

FACTORS AFFECTING NON-PERFORMING LOANS IN STATE-OWNED BANKING

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Abstract: This research aims to analyze the influence of macroeconomic factors projected by inflation and bank-specific factors used, namely Return on Asset, Equity to Asset Ratio, and Bank Size on Non-Performing Loan of State-Owned Banking for the period 2017-2021. This type of research is a causal associative study because it was conducted to determine the effect of Return on Assets, Equity to Asset Ratio, Inflation, and Bank Size on Non-performing State-owned banking Loans for the period 2017-2021. This research data analysis method uses data panel analysis as a data processing tool using EViews version 10. Return on Assets has a significant negative effect on Non-Performing Loans. Equity to Asset Ratio and bank size have a significant positive effect on Non-Performing Loans. Whereas inflation has a positive effect on Non-Performing Loans.

Keywords: *Return on assets, equity to asset ratio, Inflation, Bank Size, Non-performing Loan*

1. Introduction

Banks are the heart of a developing country. As a driver of the national economy, it would be better for the economy if it was healthy. Banks accept deposits from the public in the form of savings, current accounts, and time deposits. The funds are then disbursed in the form of credit. Banks in Indonesia generally rely on loan interest income as the primary income in financing their operations. In reality, not all loans disbursed are risk-free. Some of which have a large enough risk and can threaten the bank's health.

The performance of the banking sector in six developing countries, including Indonesia, received a negative label in the Fitch Ratings 2020 Outlook: Global Banks Compendium. Indonesia is one of six developing countries whose banking sector outlook is negative. Especially for Indonesia, there are three reasons why Fitch gave a negative label to the outlook for its banking sector.

First, the risks arising from asset quality are seen in the Indonesian banking system. This is because the Non-Performing Loan Coverage Ratio of State-Owned Banks in the Book IV category has increased rapidly. The NPL Coverage Ratio is obtained by dividing the Allowance for Impairment Losses by non-performing loans. The higher the NPL Coverage Ratio, the more prepared you are to face the risk of deteriorating asset quality. As of the first nine months of 2018, the NPL Coverage Ratio of P.T. Bank Mandiri Tbk (BMRI) was 143.6%. As of the first nine months of 2019, the value increased to 156.6%. Switching to P.T. Bank Negara Indonesia Tbk (BBNI), as of the first nine months of 2019, the NPL Coverage Ratio increased to 159.2%, from 152% in 2018.

Meanwhile, the NPL Coverage Ratio of P.T. Bank Rakyat Indonesia Tbk (BBRI) was at 160% in the first nine months of 2019. Although it was down compared to the position in the first nine months of 2018, which was 181.9%, the value was still higher than Bank Mandiri and BNI. The steps of banks that have been 'competing' to raise the NPL Coverage Ratio aggressively throughout 2019 indicate the potential for non-performing loans to increase.

Second, tight funding. Banks face tight liquidity. Last third quarter of 2019, Bank Mandiri's Loan to Deposits Ratio was recorded at 94.13%, up from the position at the end of the third quarter of 2018, 93.53%. Meanwhile, Bank BRI's LDR rose to 94.15%, from the previous 92.69%. For BNI, LDR rose to 96.6% from the last 89%. The lower the LDR, the looser the liquidity. The LDR of conventional commercial banks broke the 96% level in May 2019. Tight liquidity conditions would undoubtedly be a disaster for banks. Credit disbursement has become limited, ultimately limiting net interest income growth and net profit.

Third, corporate actions in mergers and acquisitions will be executed shortly. Mergers and acquisitions can disrupt banking performance, especially in the short term. When a corporate action such as a merger is completed, the structure of the companies involved in it will change and can disrupt their operational activities. For the record, even though Fitch gives a negative label to the outlook for the Indonesian banking sector, the outlook for the rating or rating of debt securities issued by the Indonesian government remains stable. This means that within the next 12 months, Fitch will not cut its rating. Currently, Indonesia's long-term debt securities are rated BBB by Fitch (Kevin, 2020).

