

## **ANALYSIS OF DETERMINANTS OF RETURN ON ASSETS IN NATIONAL PRIVATE COMMERCIAL BANK**

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### **ABSTRACT**

This research aims to determine and analyze the influence of the Loan to Deposit Ratio and Operational Costs on Operational Income on Return On Assets both simultaneously and partially at National Private Commercial Banks for Foreign Exchange listed on the Indonesia Stock Exchange. The research approach used in this research is an associative approach. The population in this research is all National Private Commercial Banks for Foreign Exchange listed on the Indonesia Stock Exchange, totaling 26 banking companies. The samples taken using the purposive sampling method amounted to 14 banking companies. The data collection technique in this research uses secondary data sources. The data analysis techniques used are the Classical Assumption Test, Multiple Linear Regression, Hypothesis Testing, and Coefficient of Determination Test. The research results show that partially LDR has no effect on ROA, BOPO has a significant negative effect on ROA. Meanwhile, simultaneously the research results show that LDR and BOPO together have a significant influence on ROA.

**Keywords : Loan to Deposit Ratio, Operating Costs Operating Income, Return On Assets**

### **INTRODUCTION**

The banking industry plays a very important role in economic development as a financial intermediary institution, especially in providing funds for the business world. In addition to collecting funds from the wider community in the form of savings, financial services provided by banks also carry out fund distribution activities or provide loans in the form of credit. Banks are an industry whose business activities rely on public trust, so it is necessary to pay attention to the level of performance of a bank which can reduce public trust. In measuring a bank's performance ability to generate profits by utilizing the total assets it owns, it can use Return On Assets which is a profitability ratio which aims to measure the company's effectiveness in achieving profitability. The greater the ROA of a bank will indicate the better the bank's performance in using its assets to generate profits (Setyowati and Budiwinarto, 2017). Measuring the level of credit risk of a bank is also important because in carrying out its operations banks also distribute funds to the public in the form of credit which of course has risks. The amount of credit disbursed is reflected in the size of the Loan to Deposit Ratio, if the LDR exceeds the specified limit, this means that credit risk increases. An increase in LDR reflects the possibility of making a greater profit from credit expansion, even though it carries greater risk, however a low LDR will also reflect the bank's lack of performance in relying on credit distribution as a source of liquidity, which can lead to losses which have an impact on reducing profitability. If credit risk

increases and the potential for non-payment of debt becomes high, this will also have an impact on increasing bank operational costs (BOPO), so that the bank becomes inefficient. The higher the BOPO ratio means the more inefficient the operational costs incurred by the bank, so the bank's possibility of making a profit is smaller (Sudiyatno and Fatmawati, 2013). Based on the data obtained, it is known that the net profit of 14 National Private Foreign Exchange Commercial Banks listed on the Indonesia Stock Exchange experienced a decline in 2014 with the average Return On Assets in the research period not reaching the minimum limit that had been set, namely 1.5%. This shows that the bank's performance has not been optimal in carrying out its operational activities or the bank's lack of efficiency in its operational costs to obtain maximum profits as one of the goals of a company being founded.

### **Return On Assets**

Return On Assets (ROA) is a profitability ratio that shows how a bank's performance is capable of generating profits through its operational activities and the bank's ability to manage the assets it owns. Munawir (2016, p. 89) states that Return On Assets (ROA) is a form of profitability ratio which is intended to measure a company's ability to measure the total funds invested in assets used in the company's operations to generate profits. The objectives and benefits of profitability ratios according to Kasmir (2012, pp. 197-198) are as follows: To measure or calculate the level of profit obtained by a company in a certain period. To find out the position and development of company profits from the previous year to the current year. To assess the development of profits over time. To find out the amount of net profit after tax with your own capital. To find out the productivity of all company funds used, both loan capital and own capital.

