Circular Letter No. 6 / DPNP dated May 31, 2004.

## Operational Risk

According to Irham Fahmi (2014:53) Operational Risk is a risk that generally originates from internal company problems, where this risk occurs due to the weakness of the management control system carried out by the company's internal parties. According to (Tawan, 2006) Operational Risk is a risk that is caused by, among other things, the inadequacy and/or malfunctioning of internal processes, human error, system failure, or the presence of external problems that affect bank operations.

## Operational Risk Measurement (BOPO)

According to (Dendawijaya, 2009) the BOPO ratio is a ratio used to measure the level of efficiency and ability of a bank in carrying out its operational activities, so if this ratio increases it reflects the bank's lack of ability to reduce its operational costs which can cause losses because the bank is less efficient in managing its business. Operating costs are costs incurred by the bank in order to carry out its main business activities such as interest costs, marketing costs, labor costs, and other operating costs. Meanwhile, operating income is the bank's main income, namely income obtained from the placement of funds in the form of credit and other operating income (Prasnanugraha, 2007). This ratio is formulated as follows Bank Indonesia Circular Letter No. 6 / DPNP dated May 31, 2004.

## Research Methodology

The research method used in this study is descriptive, comparative, quantitative and statistical. This method is used for the purpose of This study aims to answer questions regarding the analysis of the impact of credit risk (NPL) and operational risk (BOPO) on

bank financial stability. This research method is carried out by searching for data that can provide a clear picture of the company's financial performance. The author compares the development of the company's financial performance each year using data from the last 10 years. This method is structured as follows:

- Descriptive research is an analysis conducted by explaining aspects relevant to the observed phenomenon. This study helps explain the characteristics of the subject being studied, examines various aspects of a particular phenomenon, and offers ideas about the problem.
- Comparative research, namely analysis carried out to compare the results of research on the financial performance of companies each year.
- Ratio Analysis, is a comparative ratio analysis between Non Performing Loans (NPL), Operating Costs to Operating Income (BOPO) and Financial Stability.
- Statistical Analysis: The analysis used by the author to analyze the influence of independent variables on dependent variables. This method was chosen because this study was designed to determine the independent variables that influence the dependent variable.

## Results and Discussion

### Credit Risk Analysis (NPL) Non Performing Loan (X1)

Non-Performing Loan The Non-Performing Loan (NPL) ratio is the ratio of non-performing loans to total loans. This ratio indicates that a higher NPL indicates poorer credit quality. Non-Performing Loans (NPL) reflect credit risk; the lower the NPL, the lower the credit risk borne by the bank. Banks with high NPLs will increase costs, both in terms of reserves for productive assets and other expenses, potentially leading to bank losses.

### Non-Performing Loan (NPL) Ratio

The following is the Non Performing Loan (NPL) value of PT Bank Negara Indonesia (Persero) Tbk, PT Bank Mandiri (Persero) Tbk, PT Bank Rakyat Indonesia (Persero) Tbk for the period 2015 to 2024

Table 1: NPL Ratio of PT. Bank Negara Indonesia (BNI) Tbk for the Period 2015-2024

YEAR	NPL	Δ NPL
2015	0.03082	-
2016	0.03418	0.336%
2024	0.00595	-2.823%
2018	0.00966	0.371%
2019	0.02156	1.19%
2020	0.01651	-0.505%
2021	0.01510	-0.141%
2022	0.01575	0.065%
2023	0.02342	0.767%
2024	0.01639	-0.703%

Source: Annual Report of PT Bank Negara Indonesia (Persero) Tbk (2015-2024)

Table 2: NPL Ratio of PT. Bank Mandiri Tbk for the Period 2015-2024

YEAR	NPL	Δ NPL
2015	0.03155	-
2016	0.01127	-2.028%
2024	0.01197	0.07%
2018	0.00637	-0.56%
2019	0.00640	0.003%
2020	0.00493	-0.147%
2021	0.00570	0.007%
2022	0.01021	0.451%
2023	0.01756	0.735%
2024	0.01627	-0.129%

Source: Annual Report of PT Bank Mandiri (Persero) Tbk (2015-2024)

Table 3: NPL Ratio of PT. Bank Rakyat Indonesia (BRI) Tbk for the 2015-2024 Period

YEAR	NPL	Δ NPL
2015	0.01551	-
2016	0.01916	0.365%
2024	0.01222	-0.694%
2018	0.01195	-0.027%
2019	0.00972	-0.623%
2020	0.00834	-0.604%
2021	0.00802	-0.032%
2022	0.00746	-0.056%
2023	0.00847	0.101%
2024	0.00725	-0.122%

Source: Annual Report of PT Bank Rakyat Indonesia (Persero) Tbk (2015-2024)

#### Operational Risk Analysis (BOPO) (X2)

Operating Costs to Operating Income (BOPO) is a ratio used to measure the ability of bank management to control operating costs compared to operating income. The following are the BOPO values of PT Bank Negara Indonesia (Persero) Tbk, PT Bank Mandiri (Persero) Tbk, PT Bank Rakyat Indonesia (Persero) Tbk for the period 2015 to 2024.

