



The Effect of Non-Performing Loans, Loan to Deposit Ratios of Operating Expenses and Operating Income on Return on Assets with Net Interest Margin as an Intervening Variable in Banking Companies Listed in Indonesia Stock Exchange Period 2019 -2021

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Abstract

The banking sector is a state financial institution that has an important role in collecting and distributing funds to the public, with the aim of meeting capital and investment needs for fund owners. So this study was conducted for the purpose of knowing the extent of the influence of certain financial ratios such as Non-Performing Loan, Loan to Deposit Ratio, operating expenses operating income to Return on assets with Net Interest Margin as an Intervening variable in banking companies listed on the Indonesia Stock Exchange for the period 2019-2021. This research method uses secondary data. The results of this study indicate that to Non-Performing Loan, Loan Deposit Ratio has no significant effect on Net Interest Margin. Operating expenses operating income has a significant effect on Net Interest Margin. Net interest Margin has an effect on Return on assets, while Non Performing Loan, Loan to Deposit Ratio, operating expenses operating income, has an effect and significant on Return on assets while Non Performing Loan, Loan to Deposit Ratio, operating expenses operating income, is able to mediate Return on assets through Net Interest Margin as an Intervening variable listed on the IDX for the period 2019-2021.

Keywords: *Return on Assets; Non-Performing Loan; Loan to Deposit Ratio; Operating Expenses Operating Income; Net Interest Margin*

Introduction

A Bank is a financial institution that plays an important role in a country's economy. As a financial intermediary (financial intermediately) how the bank connects parties who are in excess funds (surplus) with those who need or lack of funds (deficit). Banks utilize funds from the community which are then channeled back to the community, so the process requires an element of trust. The Bank must apply the principle of loyalty in every activity so that the bank is able to become an institution that is

trusted by the community. According to Yulisari, et al (2021), a bank is a financial institution that has a function as a store and distributor of funds for people in need.

Sumarna, et al (2019) expressed his opinion about banking that a bank is a business entity that collects funds from the community in the form of deposits and distributes them to the community in the form of credit or in the form of other services in order to improve the standard of living of many people. This financial institution provides facilities for those who have more funds and those who have less funds, facilitating payment transactions, and seeking profits.

Profitability is a ratio to measure the ability of an entity or company to generate profits. Profit that is too high can increase taxes to be paid, on the contrary if the decline in profit is very low will show that the performance of management is not good so that management intends to make the reported profit does not fluctuate by flattening profits. Relatively stable profitability shows the good performance of the management of a company in generating profits and of course this will provide. Profitability is seen as one of the factors that can affect the flattening of profits because the level of profit is directly related to the object of flattening profits. An increase or decrease in profits will have a real impact on the company. Return on Assets (ROA) according to experts is a ratio that shows the return on the total assets used in firm operations. ROA is calculated by dividing the company's net profit after tax by the assets used for the firm's operations. Management can use this ratio to measure its business, while investors can use it to make wise and careful decisions in choosing which stocks have the potential to benefit.

Non Performing Loan (NPL) is a principal financial ratio that can provide information on the assessment of capital conditions, profitability, credit risk, market risk and liquidation. Non-performing loan (NPL) is a non-current loan that cannot be collected by the bank, while non-performing loan (NPL) is a Justice where the customer is unable to pay all or as an obligation to the bank according to what has been done by the bank is given. in addition, we also provide a wide range of products and services that you can use to meet your needs. Therefore, the bank must handle losses in its operations are some of the main factors causing the increase in the ratio of Non-Performing loans (NPL). no other bank can give credit to another bank that cannot give credit to another bank that cannot give credit to another bank.

Loan to Deposit Ratio is a bank's profit derived mostly from interest income earned from lending activities. Lending by banks can be seen through the Loan to Deposit Ratio (LDR). LDR Radio is a comparison between loans granted and third party funds (Metasari, 2014). LDR can be used as an indicator in seeing how far the function and efficiency of the bank as an intermediary institution can be achieved, and is used in assessing the health and liquidity of a bank. Bank Indonesia uses LDR as an indicator in assessing the soundness of banks in Indonesia (Agustina and Wijaya, 2013).

Bopo research on other ROA has been widely implemented, including research from Yunita et al. (2019), Thamrin et al. (2018) which states that BOPO negatively affects ROA. However, another study conducted by Sudarsono (2017) Abdissa (2016) stated another opinion that BOPO has a positive effect on ROA. BOPO is the ratio of operating expenses to operating income. The importance of the BOPO ratio in banking can describe how efficient banks are in carrying out their activities. If the ratio of BOPO increases in the ability of banks to generate income decreases, which affects the decline in the ratio of income to bank assets.

