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The Impact of Operating Expenses to Operating Income (BOPO), Non-Performing Loans (NPL), Capital Adequacy Ratio (CAR), and Net Interest Margin (NIM) on Return on Assets (ROA) of Bank CIMB Niaga (2015–2024 Period)

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Abstract: *This study aims to analyze the effect of Operating Expenses to Operating Income, Non-Performing Loans, Capital Adequacy Ratio, and Net Interest Margin on Return on Assets at Bank CIMB Niaga Tbk for the period 2015–2024. The study was conducted to determine the partial and simultaneous effects of each independent variable on the bank's profitability, which is measured by Return on Assets (ROA). The research method used is quantitative research with an associative approach. The data used are secondary data obtained from the annual financial statements of Bank CIMB Niaga Tbk during the period 2015–2024. The study used all published annual financial statements of PT Bank CIMB Niaga Tbk for the period 2015–2024, resulting in 10 research observations. The results show that BOPO has a significant effect on ROA. Meanwhile, NPL, CAR, and NIM partially do not have a significant effect on ROA. Simultaneous testing indicates that BOPO, NPL, CAR, and NIM collectively have a significant effect on ROA at Bank CIMB Niaga Tbk for the period 2015–2024. This study indicates that operational efficiency is the most dominant factor affecting the bank's profitability, while credit quality, capital adequacy, and the ability to generate net interest income have not shown a significant effect during the research period. The findings of this study are expected to serve as academic and practical references for future banking research in Indonesia*

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Introduction

Banking plays a very central role in a country's economy because of its intermediation function and its role in channeling credit to the public. Finance Minister Sri Mulyani Indrawati, at a meeting held on May 15, 2018, themed "Strategic Priorities and Policies to Support the Momentum of the Banking Industry in Credit Growth," stated that the banking industry plays an important role in supporting economic growth. The banking sector is expected to contribute to the advancement of Indonesia's economy because it functions as a financial intermediary between members of society who have excess funds (surplus) and those who need funds. The ultimate goal of economic development is to improve the welfare and standard of living of the people.

Given the importance of banking in the economy, banks are required to maintain their operational performance. One way to measure a bank's operational performance is through the rate of return, or profit relative to its total assets (ROA). Every bank is required to maintain and improve its performance in order to remain trusted by the public. One bank that focuses on maintaining its performance is Bank CIMB Niaga, as can be seen from its financial performance.

At the beginning of the research period (around 2015-2016), CIMB Niaga faced asset quality pressure, with a challenging NPL ratio of 3.74% and 3.82% respectively, caused by the slowdown in the commodity sector. This automatically increased loan loss provisions and inflated BOPO (the operating expense to operating income ratio), which temporarily put pressure on its profitability (ROA).

During the COVID-19 pandemic in 2020, credit risk (NPL) was tested again, rising from 2.74% previously to 3.55%, which forced the bank to carry out large-scale credit restructuring. However, a very interesting phenomenon occurred afterward. Based on annual report data, CIMB Niaga managed to consistently achieve operational efficiency. This efficiency is shown by a decline in the cost-to-income ratio, which was successfully reduced thanks to the optimization of banking digitalization, and culminated in 2024 when gross NPL was brought down to its lowest level of 1.7%.

Based on the financial performance phenomena of Bank CIMB Niaga Tbk during the 2015–2024 period, there are visible dynamics in the level of profitability and the factors that influence it. Changes in economic conditions, increases and decreases in credit risk, operational efficiency, capital adequacy, and the bank's ability to generate interest income are factors suspected to be related to the bank's profitability. Profitability is one of the important indicators for assessing a bank's performance and soundness, and in this study it is measured using Return on Assets (ROA). The level of ROA can reflect the bank's ability to manage all of its assets to generate profit.

Therefore, further analysis is needed regarding the factors that may affect ROA, particularly Operating Expenses to Operating Income (BOPO), Non-Performing Loan (NPL),

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Capital Adequacy Ratio (CAR), and Net Interest Margin (NIM). Based on the above description, the researcher is interested in conducting a study titled "The Effect of Operating Expenses to Operating Income (BOPO), Non-Performing Loan (NPL), Capital Adequacy Ratio (CAR), and Net Interest Margin (NIM) on Return on Assets (ROA) of Bank CIMB Niaga for the 2015–2024 Period," in the hope that this research can provide empirical evidence on the effect of operational efficiency, credit risk, capital adequacy, and the ability to generate interest income on the profitability of Bank CIMB Niaga Tbk.

