ANALYSIS THE EFFECT OF OER, NIM, NPL, CAR, AND LDR TOWARD ROA AT PT REGIONAL DEVELOPMENT BANKS IN INDONESIA FOR THE PERIOD 2016-2021

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ABSTRACT

The purpose of this research is to identify and analyze the effect of OER, NIM, NPL, CAR, and LDR toward ROA at PT Regional Development Banks in Indonesia for the period 2016-2021. The population in this research is PT Regional Development Bank in Indonesia. The sampling technique used is purposive sampling technique and gained 25 Banks. Secondary data is sourced from Financial Reports published by every Regional Development Bank in Indonesia during the 2016-2021 period and the official website of the Financial Services Authority. Method of data analysis in this research is multiple linear regression analysis. The analysis technique uses the F test, t test, and the determination coefficient test (R2). The results of this research indicate that OER, NIM, NPL, CAR, and LDR simultaneously have a significant effect on ROA. Based on the results of the t test, it can be concluded that OER and NPL have a significant effect and have a negative coefficient direction on ROA, NIM and LDR have a significant effect and have a positive coefficient direction on ROA. Meanwhile, CAR has no significant effect and has a negative coefficient on ROA. The results of multiple linear regression analysis obtained the Adjusted R2 value of 0.945, this indicates that the independent variable contributes 94.5% influence on the dependent variable while the remaining 5.5% is influenced by other variables not examined in this research.

Keywords: Profitability, ROA, OER, NIM, NPL, CAR, and LDR

INTRODUCTION

The presence of the financial sector in a country has an important role in encouraging economic growth. Banking services are always needed in almost every field related to financial activities. Therefore, Kasmir (2012: 3) states that there is an assumption that banks are the "life" that can move the wheels of a country's economy.

The end of 2019 was the beginning of the discovery of a viral disease outbreak that attacked almost all citizens of the world, including Indonesia. The virus is called the Covid-19 virus, which is a virus that attacks the human respiratory system. The Covid-19 virus was first discovered in the city of Wuhan, China and has spread to several countries until March 2, 2020 it was announced that the virus had entered Indonesia. This has a negative impact on various sectors, one of which is the financial sector. Aviliani (2020) presents data showing that the financial sector is the sector most affected by Covid-19, in addition to tourism, automotive, transportation, construction and real estate, manufacturing, and oil and gas. On the other hand, the sectors that have benefited from the Covid-19 virus are the health, technology, agriculture, and retail and hypermarket sectors.

The negative impact of Covid-19 on the financial sector, especially on banking performance, can be seen, among others, from the decline in capital and the number of loans disbursed, the increasing share of non-performing loans, deteriorating efficiency, and reduced profits. The negative impact of Covid-19 on the financial sector has occurred in the banking world. One of the

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banks that was negatively affected was PT Regional Development Banks in Indonesia. Therefore, PT Regional Development Banks will be the object of research in this research.

Banks need healthy banking performance so that the function of the bank as an intermediary institution, namely channeling funds from parties with excess funds to parties with shortages of funds can run smoothly. "The performance of the bank can be measured by analysis of profitability ratios which are usually measured using the ratio of Return on Equity (ROE) and Return on Assets (ROA)" (Riyadi, 2006:155).

According to Bank Indonesia, the profitability of a bank is greater than its assets because most of the bank's funds come from third party deposits, so that the Return on Assets (ROA) is considered more representative to measure the level of bank profitability (Dendawijaya, 2009: 119). The higher the ROA, the higher the profitability or profits obtained, which means the better the company's performance (Capriani and Dana, 2016). Therefore, the Return on Assets (ROA) variable was chosen as the Dependent Variable in the research.

This is a graph of the average Return On Assets (ROA) growth at PT Regional Development Banks in Indonesia for the period 2016-2021:
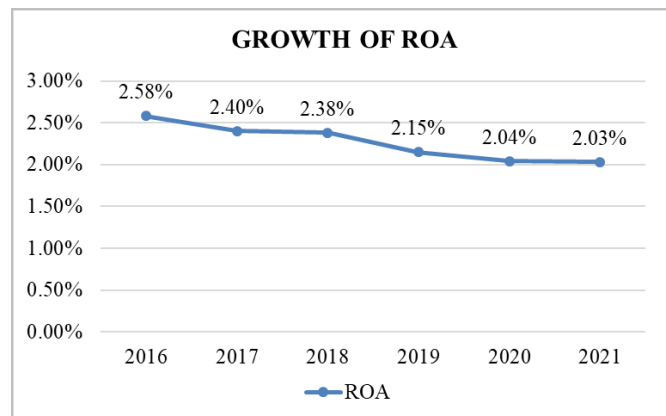
Figure 1. Growth of ROA
Source: Indonesian Banking Statistic, 2021

Based on the graph, it can be seen that the ROA at PT Regional Development Banks in Indonesia for the period 2016-2021 is decreased. Where is, Return On Asset (ROA) is one of the general measure of banks profitability which often reflects the ability of banks to achieve return on its sources of fund to generate profits. According to Bank Indonesia, the reason for the decline in ROA is the sentiment regarding the number of Covid-19 cases in Indonesia which continues to increase.