NIM is determined from the interest rate, where if the Greater this ratio, the income from productive assets managed by the bank will increase, so the possibility of the bank in a troubled condition is getting smaller. NIM is strongly influenced by changes in interest rates and the quality of productive assets. Here the Bank needs to be careful in providing credit so that the quality of its productive assets is maintained. and in other words good credit quality can increase net interest income which can affect the profitability of the bank. so with the higher NIM ratio, the higher the profitability (ROA) of the bank on its productive assets in the management of lending.

CODE	YEAR	NPL	LDR	BOPO	ROA	NIM
AMAR	2019	4,50	112,03	33,11	1,77	0,24
	2020	6,88	74,75	42,11	0,21	26,98
	2021	6,49	75,66	55,00	0,07	20,04
BBNI	2019	2,32	95,57	46,92	1,83	0,10
	2020	4,20	90,52	46,53	0,37	9,58
	2021	3,70	79,87	29,03	1,13	8,58
BBCA	2019	1,34	84,08	42,92	3,10	0,08
	2020	1,79	68,96	39,87	2,52	9,41
	2021	2,15	64,21	38,62	2,56	9,01
BBRI	2019	1,31	88,06	40,45	2,42	0,09
	2020	1,28	82,70	45,57	1,23	8,80
	2021	1,72	87,32	48,55	1,833	11,47

Non performing loans at PT. Bank Amar Indonesia 2019 amounted to 4.50% with total assets of 1.77%,but in 2020 non-performing loans increased by 6.88% followed by total assets of 0.21% .The increase was not in line in 2021 where non-performing loans decreased by 6.49% but their total assets also decreased by 0.07% .Where his nonperforming loans fell but his total assets also declined .

In 2019 PT. Bank Negara Indonesia (Persero) Tbk total loans amounted to 95.57% with total assets of 1.83% while in 2020 total loans and total assets were 90.52% and 0.37% this decrease was not in line with 2021 where total loans and total assets decreased by 79.87% and 1.13% which should have increased total assets.

At PT. BANK RAKYAT INDONESIA Tbk interest income of 40.45% which was calculated in 2020 increased by 45.57% and in 2021 by 48.55%. While the Total assets in 2019 amounted to 2.42% is not supported by the theory with the year 2020 decreased again by 1.23% in 2021 rose to 1.83%.

The hypotheses of this study are:

- H1: Non Performing Loan (NPL) has a positive effect on Net Interest Margin in banking companies listed on the Indonesia Stock Exchange for the period 2019-2021
- H2: Loan to Deposit Ratio (LDR) has a positive effect on Net Interest Margin in banking companies listed on the Indonesia Stock Exchange for the period 2019-2021.
- H3: Operating expenses, operating income (BOPO) positively affect Net Interest Margin in banking companies listed on the Indonesia Stock Exchange for the period 2019-2021
- H4: Net interest Margin (NIM) has a positive effect on the Return on assets of banking companies listed on the Indonesia Stock Exchange for the period 2019-2021.
- H5: Non Performing Loan (NPL) has a positive effect on Return on assets in banking companies listed on the Indonesia Stock Exchange for the period 2019-2021.
- H6: Loan to Deposit Ratio (LDR) has a positive effect on the Return on assets of banking companies listed on the Indonesia Stock Exchange for the period 2019-2021.
- H7: Operating expenses, operating income (BOPO) positively affect Net interest Margin in banking companies listed on the Indonesia Stock Exchange for the period 2019-2021
- H8: Non Performing Loan (NPL) has a positive effect on Return on assets through Net Interest Margin as an Intervening variable in banking companies listed on the Indonesia Stock Exchange for the period 2019-2021.
- H9: Loan to Deposit (LDR) has a positive effect on Return on assets through Net Interest Margin as an Intervening variable in banking companies listed on the Indonesia Stock Exchange for the period 2019-2021.

10.H10: Operating expenses and operating income (BOPO) have a positive effect on Return on assets through Net Interest Margin as an Intervening variable in banking companies listed on the Indonesia Stock Exchange for the period 2019-2021.

Method

Population is as a generalization region consisting of objects and subjects that have certain qualities and characteristics that are determined by the researcher to study and then draw conclusions (Sugiono 2017). The sample is part of the number of characteristics possessed by a population Sugiyono (2017) . If the population is large, then with certain considerations, researchers can use samples taken from the population. The sample in this study is the annual financial statements of banking companies listed on the Indonesia Stock Exchange for the period 2019-2021 with certain criteria. Sampling technique in this study using purposive sampling method.

