



Research Paper

The impact of Capital Adequacy Ratio (CAR) and Loan to Deposit Ratio (LDR) towards Return on Asset (ROA) at Bank Mandiri Tbk. (Persero)

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Abstract—This study aims to determine the effect of CAR, BOPO and LDR on ROA at Bank Mandiri Tbk. (Persero). The method used is explanatory research with analysis techniques using statistical analysis with regression testing, correlation, determination and hypothesis testing. The results of this study, CAR does not have a significant effect on ROA with a determination value of 2.56%, the hypothesis test obtained t count $<$ t table or $(0.023 < 2.160)$. BOPO has no significant effect on ROA with a determination value of 35.1%, hypothesis testing is obtained t count $<$ t table or $(- 2.652 < 2,160)$. LDR has a significant effect on ROA of 52.4%, hypothesis testing is obtained t count $>$ t table or $(3,781 > 2,160)$. CAR, BOPO and LDR simultaneously have a significant effect on ROA with the regression equation $Y = 161.698 - 0.014X1 - 0.015X2 + 0.048X3$. Contribution of influence is 69.3%, hypothesis testing obtained F count $>$ F table or $(8,278 > 3,360)$.

Keywords—CAR, BOPO, LDR, ROA.

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I. INTRODUCTION

According to Said et al. (In Prasanjaya & Ramantha, 2013), banks are part of the financial system and play an important role in promoting national economic development. It can be concluded that the Bank is a financial institution whose basic business is to collect and collect funds and distribute these funds to the public in the form of loans and provide services for the banking business. The funds used by banks in their daily operations come from the community, not from their own capital and owners or shareholders. By maintaining the health of the bank and the bank's management efforts to predict any changes in the national and global environment, the bank's performance will greatly affect the public's trust in the banking industry. The economy of a country or the world needs the stability of banking institutions. This stability is not only reflected in the money supply, but also in from the number of existing banks as a means of financial administration.

The very rapid development in the banking world and a high level of complex problems can affect the performance of a bank. the high complexity of the banking business can increase the risks faced by banks in Indonesia. The problem of almost all banks in Indonesia is due to the strength of the rupiah depression, the increase in bank interest rates on Bank Indonesia Certificates (SBI), which causes credit problems. The internal strength of the bank, such as inadequate management procedures, the provision of groups or business groups themselves and capital that cannot cover the risks faced by the bank causes the bank's performance to decline.

The Global Era that occurred has greatly changed aspects in economy, social, politics and culture. An economy that is very fast growing makes more capital needed to always improve a country's economy, capital that comes from within the country or from abroad. One of the sources of financing (capital), among others, is public savings, which is a potential capital in the economy.

PT Bank Mandiri (Persero), Tbk, is one of the surviving banks in the Indonesian banking industry. The existence of PT Bank Mandiri (Persero), Tbk, is to increase public confidence and meet public funding needs in simpler steps. Regulations based on the authority to regulate banks, especially PT Bank Mandiri (Persero), Tbk, are guidelines for operating banking operations in accordance with prescribed principles so that banks can become healthier and more professional banks in their operations is intended to provide.

The reliability of the bank's financial indicators can be judged by the bank's profitability indicators. The level of health can be assessed by several indicators that are used as a basis for the assessment, namely the financial statements of the bank. One of the main sources of indicators used as a basis for assessing the financial results of the bank is the financial statements of the bank. Analysis of financial ratios of management to identify the main changes in the trend in quantity, as well as the relationship and reasons for these changes. The results of the analysis of the financial statements will help to interpret the key relationships and trends that can form the basis for considering the potential success of the bank in the coming period.

This financial statement information is described by financial report items into smaller units of information and sees significant relationships so that it has meaning, both quantitatively and qualitatively. This decomposition process is called financial statement analysis. Even though the financial statements only describe the financial effects of the past period, their role is still very important in the decision-making process that will impact the company for the coming period. This is very much in accordance with the presentation of financial statements, namely, providing information that is closely related to the financial position, performance and changes in the financial position of a company which is useful for a large number of users in making economic decisions.

It was also stated that the parties with an interest in financial reports are investors who have invested now and potential investors, employees of lenders (creditors), suppliers and other business creditors, customers, governments and institutions and society. The financial statements presented are expected to meet several different information needs. One of the important information in finance is information about profit. This information is very important because earnings explain how the company has performed during the previous period. Bank financial performance can be assessed from bank financial ratios such as, Capital Adequacy Ratio (CAR), Non Performing Loans (NPL), Operational Expenses to Operating Income (BOPO). Following are the financial ratios of PT Bank Mandiri (Persero), Tbk for the period 2005-2019.