This research aims to **Analysis the Effect of Operational Efficiency Ratio (OER), Net Interest Margin (NIM), Non Performing Loan (NPL), Capital Adequacy Ratio (CAR) and Loan to Deposit Ratio (LDR) toward ROA (Return on Assets) at Regional Development Banks in Indonesia for the Period 2016-2021.**

THEORETICAL BASIS

Effect of OER, NIM, NPL, CAR, and LDR on ROA

Variable that effect Return on Assets (ROA) there are Operational Efficiency Ratio (OER), Net Interest Margin (NIM), Non Performing Loan (NPL), Capital Adequacy Ratio (CAR) and Loan to Deposit Ratio (LDR). **Operational Efficiency Ratio (OER)** is a ratio that can be used to see how

efficient the operational costs are used to obtain operating income. One of the bank's operating income is interest income obtained from lending. Interest income from lending can be seen using the **Net Interest Margin (NIM)** ratio. The bank's operational activities in the form of lending does not rule out the possibility of non-performing loans, namely loans that are categorized as substandard, doubtful, even bad loans. The non-performing loans can be seen using the ratio of **Non Performing Loans (NPL)**. The large number of non-performing loans can cause the erosion of capital, therefore banks must provide a sufficient level of capital adequacy to cover losses that may occur. The level of capital adequacy can be seen using the ratio of **Capital Adequacy Ratio (CAR)**. In addition, the absolute operational activities carried out by a bank are lending activities. These lending activities can be seen using the **Loan to Deposit Ratio (LDR)** ratio, which is the ratio used to measure the amount of credit extended by the bank compared to the amount of funds received by the bank from the public. The five variables described above are thought to have an effect on Return on Assets (ROA).

H1: The variable of OER, NIM, NPL, CAR, and LDR simultaneously have a significant effect on ROA of PT Regional Development Banks in Indonesia for the Period 2016-2021

Effect of OER on ROA

Operational Efficiency Ratio (OER) is the ratio used to measure the level of bank operational efficiency, the higher the OER ratio, the more inefficient the bank's operating costs (Taswan, 2010:167). The OER ratio is one of the efficiency ratios that can be used to assess the ability of bank management to manage operational costs against operating income. The smaller the OER ratio, the more efficient the operational costs incurred by the bank concerned so that there is a possibility that the bank is in a less problematic condition (Harun, 2016).

The higher the OER ratio, the profitability (ROA) of the bank will decrease, and conversely the smaller the OER so the profitability (ROA) of the bank will increase. So it can be concluded that OER has a significant effect and has a negative coefficient direction on ROA.

H2: The variable of OER partially has a significant effect and has a negative coefficient toward ROA of PT Regional Development Banks in Indonesia for the Period 2016-2021

Effect of NIM on ROA

According to Taswan (2010:167) that "Net Interest Margin (NIM) ratio is used to measure the ability of banks to obtain net interest income through the placement of productive assets, the higher this ratio the better the bank's performance in generating bank interest income. This ratio is used to measure the ability of bank management in managing earning assets to obtain net interest income by comparing the two". The higher the NIM, the more effective the bank in placing the company's assets in the form of credit or bank loans, this can cause the bank's ROA to increase (Nadi, 2016).

The higher NIM ratio indicates that the interest income earned is high so that the bank's ROA will be higher, and conversely the lower the NIM, the less interest income will be earned by the bank so that the bank's ROA will decrease. Therefore, it can be concluded that the NIM is significant and has a positive coefficient towards ROA.

H3: The variable of NIM partially has a significant effect and has a positive coefficient toward ROA of PT Regional Development Banks in Indonesia for the Period 2016-2021

Effect of NPL on ROA

According to Taswan (2010:167) that Non Performing Loans (NPL) is the ratio between non-performing loans and total loans disbursed by banks, the higher the NPL ratio, the worse the credit quality of the bank. Operational activities carried out by banks in the form of lending are activities that are absolutely carried out by banks as one of the functions of banks as intermediary institutions, namely as intermediaries to bring together parties with excess funds and those who lack funds. One of the problems that occur in sending credit is the existence of non-performing loans in the form of substandard, doubtful, even bad loans. Non-performing loans can be seen using the ratio of Non Performing Loans (NPL). The lower the value of the NPL ratio, the higher the credit quality and the higher the credit collectability, or it can be concluded that there are no non-performing loans (Liviawati, et al, 2021).

The higher the NPL ratio, the greater the number of non-performing loans at the bank. This can reduce bank profitability which can be seen from the declining Return on Assets (ROA). The higher the NPL, the lower the ROA of the bank, conversely the smaller the NPL, the higher the ROA of the bank.

H4: The variable of NPL partially has a significant effect and has a negative coefficient toward ROA of PT Regional Development Banks in Indonesia for the Period 2016-2021

Effect of CAR on ROA

According to Taswan (2010:166) that Capital Adequacy Ratio (CAR) is the ratio between bank capital and Risk Weighted Assets (RWA), the higher the CAR ratio, the healthier the bank's capital. Dendawijaya (2001:122) states that CAR is a ratio that shows how far bank assets that contain risks are also financed from the bank's own capital funds in addition to obtaining funds from sources outside the bank, such as public funds, loans (debt), and others. A low Capital Adequacy Ratio (CAR) can reduce public confidence and will threaten the sustainability of the bank (Irdavani, 2015).