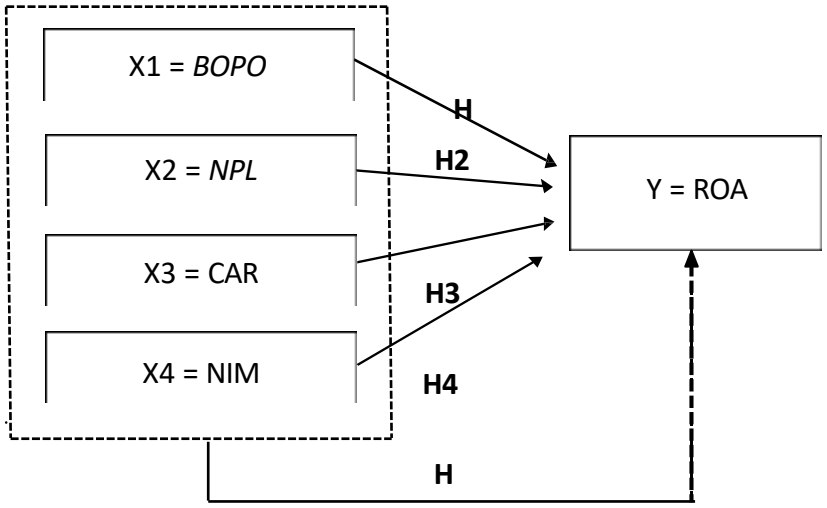


Figure 1. Research Framework

Based on theory and previous research, the hypotheses proposed in this study are as follows:

H1: Operating Expenses to Operating Income (BOPO) is presumed to have a significant effect on the Return on Assets (ROA) of Bank CIMB Niaga.

H2: Non-Performing Loan (NPL) is presumed to have a significant effect on the Return on Assets (ROA) of Bank CIMB Niaga.

H3: Capital Adequacy Ratio (CAR) is presumed to have a significant effect on the Return on Assets (ROA) of Bank CIMB Niaga.

H4: Net Interest Margin (NIM) is presumed to have a significant effect on the Return on Assets (ROA) of Bank CIMB Niaga.

H5: BOPO, NPL, CAR, and NIM are presumed to have a simultaneous significant effect on the Return on Assets (ROA) of Bank CIMB Niaga.

Research Methods

In this study, the author uses a quantitative research type with an associative method. Quantitative research is research that aims to determine the relationship between two or more variables (Mayurina Dwita, 2022). This quantitative research is used to determine the causal relationship between variable X1, namely BOPO, X2, NPL, X3, CAR, and X4, NIM, on variable Y, namely Return on Assets. The quantitative research type in this study is supported

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by the use of an associative method to find the data needed in the research.

Data collection technique is the most important step in research, because the main purpose of research is to obtain data. Without knowing the data collection technique, the researcher will not obtain data that meets the established data standards (Sugiyono, 2019:296). The data collection technique used in this study is carried out through a literature study by collecting information from previous research. The author also uses the documentation method in the form of diaries, life histories, and biographies. Internet searching is also carried out by the author to find information and data with the help of technology.

The data analysis technique in this study uses statistical calculations, using Microsoft Office and IBM SPSS Statistics 23. The stages of data analysis that will be carried out to conduct the testing are as follows:

Result and Discussion

Table 1 Descriptive Statistics Test Results

	N	*Minimum*	*Maximum*	*Mean*	*Std. Deviation*
Y	*10*	*.18*	*1.96*	*1.2420*	*.55150*
X1	*10*	*55.70*	*90.80*	*71.5880*	*11.43032*
X2	*10*	*1.70*	*3.82*	*3.0370*	*.75797*
X3	*10*	*14.7*	*36.3*	*21.880*	*5.9239*
X4	*10*	*3.68*	*5.01*	*4.4230*	*.38557*
Valid N (listwise)	*10*				

The descriptive statistics table shows that the ROA variable has a maximum value of 1.96, a minimum value of 0.18, and a mean of 1.24. The BOPO variable has a maximum value of 90.8, a minimum value of 55.7, and a mean of 71.5. The NPL variable has a maximum value of 3.82, a minimum value of 1.7, and a mean of 3.03. The CAR variable has a maximum value of 36.3, a minimum value of 14.7, and a mean of 21.8. The NIM variable has a maximum value of 5.01, a minimum value of 3.68, and a mean of 4.42.

Normality Tests

Tabel 2 Normality Test

One-Sample Kolmogorov-Smirnov Test

		Unstandardized Residual
N		*10*
Normal Parameters[a,b]	*Mean*	*.0000000*
	Std. Deviation	*.06309515*
Most Extreme Differences	*Absolute*	*.227*
	Positive	*.227*
	Negative	*-.142*
Test Statistic		*.227*
Asymp. Sig. (2-tailed)		*.155*[c]

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a. Test distribution is Normal.

b. Calculated from data.

c. Lilliefors Significance Correction.