### **Loan to Deposit Ratio**

Loan to Deposit Ratio (LDR) is a ratio that can measure a bank's ability to repay withdrawals made by depositors based on the composition of the amount of credit provided by the bank to the amount of public funds collected by the bank. According to Rivai, et al (2013, p. 153) Loan to Deposit Ratio (LDR) is a ratio that has the ability to measure a bank in repaying fund withdrawals made by depositors by relying on the credit provided as a source of liquidity or it can be said how far credit is provided to customers can offset the bank's obligation to immediately fulfill requests from depositors who want to withdraw funds that have been distributed by the bank in the form of credit. The higher this ratio, the lower the liquidity capacity of the bank concerned. According to Kasmir (2012, p. 132) the objectives and benefits of liquidity ratios are: To measure the company's ability to pay short-term liabilities with current assets as a whole or without taking into account inventory or receivables. To measure the amount of existing inventory with the company's working capital. To measure how much cash is available. As a planning tool, especially cash and debt planning. To see the condition and liquidity position of the company from time to time by comparing it for several periods. To see the company's weaknesses in terms of each component in current assets and current liabilities. To improve company performance by looking at its liquidity ratio.

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### Operating Costs Operating Income

Operational Costs Operational Income (BOPO) is a part of a bank that can be used as a benchmark for whether a bank is efficient or not in carrying out its operational activities. Rivai, et al. (2013, p. 482) states that Operational Costs Operational Income (BOPO) is a comparison between operational costs and operational income in measuring the level of efficiency and ability of a bank in carrying out its operational activities. Furthermore, Hasibuan (2009, p. 101) states that BOPO is a comparison/ratio of operational costs in the last 12 months to operational income in the same period. According to Rivai, et al. (2013, p. 482) Operating Costs Operating Income (BOPO) has the benefit of measuring the level of efficiency and ability of a bank in carrying out its operational activities. It should be noted that the main business of banks is to collect funds from the public and then distribute them back to the community in the form of credit, so that interest expenses and interest yields are the largest portion for banks.

### METHOD

The research approach used in this research is an associative approach. The population in this research is National Private Foreign Exchange Commercial Banks registered on the IDX, totaling 26 banking companies. The samples taken using the purposive sampling method amounted to 14 banking companies. The data collection technique in this research uses secondary data sources. The data analysis techniques used in this research are quantitative data analysis techniques such as the Classical Assumption Test, Multiple Linear Regression, Hypothesis Testing, and Coefficient of Determination Test.

### RESULT

#### Normality test

The normality test is used to determine whether the distribution of data follows or approaches a normal distribution. To ensure whether the data along the diagonal line is normally distributed, the Kolmogorov Smirnov test is carried out with the Asymp criterion. Sig (2-tailed) > 0.05.

**Table 1. Normality test  
One-Sample Kolmogorov-Smirnov Test**

		Unstandardized Residuals
N		70
Normal Parameters, b	Mean	.0000000
	Std. Deviation	.59560531
Most Extreme Differences	Absolute	,130
	Positive	,130
	Negative	-.075
Kolmogorov-Smirnov Z		1,090
		,185
Asymp. Sig. (2-tailed)		

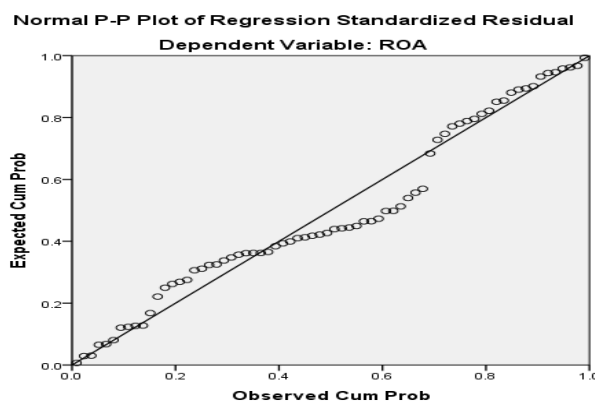
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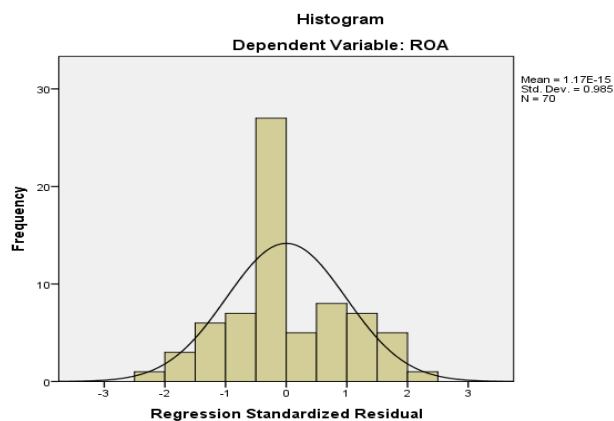
- a. Test distribution is Normal.
- b. Calculated from data.