The Covid-19 pandemic, which is still spreading, is not a problem for banks to strengthen reserves using profits. You need to be careful in recording earnings if you have to sacrifice reserves in case of problems in the future. Bank BRI's NPL ratio in June 2021 was 3.27%, Mandiri 3.19%, BNI 3.91%, and BTN 4.10%. NPL coverage of BRI reached 258.41%, Mandiri 237.30%, BNI 215.30%, and BTN 120.72%. In addition to NPL coverage, banks need to pay attention to LaR and provide reserves in LaR coverage to anticipate potential defaults. Himbara is targeted to have a LaR coverage of at least 30% of the LaR. Until June 2021, BRI's LaR ratio was recorded at 27.29%, Mandiri 21.29%, BNI 25.80%, and BTN 14.65%. Meanwhile, BRI has provided LaR Coverage of up to 30.96%, Mandiri 35.31%, BNI 32.90%, and BTN 14.81%. It is better if the LaR coverage is greater than the LaR ratio so that if the LaR becomes NPL or there is a default, there is a reserve remaining. If the LaR coverage is around 18%, it is necessary to keep the LaR from becoming an NPL of 18%. So if the LaR is still 5-10%, it is still safe (Faruq, 2021).

The results of previous studies stated that the financial performance of banks as measured by ROE and inefficiency was determined by dividing operating costs by operating income, having an additional explanation that poor management is related to management quality (Abid et al., 2014). Meanwhile, a strong relationship between NPLs and various macroeconomic factors explores the possibility of macroeconomic drivers influencing the NPL ratio (Makri, Tsagkanos, & Bellas, 2014).

The increase in NPLs has proven to have a negative impact on the banking sector, so it is imperative to consider the determinants of NPLs to ensure the effectiveness and overall health of the economy. The variable of bank efficiency has a positive correlation with NPL, while the profitability variable has a negative correlation. The two variables are statistically significant, while the income and bank capital diversification variables are not statistically significant (Prawira & Wiryono, 2020).

Non-performing loans are becoming the main factor influencing the sustainability of Vietnam's financial system. To enforce a monetary system in general and the banking system in particular, this study aims to examine NPL determinants in the Vietnamese banking system. Four factors, including the lag of NPLs in the last year, Loans-to-Asset ratio, Total asset, and the Dummy (state-owned or not), were observed and estimated by the quantitative method Ordinary Least Square to declare the relationship between them and the rate of changes in NPLs. The results showed that the four factors (Growth rate of Loans, Total Assets of Banks, NPLs in the last year, and the Dummy variable) helped the growth of NPLs in recent years. Further, some implications to the bank management are withdrawn (Hue, 2015).

NPL this year will positively affect those in the next year. In addition, a rise in bank performance and credit growth also leads to a reduction in non-performing loans from banks. Higher interest rates would significantly influence failed loans in macroeconomic dynamics and, therefore, have little effect on economic activity and inflation. Thus, the Vietnamese banking system should reduce the systematic risk and improve monitoring processes, drawing on the experience of global banks with extensive experience in risk management (Dao, Nguyen, Hussain, & Nguyen, 2020).

The deregulation of the market in the last decade and the process of European integration with the introduction of the Euro have enhanced the competitiveness of the banking sector. On the solid side of the evidence, the variables related to management decisions significantly impact the profitability of Greek commercial banks (Mamatzakis & Remoundos, 2003). Meanwhile, to measure a country's inflation, data that occurs every year is used from external factors. If inflation increases, it will impact people's incomes which will decrease so that it is difficult for debtors to repay their loans (Barus & Erick, 2016).

Capitalization, liquidity risks, poor credit quality, cost inefficiency, and banking industry size significantly increase NPLs, while greater bank profitability lowers NPLs. Moreover, higher state real GDP and actual personal income growth rates and changes in state housing price index reduce NPLs, while inflation, state unemployment rates, and U.S. public debt significantly increase NPLs. The findings imply that regular stress tests on banks' loan quality that typically underpin scenarios for a rise in NPLs, should take into account the impact of 'micro' or state-level economic conditions on NPLs, in addition to banks' capital and credit quality, and effective cost management in assessing banks financial health (Ghosh, 2015). Inflation and interest rates significantly affect the NPL of Bank BTN (Persero) Padang Branch, while the exchange rate has no effect (Linda, Megawati, & Deflinawati, 2015).