The higher the CAR ratio, the greater the ROA obtained by a bank, this can increase public confidence in banks which can increase profits. Banks must demonstrate as a healthy bank in order to encourage the level of profitability, one of which is by having a good level of capital adequacy. So it can be concluded that CAR has a positive effect on ROA.

H5: The variable of CAR partially has a significant effect and has a positive coefficient toward ROA of PT Regional Development Banks in Indonesia for the Period 2016-2021

Effect of LDR on ROA

Kasmir (2016:225) states that Loan to Deposit Ratio (LDR) is a ratio used to measure the composition of the amount of credit given compared to the amount of public funds and own capital used. A high LDR indicates that the bank provides high loans as well, so that if the interest income earned is greater than the interest expense, the profits earned by the bank also increase. Kasmir (2016) states that the main activity of banks is to collect funds, it can be said that if the number of loans increases, it will increase the company's profits. And vice versa, if credit cannot be allocated, the bank will lose because it has to pay for its deposits.

The higher the LDR level, the ROA will increase. This happens because the more loans that are disbursed, the higher the profitability obtained with the assumption that the loans disbursed do not experience non-performing loans. So it can be concluded that LDR has a positive effect on ROA.

H6: The variable of NPL partially has a significant effect and has a negative coefficient toward ROA of PT Regional Development Banks in Indonesia for the Period 2016-2021

Based on the theoretical basis, previous research and the relationship between the dependent variables is ROA and independent variables are OER, NIM, NPL, CAR, and LDR. Figure 2 is the arrangement of the theoretical framework of this research.
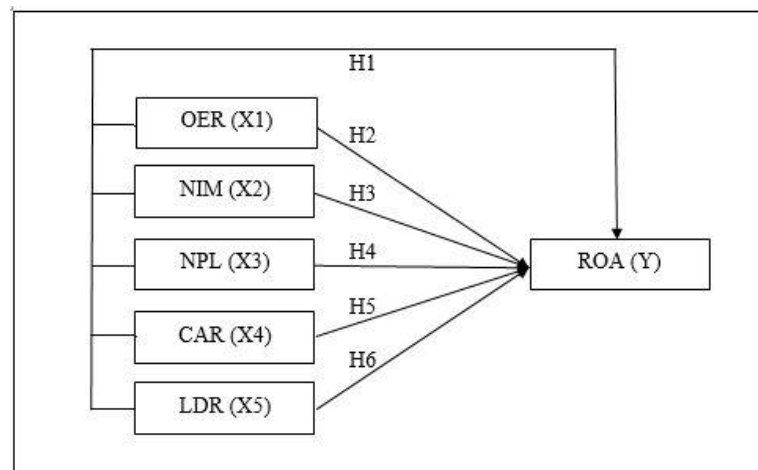
Figure 2. Theoretical Framework
Source: Research Development Results Luh Eprima Dewi, dkk 2015, Daniel Sinung K.P, dkk 2016, Rohmiati 2019

METHODOLOGY

Method, Population and Sample

The method in this research is a quantitative method. The population in this research is PT Regional Development Banks in Indonesia for the period 2016-2021, which is 27 banks. The sampling technique in this research is a purposive sampling technique with the criteria for the bank sample in this research are:

1) The bank is registered with PT Regional Development Banks in Indonesia for the period 2016-2021.
2) The bank publishes annual financial reports for the period 2016-2021.

Based on the above criteria, a sample of 25 banks entered into the PT Regional Development Banks in Indonesia period 2016-2021 were selected to be analyzed in this research.

Method of Collecting Data

The method of data collection in this research was carried out by means of literature review and documentation techniques. Data collection techniques in the literature review are carried out by reviewing books, literature, and reports related to research problems.

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Literature studies used in this research are books, scientific journals, theses and final project reports related to this research. While the documentation technique namely by collecting from the data that is already available. The documentation technique used in this research is to view, read, and record data from the published financial statements of PT Regional Development Banks in Indonesia period 2016-2021 which were obtained from the official website of the Financial Services Authority and the website of each bank concerned.

Variable Identification

Sugiyono (2019: 69) states that "Independent variables are variables that affect or cause changes or the emergence of the dependent variable. The dependent variable is a variable that is influenced or that becomes a result, because of the independent variable". The independent variables used in this research are Operational Efficiency Ratio (OER), Net Interest Margin (NIM), Non Performing Loans (NPL), Capital Adequacy Ratio (CAR), and Loan to Deposit Ratio (LDR). The dependent variable used in this study is Return on Assets (ROA).

