



THE EFFECT OF NON PERFORMING LOAN (NPL), LOAN TO DEPOSIT RATIO (LDR), CAPITAL ADEQUACY RATIO (CAR) ON PROFITABILITY (ROA) IN BANKING COMPANIES LISTED ON THE INDONESIA STOCK EXCHANGE

Siti Nur Reskiyawati Said ¹, Amiruddin Junus ², Darmawati Darmawati ³

¹Department of Accounting, STIE Tri Dharma Nusantara, Indonesia

²Department of Accounting, Hasanuddin University, Indonesia

KeyWords

Non Performing Loan, Loan to Deposit Ratio, Capital Adequacy Ratio, Return on Asset

ABSTRACT

This study was conducted to examine the effect of Non Performing Loan (NPL), Loan to Deposit Ratio (LDR), Capital Adequacy Ratio (CAR) on Profitability (ROA). the type of data used is secondary data in the form of data on financial statements of commercial banks listed on The Indonesian Stock Exchange with a total of 64 samples. The technique of data collection is done by the method of documentation. the data analysis technique used multiple linear regression analysis. The results based on the conclusion of the study there is a significant effect between Non Performing Loan (X1) on Return on Asset (ROA), there is no a significant effect between Loan to Deposit Ratio (X2) on Return on Asset (ROA), and there is a significant effect between Capital Adequacy Ratio (X3) on Return on Asset (ROA)

1. Introduction

The banking sector plays an important role in improving people's living standards and the economic growth of a country. In a study conducted by Harahap and Hairunnisah (2017) explained that banks act as intermediary institutions, namely financial institutions that connect funds owned by surplus economic units to economic units that need funding assistance (deficit).

In addition, the bank also has a function as an institution that receives and distributes monetary policy made by the Central Bank. In this case, the Central Bank has an important role as an institution that can create money and almost all processes of money circulation in the economy occur through banking, therefore banks must be able to maintain their health level in order to carry out their

role as an intermediary institution properly.

Banking health and stability will greatly affect the ups and downs of an economy. A healthy bank is a necessity for an economy that wants to grow and develop well. The monetary crisis that began with the decline in the value of the rupiah against the United States dollar has destroyed the foundations of the Indonesian economy.

According to Pohan in Diyah Pamularsih (2015), the monetary crisis that occurred in Indonesia was generally caused by the weak quality of the banking system. The weak quality of the banking system can be seen from the weak internal conditions of the banking sector, weak management and moral hazard arising from the ineffective exit mechanism and ineffective supervision carried out by Bank Indonesia.

The financial performance of a bank can be assessed from several indicators, one of the main sources of indicators that is used as the basis for the assessment is the financial report of the bank concerned, namely through the bank's financial ratios which can be used as the basis for assessing the level of performance of the bank.

One measure to see the financial performance of banks is through Return On Assets (ROA). According to Harmono in (Purnono, et al 2018), ROA ratio can be measured by the comparison between profit before tax to total assets. The greater the ROA, the better the financial performance, because the higher the rate of return. Return on Assets is a tool to measure the ability of bank management to gain profits through the total assets owned. The greater the ROA, the better the rate of return. Several ratios that can affect ROA in measuring the performance of a bank, including the Effect of Non-Performing Loans (NPL), Loan to Deposit Ratio (LDR), and Capital Adequacy Ratio (CAR).

Non Performing Loan (NPL) is a ratio used to measure the bank's ability to cover the risk of credit returns by debtors. The higher the NPL, the higher the loan interest arrears which has the potential to reduce interest income and reduce profits and vice versa.

Loan to Deposit Ratio (LDR) is a ratio used to assess a bank's liquidity by dividing the amount of credit extended by the bank to third party funds. The higher this ratio, the lower the liquidity ability of the bank concerned so that the possibility of a bank in a problematic condition will be even greater (Purnono, et al 2018).

The Capital Adequacy Ratio (CAR) is used to measure the adequacy of capital owned by a bank to support assets that contain or generate risks, such as loans. The higher the CAR, the stronger the ability of the bank to bear the risk of any credit or risky productive assets. If the CAR value is high (according to Bank Indonesia regulations of 8%, it means that the bank is able to finance the bank's operations, and this favorable situation can contribute significantly to the bank's profitability (ROA). Defri in Erma Kurniasih (2016)

2. Literature Review

2.1 Non-Performing Loans (NPL)

According to Rival (2007) that credit risk is defined as the risk that occurs due to the failure of the counterparty to fulfill its obligations. According to D. Siamat (2004) that "credit risk is a risk due to the failure or inability of the customer to return the amount received from the bank along with the interest according to a predetermined or scheduled period". According to Siamat (2005:358) that "Non-performing loans (NPL) or often called non-performing loans can be interpreted as loans that have difficulty repaying due to intentional factors and or external factors beyond the control of the debtor".