Technique in determining the sample in this study using purposive sampling method. According to Sugiyono (2017), purposive sampling is a sampling technique using certain criteria. Criteria determined by the researcher in order to determine which sample can show more valid results. The criteria for determining the sample used in this study are as follows:

No	Criteria	Total
1	Banking companies listed on the Indonesia Stock Exchange in the period 2019-2021 in a row	43
2	Banking companies that did not release financial statements in the 2019-2021 period in a row	(5)
3	Banking companies that suffered losses in the period 2019-2021	(12)
	Number of company survey samples	26
	Observational data from the survey (26 x 3)	78

This research data is processed by using Statistical Product and Service Solution (SPSS) program, namely ordinary least square (OLS) method was first introduced by Carl Freidrich Gauss. The essence of this method is to estimate a regression line by minimizing the sum of the squares of the errors of each observation of the line. The main objective of regression is to estimate the regression function of the population based on the regression function of the sample. The main assumptions underlying the regression model using the OLS method are normality Test, multicollinearity, heteroskedasticity, and autocorrelation. First, the purpose of normality test according to Ghozali (2013) is to test whether the regression model disruptor or residual variable has a normal distribution value, multicollinearity test aims to determine whether the regression model found a correlation between independent variables (Ghozali, 2013). Multicollinearity can be seen from the value of tolerance or variance inflation factor (VIF).

If the tolerance value is more than 10% or the VIF is less than 10, then it is said that there is no multicollinearity. Heteroscedasticity test aims to test whether in a regression model that is used there is an inequality of variance from the residuals of one observation to another observation. If the variance from the residuals of one observation to another remains, then it is called homoskedasticity and if it is different it is called heteroskedasticity (Ghozali, 2013). Autocorrelation is the existence of a disturbing error relationship that appears in the time series data. there is an autocorrelation between the disruptor errors. Autocorrelation testing can be done by calculating Durbin-Watson (d), by comparing the value of d to d_l and d_u . while the coefficient of determination (R^2) is a coefficient that shows the percentage effect of all independent variables on the dependent variable.

The value of Adjusted R-Square is said to be good if the value is above 0.5 because the value of Adjusted R-Square ranges from 0 to 1. When the value of Adjusted R-Square is close to 1 then most of the independent variables explain the dependent variable while if the coefficient of determination is 0

means that the independent variable has no effect on the dependent variable. Path analysis or (path analysis) is an extension of multiple linear regression analysis or path analysis is the use of regression analysis to assess the causality relationship between variables (casual model) that has been previously established based on theory (Ghozali, 2018). According to Ghozali (2018) sobel test is used to calculate the value of normally distributed mediation variables. In this study mediation variable mediation or Intervening variable is profit management. Intervening variables will affect between independent variables and dependent variables.

Results and Discussion

Results of Data Analysis

A. Deskriptive Statistics

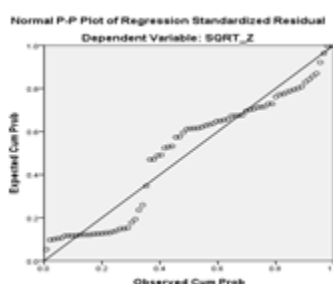
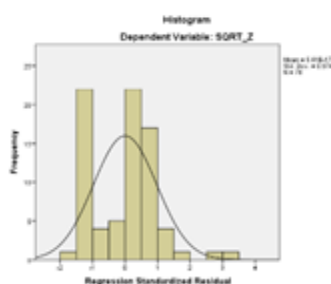
In research in Banking Companies, the independent variables observed were NPL, LDR, BOPO. The intervening variable is Net interest Margin while the dependent variable is Return on Asset (Y).

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
SQRT_X1	78	.28	2.83	1.6278	.50321
SQRT_X2	78	1.26	4.01	2.2760	.49210
SQRT_X3	78	5.39	13.68	7.9073	1.25746
SQRT_Y	78	.14	2.94	.9630	.49582
SQRT_Z	78	.17	7.31	2.0287	1.50121
Valid N (listwise)	78				

Source: Processed secondary data, 2022

A.1. Normality Test Results I



The basis of decision making is that if the data spread around the diagonal and follow the direction of the diagonal line, the path model meets the assumption of normality of the normality test data used in the study.

Then it can be concluded that the residual data is normally distributed and the Histogram graph is almost symmetrical. Seen the results of the histogram graph in the figure above which shows that the residual data is normally distributed as seen from the bell-shaped image is almost perfect (symmetrical). Kosmogorov-Smirnov test on the study is as follows:

One-Sample Kolmogorov-Smirnov Test

		Unstandardized Residual
N		78
Normal Parameters ^{a,b}	Mean	.0000000
	Std. Deviation	1.29183896
Most Extreme Differences	Absolute	.083
	Positive	.083
	Negative	-.040
Test Statistic		.083
Asymp. Sig. (2-tailed)		.200 ^{c,d}

- a. Test distribution is Normal.
- b. Calculated from data.
- c. Lilliefors Significance Correction.
- d. This is a lower bound of the true significance.