Table 1. Variable Operational Definition

Variable	Definition	Scale	Formula
Operational Efficiency Ratio (OER)	Comparison ratio between total operating expenses and operating income	Ratio	$OER = \dfrac{\text{Total Operating Costs}}{\text{Total Operating Income}} \times 100$
Net Interest Margin (NIM)	Ratio of net interest income to the average earning assets	Ratio	$NIM = \dfrac{\text{Net Interest Income}}{\text{The Average Earning Assets That Earn Interest}} \times 100$
Non Performing Loan (NPL)	Comparison ratio between non-performing loans to total loans disbursed	Ratio	$NPL = \dfrac{\text{Problem Credit}}{\text{Total Credit}} \times 100$
Capital Adequacy Ratio (CAR)	Ratio of capital to risk-weighted assets	Ratio	$CAR = \dfrac{\text{Capital}}{\text{Risk-Weighted Assets}} \times 100$
Loan to Deposit Ratio (LDR)	Comparison ratio between loans extended to third party funds	Ratio	$LDR = \dfrac{\text{Credit}}{\text{Third-Party Funds}} \times 100$
Return on Assets (ROA)	The ratio of profit before tax to average total assets	Ratio	$ROA = \dfrac{\text{Profit Before Tax}}{\text{Average Total Assets}} \times 100$

Source: Financial Services Authority Circular No. 9/SEOJK.03/2020

Data Analysis Method

Descriptive Statistics

According to Ghozali (2018: 19) that Descriptive statistics show about description of a data seen from the average value (mean), standard deviation, variance, maximum, minimum, sum, range, kurtosis and skewness (skew of distribution).

Data Testing

Testing the data in this research is normality test and classical assumption (multicollinearity test, autocorrelation test, and heteroscedasticity test). The multicollinearity test in this research by looking at the tolerance value and the Variance Inflation Factor (VIF) value. Furthermore, the autocorrelation test was performed using the Durbin-Watson test (DW test) and the heteroscedasticity test using the Glejser test.

Data Analysis Model

The analysis model in this research uses Multiple Linear Regression Analysis. "Regression analysis is a study of the relationship between the dependent variable and 1 (one) or more independent variables" (Gujarati in Ghozali, 2018: 95).
The equations used in this research are as follows:

$$Y = a - b_1X_1 - b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + e$$

Y   = ROA
a   = Constant
b1 = Regression coefficient of OER variable
b2 = Regression coefficient of NIM variable
b3 = Regression coefficient of NPL variable
b4 = Regression coefficient of CAR variable
b5 = Regression coefficient of LDR variable
X1 = OER
X2 = NIM
X3 = NPL
X4 = CAR
X5 = LDR
e   = error

Hypothesis Test

Furthermore, the feasibility test of the model is carried out using the F test. The F test is used to determine whether the independent variable has a simultaneous effect on the dependent variable. Testing of the regression results is carried out using a 95% confidence level or = 5%. The coefficient of determination (R2) is used to find out how far the model's ability in explaining the

variation of the dependent variable seen of the adjusted value of r square. The t test is used to test the effect of the variable partially independent of the variable depends.

RESULTS AND DISCUSSION

Descriptive Statistics
The results of these descriptive statistics can be seen in table 2.

Table 2. Descriptive Statistics

Descriptive Statistics						
	N	Minimum	Maximum	Mean	Median	Std. Deviation
OER	150	0.6013	1.9570	0.797174	0.7693	0.162284
NIM	150	0.0056	0.1182	0.066583	0.0676	0.01576
NPL	150	0.0012	0.2227	0.030294	0.0257	0.02856
CAR	150	0.0901	0.4168	0.222310	0.2169	0.043134
LDR	150	0.5138	1.4677	0.896952	0.8972	0.134942
ROA	150	-0.0958	0.0496	0.022222	0.0235	0.015067

Source: Secondary data processed, 2022

Normality Test

Ghozali (2018:161) states that "the normality test aims to test whether in the regression model the confounding variables or residual variables are normally distributed". The results of these normality test can be seen in table 3.

Table 3. Kolmogorov-Smirnov Test

One-Sample Kolmogorov-Smirnov Test		
		Unstandardized Residual
N		132
Normal Parameters[a,b]	Mean	0.0000000
	Std. Deviation	0.00203394
Most Extreme Differences	Absolute	0.067
	Positive	0.067
	Negative	-0.055
Test Statistic		0.067
Asymp. Sig. (2-tailed)		0.200[c,d]

Source: Secondary data processed, 2022

Based on the results of the Kolmogorov-Smirnov Test it shows that the residuals are normally distributed because the significance value is 0.200 > 0.050.

Multicollinearity Test

"The multicollinearity test aims to test whether there is a correlation between the independent variables of the regression model in the research conducted. The cut off value that is generally used to indicate the presence of multicollinearity is the tolerance value < 0.10 or the same as the VIF value > 10 " (Ghozali, 2018:108). The result of these multicollinearity test can be seen in table 4.

Table 4. Multicollinearity Test

Model		Unstandardized B	Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.	Collinearity Tolerance	Statistics VIF
1	(Constant)	0.077	0.004		18.439	0.000		
	OER	-0.085	0.003	-0.868	-26.129	0.000	0.377	2.652
	NIM	0.094	0.016	0.142	5.951	0.000	0.727	1.375
	NPL	-0.023	0.010	-0.057	-2.315	0.022	0.679	1.472
	CAR	-0.005	0.006	-0.023	-0.854	0.395	0.558	1.793
	LDR	0.009	0.001	0.155	7.215	0.000	0.898	1.114

a. Dependent Variable: ROA

Source: Secondary data processed, 2022

Based on the tolerance value and VIF data in this research, it shows that there is no independent variable that has a tolerance value < 0.10 and there is also no independent variable that has a VIF value > 10, all data tolerance values in this study are more than 0.10 and VIF is less than 10 so it can be concluded that the data does not occur multicollinearity between variables.