TABLE 1. FINANCIAL RATIOS OF PT BANK MANDIRI (PERSERO), TBK FOR THE 2005-2019

No.	Year	Period.			
		Capital Adequacy Ratio (CAR) X1	Operating Expenses to Operating Income (BOPO) X2	Loan to Deposit Ratio (LDR) X3	Return on Asset (ROA) Y1
1	2019	127,07	58,45	83,71	2,76
2	2018	116,05	60,11	83,26	2,82
3	2017	117,32	64,84	76,22	2,41
4	2016	110,89	74,77	74,48	1,79
5	2015	95,29	60,62	76,21	2,90
6	2014	98,97	54,02	73,62	3,04
7	2013	92,63	53,93	75,41	3,28
8	2012	98,14	52,81	71,57	3,23
9	2011	94,50	53,76	66,87	2,99
10	2010	77,73	51,79	57,54	3,11
11	2009	84,11	53,13	52,05	2,74
12	2008	83,66	59,33	50,90	2,25
13	2007	63,73	38,02	45,91	0,90
14	2006	107,42	81,49	37,30	0,90
15	2005	108,19	94,73	39,43	0,23

Source: PT Bank Mandiri (Persero) processed

Based on the information in the table above, the amount of CAR, BOPO, LDR, and ROA during the 2005-2019 period experienced variable developments at different levels of achievement. The lowest CAR was experienced in 2007, reaching only 63.73%, and the highest achievement was achieved at 127.07% in 2019. The lowest BOPO was experienced in 2010 and can only reach 51.79%, the highest achievement reached 94.73% in 2005. The lowest LDR status was experienced in 2006, reaching only 37.30% and achieving the highest achievement of 83.71% in 2019.

The lowest ROA was experienced in 2005 which was only able to reach 0.23% and the highest achievement was achieved in 2013 at 3.28%.

The capital adequacy ratio (CAR) is used to measure a bank's capital adequacy to support assets that contain or create risk. If the value of the Capital Adequacy Ratio (CAR) is high (at 8% according to Bank Indonesia regulations), it means that the bank is able to finance banking operations, this favorable condition can significantly contribute to the profitability of the bank or to the Return on Assets (ROA). From the above data it can be seen that the Capital Adequacy Ratio (CAR) at PT Bank Mandiri (Persero), Tbk has fluctuated over the past 15 years.

The ratio of operating expenses to operating income (BOPO) is used to measure the efficiency and ability of a bank to carry out business activities. Any increase in operating costs will result in a decline in the profit or profitability of the bank's return on assets (ROA). According to Bank Indonesia Circular No. 6/23/DPNP dated May 31, 2004, operating expenses and operating income (BOPO) are measured by the ratio of operating expenses to operating income. This ratio is usually called the efficiency ratio, which is used to measure the ability of bank management to control operating costs and operating income. According to PT Bank Mandiri (Persero), Tbk's financial ratio report, fluctuations occurred during the period 2005-2019.

The profitability measure used is the Return on Assets (ROA) in the banking industry. The reason for choosing Return on Assets (ROA) as a measure of performance is because Return on Assets (ROA) can be used to measure the effectiveness of a company in generating profits by utilizing its assets.

Return on assets (ROA) is the ratio of profit before tax to total assets. The amount of return on assets (ROA) shows better financial performance because the rate of return is getting bigger and bigger. If the return on assets (ROA) increases, it means that the company's profitability increases, and the ultimate impact is an increase in the profitability enjoyed by shareholders. Return on assets (ROA) also includes company debt and dividend payments. For these reasons, the return on assets (ROA) is used as an indicator of profitability in this research. During 2010-2016, PT Bank Mandiri (Persero), Tbk's return on assets (ROA) experienced volatility.

Based on the background of the study, problem statements are formulated as follows: (a) is there any influence between CAR on ROA at Bank Mandiri Tbk. (Persero)?; (b) is there any influence between BOPO on ROA at Bank Mandiri Tbk. (Persero)?; (c) is there any influence between LDR on ROA at Bank Mandiri Tbk. (Persero)?; (d) is there a simultaneous influence between CAR, BOPO and LDR on ROA at Bank Mandiri Tbk. (Persero)?

