

## **The Effect Of Capital Adequacy Ratio On Return On Assets With Problem Credit Ratio Moderation**

**Case Study In The Sub-Sector Of The National Private Foreign Exchange National  
Bank Listed On The Indonesia Stock Exchange In 2014-2018**

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### **ABSTRACT**

The study aims to determine the effect of Capital Adequacy Ratio on Return On Asset with the moderation of Non-Performing Loan sub sector of national foreign exchange private banks listed on the Indonesian stock exchange (IDX) in 2014-2018 with a population of 22 banks. The analysis technique used are simple Linear Regression and Moderated Regression Analysis (MRA). The result showed that the Capital Adequacy Ratio has a positive and significant effect on Return On Asset. While the Capital Adequacy Ratio of Non-Performing Loan is not able to moderate the Capital Adequacy Ratio with Return On Asset.

Keywords : Return On Asset, Capital Adequacy Ratio, Non-Performing Loan.

### **INTRODUCTION**

The existence of financial intermediaries institution namely banks, is very important in a modern economic system. As an intermediary institution, banks must have good financial performance, because with good financial performance, banks will more easily get the trust of their customers. One of the main objectives of bank operations is achieving maximum profitability.

Profitability is the most important indicator to measure the performance of a bank. The ratio commonly used to measure profitability performance is the Return on Asset (ROA). ROA is important for banks because ROA is used to measure the effectiveness of the company in generating profits by utilizing its assets.

The greater the Return On Assets (ROA) of a bank, the greater the level of profit achieved by the bank and the better the bank's position in terms of the use of its assets. The effort to increase the growth of a bank can be seen from the bank's financial performance that can affect the Return On Assets (ROA) in terms of financial ratios, such as Capital Adequacy Ratio (CAR), and Non-Performing Loans (NPL).

According to Kuncoro and Suhardjono (2011: 519) Capital Adequacy Ratio is the capital adequacy ratio that shows the ability of banks to identify, measure, monitor, and control risks that arise that can affect the amount of bank capital. The issue of capital adequacy is an important thing in the banking business. Banks that have a good level of capital adequacy, show indicators as a healthy bank. Based on Bank Indonesia regulations, the minimum capital adequacy requirement for each bank is 8% (PBI No.15 / 12 / PBI / 2013 Concerning the Minimum Capital Requirement for Commercial Banks).

In achieving optimal ROA, banks are faced with various risks including credit risk. Credit risk can be seen from the amount of Non-Performing Loans (NPL). The amount of NPL will affect ROA and CAR, because the greater the credit risk faced by banks will increase the formation of Allowance for Earning Asset Losses (PPAP) from owned equity, so that the reduced share of equity which is a component of capital adequacy.

Some previous studies show inconsistent results. This encourages this research. Judging from the background of these problems, then a study entitled "The influence of the Capital Adequacy Ratio (CAR) on Return On Assets with the Moderation of Problematic Credit Ratios". Based on the background described above, it can be concluded the formulation of the problem from this study: (1) How the effect of the Capital Adequacy Ratio (CAR) on Return on Assets (ROA) on Private Commercial Banks listed on the Indonesia Stock Exchange for the period 2014-2018? (2) How does Non-Performing Loans (NPL) moderate the effect of Capital Adequacy Ratio (CAR) with Return On Assets (ROA) on Private Commercial Banks listed on the Indonesia Stock Exchange for the 2014-2018 period?

Findings from previous studies regarding factors that affect the profitability of the banking sector show inconsistent results. Research conducted by Sri Septiarini and I wayan Ramantha (2014) shows that CAR has a positive and not significant effect on profitability proxied by ROA. This study is in line with the results of research of Riski Agustiningrum (2014) shows that CAR has no significant effect on ROA.

However, this is different from the results of Putu Agus Atmaja and Ketut Sujana (2014) research that shows that CAR has a positive and significant effect on profitability proxied by ROA. The results of Gusti Ayu Dwi A and Nyoman Abundanti (2018) showed that CAR had a positive and significant effect on ROA. This study is in line with the research results of Samsurizal and Astohar (2016) and shows that CAR has a positive and significant effect on profitability (ROA).

Research conducted by Sri Septriani and IW Ramantha (2014) shows that NPL has a positive effect and significant effect on the relationship between CAR and ROA. Research conducted by Wayan Suardita and M. Asri Dwija Putri shows that credit risk has a significant effect on CAR's relationship with profitability. This study is not in line with the results of Putu Agus and Ketut Sujana's (2014) research showing that NPL results have a negative effect on the relationship between CAR and Profitability. Based on these results, the research hypothesis is:

Hypothesis-1: It is suspected that the Capital Adequacy Ratio has a positive and significant effect on Return On Assets.