2.2 Loan to Deposit Ratio (LDR)

Liquidity management is one of the complex problems in bank operational activities, this is because the funds managed by banks are mostly funds from the public which are short-term in nature and can be withdrawn at any time.

According to Dendawijaya, Lukman (2001) Loan to Deposit Ratio (LDR) states how far the bank's ability to repay the withdrawal of funds made by depositors by relying on loans provided as a source of liquidity. In other words, how far is credit given to customers, credit can offset the bank's obligation to immediately meet the demands of depositors who want to withdraw their money that has been used by the bank to provide credit.

2.3 Capital adequacy ratio (CAR)

Capital adequacy ratio is capital adequacy which shows the bank in maintaining sufficient capital and the ability of bank management to identify, measure, supervise and control the risks that arise that can affect the amount of capital (Fifai, 2007)

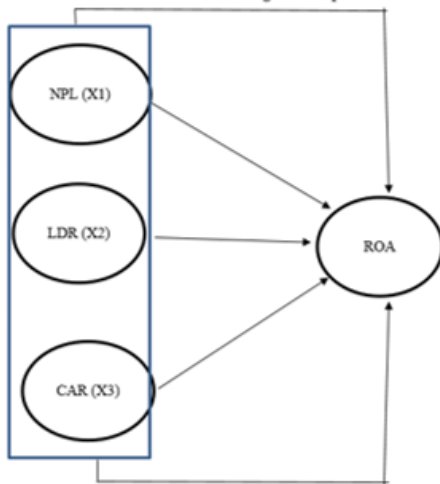
The capital in question is core capital and complementary capital. Bank's core capital consists of paid-in capital, share premium, general reserves, retained earnings, and supplementary capital is defined as fixed asset revaluation reserves, general reserves of PPAP, collateralized capital/subordinated loans.

2.4 Profitability

The profit earned from the activities carried out is a reflection of the performance of a company in running its business. Profitability as one of the references in measuring the amount of profit becomes so important to know whether the company has run its business efficiently, because the new efficiency can be known by comparing the profit earned with the assets or capital that generates the profit, in other words, is calculating profitability.

ROA is calculated based on the comparison of profit before tax and average total assets. In this study, ROA is used as an indicator of bank performance. This ratio is used to measure the ability of bank management to obtain overall profit (profit).

3. Research Model



X1 : Non Performing Loan (NPL)

X2 : Loan To Deposit Ratio (LDR)

X3 : Capital adequacy ratio (CAR)

Y : Profitability (ROA)

4. Research Methods

This research uses quantitative research methods. The type of data used is secondary data in the form of data on financial statements of commercial banks listed on the Indonesian stock exchange for the 2017-2020 period. The data analysis technique used multiple linear regression analysis. Before linear regression analysis was carried out, the data was tested using the classical assumption test to ensure that the regression model used did not contain problems of normality, multicollinearity, heteroscedasticity, and autocorrelation. If fulfilled, the analysis model is feasible to use.

5. Results

Evaluation of the measurement model is carried out to determine the relationship between latent variables and each indicator. The evaluation includes an assessment of validity and reliability that aims to determine the valid and reliable indicators in explaining latent variables.

5.1 Descriptive Analysis

Table 5.1
Descriptive Statistics

	N	Range	Minimum	Maximum	Mean	Std. Deviation	Variance
NPL	64	3,93	,40	4,33	1,3606	,88854	,790
LDR	64	106,63	56,47	163,10	91,0425	20,51371	420,812

CAR	64	16,93	14,11	31,04	21,1703	3,35918	11,284
ROA	64	3,88	,12	4,00	1,8755	1,07450	1,155
Valid N (listwise)	64						

From the results shown in table 5.1, it shows that the amount of data used in this study was 64 samples. The data is taken from the financial statements of 14 conventional banks listed on the Indonesia Stock Exchange. Based on the calculation results above that:

1. Non-Performing Loans (NPL)

The range of NPL values is 3.93%, with the lowest (minimum) value of 0.40%, namely at BCA and BTPN banks in 2017, while the highest (maximum) NPL is 4.33%, namely Sinarmas bank in 2019. the average (mean) NPL is 1.36%, the magnitude of the deviation of the NPL ratio data seen from the standard deviation of 0.88% shows the NPL variable data can be said to be good because the standard deviation value is smaller than the average value (mean).