Autocorrelation Test

The autocorrelation test in this research used the Durbin-Watson Test (DW Test). The data is said to be free from the autocorrelation test if the value of du < d < 4 - du. The results of the DW test in this research can be seen in table 5.

Table 5. Autocorrelation Test

Model Summary[b]				
R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
0.980[a]	0.961	0.959	0.0019182	1.839

a. Predictors: (Constant), LAG_LDR, LAG_NIM, LAG_CAR, LAG_NPL, LAG_OER
b. Dependent Variable: LAG_ROA
Source: Secondary data processed, 2022

Based on the table shows that the value of the Durbin-Watson table is the dl value of 1.6363 and the du value of 1.7945. Therefore, the Durbin-Waston value of du < d < 4 – du which is 1.7945 < 1.839 < 2.2055, so it can be concluded that the data is free from the autocorrelation test.

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Heteroscedasticity Test

"Heteroscedasticity test aims to test whether in the regression model there is an inequality of variance from the residuals of one observation to another observation" (Ghozali, 2018: 137). Heteroscedasticity test in this study using the glejser test. The results of the Glejser test in this research can be seen in table 6.

Table 6. Heteroscedasticity Test

Coefficients[a]					
Model	Unstandardized B	Coefficients Std. Error	Standardized Coefficients Beta	T	Sig.
1 (Constant)	-0.002	0.003		-0.707	0.481
OER	0.003	0.002	0.180	1.259	0.210
NIM	0.010	0.010	0.106	1.031	0.304
NPL	0.002	0.006	0.039	0.367	0.714
CAR	0.005	0.004	0.140	1.191	0.236
LDR	0.000	0.001	-0.046	-0.492	0.623

a. Dependent Variable: ABS_RES
Source: Secondary data processed, 2022

Based on the significance value of each of these variables, it shows that there is no independent variable that has a significance value of <0.05, so it can be concluded that there is no heteroscedasticity in the data.

Multiple Linear Regression Analysis

The results of the Multiple Linear Regression Analysis in this research can be seen in table 7.

Table 7. Multiple Linear Regression Analysis

Coefficients[a]					
Model	Unstandardized B	Coefficients Std. Error	Standardized Coefficients Beta	T	Sig.
1 (Constant)	0.077	0.004		18.439	0.000
OER	-0.085	0.003	-0.868	-26.129	0.000
NIM	0.094	0.016	0.142	5.951	0.000
NPL	-0.023	0.010	-0.057	-2.315	0.022
CAR	-0.005	0.006	-0.023	-0.854	0.395
LDR	0.009	0.001	0.155	7.215	0.000

a. Dependent Variable: ROA
Source: Secondary data processed, 2022

Based on the value of the constants and regression coefficients of each of the independent variables of the regression, the relationship between the dependent variable and the independent variable in the regression model can be formulated as follows:
ROA = 0,077 – 0,085 OER + 0,094 NIM – 0,023 NPL – 0,005 CAR + 0,009 LDR + e

Simultaneous Test (F Test)

The results of the simultaneous test in this research can be seen in table 8.

Table 8. Simultaneous Test

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	-0.010	5	0.002	454.92	0.000[b]
	Residual	0.003	126	0.000		
	Total	0.010	131			

 a. Dependent Variable: ROA
 b. Predictors: (Constant), LDR, NIM, CAR, NPL, OER
 Source: Secondary data processed, 2022

Based on table 8 simultaneous test results (F test) obtained F count = 454.920 > F table = 2.29 with a significance level of 0.000 <0.05. This shows that the variables of OER, NIM, NPL, CAR, and LDR simultaneously have a significant effect on ROA.

This shows that the use of the independent variables Operating Costs compared to Operating Income (OER) Net Interest Margin (NIM), Non Performing Loans (NPL), Capital Adequacy Ratio (CAR), and Loan to Deposit Ratio (LDR) are relevant to use as predictions in assessing dependent variable Return on Assets (ROA).

The independent variable Operating Costs compared to Operating Income has a significant effect on Return on Assets (ROA). If OER increases, ROA will decrease. Then the independent variable Net Interest Margin (NIM) also has a significant effect on Return on Assets (ROA). If NIM increases, ROA will also increase. Furthermore, the independent variable Non Performing Loan (NPL) also has a significant effect on Return on Assets (ROA). If the NPL increases, it will result in a decrease in ROA. The independent variable Loan to Deposit (LDR) also has a significant effect on Return on Assets (ROA). If the LDR increases, the ROA will also increase. Meanwhile, the independent variable Capital Adequacy Ratio (CAR) has no significant effect on Return on Assets. The greater the CAR value, the effect on ROA is not significant. CAR has an insignificant effect on Return on Assets but simultaneously the five independent variables still have a significant effect on Return on Assets (ROA). This can happen because the four variables have a significant influence so that they can raise the CAR variable so that all variables together have a significant effect on Return on Assets (ROA). So, **hypothesis 1 is accepted.**

The results of this research are supported by research conducted by Refni Sukmadewi (2020), Yenni Vera Fibriyanti and Lilik Nurcholidah (2020) and Astohar (2018) which states that OER, NIM, NPL, CAR, and LDR simultaneously have a significant effect on ROA.

Partial Test (t Test)

The results of the partial test in this research can be seen in table 9.