Terms of credit variables significantly affect the banks' non-performing loans in the presence of bank size-induced risk preferences and macroeconomic shocks. Moreover, alternative measures of bank size could give rise to a differential impact on a bank's non-performing loans. On the other hand, factors like the horizon of credit maturity, better credit culture, and favorable macroeconomic and business conditions lead to lower NPAs. The business cycle may have differential implications relating to borrowers' and lenders' differential responses (Rajan & Dhal, 2003).

2. Research Method

Quantitative research methods are research whose specifications are systematic, well-planned, and structured from the beginning to the making of the research design. This type of research is causal associative research because it was conducted to determine the effect of Return on Assets, Equity to Asset Ratio, Inflation, and Bank Size on Non-performing Loans

of State-owned banks for the period 2017-2021. Here, the researchers describe in the operating table the variables:

Tabel 1. Definisi Operasional Peubah

Variable	Concept	Indicator	Scale
<i>Return on Asset</i> (X ₁)	Measuring the ability of the company with the overall assets used for the company's operations to generate profits (Munawir, 2014)	ROA $= \frac{\text{Net Profit After Tax}}{\text{Total Assets}} \times 100\%$	Ratio
<i>Equity to Asset Ratio</i> (X ₂)	The company's capital ratio is used to fund the company's assets (Dendawijaya, 2015)	$EAR = \frac{\text{Equity}}{\text{Total Aset}} \times 100\%$	Ratio
Bank Size (X ₃)	The number of total assets (Mudrajat & Suhardjono, 2002)	$\text{Bank Size} = \text{Ln} (\text{Total Assets})$	Ratio
Inflation (X ₄)	An increase in the price of goods and services over a certain period (Bank Indonesia, 2022)	Inflation $= \frac{\text{January s/d December}}{12} \times 100\%$	Ratio
<i>Non-Performing Loan</i> (Y)	The ratio between total non-performing loans to total loans (Kasmir, 2013)	$\text{NPL} = \frac{\text{Non current loan}}{\text{Loan}} \times 100\%$	Ratio

Data analysis uses panel data, a combination of time series and cross-sections. By accommodating the model, information related to both cross-section and time-series variables can substantially reduce the problem of omitted variables. This model ignores relevant variables (Wibisono in Ajija et al., 2011). The equation of the model using cross-section data can be written as follows:

$$Y_i = \beta_0 + \beta_1 X_i + e_i ; i = 1, 2, \dots, N \dots \dots \dots (1)$$

where N is the number of cross-sectional data.

While the equation of the model with the time series is:

$$Y_t = \beta_0 + \beta_1 X_t + e_t ; t = 1, 2, T \dots \dots \dots (2)$$

where T is the number of time-series data

Considering that the panel data is a combination of time-series and cross-sections, the model can be written as:

$$Y_{it} = \beta_0 + \beta_1 X_{it} + e_{it} i = 1, 2, N; t = 1, 2, T \dots \dots \dots (3)$$

where:

N = obseravtion

T = time

N × T = panel data

3. Results and Discussion

3.1. Results

The normality test tests whether the residual data in the regression model is normally distributed with probability. If it is more than 5%, the residual data is normally distributed.