2. Loan Deposit Ratio (LDR)

The LDR value range is 106.63% which has the lowest (minimum) value of 56.47%, namely at Mega bank in 2017, while the highest (maximum) LDR is 163.10% at bank BTPN in 2019. As for the average (mean) LDR of 91.04%, the amount of deviation of the LDR ratio data seen from the standard deviation of 20.51% shows the LDR variable data can be said to be good because the standard deviation value is smaller than the average value (mean).

3. Capital Adequacy Ratio (CAR)

The range of CAR values is 16.93% which has the lowest (minimum) value of 14.11%, namely at MAYAPADA bank in 2017, while the highest CAR (maximum) is 29.88% at Bank DKI in 2017. The average value (mean) of CAR is 21.17%, the amount of deviation of the CAR ratio data seen from the standard deviation of 3.35% shows that the CAR variable data can be said to be good because the standard deviation value is smaller than the average value (mean).

4. Return on Assets (ROA)

The range of ROA values is 3.88% which has the lowest (minimum) value of 0.12%, namely MAYAPADA bank in 2020, while the highest ROA (maximum) is 4.00% at the BCA bank in 2019. The average value (mean) ROA is 1.87%, the amount of deviation of the ROA ratio data seen from the standard deviation of 1.07% shows the ROA variable data can be said to be good because the value the standard deviation is smaller than the mean (mean).

5.2 Classical Assumption Test

a. Normality test

The normality test aims to determine whether the nodding or residual variable in the regression model has a normal distribution. There are several ways to detect whether the residuals are normally distributed or not, one of them is by using graph analysis.

The results of the normality test are in the following picture:

One-Sample Kolmogorov-Smirnov Test

		Unstandardized Residual
N		64
Normal Parameters ^{a,b}	Mean	,0000000
	Std. Deviation	,88143685
Most Extreme Differences	Absolute	,075
	Positive	,057
	Negative	-,075
Test Statistic		,075
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.

By using the Kolmogorov Smirnov test analysis method. It is known that the significance value of 0.200 is greater than 0.05 so that it can be concluded that the tested data is normally distributed

b. Multicollinearity Test

The multicollinearity test aims to test whether the regression model is determined by the correlation between the independent variables (independent). A good regression model should not have a correlation between the independent variables. To detect the presence or absence of multicollinearity in the regression model by looking at the tolerance value > 0.10 and the opposite variance inflation factor (VIF) < 0.10 means the data does not have multicollinearity problems. The results of multicollinearity testing can be seen in table 4.2 below:

Model	Coefficients ^a				Collinearity Statistics
	Unstandardized Coefficients	Standardized Coefficients	t	Sig.	

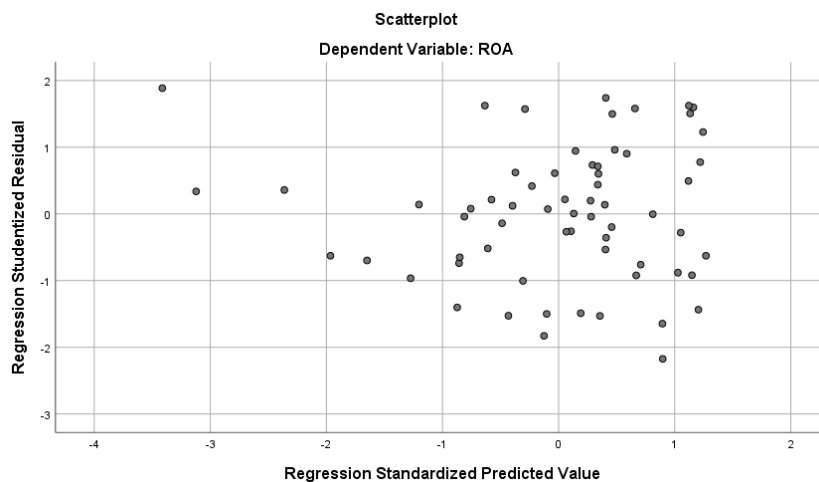
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	1,199	1,076		1,115	,269		
	NPL	-,555	,138	-,459	-4,026	,000	,864	1,157
	LDR	-,002	,006	-,030	-,271	,787	,946	1,057
	CAR	,074	,036	,232	2,061	,044	,884	1,131

a. Dependent Variable: ROA

Based on the results of the multicollinearity test shown in the table above, it is known that all tolerance values for the NPL (X1) variable are 0.864, LDR (X2) 0.946, CAR (X3) 0.884. Less than 10.00 It can be concluded that there is no correlation between the independent variables and it means that the regression model of this study is considered good.

c. 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.