Based on the table above, the Asymp value. Sig (2-tailed) of  $0.185 > 0.05$  is greater than the significant value which indicates the residual value is normally distributed or meets the classic assumption test of normality. Normality testing can also be done using the Normal P-Plot graph or by looking at the histogram of the residuals. The Normal P-Plot Test can be said to be normally distributed if the lines depicting the actual data are spread out and follow the direction of the diagonal line as shown in the following image:



**Figure 1. Normal P-Plot Graph**

Testing using a histogram is said to have a normal distribution, which can be seen by looking at the curve which shows a bell-like shape, in other words balanced to the left and right, does not lean to the left or right and is right in the middle like the following picture:



**Figure 2. Histogram Graph**

### Multicollinearity Test

The multicollinearity test is used to test whether in the linear regression model a high correlation is found between the independent variables. To detect whether there is multicollinearity or not, it can be done by looking at the variable tolerance and Variance Inflation Factor (VIF) by comparing  $Tolerance > 0.1$  and  $VIF < 10$ , which means there is no multicollinearity.

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**Table 2. Multicollinearity Test**

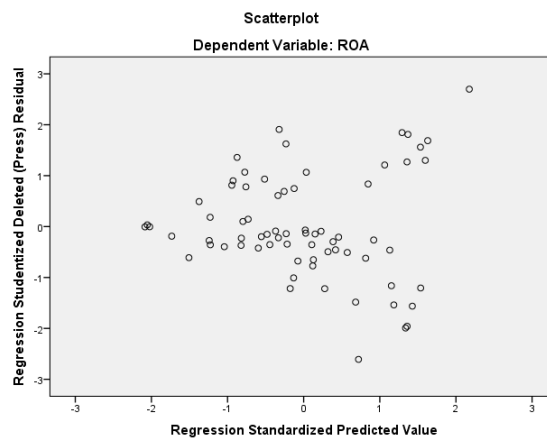
Coefficients <sup>a</sup>		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model		B	Std. Error	Beta			Tolerance	VIF
	(Constant)	4,424	,749		5,909	,000		
1	LDR	-.002	,006	-.034	-.351	,727	,916	1,092
	BOPO	-.044	,006	-.658	-6,770	,000	,916	1,092

a. Dependent Variable: ROA

Based on the table above, the tolerance results for the independent variables show a value of  $0.916 > 0.1$ , which means there is no correlation and the results of calculating the VIF value also show the same thing, namely  $1.092 < 10$ , so it can be concluded that there is no multicollinearity between the independent variables in the regression model.

### Heteroscedasticity Test

The heteroscedasticity test is carried out to determine whether a group has the same variance among members of the group. If the variances are not the same, it can be said that heteroscedasticity is occurring. If the points are spread randomly and do not form a particular pattern and are spread both above and below zero on the Y axis, it can be said that heteroscedasticity does not occur.



**Figure 3. Scatterplot Graphics**

Based on the picture above, it can be seen that the points are spread randomly and do not form a particular pattern and are spread both above and below zero on the Y axis, so it can be concluded that heteroscedasticity does not occur so that the regression model is suitable for use.