These all problems are converted to be objectives of the study formulated as follows: (a) to determine the effect of CAR on ROA at Bank Mandiri Tbk. (Persero); (b) to determine the effect of BOPO on ROA at Bank Mandiri Tbk. (Persero); (c) to determine the effect of LDR on ROA at Bank Mandiri Tbk. (Persero); (d) to determine the effects simultaneously between CAR, BOPO and LDR on ROA at Bank Mandiri Tbk. (Persero).

II. LITERATURE REVIEW

A. CAR (Capital Adequacy Ratio)

According to Achmad and Kusuno (In Rembet & Baramuli, 2020) Capital Adequacy Ratio is a capital ratio that shows a bank's ability to provide funds for business development purposes as well as accommodating possible risk of losses caused by bank operations. The greater the ratio, the better the capital position.

B. BOPO (Operating Expenses to Operating Income)

According to Bank Indonesia Circular No. 6/23 / DPNP dated May 31, 2004, Operating Expenses to Operating Income (BOPO) is measured from the ratio of operating expenses to operating income. Based on Dendawijaya (In Rembet & Baramuli, 2020) the smaller the BOPO ratio means the more efficient the operational costs incurred by the bank concerned, and any increase in operating income will result in reduced profit before tax which will ultimately decrease the bank's profit or profitability (ROA). concerned.

C. LDR (Loan to Deposito Ratio)

Almilia and Herdiningtyas (In Rembet & Baramuli, 2020) Loan to Deposit Ratio (LDR) is used to assess the liquidity of a bank by dividing the amount of credit by the amount of funds. Loan to Deposit Ratio (LDR) is a ratio which shows the ability of a bank to provide funds to its debtors with capital owned by the bank and funds that can be collected from the public

D. ROA (Return to Asset)

According to Mahrinasari (In Rembet & Baramuli, 2020) Return on Assets (ROA) is a ratio used to measure the ability of bank management to gain profitability and manage the overall efficiency level of the bank's business. The greater the value of this ratio, the better or healthier the bank's business is profitability

Some studies have conducted similar interest such as Nugroho, Mangantar and Tulung (2019) in their research entitled The Effect of CAR, BOPO, NIM and NPL on ROA of the national private commercial banking industry book 3 for the period 2014-2018, the results show that CAR has a significant positive effect on ROA, BOPO has no significant effect. negative effect on ROA, NIM has a significant positive effect on ROA, NPL does not have a significant negative effect on ROA.

Hutapea, Saerang and Tulung (2017) in their research entitled The Effect of Return on Assets, Net

Profit Margin, Debt to Equity Ratio, and Total Asset Turnover on the Stock Price of the Automotive Industry and Components listed on the Indonesia Stock Exchange, the results show only partially DER and TATO have a significant effect on stock prices while ROA and NPM have no significant effect to Share Price. Simultaneously ROA, NPM, DER and TATO have an effect on stock prices in the automotive and component industries on the Indonesia Stock Exchange.

Mangeta, Mangantar and Baramuli (2019) in their research entitled Analysis of Return On Equity (ROE), Net Profit Margin (NPM), and Return On Asset (ROA) Against property stock prices on the IDX (2013-2017 period), the results show Simultaneously Return on Equity, Net Profit Margin, and Return on Assets have a significant effect on property stock prices.

Sengkey, Murni, and Tulung (2018) in their paper Analysis of Factors Affecting Bank Liquidity Risk (a case study of a private national commercial bank included in IDX for 2012-2015, the results of the analysis show that BOPO has a significant impact and has a negative relationship to risk.LDR), non-performing loans to liquidity risk (LDR) do not have a significant impact and have a negative relationship to liquidity risk (LDR), and return on assets has a significant impact and has a negative relationship to liquidity risk (LDR) in the national privatecommercial banks listed in IDX 2012-2015. .