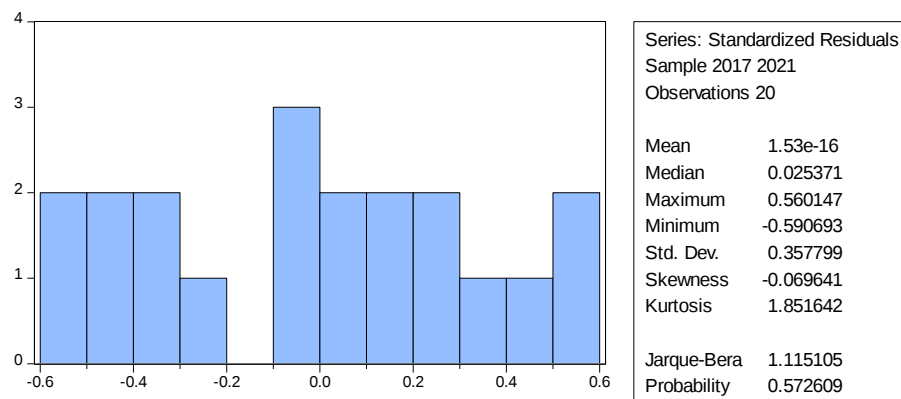


Figure 1. Normality Test Results

From the normality test results, Jarque-Bera is 1.115105 with a probability of 0.572609, indicating that the residual data is normally distributed ($0.572609 > 0.05$). The heteroscedasticity uses Breusch-Pagan-Godfrey to detect the presence of heteroscedasticity in a regression model (Winarno, 2015). The results show a more than 5 percent probability, so there is no heteroscedasticity.

Table 1. Heteroscedasticity Test Results

Residual Cross-Section Dependence Test
Null hypothesis: No cross-section dependence (correlation) in residuals
Equation: EQ01
Periods included: 5
Cross-sections included: 4
Total panel observations: 20
Note: non-zero cross-section means detected in data
Cross-section means were removed during computation of correlations

Test	Statistic	d.f.	Prob.
Breusch-Pagan LM	8.395707	6	0.2105
Pesaran scaled LM	0.691581		0.4892
Pesaran CD	-1.458693		0.1446

Based on table 2, Durbin Watson is 1.6483 between 1.54 – 2.46, meaning no autocorrelation.

Table 2. Common Effect Model Panel Data Regression Results

Dependent Peubah: NPL
Method: Panel Least Squares
Date: 03/01/22 Time: 15:35
Sample: 2017, 2021
Periods included: 5
Cross-sections included: 4
Total panel (balanced) observations: 20

Variable	Coefficient	Std. Error	t-Statistic	Prob.
ROA	-0.8950	0.1734	-5.1631	0.0001
EAR	8.9180	4.8206	1.8500	0.0841
BANK SIZE	0.0782	0.0335	2.3322	0.0340
INFLATION	0.0058	0.1366	0.0427	0.9665
C	2.3394	0.9659	2.4222	0.0286
R-squared	0.8053	Mean dependent var		3.0215
Adjusted R-squared	0.7533	S.D. dependent var		0.8108
S.E. of regression	0.4027	Akaike info criterion		1.2310
Sum squared resid	2.4324	Schwarz criterion		1.4780
		Hannan-Quinn		
Log-likelihood	-7.3102	criteria.		1.2796
F-statistic	15.5069	Durbin-Watson stat		1.6483
Prob(F-statistic)	0.0000			

Based on table 2, the regression equation can be written as follows:

$$NPL = -0.8950 \cdot ROA + 8.9180 \cdot EAR + 0.0782 \cdot \text{Size} + 0.0058 \cdot \text{Inflation} + 2.3394$$

3.2. Discussion

The Influence of Return on Assets on Non-Performing Loans

ROA is used to measure the overall effectiveness in generating profits through available assets. During the 2017-2021 observation period, it fluctuated. In 2017 was 2.71%. In 2018, it increased to 2.75%. In 2019 it decreased to 2.27%, then its peak in 2020 drastically reduced to 1.20% under the OJK regulation; the criteria are excellent if the ROA value is > 1.45%. In 2021 the ROA of state-owned banks will increase to 1.87%. This shows that for five years, the average ROA is 2.16%.