Table 4 BOPO Ratio of PT. Bank Negara Indonesia (BNI) Tbk for the Period 2015-2024

YEAR	BOPO	Δ BOPO
2015	2.03659	-
2016	1.86042	-17.612%
2024	1.36571	-49.471%
2018	1.46471	9.9%
2019	1.50833	4.362%
2020	1.54356	3.523%
2021	1.50283	-4.073%
2022	1.86081	35.978%
2023	1.92888	6.807%

2024 1.81309 -11.579%

Source: Annual Report of PT Bank Negara Indonesia (Persero) Tbk (2015-2024)

Table 5 BOPO Ratio of PT. Bank Mandiri (Persero) Tbk Tbk for the 2015-2024 Period

YEAR	BOPO	Δ BOPO
2015	1.70007	-
2016	1.90258	20.251%
2024	1.62958	-27.3%
2018	1.38609	-24.349%
2019	1.58962	20.353%
2020	1.46398	-12.564%
2021	1.72757	26.359%
2022	1.56455	-16.302%
2023	1.62125	5.67%
2024	1.57141	-4.984%

Source: Annual Report of PT Bank Mandiri (Persero) Tbk (2015-2024)

Table 6 BOPO Ratio of PT. Bank Rakyat Indonesia (Persero) Tbk for the 2015-2024 Period

YEAR	BOPO	Δ BOPO
2015	4.33748	-
2016	3.65779	-67.969%
2024	2.90623	-75.156%
2018	2.95805	5.182%
2019	2.32320	-63.485%
2020	2.68082	35.762%
2021	2.86696	18.614%
2022	2.52039	-34.657%
2023	2.15523	-36.516%
2024	2.01359	-14.154%

Source: Annual Report of PT Bank Rakyat Indonesia (Persero) Tbk (2015-2024)

#### Financial Stability Analysis (Y)

This ratio is one of the ratios used to assess earnings. It measures the bank's management's ability to generate profits (pre-tax profit) from the bank's average total assets. ROA serves as the dependent variable. The following are the Financial Stability values of PT Bank Negara Indonesia (Persero) Tbk, PT Bank Mandiri (Persero) Tbk, PT Bank Rakyat Indonesia (Persero) Tbk for the period 2015 to 2024.

Table 7 ROA Ratio of PT. Bank Negara Indonesia (BNI) Tbk for the Period 2015-2024

YEAR	ROA	Δ ROA
2015	0.00971	-
2016	0.01520	14.229%
2024	0.02209	-12.991%
2018	0.02473	0.264%
2019	0.25804	23.331%
2020	0.02859	22.945%
2021	0.03144	0.285%
2022	0.02126	-1.018%



2023	0.02241	-19.019%
2024	0.02301	0.06%

Source: Annual Report of PT Bank Negara Indonesia (Persero) Tbk (2015-2024)

Table 8 ROA Ratio of PT. Bank Mandiri (Persero) Tbk for the 2015-2024 Period

YEAR	ROA	Δ ROA
2015	0.02251	-
2016	0.02742	0.491%
2024	0.03106	0.364%
2018	0.02991	-0.115%
2019	0.03225	0.234%
2020	0.03282	0.057%
2021	0.03282	-0.241%
2022	0.03041	-0.144%
2023	0.01788	-1.109%
2024	0.02414	0.626%

Source: Annual Report of PT Bank Mandiri (Persero) Tbk (2015-2024)

Table 9 ROA Ratio of PT. Bank Rakyat Indonesia (Persero) Tbk for the Period 2015-2024

YEAR	ROA	Δ ROA
2015	0.03585	-
2016	0.03120	-0.465%
2024	0.03562	-0.442%
2018	0.03991	0.429%
2019	0.04327	0.356%
2020	0.04457	0.013%
2021	0.03847	-0.061%
2022	0.03699	-0.0148%
2023	0.03385	-0.314%
2024	0.03287	-0.098%

Source: Annual Report of PT Bank Rakyat Indonesia (Persero) Tbk (2015-2024)

## Conclusion

Based on the results of the analysis and discussion, the following conclusions can be drawn:

1. From the results of data analysis, the Non-Performing Loan (NPL) variable obtained a significant value of 0.001 or 1% which is below 5%. Thus, H1 is accepted and H0 is rejected, meaning that the Non-Performing Loan (NPL) variable has a significant effect on the Financial Stability variable. Non-Performing Loan (NPL) significantly affects the level of Financial Stability, because Non-Performing Loan (NPL) is a ratio to measure how the quality of bank credit that has been given if the credit quality is poor or the NPL is high then the ROA will decrease and vice versa.
2. Based on the data analysis, the BOPO variable obtained a significance value of 0.077 or 7.7%, which is above 5%. Therefore, H1 is rejected and H0 is accepted, meaning the BOPO variable does not significantly influence the Financial Stability variable. This means that the operating costs compared to operating

income (BOPO) variable has no significant effect on ROA, because if BOPO is low, ROA will decrease.

3. Simultaneously, Non-Performing Loan (NPL) and Operating Costs compared to Operating Income (BOPO) From the SPSS results, the significance value is 0.002 or 2% which is below 5%. Thus, H1 is accepted and H0 is rejected, which means that the Non-Performing Loan (NPL) and Operating Costs compared to Operating Income (BOPO) variables have a significant effect on the Financial Stability variable. It can be concluded that the NPL and BOPO variables at PT Bank Negara Indonesia Tbk, PT Bank Mandiri Tbk, PT Bank Rakyat Indonesia Tbk simultaneously or together significantly affect ROA.

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