### Autocorrelation Test

The autocorrelation test aims to test whether in the linear regression model there is a correlation between confounding errors in period  $t$  and the previous period. A good regression model is free from autocorrelation, following the autocorrelation test using Durbin-Watson (DW).

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**Table 3. Durbin-Watson test**

<b>Model Summary b</b>					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.649a	.421	.403	.60443	1,677
a. Predictors: (Constant), BOPO, LDR					
b. Dependent Variable: ROA					

Based on the table above, it shows that the Durbin-Watson result is 1.677 with  $n = 70$  and  $k = 2$ , so the  $d_l$  value is 1.583 and  $d_u$  is 1.641. So it can be concluded that this is in accordance with the provisions  $d_u < d < 4 - d_u$ , namely  $1.641 < 1.677 < 2.359$ , which means there is no positive or negative autocorrelation.

### Multiple Linear Regression Analysis

Multiple linear regression analysis aims to find out how big the relationship or influence is between the independent variables on the dependent variable. The following are the results of data processing using multiple linear regression analysis.

**Table 4. Multiple linear regression**

<b>Coefficientsa</b>						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4,424	,749		5,909	,000
	LDR	-.002	,006	-.034	-.351	,727
	BOPO	-.044	,006	-.658	-6,770	,000

a. Dependent Variable: ROA

Based on the table above, you can see the relationship between the independent variables, namely Loan to Deposit Ratio (LDR) and BOPO, on the dependent variable, namely Return On Assets (ROA). So the regression equation can be seen as follows:

$$Y = 4.424 - 0.002X_1 - 0.044X_2$$

Information:

Y = Return On Assets (ROA)

$X_1$  = Loan to Deposit Ratio (LDR)

$X_2$  = BOPO

The regression equation above can be explained as follows:

1. A constant of 4.424 with a positive relationship indicates that if the independent variable is considered constant then the dependent variable Return on Assets (ROA) will increase by 4.424.
2. Loan to Deposit Ratio (LDR) of -0.002 with a negative relationship direction indicates that if the Loan to Deposit Ratio (LDR) variable decreases, the Return on Asset (ROA) variable will also experience a decrease of -0.002 assuming other variables are considered constant.

3. BOPO is -0.044 with a negative relationship direction, indicating that if the BOPO variable decreases, the Return On Assets (ROA) variable will also decrease by -0.044 assuming other variables are considered constant.

### Hypothesis test

#### Partial Test (t Test)

The t statistical test is used to test whether the independent (free) variables individually have an influence on the dependent (dependent) variable and to analyze whether the hypothesis is accepted or rejected.

**Table 5. Statistical Test Results t**

Coefficients <sup>a</sup>		Unstandardized		Standardized	t	Sig.
		Coefficients				
Model		B	Std. Error	Beta		
	(Constant)	4,424	,749		5,909	,000
1	LDR	-.002	,006	-.034	-.351	,727
	BOPO	-.044	,006	-.658	-6,770	,000

a. Dependent Variable: ROA

#### The Effect of Loan to Deposit Ratio (LDR) on Return On Assets (ROA)

The calculated t result for the Loan to Deposit Ratio (LDR) variable is -0.351 with a significant value of 0.727 and the t table value  $n - k = 70 - 2 = 68$  is 1.995. Thus -t calculated  $-0.351 > -1.995$  -t table with a significant value of  $0.727 > 0.05$  which means  $H_0$  is accepted and  $H_a$  is rejected. So it can be concluded that partially the Loan to Deposit Ratio (LDR) has no significant effect on Return On Assets (ROA) and the hypothesis which states that the Loan to Deposit Ratio (LDR) has an effect on Return On Assets (ROA) is rejected.