Based on the table above shows that the value of Asymp. Sig is 0.2, this value indicates that the value is greater than 0.05, it can be concluded that the data has met the requirements of normal distribution residual data.

A.2 Multicollinearity Test I

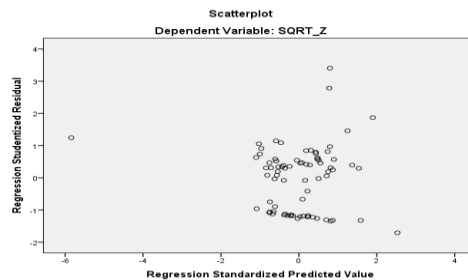
If tolerance value < 0.10 or VIF value >10 then multicorenelity occurs if tolerance value >0.10 or VIF value <10 then multicorenelity is rejected

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	4.063	2.075		1.958	.054		
	SQRT_X1	-.031	.459	-.010	-.068	.946	.564	1.773
	SQRT_X2	-.177	.373	-.058	-.476	.636	.895	1.117
	SQRT_X3	-.166	.141	-.139	-1.174	.244	.956	1.046
	SQRT_Y	-.280	.466	-.092	-.600	.550	.563	1.777

a. Dependent Variable: SQRT_Z
Source: Processed secondary data, 2022

A.3 Heteroskedasticity test results I



The scatterplots graph shows that the dots spread randomly and spread both above and below the number 0 on the Y axis and do not form a certain regular pattern, it is concluded that there is no heteroskedasticity in the regression model. It follows overall that the regression model qualifies the classical assumption test. Glejser test results in this study are as follows:

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	.852	.538		1.584	.117
SQRT_X1	-.550	.123	-.418	-4.476	.000
SQRT_X2	-.389	.126	-.290	-3.101	.003
SQRT_X3	.210	.048	.399	4.339	.000

a. Dependent Variable: Abs_res1

The results showed that the parameter coefficients for the independent variables are non-Performing loan variable $0.00 < \alpha = 0.05$; variable Loan to Deposit Ratio $0.003 < \alpha = 0.05$; variable operating expenses operating income $0,000 < \alpha = 0.05$ because of the significance value (Sig.) the two variables above are greater than 0.05, it can be concluded that there are symptoms of heteroskedasticity regression model.

A.4 Autocorrelation Test I

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.661 ^a	.437	.414	37940	1.967

a. Predictors: (Constant), SQRT_X3, SQRT_X1, SQRT_X2

b. Dependent Variable: SQRT_Z

A.5 Hypothesis Testing Sub Model I

The hypothesis states that Non-Performing Loan(X1), positive and significant effect, Loan to Deposit Ratio (X2), operating expenses and operating income (X3), but not significant effect on Net Interest Margin (Z). The following table 4.13 t-test calculation results of each variable:

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	3.225	1.528		2.110	.038
SQRT_X1	.147	.349	-.049	.420	.451
SQRT_X2	-.116	.357	.038	.325	.232
SQRT_X3	-.148	.137	-.124	-1.078	.043

Thus, the equation of path analysis can be arranged as follows :

$$Z = -0.049 X1 + 0.038X2 - 0.124X3$$

Furthermore, to determine the magnitude of the influence of the independent variable to the dependent variable is to use the coefficient of determination test R.