Rembet WE & Baramuli DN wrote in a study titled "The Impact of CAR, NPL, NIM, BOPO, and LDR on Return on Assets (ROA)" (a survey of national private commercial banks listed on IDX). ROA has a big impact, NPL does not have a big impact ROA is important, NIM has a big impact on ROA, BOPO has a big impact on ROA, LDR has no big impact on ROA, CAR has a big impact on ROA Have a big impact

RESEARCH MODEL

According to Sugiyono (2016), "The research model is a synthesis that reflects the relationship between the variables studied and is a guide to solving research problems and formulating hypotheses in the form of a flowchart equipped with qualitative explanations". In this study the research model created as follows:

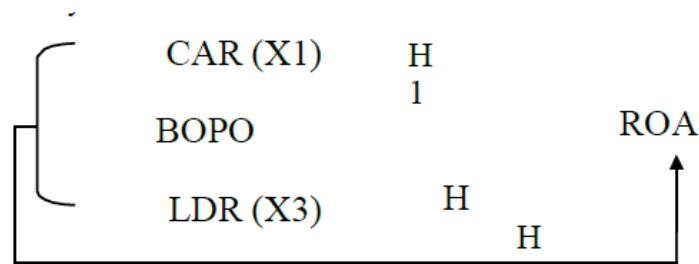


Fig 1. Research Model

The hypothesis that the researchers propose is as follows: H1: It is suspected that there is a significant influence between CAR and ROA at Bank Mandiri Tbk. (Persero). H2: It is suspected that there is a significant influence between BOPO to ROA at Bank Mandiri Tbk. (Persero). H3: It is suspected that there is a significant influence between LDR on ROA at Bank Mandiri Tbk. (Persero). H4: It is suspected that there is a significant influence between CAR, BOPO and LDR simultaneously on ROA at Bank Mandiri Tbk. (Persero).

A. Population

Population is a set of objects that are determined through certain criteria which will be categorized into the object to be studied. According to Sugiyono (2016) defining population is the number of generalization areas consisting of objects or subjects that have the qualities and characteristics set by the researcher and then draw conclusions. The population in this study is based on financial reports for 15 years at Bank Mandiri Tbk. (Persero)

B. Sample

According to Sugiyono (2016), namely "The sample is the number and characteristics of the population". Meanwhile, Suharsini Arikunto (2010) argues that "The sample is part or representative of the population under study". The sampling technique used in this research is saturated sample, where all members of the population are used as samples. Thus the sample in this study financial statements for 15 years.

C. Type of Research

The author decides that the type of research used is associative, where the goal is to obtain information by looking for the relationship between the independent variables and the dependent variable.

D. Data Analysis Methods

In analyzing the data, the writer uses the classical assumption test. According to Singgih Santoso (2011) "A regression model will be used to make forecasts, a good model is a model with minimal forecast errors".

E. Normality Test

In the normality test used by the author aims to test whether in the regression model, confounding variables or residues have a normal distribution. As it is known, the t test and F test assume that the residual value follows a normal distribution. If this assumption is violated, the statistical test will be invalid for a small sample size. There are two ways to detect whether the residuals are normally distributed or not, namely by graph analysis and statistical tests (Imam Ghozali, 2009)

Multicollinearity Test

Multicollinearity test aims to test whether the author's estimate in the regression model found a correlation between the independent variables (independent variables). A good regression model should not have a correlation between the independent variables (Imam Ghozali, 2009).

In addition to the classical assumption test, regression test, correlation coefficient, determination coefficient and hypothesis testing are also used, either partially or simultaneously.

III. RESEARCH RESULT

A. Classic Assumptions Test

The classical assumption test is intended to determine the accuracy of a data. According to Singgih Santoso (2011) "A regression model will be used to make forecasts, a good model is a model with minimal forecast errors". Therefore, a model before it is used should fulfill several assumptions, which are commonly called classical assumptions. In this study, the classical assumption tests used were: Normality Test, Multicollinearity Test, Autocorrelation Test, and Heteroscedasticity Test. The results are as follows:

B. Normality Test

The normality test is carried out to test whether in the regression model, the dependent variable and the independent variable are normally distributed or not. The results of the normality test using the Probability Plot Graph test tool with the following results:

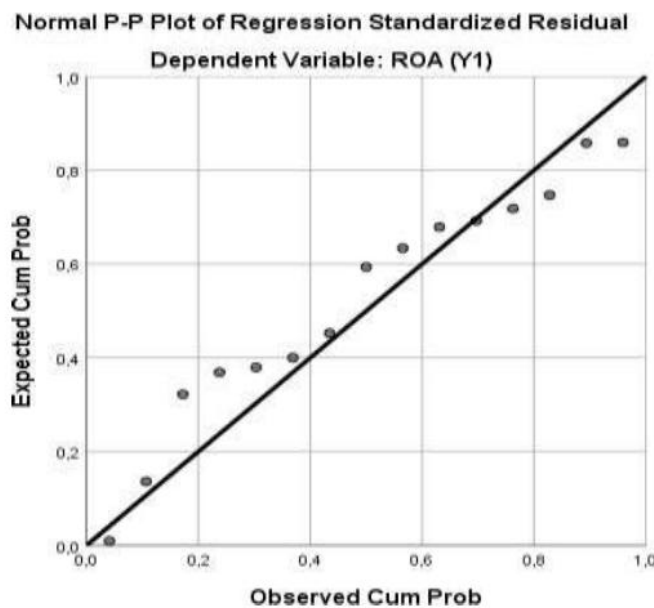


Fig 2. Results of Normality Test with Probability Plot Graph

Based on the test results in the graphic image above, it shows the points follow the direction of the diagonal line. Thus, the assumption of the distribution of the equation in this test is normal.

C. Multicollinearity Test

Multicollinearity testing is conducted to ensure that the independent variables do not have multicollinearity or do not have a correlation effect between the variables that are determined as models in the study. The multicollinearity test is carried out by looking at the Tolerance Value and Variance Inflation Factor (VIF). The test results are shown in Table 2.

TABLE 2. MULTICOLLINEARITY TEST RESULTS WITH COLLINERITY STATISTIC.

Coefficients^a

Unstandardized Coefficients			Standardized Coefficients	t	Sig.	Collinearity Statistics	
Model	B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	161,698	117,921		1,371	,198	
	CAR (X1)	-,014	,022	-,247	-,654	,527	5,133
	BOPO (X2)	-,015	,024	-,220	-,637	,537	4,283
	LDR ((X3)	,048	,020	,779	2,406	,035	3,760

a. Dependent Variable: ROA (Y1)

Based on the test results in the table above, the tolerance CAR value is 0.195, BOPO is -0.233, LDR is 0.266 < 1.0 and the Variance Inflation Factor (VIF) value of the CAR variable is 5.133, BOPO is 4.283, LDR is 3.760. thus this regression model does not occur multicollinearity disorders.

D. Autocorrelation Test

Autocorrelation testing is used to determine whether or not there are correlation deviations between sample members. The test was carried out with the Darbin- Watson test (DW test). The test results are as follows:

TABLE 3. TEST RESULT TABLE

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	,832 ^a	,693	,609	60,166	1,768

a. Predictors: (Constant), LDR (X3), CAR (X1), BOPO (X2)

b. Dependent Variable: ROA (Y)

The test results in the table above show that the Durbin-Watson value is 1,768, this value is between the interval 1,550 - 2,460. Thus the regression model stated that there was no autocorrelation disorder.

E. Heteroskedasticity Test

Heteroscedasticity testing is intended to test whether the residual percentage in a regression model is inequality. The test results are as follows:

TABLE 4. TABLE OF HETEROSKESDASTICITY TEST RESULTS WITH GLEJSER TEST MODEL

Coefficients^a

Unstandardized Coefficients				Standardized Coefficients	T	Sig.
Model	B	Std. Error	Beta			
1	(Constant)	209,894	52,532		3,996	,002
	CAR (X1)	-,004	,010	-,193	-,405	,693
	BOPO (X2)	-,011	,011	-,436	-1,004	,337
	LDR ((X3)	-,010	,009	-,473	-1,163	,269

a. Dependent Variable: RES2

The test results using the Glejser test obtained the significance value of the CAR variable of 0.693, BOPO of 0.337 and LDR of 0.269 where the three variables > 0.05. Thus regression model there is no heteroskedasticity disorder.

F. Descriptive Analysis

In this test, it is used to determine the minimum and maximum score, mean and standard deviation of each variable. The results are as follows:

TABLE 5. DESCRIPTIVE STATISTICS ANALYSIS RESULTS TABLE

Descriptive Statistics

N	Minimum	Maximum	Mean	Std. Deviation
CAR (X1)	15	6373	12707	9838,00

BOPO (X2)	15	3802	9473	6078,67	1379,570
LDR (X3)	15	3730	8371	6429,87	1570,846
ROA (Y)	15	23	328	235,67	96,259
Valid N (listwise)	15				

From 15 years of financial reporting, it was obtained CAR with a minimum percentage of 63.73% and a maximum percentage of 127.07% with an average of 98.38% with a standard deviation of 16.76%. BOPO obtained a minimum percentage of 38.02% and a maximum percentage of 94.73% with an average of 60.78% with a standard deviation of 13.79%. The LDR is obtained a minimum percentage of 37.30% and a maximum percentage of 83.71% with an average of 64.29 with a standard deviation of 3.582. ROA obtained by a minimum percentage of 0.23% and a maximum percentage of 3.28% with an average - average of 2.35% with a standard deviation of 0.96%.