Hypothesis-2: It is suspected that the Non-Performing Loans can moderate the influence of Capital Adequacy Ratio with Return On Assets.

## METHOD

The population in this study is the National Private Foreign Exchange Bank in 2014-2018 using data collection methods used are secondary data, namely financial statements from 2014-2018 by accessing [www.idx.co.id](http://www.idx.co.id)

The determination of the sample is done by Purposive Sampling with the following sample criteria: 1) Public Private National Bank Foreign Exchange Public listed on the IDX; 2) Having the most complete and published financial statements from 2014-2018; 3) Present the audited annual financial statements for the 2014-2018 period; 4) Present information in the financial statements relating to the research variables; 5) Presenting in full the ratio data needed in this study during the 2014-2018 periods. Based on these criteria, the sample used in this study were 10 banks

from 22 banks with five years of observation. The variables used: 1) the independent variable is the Capital Adequacy Ratio; 2) The independent variable is the Troubled Credit Ratio; 3) The moderating variable is Return On Assets. Hypothesis testing in this study was conducted using Simple Linear Regression and Moderated Regression Analysis (MRA). MRA is a special application of linear multiple regression where the regression equation contains an interaction element (Ghozali, 2011: 223).

According to (Sugiyono, 2010: 270) The equation of a simple linear regression model is:

$$Y = a + bX \dots\dots\dots(1)$$

Information :

Y = subject in the predicted dependent variable (ROA)

X = independent variable that has a certain value to be predicted (CAR)

a = price of Y if X = 0 (constant price)

b = direction number or regression coefficient, which shows the number of increase or decrease in the dependent variable based on the independent variable. If b (+) then rises, and if (-) there is a decrease.

While the Moderated Regression Analysis model equation.

$$Y = a + b_1X_1 + b_2M_1 + b_3X_1M_1 + e \dots\dots\dots(2)$$

Information :

Y = Dependent Variable Return on Assets (ROA)

a = constant

b = Regression Coefficient

X<sub>1</sub> = Independent Variable Capital Adequacy Ratio (CAR)

M<sub>1</sub> = Variable Problem Ratio (NPL) Moderation

e = confounding variable

Linear regression test is done after the data is free from the classic assumption test, that is, a normality test is performed to test whether in the regression model the independent variable and the dependent variable have a normal distribution or not (Ghozali, 2012: 160), the heteroscedasticity test aims to test whether in the regression model there is an inequality of variance from the residuals of one observation to another. According to (Ghozali, 2012: 110) the autocorrelation test aims to test whether in a linear regression model there is a correlation between the interruption error in the t period and the confounding error in the t-1 period (before).

## RESULT AND DISCUSSION

**Table 1**  
**Descriptive Statistics**

	N	Minimum	Maximum	Mean	Std. Deviation
ROA	50	.24	3.86	1.6336	.84859
CAR	50	15.17	35.12	21.2324	4.93967
NPL	50	.34	6.11	2.6440	1.10158
INTERACTION	50	5.59	126.08	55.9674	24.92706
Valid N (listwise)	50				

Source: SPSS data processing results 23

In Table 1, the minimum ROA value is 0.24 obtained by CIMB Niaga Bank, the maximum value is 3.86 obtained by Mestika Dharma Bank, and the mean (average) ROA value is 1.6336 and the standard deviation is 0,84859. Standard deviation values that are smaller than the average value indicate that ROA data are normal. The smaller the standard deviation the better, because the small standard deviation indicates a small deviation.

The Capital Adequacy Ratio shows that the minimum value of 15.17 obtained by Bank Maybank Indonesia, the maximum value of 35.12 obtained by Bank Mestika Dharma, and the mean (average) CAR value of 21.2324 and the standard deviation of 4,93967, Standard deviation values smaller than the mean indicate that the data from the CAR are normal.

The Non-Performing Loan Ratio shows the result that the minimum value of 0.34 obtained by Capital Indonesia Bank, the maximum value of 6.11 obtained by Bank Artha Graha International, the mean value (average) of NPL of 2.6440 and the standard deviation of 1,10158. Standard deviation values that are smaller than the average value indicate that the data from the NPL is normal.

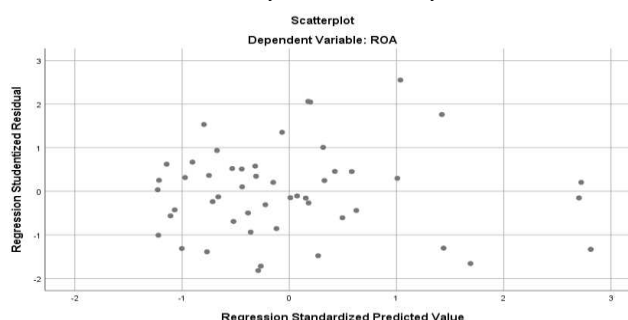
The interaction between the Capital Adequacy Ratio and the Non-Performing Loan shows that the minimum value is 5.59, the maximum value is 126.08, the average value is 55.9674 and the standard deviation value is 24.92706. The standard deviation of interactions between the Capital Adequacy Ratio and the Non-Performing Loan is smaller than the average, indicating that the CAR and NPL data are normal.