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.661 ^a	.437	.414	.37940

a. Predictors: (Constant), SQRT_X3, SQRT_X1, SQRT_X2

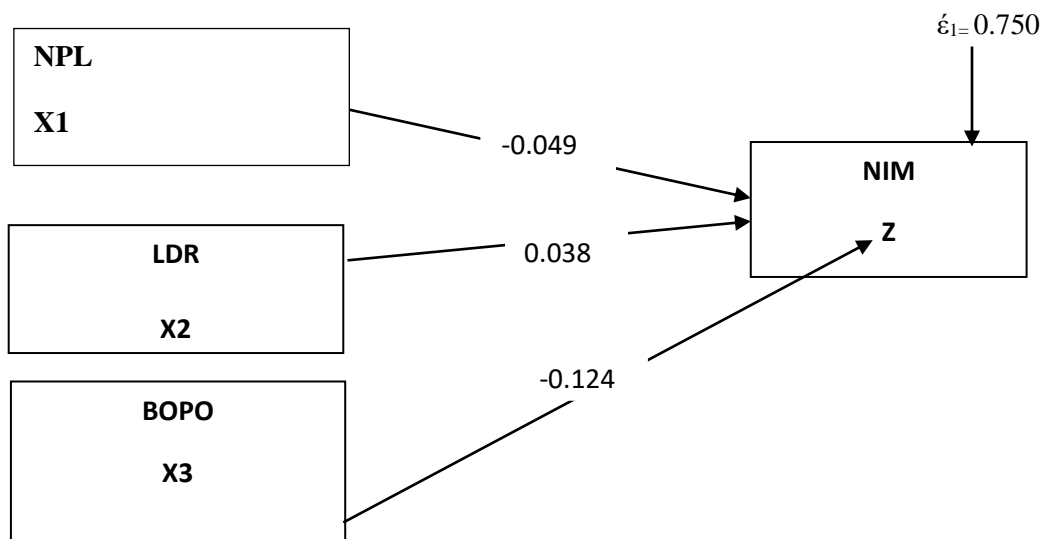
b. Dependent Variable: SQRT_Z

Source: Processed secondary data, 2022

R Square is 0.437 in other words 43.7 percent of NIM can be described, while the remaining 56.6 percent is described with unrelated variables.

A.6 Sub Model I Path Analysis

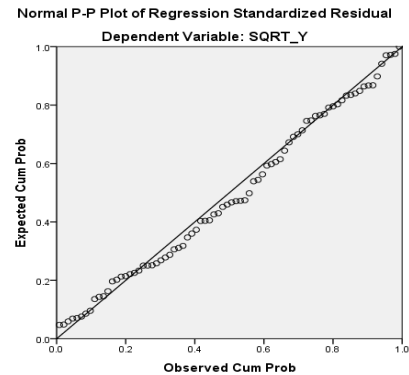
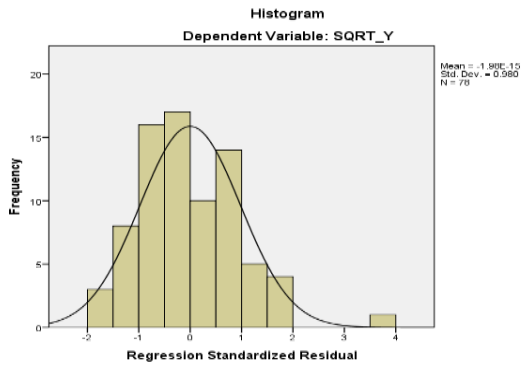
With the value of R² or R Square in the Summary Model table is equal to 0.661 shows the contribution or contribution of the influence of NPL(X1) , LDR , BOPO(X3) to the variable NIM (Z), amounting to 43.7%, the remaining 56.3% is the contribution of other variables that are not included in the study. Meanwhile, for the value of e1 can be found by the formula $e1 = \sqrt{1-0,437} = 0,750$. Thus obtained the path diagram of the structure model I as follows :



$$Z = -0.049 X1 + 0.038X2 - 0.124X3$$

B.1 Normality Test Results II

Decision making test results normality Return On Asset is :



Then it can be concluded that the residual data is normally distributed and the Histogram graph is almost symmetrical.

One-Sample Kolmogorov-Smirnov Test

		Unstandardized Residual
N		78
Normal Parameters ^{a,b}	Mean	.0000000
	Std. Deviation	.37193908
Most Extreme Differences	Absolute	.078
	Positive	.078
	Negative	-.044
Test Statistic		.078
Asymp. Sig. (2-tailed)		.200 ^{c,d}

- a. Test distribution is Normal.
- b. Calculated from data.
- c. Lilliefors Significance Correction.
- d. This is a lower bound of the true significance.

The table above shows that the value of Asymp. Sig is 0.200, this value indicates that the value is greater than 0.05, it can be said that the data meets the requirements of normal distribution residual data.

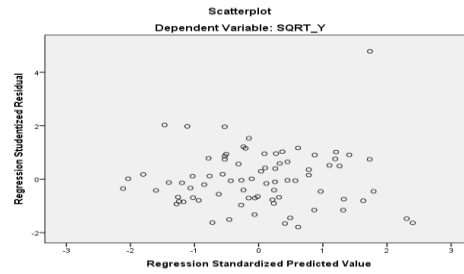
B.2 Multicollinearity Test I

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	3.052	.396		7.714	.000		
	SQRT_X1	-.633	.088	-.643	7.212	.000	.966	1.035
	SQRT_X2	-.221	.090	.019	2.462	.016	.967	1.034
	SQRT_X3	-.066	.035	.167	1.887	.033	.984	1.017
	SQRT_Z	-.018	.029	.053	.600	.045	.980	1.021

a. Dependent Variable: SQRT_Y
Source: Processed secondary data, 2022

B.3 Heteroskedasticity test results II



The scatterplots graph shows that the dots spread randomly and spread both above and below the number 0 on the Y axis and do not form a certain regular pattern, it is concluded that there is no heteroskedasticity in the regression model. It follows overall that the regression model qualifies the classical assumption test. Glejser test results in this study are as follows:

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
1 (Constant)	9.349	6.415		1.457	.149
SQRT_X1	-.797	1.424	-.062	-.560	.578
SQRT_X2	-1.647	1.455	-.124	-1.132	.262
SQRT_X3	-.298	.565	-.058	-.527	.600
SQRT_Z	1.496	.474	.345	3.157	.002

a. Dependent Variable: Abs_res2

Based on the table above, NPL, LDR,BOPO, NIM greater than 0.05 then concluded heteroskedastosity.