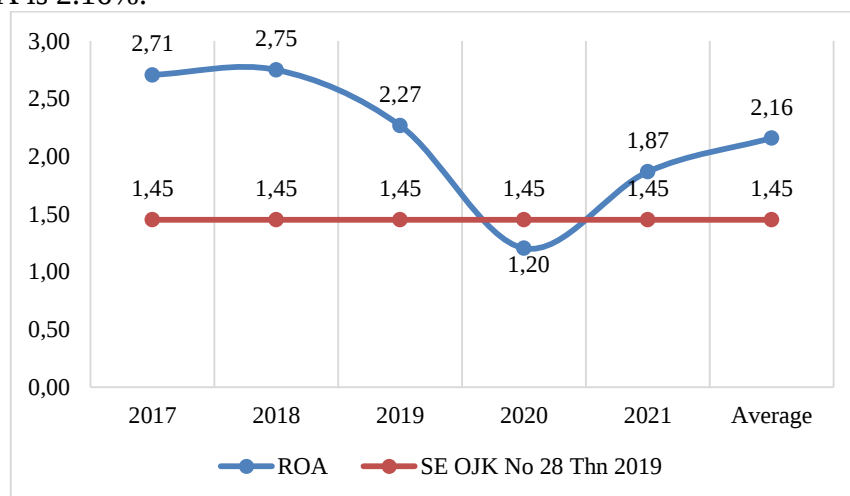


Figure 2. ROA of State-Owned Banking in 2017-2021

With this effectiveness, it is expected to be able to reduce the NPL ratio. The results of panel data regression testing with the common effect model show that ROA has a significant negative effect on NPL; this indicates that any increase in ROA is predicted to be able to reduce the NPL of state-owned banks. The results of this study are in line with the results of

research conducted by Messai and Jouini (2013), Abid et al. (2014), and Dao et al. (2020), which state that ROA has a significant negative effect on NPL, which means that investors consider the increase in ROA to invest or buy shares in the state-owned bank. So it becomes a dilemma when the resulting ROA is used to cover or cover the existing NPL to maintain the performance of state-owned banks to remain healthy.

The Influence of Equity to Asset Ratio on Non-Performing Loan

EAR is the ratio of using the company's capital to finance banking assets. The high and low ratio will reflect the management of the bank's capital.

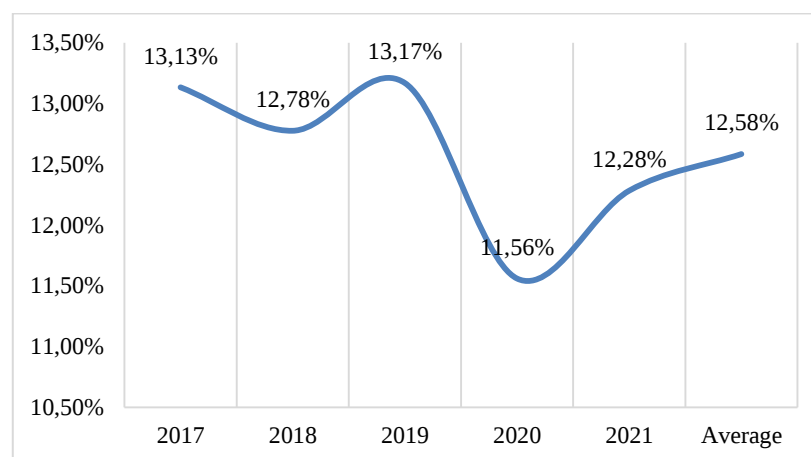


Figure 3. EAR of State-Owned Banking in 2017-2021

EAR 2017-2021 fluctuated. In 2017 was 13.13%. In 2018 it decreased to 12.78%. In 2019 it increased to 13.17%. In 2020 it drastically reduced to 11.56%. In 2021 it increased to 12.28%. The average EAR for five years is 12.58%.

NPL in 2017-2021 fluctuated. In 2017 was 2.63%. In 2018 it decreased to 2.41%. In 2019 it increased to 3.02%. In 2020 it increased to 3.73%. In 2021 it dropped to 3.32%. The five year average of 3.02% is still below the Bank Indonesia regulation of 5%, which means that the NPL is still within reasonable limits and can be managed well by state-owned banks.