G. *Verification Analysis.*

This analysis aims to determine the effect of the independent variable on the dependent variable. The test results are as follows:

a. *Regression Analysis*

This regression test is intended to determine changes in the dependent variable if the independent variable changes. The test results are as follows:

TABLE 6. SIMPLE LINEAR REGRESSION TEST RESULTS CAR (X1) Coefficients^a

Unstandardized Coefficients				Standardized Coefficients	t	Sig.
Model		B	Std. Error	Beta		
1	(Constant)	232,130	158,790		1,462	,168
	CAR (X1)	,002	,016	,006	,023	,982

a. Dependent Variable: ROA (Y1)

Based on the test results in the table above, the regression equation $Y = 232.130 + 0.002X1$ is obtained. From this equation it is explained as follows:

1. A constant of 232.130 means that if there are no CAR and BOPO, then there is an ROA value of 232.130 points.
2. The CAR regression coefficient is 0.002, this number is positive, meaning that every time there is an increase in CAR of 0.002, the ROA will also increase by 0.002 points.

TABLE 7. OF SIMPLE LINEAR REGRESSION TEST RESULTS BOPO (X2) Coefficients^a

Unstandardized Coefficients				Standardized Coefficients	t	Sig.
Model		B	Std. Error	Beta		
1	(Constant)	486,989	97,010		5,020	,000
	BOPO (X2)	-,041	,016	-,593	-2,652	,020

a. Dependent Variable: ROA (Y1)

Based on the test results in the table above, the regression equation $Y = 486,989 - 0.041X1$ is obtained. From this equation it is explained as follows:

1. A constant of 161,698 means that if BOPO and LDR do not exist, there is an ROA value of 161,698 points.
2. The BOPO regression coefficient is - 0.041, this number is positive, meaning that every time there is an increase in BOPO of 0.044, the ROA will also increase by - 0.041 points.

TABLE 8. LDR SIMPLE LINEAR REGRESSION TEST RESULTS (X3) Coefficients^a

Unstandardized Coefficients				Standardized Coefficients	t	Sig.
Model		B	Std. Error	Beta		
1	(Constant)	-49,487	77,485		-,639	,534
	LDR ((X3)	,044	,012	,724	3,781	,002

a. Dependent Variable: ROA (Y1)

Based on the test results in the table above, the regression equation $Y = -49.487 + 0.044X_1$ is obtained. From this equation it is explained as follows:

1. A constant of -49.487 means that if there are no CAR and BOPO, then there is an ROA value of -49.487 points.
2. The LDR regression coefficient is 0.044, this figure is positive, meaning that every time there is an increase in LDR of 0.044, the ROA will also increase by 0.044 points.

**Table 9. Multiple Linear Regression Test Results
Coefficients^a**

Unstandardized Coefficients			Standardized Coefficients	t	Sig.
Model	B	Std. Error	Beta		
1	(Constant)	161,698		1,371	,198
	CAR (X1)	-,014	,022	-,247	,527
	BOPO (X2)	-,015	,024	-,220	,537
	LDR (X3)	,048	,020	,779	,035

a. Dependent Variable: ROA (Y1)

Based on the test results in the table above, the regression equation $Y = 161.698 - 0.014X_1 - 0.015X_2 + 0.0256X_3$ is obtained.

From this equation it is explained as follows:

1. A constant of 161,698 means that if there are no CAR, BOPO and LDR, then there is an ROA value of 161,698 points.
2. The CAR regression coefficient is - 0.014, this number is negative, meaning that every time there is a change in CAR of - 0.014, ROA will also decrease by - 0.014 points.
3. The BOPO regression coefficient is - 0.015, this number is negative,
4. meaning that every time there is a change in BOPO of - 0.015, the ROA will also change by - 0.015 points.
5. The LDR regression coefficient is 0.0256, this figure is positive, meaning that every time there is an increase in BOPO of 0.0256, the ROA will also increase by 0.0256 points.

b. *Correlation Coefficient Analysis*

Correlation coefficient analysis is intended to determine the level of strength of the relationship between the independent variable and the dependent variable either partially or simultaneously. The test results are as follows:

TABLE 10. CORRELATION COEFFICIENT TESTING RESULTS OF CAR TO ROA.