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
	.663 ^a	.440	.409	.38106	1.352

a. Predictors: (Constant), SQRT_Z, SQRT_X1, SQRT_X3, SQRT_X2

b. Dependent Variable: SQRT_Y

B.5 Hypothesis Testing Sub Model II

The hypothesis states that Non-Performing Loan (X1), negative and significant effect and Loan to Deposit Ratio (X2) significant negative effect, operating expenses and operating income (X3), Net Interest Margin (Z) does not affect positively and not significant to Return on assets (Y).

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	3.052	.396		7.714	.000
SQRT_X1	.633	.088	.643	7.212	.000
SQRT_X2	.221	.090	.019	2.462	.016
SQRT_X3	.066	.035	.167	1.887	.033
SQRT_Z	.018	.029	.053	.600	.045

a. Dependent Variable: SQRT_Y

Thus, the equation of path analysis can be arranged as follows:

$$Y = 0,643X1 + 0,019X2 + 0,167X3 + 0,053Z$$

Furthermore, to determine the magnitude of the influence of the independent variable to the dependent variable is to use the coefficient of determination test R.

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.663 ^a	.440	.409	.38106

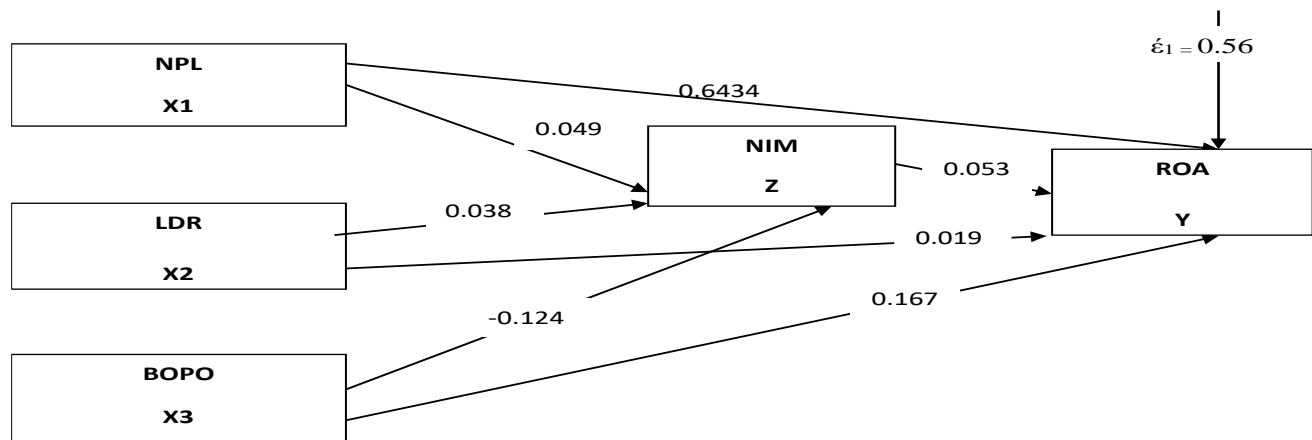
a. Predictors: (Constant), SQRT_Z, SQRT_X2, SQRT_X3, SQRT_X1

b. Dependent Variable: SQRT_Y

The result of calculating the value of R Square is 0.440. This result means that 44 percent of Return on assets can be explained by the three variables above while the remaining 66 percent is explained by other variables that are not included in this study.

B.6 Sub Model II Path Analysis

These results give the conclusion that the regression of Sub Model II, the variables of Non-performing Loan (X1) and Loan to Deposit Ratio (X2) significantly affect the Return on assets (Y). Variable operating expenses and operating income (X3), Net Interest Margin (Z) influential and significant.



$$Y = 0,643 X1 + 0,019X2 + 0,167X3 + -0,053Z$$

Discussion of Research Results

➤ The Effect of Non-Performing loans on Net Interest Margin

From the results of statistical tests concluded that Non-Performing Loan Ratio to Net Interest Margin has no effect and significant with a probability of 0.451. Thus, it can be concluded that $P = 0.451 > \alpha = 0.05$, rejected the hypothesis that states the variable Non-Performing Loan (X1) does not

significantly affect the variable Net Interest Margin. This study contradicts the previous hypothesis which said the hypothesis is accepted and significant. Research has shown that NPLs affect NIM. The main impact on bank operations due to declining banking transactions in the form of funding and lending during the Covid-19 pandemic. Research conducted by Hoang (2015), Hassan (2012), Jane (2011) showed that NPLs negatively affect NIM. Then the results obtained by researchers have relevance and conformity with the results of previous researchers.