**Tabel 2**  
**Normality Test Results**  
**One-Sample Kolmogorov-Smirnov Test**

		Unstandardized Residual
N		50
Normal Parameters <sup>a,b</sup>	Mean	,0000000
	Std. Deviation	,64833365
Most Extreme Differences	Absolute	,072
	Positive	,072
	Negative	-,046
Test Statistic		,072
Asymp. Sig. (2-tailed)		,200 <sup>c,d</sup>

Source: SPSS data processing results 23

Based on the results of the classic assumption test value Kolmogorov Smirnov test, it can be seen that the Asymp value. Sig (2-tailed) of 0,200. Asymp Value Sig that exceeds the level of significant (0.05), shows that there is no centralization or grouping of data at one point, so that it can be said that the residual data in this study are normally distributed.



**Figure 1**  
**Heteroscedasticity Test Results**  
Source: SPSS data processing results 23

Based on the picture above it can be seen that the residual data in the two regression models spreads both above and below the 0 point and does not form a specific pattern. Thus the regression model proposed in this study does not occur symptoms of heteroscedasticity.

**Table 3**  
**Autocorrelation Test Results**  
**Model Summary<sup>b</sup>**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	,522 <sup>a</sup>	,273	,241	,58475	1,844

a. Predictors: (Constant), lag\_interaksi, lag\_X1

b. Dependent Variable: lag\_Y

Source: SPSS data processing results 23

Based on the D-W table, obtained dU = 1.5849 and dL = 1.5035. Value of dU 1.5849 < DW 1,844 < 4 - 1.5849 = 2.4151 means that there are no autocorrelation symptoms.

**Table 4**  
**Simple Linear Regression Test Results**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	-,627	,424		-1,477	,146
CAR	,106	,019	,620	5,469	,000
R	,620				
R Square	,384				
Adjusted R Square	,371				

Source: SPSS data processing results 23

$$Y = -0,627 + 0,106 \text{ CAR} + e \dots\dots\dots(3)$$

The results of the simple linear regression equation show that the coefficient of the independent variable CAR which is positive means it has a direct effect on Return On Assets. Simple linear regression results can also be seen Adjusted R <sup>2</sup> value of 0.371. This value shows that 37.1% of the variation in Return On Assets (ROA) which can be explained by the Capital Adequacy Ratio (CAR), while the remaining 62.9% is explained by other indicators that can affect ROA.

**Table 5**  
**Uji Moderated Regression Analysis**

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
1 (Constant)	-1,817	1,530		-1,188	,241
CAR	,185	,078	1,079	2,388	,021
NPL	,435	,535	,565	,813	,420
INTERAKSI	-,029	,028	-,859	-1,062	,294
R	,652				
R Square	,425				
Adjusted R Square	,387				

Source: SPSS data processing results 23

$$Y = -1,817 + 0,185CAR + 0,435NPL - 0,029CAR * NPL + e \dots\dots\dots(4)$$

Based on the calculation of the hypothesis test, it can be concluded that the effect of Capital Adequacy Ratio (CAR) on Return On Assets (ROA) in the t test obtained sig. 0,000 < 0.05 and t arithmetic = 5.469 and t table = 1.677 then t arithmetic > t table. So it can be concluded that in terms of Capital Adequacy Ratio has a significant effect on Return On Assets. So the first hypothesis can be accepted.

The second hypothesis states that Non-Performing Loans are able to moderate the effect of Capital Adequacy Ratio with Return on Assets. Persistently obtained t count of -1.062 and a significance of 0.294. These results indicate that the Non-Performing Loan has a negative effect on the relationship between the Capital Adequacy Ratio and the Return On Asset or the Credit Ratio is not able to moderate the relationship between the Capital Adequacy Ratio to the Return On Asset.

## CONCLUSION

Based on the results of testing and discussion that has been done, it can be concluded that: 1) Capital Adequacy Ratio has a significant effect on Return On Assets. So the first hypothesis can be accepted; 2) Non-Performing Loans negatively affect the relationship between Capital Adequacy Ratio and Return on Assets or Credit Ratio is not able to moderate the relationship between Capital Adequacy Ratio to Return on Assets.

Based on that conclusions, suggestions for further authors to add or replace other variables such as those that affect Return On Assets such as BOPO, LDR, ROI and are expected to be able to examine with other variables outside this variable in order to obtain more varied results that can describe things anything that can affect ROA and can extend the observation period last 7 years.

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