Table 9. Partial Test

Coefficients[a]					
Model	Unstandardized B	Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1 (Constant)	0.077	0.004		18.439	0.000
OER	-0.085	0.003	-0.868	-26.129	0.000
NIM	0.094	0.016	0.142	5.951	0.000
NPL	-0.023	0.010	-0.057	-2.315	0.022
CAR	-0.005	0.006	-0.023	-0.854	0.395
LDR	0.009	0.001	0.155	7.215	0.000

a. Dependent Variable: ROA
Source: Secondary data processed, 2022

Effect of OER on ROA

The results of the partial test (t test) for the OER variable obtained T count = -26.129│> T table = 1.97897 with a significance level of 0.000 <0.05. This shows that partially there is a significant effect between the variable OER ROA variable.

The results of this results indicate that if the OER increases, it will cause ROA to decrease. And conversely, if OER decreases, it will cause ROA to increase. The smaller the OER, the more efficient a bank is in running its business, where the bank is able to obtain optimal income with costs that can be reduced to a minimum. This is also supported by the average OER value at PT Regional Development Banks in Indonesia before and during the Covid-19 period, which was 79.72%. Based on the Circular Letter of the Financial Services Authority Number 14/SEOJK.03/2016, the standard for the OER ratio is around 80%, so it can be said that the OER at PT Regional Development Banks in Indonesia before and during the Covid-19 period can be classified as good because the OER ratio at banks is still below the established OER standard. So, **hypothesis 2 is accepted.**

The results of this research are supported by research conducted by Fauziyyah and Nurismalatri (2021), Refni Sukmadewi (2020), Adhista Setyarini (2019), Astohar (2018), Slamet Fajari and Sunnarto (2017) and Usman Harun (2016) stated OER has a significant effect and has a negative coefficient direction on ROA.

Effect of NIM on ROA

The results of the partial test (t test) for the NIM variable obtained T count = 5.951 > T table = 1.97897 with a significance level of 0.000 <0.05. This shows that partially there is a significant influence between NIM variable on the ROA variable.

The results in this research indicate that if the NIM increases, it will cause the ROA to increase. And conversely, if the NIM decreases it will cause the ROA to decrease. The higher the NIM, the greater the interest income received by the bank, so that the bank's profit will increase and the bank's ROA will also increase. This research is also supported by the average NIM value at PT Regional Development Banks in Indonesia before and during the Covid-19 period, which is 6.66%. Based on the Codification of Bank Indonesia Regulations for Assessing Bank Soundness

Levels in 2012, the standard for the NIM ratio is around 5%, so it can be said that the NIM at PT Regional Development Banks in Indonesia for the period Before and During Covid-19 can be classified as good because the NIM ratio at the bank is already above predefined NIM standard. So, **hypothesis 3 is accepted.**

The results of this research are supported by research conducted by Elen Puspitasari, et al (2021), Wulandari Danu Lestari (2020) and Evi Rohmiati (2019) stated that Net Interest Margin (NIM) has a significant effect and has a positive coefficient direction on ROA.

Effect of NPL on ROA

The results of the partial test (t test) for the NPL variable obtained T count = -2.315│ > T table = 1.97897 with a significance level of 0.022 <0.05. This shows that partially there is a significant effect between the NPL variable on the ROA variable.

The results of this study indicate that if the NPL increases, it will cause ROA to decrease. And conversely, if the NPL decreases, it will cause ROA to increase. The large number of debtors who are unable to pay their obligations, makes banks lose opportunities to earn interest income and causes loans disbursed to become problematic so that the NPL ratio increases, this can cause bank profits as seen from the ROA ratio to decrease. The results of this study are also supported by the average NPL value at PT Regional Development Banks in Indonesia before and during the Covid-19 period, which is 3.02%. Based on a copy of the Financial Services Authority Regulation Number 15/POJK.03/2017, the standard for the NPL ratio is 5%, so it can be said that the NPL at PT Regional Development Banks in Indonesia in the period Before and During Covid-19 can be classified as good because the NPL ratio in banks This is still below the NPL standard that has been set. So, **hypothesis 4 is accepted.**

The results of this research are supported by research conducted by Gusti Alit Suputra (2021), Uli Wildan Nuryanto, et al (2020), Teguh Pranowo, et al (2019), Jihan Aprilia and Siti Ragil Handayani (2018) state that NPL has a significant effect and has a negative coefficient direction on ROA.

Effect of CAR on ROA

The results of the partial test (t test) for the CAR variable obtained T count = - 0.854 < T table = 1.97897 with a significance level of 0.395 > 0.05. This shows that partially there is no significant effect between the CAR variable on the ROA variable.