➤ **The Effect of Loan to Deposit Ratio on Net Interest Margin**

This Variable Loan to Deposit Ratio (X2) with a probability of 0,000. Thus, it can be concluded that $P = 0.746 > \alpha = 0.05$, rejected the hypothesis that the variable Loan to Deposit Ratio (X2) has no significant effect on the variable Net Interest Margin. LDR does not affect NIM due to several factors, one of which is the bank's inability to cope with structural liquidity receipts (long-term and short-term), as well as the bank is unable to meet its obligations to repay the withdrawal of funds made by depositors. This study is in line with research conducted by Dewi, et al (2015), Fajari and Sunarto, Arifianto (2016) LDR has no effect on ROA.

➤ **The Effect of Operational Load Control and Operational Improvement on Net Interest Margin**

Variable operating expenses and operating income (X3) = -0.124. Variable operating expenses and operating income marked negative means that it does not have a unidirectional influence, which means that any addition or expense will not add to the value of the variable net interest margin of -0.124. because the lower the Bopo ratio means the better the bank's management performance and more efficient in using the resources available in the company. The lower the Bopo indicates the ability of a company to manage assets for all its operational activities, both in terms of expenses and revenue. This study is in line with research conducted by Hamadi & Awdeh (2012), Hidayat et al. (2012), Dan Durguti et al. (2014) showed that BOPO has a negative effect on NIM .

➤ **The Effect of Net Interest Margin on Return On Asset**

Variable Net Interest Margin (Z) with a probability of 0.045. Thus it can be concluded $\alpha = 0.045 < \alpha = 0.05$, the hypothesis is accepted that the variable net Interest Margin (Z) and significant effect on Variable Return on assets. Where NIM demonstrates its ability to generate income from interest by looking at the performance of banks on lines of credit.

Because the amount of NIM affects the bank's income derived from interest, the amount of bank income will affect the company's ability to earn a profit (ROA) because income is a profit-forming element for the company. The results of this study are in line with research by Pinasti and Mustikawati (2018), Avrita and Pangestuti (2016), Dewi, et al (2015), and Arifianto (2016) NIM significant positive effect on ROA.

➤ **The Effect of Non-Performing Loan on Return On Return On Asset**

Based on the results of statistical tests concluded that Non-Performing loans influential and significant. Why affect the ROA can be seen in terms of benefits to the community itself where the presence of credit can encourage economic growth and can reduce the level of unemployment and give a sense of security to the community to save money. The results of this study are in line with those carried out Suci Susilawati Nafisah Nurulrahmatiah (2021), Dewi and Suryanawa (2018), stating that NPL is influential and significant to ROA, and another study was also carried out by Julaeha (2015) who argued that NPL has a positive effect on NPL (Non-performing Loan) is one of the measurements of the bank's business risk ratio which shows the amount of non-performing loan risk that exists in a bank.

➤ **The Effect of Loan to Deposit Ratio On Return On Asset**

The results of research conducted on the statistical test then obtained that the Loan to Deposit Ratio to Return on assets influential and significant . Where Loan to Deposit Ratio is a liquidity ratio that describes a bank is able to provide funds to be withdrawn by depositors by relying on credit as a source of liquidity. This ratio is also an indicator of the vulnerability and capability of a bank, where some banking practices agree that the limit is safe. This research is in line with the research conducted by Pinasti & Mustikawan (2018) which is influential and Prasetyo (2018) has a positive and significant effect reflecting the ability of banks to meet obligations in repaying withdrawals made by depositors on loans granted and also supported by research conducted Prasetyo (2015) argues that LDR has a positive and significant effect on roa and is a ratio that granted (Muttaqin 2017).

➤ **The Effect of Operational Load Control and Operational Improvement on Return On Asset**

The results of the analysis showed that the direct influence given operating expenses and operating income (X3) to the Return on assets (Y) amounted to 0.167. While the indirect effect of operating expenses and operating income (X3) on Return on assets (Y) through Net Interest Margin (Z), namely $(-0.214) \times 0.053 = (-0.011)$. Then the total influence given variable operating expenses and operating income (X3) to the Return on assets (Y) is a direct influence coupled with indirect influence, which is $0.167 + (-0.011) = 0.156$. This research is also in line with the research by Sudarsono (2017) Abdissa (2016) expressed another opinion that BOPO has a positive effect on ROA, and also followed by Hantono et al. (2017) stated that BOPO has a positive effect on ROA.