#### The Effect of Operating Costs on Operating Income (BOPO) on Return On Assets (ROA)

The Effect of Operational Costs on Operational Income (BOPO) on Return On Assets (ROA) The calculated t result for the variable Operational Costs on Operational Income (BOPO) is -6.770 with a significant value of 0.000 and the t table value  $n - k = 70 - 2 = 68$  is 1.995. So -t count is  $-6.770 < -1.995$  -t table with a significant value of  $0.000 > 0.05$ , which means  $H_0$  is rejected and  $H_a$  is accepted. So it can be concluded that partially Operational Costs, Operational Income (BOPO) has a negative and significant effect on Return On Assets (ROA) and the hypothesis which states that Operational Costs, Operational Income (BOPO) has an effect on Return On Assets (ROA) is accepted.

#### Simultaneous Test (F Test)

This F test is carried out to find out whether all independent (free) variables have a joint influence on the dependent (dependent) variable.

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**Table 6. F Statistical Test Results**

ANOVAa					
Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	17,777	2	8,888	24,329	,000b
1 Residual	24,477	67	,365		
Total	42,254	69			

a. Dependent Variable: ROA

b. Predictors: (Constant), BOPO, LDR

Based on the table above, the Fcount result is 24.329 with a significant value of 0.000 and the Ftable value  $n - k - 1 = 70 - 2 - 1 = 67$  is 3.13. So Fcount is  $24.329 > 3.13$  Ftable with a significant value of  $0.000 > 0.05$ , which means  $H_0$  is rejected and  $H_a$  is accepted. Thus it can be concluded that simultaneously Loan to Deposit Ratio (LDR) and Operational Costs Operational Income (BOPO) have a positive and significant effect on Return On Assets (ROA) and the hypothesis states that Loan to Deposit Ratio (LDR) and Operational Costs Operational Income (BOPO) has an effect on the Return On Assets (ROA) received.

### Determinant Coefficient (R-Square)

The coefficient of determination functions to determine how far the independent or independent variables in the regression equation are able to explain the dependent or dependent variable. If the test value of a regression is close to one, the better the regression is and conversely, the closer the regression is to zero, the independent variable as a whole cannot explain the dependent variable.

**Table 7. Determinant Coefficient Results**

Model Summary b					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.649	.421	.403	.60443	1,677

a. Predictors: (Constant), BOPO, LDR

b. Dependent Variable: ROA

Based on the table above, the Adjusted R Square value is 0.421. This shows that the independent variables Loan to Deposit Ratio (LDR) and Operating Costs Operating Income (BOPO) together influence the dependent variable ROA by 42.1% and the remaining 57.9% is influenced by other factors which are not included. in this research.

### DISCUSSION

Based on the research results above, in this research several things that can be explained are as follows:

**The Effect of Loan to Deposit Ratio (LDR) on Return On Assets (ROA)**

Based on the partial test results between Loan to Deposit Ratio (LDR) and Return On Assets (ROA), the results obtained were  $-t$  count  $-0.351 > -1.995$   $-t$  table with a significant value of  $0.727 > 0.05$  which means Loan to Deposit Ratio (LDR) has no significant effect on Return On Assets (ROA). So the high and low LDR will not affect the size of the ROA or profits generated by the company. The results of this research are in line with the research results of Setyowati and Budiwinarto (2017) which concluded that LDR has no effect and is not significant on ROA. Furthermore, research conducted by Wirawan, et al (2018) concluded that LDR had no significant effect on ROA. This research is also in line with research conducted by Verawaty, et al (2017) concluding that LDR has no effect on ROA. However, the results of this research contradict the theory put forward by Rivai, et al (2013, p. 153) which states that the higher this ratio will identify low liquidity capacity of the bank concerned. This shows that if a bank experiences liquidity difficulties, this will have an impact on reducing the bank's performance and the profitability or profits generated by the bank. Research conducted by Mismiwati (2016) also concluded that there is a positive and significant influence between LDR on ROA, which means that the higher the LDR value results in higher ROA performance, and vice versa, the lower the LDR, the lower the ROA performance. Furthermore, research conducted by Harun (2016) concluded that LDR had a significant effect on ROA. So the hypothesis which states that the Loan to Deposit Ratio (LDR) has an effect on Return On Assets (ROA) is rejected.