		CAR (X1) ROA (Y)	
CAR (X1)	Pearson Correlation	1	,016
	Sig. (2-tailed)		,982
ROA (Y)	Pearson Correlation	,006	1
	Sig. (2-tailed)	,982	

Based on the test results obtained a correlation value of 0.016 means that CAR has a very weak relationship with ROA.

TABLE 11. TESTING RESULTS OF CORRELATION COEFFICIENT OF BOPO AGAINST ROA.

		BOPO (X2) ROA (Y)	
BOPO (X2)	Pearson Correlation	1	-,593*
	Sig. (2-tailed)		,020
ROA (Y)	Pearson Correlation	-,593*	1
	Sig. (2-tailed)	,020	

Based on the test results obtained a correlation value of - 0.593 means that BOPO has a moderate negative relationship to ROA.

TABLE 12. RESULTS OF TESTING THE CORRELATION COEFFICIENT OF LDR ON ROA.

Correlations^b

		BOPO (X2)	ROA (Y)
LDR (X3)	Pearson Correlation	1	,724**
	Sig. (2-tailed)		,002
ROA (Y)	Pearson Correlation	,724**	1
	Sig. (2-tailed)	,002	

Based on the test results obtained a correlation value of 0.724 means that LDR has a strong positive relationship to ROA.

TABLE 13. CORRELATION COEFFICIENT TESTING RESULTS FOR CAR, BOPO, AND LDR SIMULTANEOUSLY AGAINST ROA.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,832 ^a	,693	,609	60,166

a. Predictors: (Constant), LDR ((X3), BOPO (X2), CAR (X1))

Based on the test results obtained a correlation value of 0.832 means that CAR, BOPO and LDR simultaneously have a very strong positive relationship to ROA.

c. *Analysis of the coefficient of determination*

The analysis of the coefficient of determination is intended to determine the percentage of influence of the independent variable on the dependent variable, either partially or simultaneously. The test results are as follows:

TABLE 14. TEST RESULTS OF CAR DETERMINATION COEFFICIENT ON ROA.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,016	,0256	-,077	99,891

a. Predictors: (Constant), CAR (X1)

Based on the test results, it was obtained a determination value of 0.0256, meaning that CAR had an effect of 2.56% on ROA.

TABLE 15. RESULTS OF TESTING THE COEFFICIENT OF BOPO DETERMINATION ON ROA.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,593 ^a	,351	,301	80,467

a. Predictors: (Constant), BOPO (X2)

Based on the test results obtained a determination value of 0.351 means that BOPO has an influence contribution of 35.1% on ROA.

TABLE 16. TEST RESULTS OF LDR DETERMINATION COEFFICIENT ON ROA.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,724	,524	,487	68,936

a. Predictors: (Constant), LDR (X3)

Based on the test results, it was found that the determination value was 0.524, meaning that the LDR had an effect of 52.4% on ROA.

TABLE 17. TEST RESULTS OF THE DETERMINATION COEFFICIENT OF CAR, BOPO AND LDR AGAINST ROA.

Model Summary				
Model	R	R Square	Adjusted RSquare	Std. Error of theEstimate
1	,832	,693	,609	60,166

a. Predictors: (Constant), LDR (X3), BOPO (X2), CAR (X1)

Based on the test results, the determination value of 0.693 means that CAR, BOPO and LDR simultaneously have an influence contribution of 69.3% on ROA, while the remaining 30.7% is influenced by other factors.

d. Hypothesis Test

1) Partial hypothesis testing (T Test)

Hypothesis testing with the t test is used to determine which partial hypothesis is accepted. The first hypothesis: There is a significant effect between CAR on ROA.

TABLE 18. HYPOTHESIS TEST RESULTS OF CAR AGAINST ROA.

Coefficients ^a				t	Sig.
UnstandardizedCoefficients			Standardized Coefficients		
Model	B	Std. Error	Beta		
1 (Constant)	232,130	158,790		1,462	,168
CAR (X1)	,000	,016	,006	,023	,982

b. Dependent Variable: ROA (Y)

Based on the test results in the table above, the value of t count < t table or (0.023 < 2.160) is obtained, thus the first hypothesis that there is no positive and significant effect between CAR on ROA is accepted..

TABLE 19. BOPO HYPOTHESIS TEST RESULTS AGAINST ROA.