➤ **The Effect of Non-Performing loans on Return on assets through Net Interest Margin**

The results of the analysis showed that the direct effect of Non-Performing loans (X1) on Return on assets (Y) amounted to 0.643. While the indirect influence of Non Performing Loan (X1) to Return on Asset (Y) through Net Interest Margin(Z), which is $0.049 \times 0.053 = 0.26$, the total influence given variable Non Performing Loan (X1) to Return on Asset (Y) is a direct influence coupled with indirect influence, which is $0.643 + 0.26 = 0.903$. This result shows that the variable Non Performing Loan (X1) through Net Interest Margin(Z) has a significant influence on the Return on Asset (Y). This result shows that indirectly variable Non Performing Loan (X1) through Net Interest Margin(Z) does not have a significant effect on Return on assets (Y). The results of this study are in line with the research of Wibisono and Wahyuni (2017) stated that NIM can mediate the influence of NPL on ROA.

➤ **The Effect of Loan to Deposit Ratio on Return on assets through Net Interest Margin**

The results of the analysis showed that the direct influence given Loan to Deposit Ratio (X2) to Return on assets (Y) of 0.019. While the indirect effect of Loan to Deposit Ratio (X2) on Return on assets (Y) through Net Interest Margin(Z) ,which is $0.038 \times 0.053 = 0.202$. Then the total influence given variable Loan to Deposit Ratio (X3) to Return on assets (Y) is a direct influence coupled with indirect influence, which is $0.038 + 0.202 = 0.164$. This result shows that directly variable Loan to Deposit Ratio (X2) through Net Interest Margin (Z) has a significant influence on Return on Asset (Y). The results of this study were supported by research Anindansyah et, al.,(2020) which states that NIM can mediate LDR against ROA. Vodov (2013) showed that NIM is able to mediate the influence of LDR on ROA. This means that good bank liquidity can have an impact on the increase in ROA, if the interest income obtained by the bank is large.

➤ The Effect of Operating Expenses and Operating Income on Return on Assets through Net Interest Margin

The results of the analysis showed that the direct influence given operating expenses and operating income (X3) to the Return on assets (Y) of 0.167. While the indirect effect of operating expenses and operating income (X3) to the Return on assets (Y) through Net Interest Margin (Z), which is $0.167 \times 0.043 = 0.007$, then the total effect given variable operating expenses and operating income (X3) to the Return on assets (Y) is a direct influence coupled with indirect influence, which is $0.167 + 0.007 = 0.174$. variable operating expenses and operating income Ratio (X3) through Net Interest Margin (Z) has a significant influence on the Return on assets (Y). This research was also supported by Astohar & Praptitorini (2019), Hardiyanti Widhian et al.(2016), Berrospide and Edge, (2010), found that NIM is able to mediate the relationship of BOPO to ROA

Conclusion

From this research, it can be concluded that: 1. Non Performing Loan (NPL) does not have a significant influence on Net Interest Margin on banking companies listed on the Indonesia Stock Exchange in 2019-2021 because during the current pandemic, the company is unable to pay loans to banks . 2. The Loan to Deposit Ratio (LDR) hypothesis was rejected and had no significant effect on Net interest Margin in banking companies listed on the Indonesia Stock Exchange in 2019-2021 due to the inability of banks to repay depositors ' withdrawals or to overcome long-term and short-term liquidity risks. 3. Hypothetical operating expenses and operating income are accepted, significantly affecting Net interest Margin in banking companies listed on the Indonesia Stock Exchange in 2019-2021. because when the delay in paying the customer must pay a penalty than has been agreed, therefore the bank's income will increase . 4. The influence of Net Interest Margin has a significant effect on Return on assets and received hypothesis because the higher the interest rate and the higher the profit will also be good for the company's performance in banking companies listed on the Indonesia Stock Exchange in 2019-2021. 5. The non Performing Loan (NPL) hypothesis is accepted to have a significant effect on the Return on assets of banking companies listed on the Indonesia Stock Exchange in 2019-2021 with the provision of credit can improve the economy of the community and provide a sense of security . 6. The Loan to Deposit Ratio (LDR) hypothesis is accepted, having a significant effect on the Return on assets in banking companies listed on the Indonesia Stock Exchange in 2019-2021. 7. Operating expenses and operating income (BOPO) hypothesis is accepted, significant effect on Return on assets in banking companies listed on the Indonesia Stock Exchange in 2019-2021. 8. Non-Performing loans through Net Interest Margin are able to mediate the Return on assets of banking companies listed on the Indonesia Stock Exchange in 2019-2021. 9. The Loan to Deposit Ratio through Net Interest Margin has a significant effect on the Return on assets of banking companies listed on the Indonesia Stock Exchange in 2019-2021. 10. Operating expenses and operating income on Return on Asset Margin significantly affect Net Interest Margin in banking companies listed on the Indonesia Stock Exchange in 2019-2021.

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