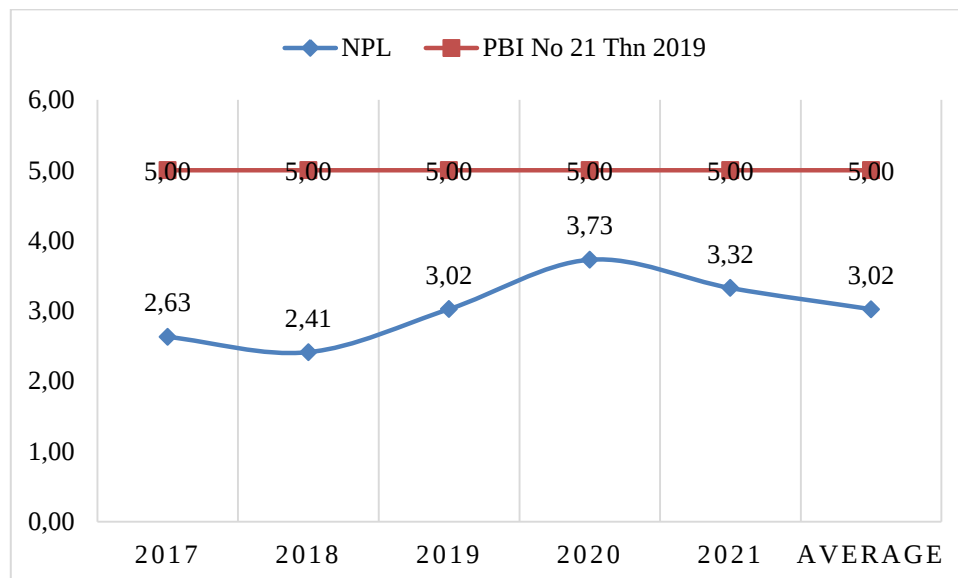


Figure 4. NPL of State-Owned Banking in 2017-2021

With this management capability, it is expected to reduce the NPL ratio. The results of panel data regression testing with the common effect model show that EAR has a significant positive effect on NPL. However, this increase is still below the Bank Indonesia regulation, which requires the maximum limit for banking NPLs to be 5%. The results of this study are in line with the results of research conducted by Dao et al. (2020).

The Influence of Inflation on Non-Performing Loans

Inflation increases overall prices, disrupting the balance between the flow of money and goods. Inflation occurs because of inflation abroad, resulting in rising prices of goods in the country. High inflation will cause a decrease in people's real income so that people's living standards also fall, so that debtors may not be able to pay (Barus & Erick, 2016). During the 2017-2021 observation period, it tends to experience deflation. In 2017 was 3.61%. In 2018 it decreased to 3.13%. In 2019 it dropped to 2.72%. In 2020 it dropped to 1.68%. In 2021 it increased to 1.87%. The five year average inflation is 2.60%, which means that deflation due to limited money circulating in the community or the rupiah deficit can also decrease the number of requests for goods or services.

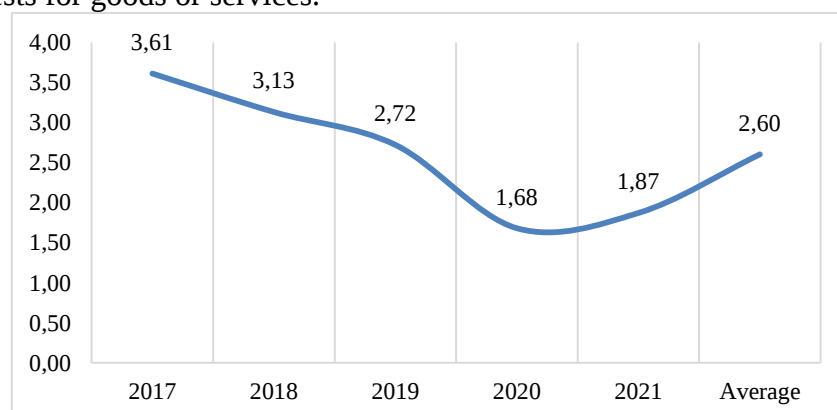


Figure 5. Inflation of State-Owned Banking in 2017-2021

The results of panel data regression testing with the common effect model show that inflation has a positive and insignificant effect on NPL. There is no inflation, but there is deflation due to limited money circulating in the community or a rupiah deficit, so debtors have difficulty paying their obligations.