**The Effect of Operating Costs on Operating Income (BOPO) on Return On Assets (ROA)**

Based on the results of the research carried out, the results showed that the influence of Operational Costs on Operational Income (BOPO) on Return On Assets (ROA) was partially  $-t$  calculated  $-6.770 < -1.995$   $-t$  table with a significant value of  $0.000 > 0.05$  which means Operational Costs Operational Income (BOPO) has a negative and significant effect on Return On Assets (ROA), this is in line with research conducted by Hartini (2016) which concluded that BOPO has a negative and significant effect because the higher the BOPO will reflect the bank's lack of ability to reduce or manage costs. operations in its operational activities in order to increase operational income so that the profit generated by the company will decrease. This research is also in line with research conducted by Sudarmawanti and Pramono (2017) which concluded that BOPO has a significant effect on ROA. The results of this research are also supported by the theory put forward by Rivai (2013, p. 482) which states that the smaller the BOPO ratio, the better it will be because the bank concerned can cover operational costs with its operational income, so that the profit generated will increase, which means that if the ratio BOPO increases, this will reduce company profits. However, the results of this study contradict the results of research conducted by Yusriani (2018) which concluded that BOPO had a positive and significant effect on ROA. The results of research conducted by Ponco (2008) also concluded that BOPO had an insignificant negative effect. Furthermore, research conducted by Nusantara (2009) also concluded that BOPO had no effect on ROA. So the hypothesis which states that Operating Costs Operating Income (BOPO) has an effect on Return On Assets (ROA) is accepted.

**The Effect of Loan to Deposit Ratio (LDR) and Operating Costs Operating Income (BOPO) on Return On Assets (ROA)**

Based on the results of simultaneous testing, the results obtained were  $F_{count} 24.329 > 3.13 F_{table}$  with a significant value of  $0.000 > 0.05$ , which means that simultaneously the Loan to Deposit Ratio (LDR) and Operational Costs Operating Income (BOPO) have a positive and significant effect together on Return On Assets (ROA). The results of this research are in line with research conducted by Setyowati and Budiwinarto (2017) which concluded that simultaneously there was a significant influence between the independent variables on the dependent variable. This research is also in line with research conducted by Mismiwati (2016) which concluded that CAR, NIM, BOPO, LDR, and NPL together have an influence on ROA. Furthermore, research conducted by Ali and Laksono TY (2017) also concluded that simultaneously the influence of NIM, BOPO, LDR and NPL had an influence on ROA. Research conducted by Wirawan, et al (2018) also concluded that there is a significant influence between CAR, LDR, NPL, inflation rate, GDP growth rate and BI Rate on ROA. Based on this, it means that if the LDR is too large, a bank will experience liquidity difficulties which will have an impact on increasing operational costs or the BOPO ratio to cover the bank's debts to customers and this will have an impact on reducing bank profitability so that the profits generated by the bank will decrease. So the hypothesis which states that the Loan to Deposit Ratio (LDR) and Operating Costs, Operating Income (BOPO) has an effect on Return On Assets (ROA) is accepted.

**CONCLUSION**

Based on the research results and discussion in this research, the following conclusions can be drawn: Loan to Deposit Ratio partially has no effect on Return On Assets at National Private Commercial Banks for Foreign Exchange listed on the Indonesia Stock Exchange for the 2019 - 2023 period. Operational Costs Operational income (BOPO) partially has a significant negative effect on Return On Assets at National Private Commercial Banks for Foreign Exchange listed on the Indonesia Stock Exchange for the 2019 - 2023 period. Loan to Deposit Ratio and Operational Costs Operational income (BOPO) simultaneously has a significant effect on Return On Assets at National Private Commercial Banks for Foreign Exchange listed on the Indonesia Stock Exchange for the period 2019 - 2023.

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