Based on the results of the Kolmogorov–Smirnov normality test, a significance value of 0.155 was obtained. Because this significance value is greater than 0.05 (α = 0.05), it can be concluded that the residual data are normally distributed. Therefore, the normality assumption in the regression model has been met.

Multicollinearity Test

Tabel 3 Multicollinearity Test

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	4.088	.531		7.702	.001		
	X1	-.055	.006	-1.135	-8.531	.000	.148	6.767
	X2	.097	.097	.133	.996	.365	.147	6.811
	X3	.008	.006	.086	1.367	.230	.658	1.519
	X4	.137	.143	.096	.960	.381	.262	3.813

a. Dependent Variable: Y

Based on the test table, the centered VIF value for X1 is 6.767 < 10, X2 is 6.811 < 10, X3 is 1.519 < 10, and X4 is 3.812 < 10. Therefore, it can be said that the data is free from multicollinearity.

Heteroscedasticity Test

Tabel 4 Heteroscedasticity Test

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.319	.186		-1.714	.147
	X1	.000	.002	.047	.071	.946
	X2	-.035	.034	-.690	-1.034	.348
	X3	-.002	.002	-.287	-.911	.404
	X4	.114	.050	1.133	2.269	.073

a. Dependent Variable: Abs_Res

Based on the results of the heteroscedasticity test using the Glejser method presented in the table above, the BOPO variable (X1) has a significance value of 0.946, the NPL variable (X2) has a significance value of 0.348, the CAR variable (X3) has a significance value of 0.404, and the NIM variable (X4) has a significance value of 0.073. All of these significance values are greater than 0.05. Therefore, it can be concluded that there is no indication of a heteroscedasticity problem in the regression model. Thus, the regression model used in this study meets the assumption of homoscedasticity, which means that the variance of the residuals is constant.

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Autocorrelation Test

Tabel 5 Autocorrelation Test

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.993[a]	.987	.976	.08465	2.757

a. Predictors: (Constant), X4, X3, X1, X2
b. Dependent Variable: Y

It is known that N = 10 and K (independent variables) = 4. Based on the Durbin-Watson reference table with α = 5%, the results are as follows:

- DL value = 0.376
- 4-DL value = 3.624
- DU value = 2.414
- 4-DU value = 1.586
- DW (Durbin-Watson) value = 2.757

Result:
4-DU < DW < 4-DL = 1.586 < 2.757 < 3.624
This means that no decision can be made as to whether or not autocorrelation occurs in the data (the result is inconclusive).

Multiple Linear Regression Analysis

Tabel 6 Multiple Linear Regression Analysis

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	4.088	.531		7.702	.001		
	X1	-.055	.006	-1.135	-8.531	.000	.148	6.767
	X2	.097	.097	.133	.996	.365	.147	6.811
	X3	.008	.006	.086	1.367	.230	.658	1.519
	X4	.137	.143	.096	.960	.381	.262	3.813

a. Dependent Variable: Y

Regression Equation Analysis:
4.088 – 0.055X1 + 0.097X2 + 0.008X3 + 0.137X4
From the regression equation above, the following conclusions can be drawn:

1. The constant value obtained is 4.087. This means that when all independent variables are assumed to be zero, the dependent variable (ROA) is estimated to have a value of 4.087.
2. The regression coefficient of variable X1 is negative (-), at -0.054. This indicates that if variable X1 increases by one unit, variable Y (ROA) will decrease by 0.054 units, assuming the other independent variables remain constant.
3. The regression coefficient of variable X2 is positive (+), at 0.096. This indicates that if variable X2 increases by one unit, variable Y (ROA) will increase by 0.096 units, assuming the other independent variables remain constant.
4. The regression coefficient of variable X3 is positive (+), at 0.008. This indicates that if

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variable X3 increases by one unit, variable Y (ROA) will increase by 0.008 units, assuming the other independent variables remain constant.

5. The regression coefficient of variable X4 is positive (+), at 0.137. This indicates that if variable X4 increases by one unit, variable Y (ROA) will increase by 0.137 units, assuming the other independent variables remain constant.T-Test (Partial Test)

Tabel 7 T-Test (Partial Test)

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	4.088	.531		7.702	.001		
	X1	-.055	.006	-1.135	-8.531	.000	.148	6.767
	X2	.097	.097	.133	.996	.365	.147	6.811
	X3	.008	.006	.086	1.367	.230	.658	1.519
	X4	.137	.143	.096	.960	.381	.262	3.813

a. Dependent Variable: Y

From the table above, the partial effect of the independent variables on the dependent variable is as follows:

1. The T-test result for the BOPO variable (X1) shows a t-value of -8.530 (in absolute terms, greater than the t-table value of 2.306004), with a significance value of 0.000 < 0.05. Therefore, Ha1 is accepted and H01 is rejected, which indicates that the BOPO variable (X1) has a significant effect on the ROA of Bank CIMB Niaga.
2. The T-test result for the NPL variable (X2) shows a t-value of 0.99 < the t-table value of 2.306004, with a significance value of 0.36 > 0.05. Therefore, Ha2 is rejected and H02 is accepted, which indicates that the NPL variable (X2) does not have a significant effect on the ROA of Bank CIMB Niaga.
3. The T-test result for the CAR variable (X3) shows a t-value of 1.37 < the t-table value of 2.306004, with a significance value of 0.23 > 0.05. Therefore, Ha3 is rejected and H03 is accepted, which indicates that the CAR variable (X3) does not have an effect on the ROA of Bank CIMB Niaga.
4. The T-test result for the NIM variable (X4) shows a t-value of 0.960 < the t-table value of 2.306004, with a significance value of 0.381 > 0.05. Therefore, Ha4 is rejected and H04 is accepted, which indicates that the NIM variable (X4) does not have an effect on the ROA of Bank CIMB Niaga.

F-Test (Simultaneous Test)

Tabel 8 F-Test (Simultaneous Test)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	4.088	.531		7.702	.001		
	X1	-.055	.006	-1.135	-8.531	.000	.148	6.767
	X2	.097	.097	.133	.996	.365	.147	6.811
	X3	.008	.006	.086	1.367	.230	.658	1.519
	X4	.137	.143	.096	.960	.381	.262	3.813

In the F table, it can be seen that the calculated F value of 94.251 > 5.192168 and the sig value of 0.00 < 0.05. Therefore, H05 is rejected and Ha5 is accepted, meaning that the variables BOPO,

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Coefficient of Determination

Tabel 9 Coefficient of Determination

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.993[a]	.987	.976	.08465	2.757

a. Predictors: (Constant), X4, X3, X1, X2

b. Dependent Variable: Y

Based on the table above, the Adjusted R-Square value is 0.976 or 97.6%. This coefficient of determination indicates that the independent variables, consisting of BOPO, NPL, CAR, and NIM, are able to explain 97.6% of the variation in ROA at Bank CIMB Niaga. Meanwhile, the remaining 2.4% (100% − 97.6%) is explained by other variables not included in this research model.

Conclusion and Recommendation

Contains Based on the results of the data analysis and discussion of the BOPO, NPL, CAR, and NIM variables on the ROA of Bank CIMB Niaga Tbk for the 2015-2024 period, the researcher found the following facts:

1. BOPO has a significant effect on the ROA of Bank CIMB Niaga Tbk for the 2015-2024 period, with a significance value of 0.00.
2. NPL has an effect but it is not significant on the ROA of Bank CIMB Niaga Tbk for the 2015-2024 period, with a significance value of 0.36.
3. CAR has an effect but it is not significant on the ROA of Bank CIMB Niaga Tbk for the 2015-2024 period, with a significance value of 0.23.
4. NIM has an effect but it is not significant on the ROA of Bank CIMB Niaga Tbk for the 2015-2024 period, with a significance value of 0.381.
5. BOPO, NPL, CAR, and NIM simultaneously have an effect on the ROA of Bank CIMB Niaga Tbk for the 2015-2024 period, with a significance value of 0.00.

Recomendations

According to the research conducted, the points to consider and the recommendations are as Follows:

1. For the Management of Bank CIMB Niaga
   Bank CIMB Niaga needs to continue improving its operational efficiency because the BOPO variable has been proven to have a significant effect on ROA. Control of operating costs and optimization of operating income need to be carried out continuously so that the bank's profitability can increase sustainably.
2. For Investors
   Investors are advised to pay attention to the bank's level of operational efficiency as reflected in the BOPO ratio, because based on the research results, this ratio has a significant effect on the company's profitability. A decline in the BOPO ratio indicates that the management of Bank CIMB Niaga is able to reduce operating costs amid its business expansion, which in turn will boost net profit (Return on Assets). For investors, stable and

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increasingly rising profitability is a positive signal that ensures the sustainability of dividend payments (dividend yield) as well as the potential for future share price growth (capital gain).

3. For Future Researchers

   Future researchers are

   advised to:

   A. Increase the number of research samples by using several banks listed on the Indonesia Stock Exchange.
   B. Extend the observation period so that the research results are more representative.
   C. Add other variables that potentially affect ROA, such as LDR, DPK (third-party funds), company size, inflation, and interest rates.
   D. Use different analysis methods, such as panel data or other econometric approaches, so that they can produce more comprehensive findings.

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