The results of this study indicate that if the CAR has increased, then the effect of the increase is not significant to the decrease in ROA. This happens because the capital in the bank is not used to seek profit but is used to cover possible risks such as the risk of loss to the bank. Meanwhile, the funds used to seek profit by banks are third party funds which are collected in the form of deposits, then redistributed in the form of credit, this is in accordance with the function of the bank as an intermediary institution. Therefore, even though a bank has large capital and a high CAR, if it is not balanced with investment and the bank's ability to guard against the risk of loss, the CAR will not have a significant effect on the bank's profitability. The results of this study are also supported by the average CAR value at PT Regional Development Banks in Indonesia before and

during the Covid-19 period, which is 22.23%. Based on the Financial Services Authority Regulation Number 11/PJOK.03/2016 concerning the Minimum Capital Adequacy Requirement for Commercial Banks, it stipulates that the standard CAR ratio is 8%, so it can be said that the CAR at PT Regional Developmanet Banks in Indonesia for the period Before and During Covid-19 can be classified as very good because the CAR ratio at the bank is already above the CAR standard that has been set. So, **hypothesis 5 is rejected.**

The results of this research are supported by research conducted by Renal Adi Prayoga, et al (2022), Teguh Pranowo, et al (2019), Wildan Farhat Pinasti (2018), and Sri Adrianti Muin (2017) which states that CAR has no significant effect and has a direction negative coefficient on ROA.

Effect of LDR on ROA

The results of the partial test (t test) obtained T count = 7.215 > T table = 1.97897 with a significance level of 0.000 <0.05. This shows that partially there is a significant effect between the LDR variable on the ROA variable.

The results of this research indicate that if the LDR increases, it will cause ROA to decrease. And conversely, if the LDR decreases, it will cause ROA to increase. The higher the LDR of a bank, it can be interpreted that the bank has channeled credit optimally, so that if the amount of credit disbursed is high, the opportunity to earn interest income is also high (assuming there are no bad loans) so that the profits obtained by the bank will also be large and the ROA of the bank. will increase. The results of this research are also supported by the average LDR value at PT Regional Development Banks in Indonesia before and during the Covid-19 period, which is 89.70%. Based on Bank Indonesia Regulation Number 17/11/PBI/2015, the lower LDR limit is 78% and the LDR upper limit is 92%, so it can be said that the LDR at PT Regional Development Banks in Indonesia for the period Before and During Covid-19 can be classified as good because the ratio The LDR at the bank is still between the lower limit and the upper limit of the LDR standard that has been set. So, **hypothesis 6 is accepted.**

The results of this research are supported by research conducted by Refni Sukmadewi (2020), Adhista Setyarini (2019), and Usman Harun (2016) stating that LDR has a significant effect and has a positive coefficient direction on ROA.

Coefficient of Determination Test (R²)

The results of the coefficient of determination can be seen in table 10.

Table 10. Coefficient of Determination Test (R²)

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.973[a]	0.948	0.945	0.0020739

b. Dependent Variable: ROA
Source: Secondary data processed,
2022

Based on table 10 the results of the Coefficient of Determination (R^2) obtained the Adjusted R Square value of 0.945 or 94.5%. This shows that the variables of OER, NIM, NPL, CAR, and LDR

contributed 94.5% to the ROA variable while the remaining 5.5% is influenced by other factors not examined in this research.

DISCUSSION AND CONCLUSION

Conclusion

The problem in this research is that the ROA at PT Regional Development Banks in Indonesia for the period 2016-2021, continued to decline. Therefore, this research aims to determine whether there is an effect of OER, NIM, NPL, CAR, and LDR toward ROA at PT Regional for the Period 2016-2021. Based on the results of the normality test, multicollinearity test, autocorelation test, and heteroscedasticity test using SPSS 26.00 for windows software, it shows that all variables used in this study are normally distributed and there are no variables that deviate from classical assumptions. Therefore, the data in this study have met the requirements to use the multiple linear regression equation model.

Based on the results of the analysis and discussion obtained from the results of the F test and t test, the following conclusions are obtained:

1) Operational Efficiency Ratio (OER), Net Interest Margin (NIM), Non Performing Loans (NPL), Capital Adequacy Ratio (CAR), and Loan to Depost Ratio (LDR) simultaneously have a significant effect on Return on Assets (ROA) at PT Regional Development Banks in Indonesia for the Period 2016-2021.
2) Operational Efficiency Ratio (OER) partially have a significant effect and have a negative coefficient direction on Return on Assets (ROA) at PT Regional Development Banks in Indonesia for the Period 2016-2021.
3) Net Interest Margin (NIM) partially has a significant effect and has a positive coefficient direction on Return on Assets (ROA) at PT Regional Development Banks in Indonesia for the Period 2016-2021.
4) Non-Performing Loans (NPL) partially have a significant effect and have a negative coefficient direction on Return on Assets (ROA) at PT Regional Development Banks in Indonesia for the Period 2016-2021.
5) Capital Adequacy Ratio (CAR) partially has no significant effect and has a negative coefficient direction on Return On Asset (ROA) at PT Regional Development Banks in Indonesia for the Period 2016-2021.
6) Loan to Deposit Ratio (LDR) partially has a significant effect and has a positive coefficient direction on Return on Assets (ROA) at PT Regional Development Banks in Indonesia for the Period 2016-2021.

Implication Practical

The pratical implications in this research focus on the variables that affect Return on Assets (ROA) based on the order of the **highest coefficients** starting from the variable Net Interest Margin (NIM), Operational Efficiency Ratio (OER), Non Performing Loans (NPL), and Loan to Deposit Ratio (LDR).