Coefficients ^a				t	Sig.
Unstandardized Coefficients			Standardized Coefficients		
Model	B	Std. Error	Beta		
1 (Constant)	486,989	97,010		5,020	,000
BOPO (X2)	-,041	,016	-,593	-2,652	,020

a. Dependent Variable: ROA (Y)

Based on the test results in the table above, the value of t count < t table or (- 2.652 < 2,160) is obtained, thus the second hypothesis that there is no positive and significant effect between BOPO on ROA is accepted.

TABLE OF LDR HYPOTHESIS TEST RESULTS AGAINST ROA.

Coefficients ^a				t	Sig.
UnstandardizedCoefficients			Standardized Coefficients		
Model	B	Std. Error	Beta		
1 (Constant)	-49,487	77,485		-,639	,534
LDR (X3)	,044	,012	,724	3,781	,002

a. Dependent Variable: ROA (Y)

Based on the test results in the table above, the value of t count > t table or (3,781 > 2,160) is obtained, thus the third hypothesis proposed that there is a positive and significant effect between LDR on ROA is accepted.

2) Simultaneous Hypothesis Testing (F Test)

Hypothesis testing with the F test is used to determine which simultaneous hypothesis is accepted. The fourth hypothesis There is a significant effect between CAR and BOPO on ROA.

TABLE OF HYPOTHESIS TEST RESULTS CAR, BOPO AND LDR AGAINST ROA.

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	89901,822	3	29967,274	8,278	,004 ^b
	Residual	39819,512	11	3619,956		
	Total	129721,333	14			

Based on the test results in the table above, the calculated F value > F table or (8,278 > 3,360), thus the third hypothesis that is proposed that there is a significant effect between CAR, BOPO and LDR on ROA is accepted.

e. Effect of CAR on ROA

From the analysis, it was found that the CAR variable had a significant effect on ROA with a correlation value of 0.016, meaning that the two variables had a very weak relationship with an influence contribution of 2.56%. Hypothesis testing obtained t value < t table or (0.023 < 2.160). Thus, the first hypothesis proposed that there is no significant effect between CAR and ROA is accepted.

f. Effect of BOPO on ROA

From the analysis, it was found that the BOPO variable had a significant effect on ROA with a correlation value of - 0.593 meaning that the two variables had a strong relationship with an influence contribution of 35.1%. Hypothesis testing obtained t value < t table or (- 2.652 < 2.160). Thus, the second hypothesis proposed that there is no significant effect between BOPO and ROA is accepted.

g. Effect of LDR on ROA

From the analysis, it was found that the LDR variable had a significant effect on ROA with a correlation value of 0.724, meaning that the two variables had a strong relationship with an influence contribution of 52.4%. Hypothesis testing obtained t value > t table or (3,781 > 2,160). Thus, the third hypothesis proposed that there is a significant effect between LDR and ROA is accepted.

h. Effect of CAR, BOPO and LDR on ROA

From the analysis results, it is obtained that the variables CAR, BOPO and LDR have a significant effect on ROA by obtaining the regression equation $Y = 161.698 - 0.014X_1 - 0.015X_2 + 0.048X_3$, the correlation value is 0.832, meaning that the three variables have a strong relationship with an influence contribution of 69.3% while the remaining 30.7% is influenced by other factors. Hypothesis testing obtained the value of F count > F table or (8,278 > 3,360). Thus, the fourth hypothesis proposed that there is a significant effect between CAR, BOPO and LDR on ROA is accepted.

IV. CONCLUSIONS AND RECOMMENDATIONS

A. Conclusion

1. CAR has no effect on ROA, the correlation value is 0.016 or moderate with an effect contribution of 2.56%. Hypothesis testing obtained t value < t table or (0.023 < 2.160). Thus there is no significant effect between CAR on ROA at Bank Mandiri Tbk. (Persero).

2. BOPO has no significant effect on ROA with a Hypothesis testing obtained the value of F count > F table or (8,278 > 3,360). Thus there is a significant influence between CAR, BOPO and LDR simultaneously on ROA at Bank Mandiri Tbk. (Persero).

B. Recommendations

1. Investors should always consider general ratios such as ROA calculations and more specifically in determining the issuer as the appointed supervisor.

2. It is hoped that Bank Mandiri will improve its financial performance so that the BOPO, LDR can meet Bank Indonesia calculation standards

3. For the next author, look at the limitations and economic conditions and the Covid-19 pandemic input from other factors such as economic, social, political conditions in macro

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