The heteroscedasticity test was carried out by analyzing the scatterplot graph. The figure below shows no clear pattern, namely the points spread above and below the number 0 (zero) on the Y axis. This means that there is no heteroscedasticity

d. Hypothesis testing

Hypothesis testing is carried out after testing the classical assumptions and it is concluded that the model can be used for testing regression analysis. Hypothesis testing using the analysis of the coefficient of determination (R²) and simultaneous testing (f test).

Coefficient of Determination Test (R²)

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,572 ^a	,327	,293	,903

a. Predictors: (Constant), CAR, LDR, NPL

b. Dependent Variable: ROA

The results of the coefficient test before the interaction as shown in table shows the value of the multiple correlation coefficient (R) between the variables of **Non Performing Loan (NPL), Loan to Deposit Ratio (LDR), Capital Adequacy Ratio (CAR) and Profitability (ROA)** is 0.572. The closer to 1, the stronger the relationship. The value of the coefficient of determination (R²) is 0.327 while the value of determination that has been adjusted (Adjusted R²) is 0.293. So 29 % of the dependent variable auditor performance is explained by the independent, then 71% (100% - 29%) is explained by other variables outside the variables used in this study.

F Test

Testing of the influence of independent variables simultaneously on the dependent variable is carried out by looking at the F value as can be seen in the following ANOVA table. The test uses a 95% confidence level, = 5%, df 1 (number of variables – 1)

Model		Coefficients ^a					Collinearity Statistics	
		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Tolerance	VIF
		B	Std. Error	Beta				
1	(Constant)	1,199	1,076		1,115	,269		
	NPL	-,555	,138	-,459	-4,026	,000	,864	1,157
	LDR	-,002	,006	-,030	-,271	,787	,946	1,057
	CAR	,074	,036	,232	2,061	,044	,884	1,131

a. Dependent Variable: ROA

In significant testing there are two criteria that become measurements, namely the calculated t value compared to the t table value and the significance value compared to the standard of significance. If the t-count value is more than the t-table value and the significance value is <0.05, then it is stated that the independent variables have a significant effect on the dependent variable.

a. Hypothesis 1

Based on the coefficients in table 5.14, the Non-Performing Loan variable shows a t-count value of -4.026 while the t-table value with a degree of freedom (df) 64 – 4 = 60 and = 5% (both directions) shows a t-table value = 2,000. The results of the significance test also show the value of the Non-Performing Loan variable is 0.000.

Based on these two results, hypothesis 1 which states that non-performing loans have a significant effect on return on assets is accepted.

b. Hypothesis 2

Based on the coefficients in table 5.14, the Loan to Deposit Ratio variable shows a t-count value of -0.271 while the t-table value with a degree of freedom (df) $64 - 4 = 60$ and $\alpha = 5\%$ (both directions) shows a t-table value = 2,000. The results of the significance test also show the value of the Non-Performing Loan variable is 0.787. Based on these two results, hypothesis 2 which states that the Loan to Deposit Ratio has a significant effect on return on assets is rejected.

c. Hypothesis 3

Based on the coefficients in table 5.14, the Capital Adequacy Ratio variable shows a t-count value of -0.271 while the t-table value with a degree of freedom (df) $64 - 4 = 60$ and $\alpha = 5\%$ (two directions) shows a t-table value = 2.061. The results of the significance test also show the value of the Capital Adequacy Ratio variable of 0.044, Based on these two results, hypothesis 3 which states that the Capital Adequacy Ratio has a significant influence on return on assets is accepted

6. Conclusion

Based on the results of research and discussion of research, the following conclusions are obtained:

1. Non-Performing Loans have negative and significant effect on Return On Asset (ROA) in banking companies listed on the Indonesia Stock Exchange in 2017 -2020. The results of this study confirm the theory which states that the higher the NPL ratio, the worse the quality of bank credit, which causes the number of non-performing loans to increase. Therefore, the bank must bear losses in its operational activities so that it affects the decrease in profit (Return On Assets) obtained by the bank. This study is consistent with research conducted by Malinda (2017) showing the NPL variable has a negative effect on profitability
2. Loan to Deposit Ratio (LDR) has no effect on profitability. This can happen because the bank management does not apply the precautionary principle in assessing prospective customers who apply for financing (Nurfitriani, 2021). The size of a bank's LDR has no effect on profitability because the size of the credit provided is not supported by good credit quality. Banks can bear a greater risk if the bank in providing credit is not prudent and the expansion in lending is not controlled. The results of this study are in line with the results of previous studies which stated that LDR had no significant effect on ROA (Nurfitriani, 2021; Maharani, Slamet, and Rahman, 2021).
3. Capital Adequacy Ratio has a significant effect on return on asset. The results showed that the greater the CAR, the greater the ROA obtained by the bank. This is because CAR is a ratio that shows the capital capacity of a bank where this capital will later be used in its production activities which will generate profits for the banking sector and maintain the possibility of risk of loss of business activities. So the higher the CAR, the higher the ROA. These findings support the research results of Ahmad Buyung Nusantara (2009) and Syamsuddin (2013) which shows that the effect of CAR partially affects significantly positive on ROA.

References

- [1] Buyung Nusantara. 2009. Analysis effect of NPL, CAR, LDR, and BOPO to Profitability on Bank. *Journal of Accounting*. Muhammadiyah University of Yogyakarta
- [2] cashmere. 2014. *Banks and Other Financial Institutions*. Fourteenth printing. PT Raja Grafindo Persada. Jakarta
- [3] Dendawijaya, L. (2009). *Banking management*. Third edition. PT. Indonesian Ghalia. Bogor.

- [4] Dewi, Arifati, Andini, (2016). "Analysis of Effect Of Car, Roa, Ldr, Company Size, Npl, And Gcg To Bank Profitability (Case Study On Banking Companies Listed In Bei Period 2010-2013)", *Journal Of Accounting*, Accounting Department, Faculty of Economics and Business Unpand.
- [5] Diyah Pamularsih, (2016). "The Effect of Ldr, Npl, Nim, Bopo, Car and Interest Rates on Profitability in the Banking Sector Listed on the Indonesia Stock Exchange for the Period of 2009-2013", Accounting Department, Faculty of Economics, Pandanaran University, Semarang.
- [6] Erma Kurniasih, (2016). "The Influence of Capital Adequacy Ratio, Non Performing Loan, Loan To Deposit Ratio, Operational Efficiency, Not Interest Margin on Return On Assets
- [7] Ghozali, Imam. (2018). "Multivariate Analysis Application with IBM SPSS20 Program, Publishing Agency – Diponegoro University, Semarang.
- [8] Harahap, S. S. (2017). *Accounting Theory*. Seventh Printing. PT Raja Grafindo Persada. Jakarta.
- [9] Indonesian Accounting Association. 2012. *Financial Accounting Standards*. Salemba Four. Jakarta.
- [10] Kelvin and Oetomo, (2016). "The Effect of Car, Npl, Bopo, and Ldr on ROA on the Foreign Exchange Bus", Indonesian College of Economics (Stiesia) Surabaya.
- [11] Maharani, S. A., Slamet, A. R., & Rahman, F. (2020). Pengaruh CAR, NPL, LDR dan NIM Terhadap Profitabilitas Perbankan (Studi Kasus Pada Bank Umum yang Terdaftar di BEI Tahun 2017-2019). 1997(November 1997), 82–94.
- [12] Malinda. 2017the Effect Of Non Performing Loan, Capital Adequacy Ratio, And Loan To Deposit Ratio On Banking Profitability (Roa) Listed On The Indonesia Stock Exchange For The 2013-2017 Period. Universitas Pakuan
- [13] Nurfitriani, I. (2021). The Influence of Capital Adequacy Ratio (CAR), Non Performing Loan (NPL), and Loan to Deposit Ratio (LDR) to Return On Asset (ROA) At the Bank Muamalat Indonesia. *Jurnal At-Tamwil*, 3(1), 50–67
- [14] Purnomo, Sriwidodo, Wibowo, (2018). "The Influence of Financial Ratios on Financial Performance in Foreign Exchange National Private Commercial Banks Listed on the Indonesia Stock Exchange for the Period 2013 - 2016", Management Study Program, Faculty of Economics, Slamet Riyadi University, Surakarta.
- [15] Sugiyono, (2017), "Quantitative Qualitative Research Methods for R & D", Twenty-sixth Printing, Alfabeta Publishers, Bandung
- [16] Syamsuddin (2013) The EFFECT OF Capital Adequacy Ratio (CAR), Non Performing Loan (NPL) BOPO, loan to Deposit Ratio and Net Interest Margin to Profitability