The description regarding the policy implications in this research is as follows:

1) Net Interest Margin (NIM) has a significant effect and has a positive coefficient direction on Return on Assets (ROA). The findings in this study indicate that an increase in Net Interest Margin (NIM) will lead to an increase in the bank's Return on Assets (ROA). A high Net Interest Margin (NIM) indicates that a bank obtains optimal net interest income on productive assets managed by the bank concerned so that Return on Assets (ROA) can increase. The first strategy is to increase Return on Assets (ROA) through Net Interest Margin (NIM) by means of which the bank has a good level of bank management ability to obtain net interest. So that the interest income received by the bank is greater than the interest costs. The second strategy to increase Net Interest Margin (NIM) can be done by setting competitive interest rates. Both of these strategies can be carried out by banks to increase the Net Interest Margin (NIM) so that the bank's Return on Assets (ROA) can increase.

2) Operational Efficiency Ratio (OER) have a significant effect and have a negative coefficient direction on Return on Assets (ROA). The findings in this study indicate that an increase in Operational Efficiency Ratio (OER) will lead to a decrease in the bank's Return on Assets (ROA). High Operational Efficiency Ratio (OER) indicates that the bank's operational costs are increasingly inefficient in carrying out its operational activities. On the other hand, lower Operational Efficiency Ratio (OER) indicates that the bank is more efficient in carrying out its operational activities. Efforts to increase Return on Assets (ROA), namely banks must maintain Operational Efficiency Ratio (OER) so that they do not increase, this can be done by streamlining operational costs to increase operating income. The first strategy is how to streamline operational costs, which can be done by avoiding costs that should not have occurred, such as penalty rate fees related to bank compliance with Bank Indonesia or the Financial Services Authority. The second strategy is to increase operating income through increasing interest income from optimal investment of funds. Banks can increase their operating income by improving services in the service sector so that fee-based income (income from collection, transfers, safe deposit boxes, letters of credit, credit cards, payment points, and others) received by banks increases so that bank operating income increases. Both of these strategies can be carried out by banks to reduce Operational Efficiency Ratio (OER) so that the Bank's Return on Assets (ROA) can increase.

3) Non-Performing Loans (NPL) have a significant effect and have a negative coefficient direction on Return on Assets (ROA). The findings in this study indicate that an increase in Non-Performing Loans (NPL) will reduce the bank's Return on Assets (ROA). The first strategy is to increase Return on Assets (ROA) through Non-Performing Loans (NPL), namely by maintaining the NPL value so that it remains below the provisions set by Bank Indonesia, namely a maximum of 5% by means of which banks must be more selective in selecting debtors while still paying attention to prudential principles. or the precautionary principle in extending credit to customers. The second strategy can be carried out by conducting regular credit monitoring to all debtors, this is done to ensure that credit extended to customers does not fall into the category of non-performing loans, so that the bank's NPL does not increase. Both of these strategies can be carried out by banks to reduce Non Performing Loans (NPL) so that the Bank's Return on Assets (ROA) can increase.

4) Loan to Deposit Ratio (LDR) has a significant effect and has a positive coefficient direction on Return on Assets (ROA). The findings in this study indicate that an increase in the Loan to Deposit Ratio (LDR) will cause an increase in Return on Assets (ROA). The first strategy is to increase Return on Assets (ROA) through the Loan to Deposit Ratio (LDR), namely the bank

must have the ability to optimize lending using third party funds received by the bank. Optimizing the distribution of credit must be carried out with the principle of prudence and still pay attention to the Legal Lending Limit (LLL) which has been stipulated in the Financial Services Authority Regulation Number 32/PJOK.03/2018, which is a maximum of 10% of the bank's capital and remains pay attention to the provisions of the LDR limit according to Bank Indonesia Regulation Number 17/11/PBI/2015, namely the lower limit of LDR is 78% while the upper limit of LDR is 92%. The second strategy is to increase Return on Assets (ROA) through the Loan to Deposit Ratio (LDR), namely that banks must be able to reduce idle funds or idle money, which can be done by increasing the amount of credit, one of which is by diversifying credit products. This aims to provide credit according to the tastes and needs of the community while still paying attention to the quality of the credit being disbursed. Both of these strategies can be carried out by banks to increase the Loan to Deposit Ratio (LDR) so that the Bank's Return on Assets (ROA) can increase.

Research Limitations

1) The objects in this study only include Commercial Banks that are included in the type of PT Regional Development Banks in Indonesia.
2) The variables used in this study only use 5 (five) variables, namely Operating Costs compared to Operational Efficiency Ratio (OER), Net Interest Margin (NIM), Non Performing Loans (NPL), Capital Adequacy Ratio (CAR), and Loan to Depost Ratio (LDR), while the Adjusted R Square value shows a value of 94.5% while the remaining 5.5% is influenced by other factors not examined in this study.
3) The period used in this study is only 6 (six) years, namely 2016 - 2021, so this study only describes the Return on Assets of PT Bank Pembangunan Daerah in Indonesia during that period.

Advice for Future Research

Based on the limitations of the existing research in this study, the suggestions that can be considered for future research are as follows:
1) In future research it is hoped that it will be able to expand the research object which is not limited to Commercial Banks which are included in the type of Regional Development Banks in Indonesia such as adding State-Owned Commercial Banks or National Private Commercial Banks.
2) Future research is expected to increase the number of research variables that are not limited to bank internal factors but also to add other factors that affect Return on Assets (ROA) such as banking macro factors, namely inflation and the Bi Rate.
3) In future research it is expected to increase the research period because the longer the research period, the more accurate the research results.

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