The results of this study are not in line with the results of research conducted by Dao et al. (2020), which states that inflation has a negative effect on NPL. Meanwhile, Roza Linda et al. (2015) said that inflation positively affected NPL increase.

The Influence of Bank Size on Non-Performing Loans

The larger the volume of credit can allow banks to reduce the spread rate, which lowers loan interest rates so that banks will be more competitive in providing services to customers who need credit. Low-interest rates will reduce the credit congestion to facilitate credit payments and reduce the number of non-performing loans. A low level of non-performing loans can spur investment and improve the economy. From 2017 to 2021, bank size continued to increase. In 2017 it was 16.63%, continuing to increase until 2021 by 19.01%. The average for 5 years is 18.83%.

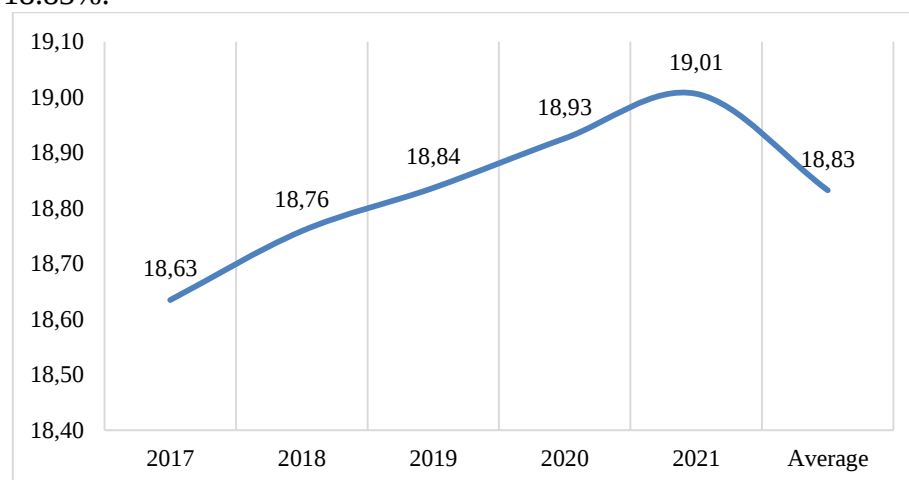


Figure 6. Size of State-Owned Banking in 2017-2021

The results of panel data regression testing with the common effect model show that bank size has a significant positive effect on NPL. This indicates that large banks tend to increase their lending activities to achieve maximum profits because large banks get protection from the government if something happens (Laksono & Setyawan, 2019). If a large bank runs the risk of business failure, it will significantly impact a country's economy. The greater the amount of credit disbursed, the greater the potential for non-performing loans (Wood & Skinner, 2018). The results of this study are in line with the results of research conducted by Laksono & Setyawan (2019), and Dao et al. (2020).

4. Conclusion

ROA has a significant negative effect on NPL. Investors consider the increase in ROA to invest or buy shares in the state-owned bank. So it becomes a dilemma when the resulting ROA is used to cover or cover existing NPLs to maintain the performance of state-owned banks to remain healthy.

EAR has a significant positive effect on NPL. This increase is still under the provisions of Bank Indonesia, which applies the maximum limit for banking NPLs of 5 percent.

Inflation has no significant positive effect on NPL. This is because there is no inflation but deflation due to the limited money supply in the community. Bank size has a significant positive effect on NPL. This shows that large banks tend to increase their credit activities to maximize profit; the government protects large banks.

This research has limitations in terms of the period of observation, the object under study, and the changes that must be investigated. The observation period is only five years, with the research object being four state-owned banks. The variables studied are asset returns, equity to assets ratio, inflation, bank size, and non-performing loans. It is hoped that further research will increase the observation period, add research objects, not only state-owned banks, and add variables such as Gross Domestic Product and B.I. Rate.

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