

**The Determinant of Banking Profitability in Indonesia (A Study of  
Commercial Banks Listed on the Indonesia Stock Exchange in 2013-2019)**

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**By: Muhammad Parhan**

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## **The Determinant of Banking Profitability in Indonesia**

**(A Study of Commercial Banks Listed on the Indonesia Stock Exchange in 2013-2019)**

**Muh Parhan**

Faculty of Economics and Business, Universitas Brawijaya

### **ABSTRACT**

This study aimed to analyze the effect of Capital Adequacy Ratio (CAR), Non Performing Loan (NPL), Net Interest Margin (NIM), Operating Expense to Operating Income (BOPO), Loan to Deposit Ratio (LDR) on Banking Profitability (ROA) at commercial banks listed on the IDX in 2013-2019. There was a decline in the growth of third party funds and credit from 2013 to 2019 which had an effect on bank profitability. Therefore the authors are interested in taking the title determinants of profitability of commercial banks in Indonesia which are listed on the IDX. Data analysis technique used the panel data regression with a fixed effect model. The data used are secondary data in the form of published financial ratios with a total of 154 observations. The sample consisted of 22 banks which was conducted by means of purposive sampling. The results show that CAR has a positive and significant effect towards ROA. NPL has a negative and significant effect on ROA. NIM has an effect but not significant on ROA. BOPO has a negative and significant effect towards ROA. LDR has an effect but not significant on ROA. Simultaneously CAR, NPL, NIM, BOPO, and LDR have a significant effect on ROA of commercial banks listed on the IDX 2013-2019.

*Keywords: CAR, NPL, NIM, BOPO, LDR, ROA.*

## **A. INTRODUCTION**

Banking is a financial institution that plays an important role in economic stability. The fundamentals of banking activities are trust, which raises and distributes funds. It because the banking sector is an institution that carries the main function as a financial intermediary between those who need funds and as an institution that functions to facilitate the flow of payment traffic (Veithzal et al. 2007: 109).

The linkage between monetary policy and banking occurs through two stages of monetary transmission in the circulation of money. With this interaction, monetary policy affects the development of interest rates, the volume of public funds deposited in banks, loans provided by banks to businesses, and the development of money market transactions conducted by banks. This development will determine the effect of monetary policy on the development of aggregate demand in the real sector, both consumption and investment, and will ultimately determine the rate of economic growth and inflation, which are the final targets of monetary policy (Warjiyo, 2007).

The main objective of the bank is to achieve maximum profitability. Profitability is the ability of banks to generate or obtain profits used to assess the extent to which banks can generate profits effectively and efficiently (Kumbirai 2010). The profitability level in this study is measured using the financial ratio of Return on Assets (ROA), because ROA is more focused on the ability of banking companies to earn profits in the operations of banking companies as a whole. The higher the ROA of a bank, the more profitable the bank (Kumbirai 2010).

There are several previous studies relating to the measurement of banking performance by using financial ratios to assess bank profitability. Study conducted by Werdaningtyas (2002) and Yuliani (2007) shows that Capital Adequacy Ratio (CAR) has a positive and significant effect on bank profitability. This is different from Mawardi (2004), Pahlevie (2009), and Qin and Pastory (2012), which shows that the Capital Adequacy Ratio has a negative effect.

Non Performing Loans (NPL) examined by Mawardi (2004), Pahlevie (2009) and Qin and Pastory (2012) shows that NPLs have a significant negative effect on bank profitability. This is different from Petria (2013) which shows that NPL has a positive effect.

Net Interest Margin (NIM) examined by Mawardi (2004) shows that it has a positive effect on bank profitability. This is different from study conducted by Pahlevie (2009), which shows that NIM does not have a significant effect.

Operational Cost on Operating Income (BOPO) examined by Mawardi (2004) and Yuliani (2007) shows that BOPO has a negative and significant effect on bank profitability. While study conducted by Pahlevie (2009) indicates that BOPO does not have a significant effect.

Loan to Deposit Ratio (LDR) examined by Pahlevie (2009) and Qin and Pastory (2012) shows that LDR has a positive effect on bank profitability. While study conducted by Werdaningtyas (2002) shows that LDR has a negative effect.

Based on the background above, a study entitled "**The Determinant of Banking Profitability in Indonesia (A Study of Commercial Banks Listed on the Indonesia Stock Exchange in 2013-2019)**" is considered important to be

conducted by researchers. The ratios used in this analysis are ROA, CAR, NPL, NIM, BOPO, and LDR. So the problems that can be formulated in this study are as follows: Is there an effect of CAR, NPL, NIM, BOPO, LDR on the profitability of commercial banks listed on the Indonesian stock exchange?

## **B. LITERATUR REVIEW**

### **Definition of Bank**

According to RI Law Number 10 year 1998 dated November 10, 1998 concerning banking, what is meant by a bank is a business entity that collects funds from the public in the form of deposits and distributes them to the public in the form of credit and or other forms to improve the standard of living common people.

Banks are financial intermediaries who accept deposits, provide credit, and provide services in a broad menu for various financial institutions (Rose 2002: 2). Banks are financial institutions that collect funds from the public in deposits and then distribute them back to the public and provide other bank services (Kasmir 2011: 2).

From the above understanding, it can be explained more broadly that the bank is a company engaged in the financial sector, meaning that activities are banking always related to the financial sector, so talking about banks cannot be separated from financial problems.

### **Return On Assets (ROA)**

ROA, according to Bank Indonesia Circular Letter No 6/23/DPNP dated May 31, 2004, is a ratio that assesses how much the return of assets owned. According to Krawish (2011), ROA is one of the main ratios that shows bank

profitability. The ratio measures bank management's ability to generate revenue by utilizing the company's assets they have.

ROA shows management's ability to obtain deposits at reasonable costs and invest them in profitable investments. The higher the ROA, the more profitable the bank (Ahmed 2009). Based on Circular Letter of Bank Indonesia No.13/30/DPNP dated December 16, 2011, the formula used in the calculation of ROA is as follows:

$$\text{ROA} = \frac{\text{Profit Before Tax}}{\text{Total Assets}} \times 100\%$$

The assessment of ROA based on Bank Indonesia Circular Letter No.13/24/DPNP on October 25, 2011, is  $\text{ROA} > 1.5\%$ .

### **Capital Adequacy Ratio (CAR)**

According to Faisal (2007), CAR shows the extent to which risky bank assets (credit, investments, letters valuable, bills at other banks) are also financed from the bank's own funds in addition to obtaining funds from sources outside the bank, such as public funds, loans (debt), etc. Capital consists of core capital and supplementary capital. Calculation of capital and Risk Weighted Assets (RWA) is the total value of each bank asset after being multiplied by each asset's risk weight. Based on Bank Indonesia Regulation No.15/12/PBI/2013 concerning the minimum capital adequacy requirement, the percentage each bank must fulfill is 8%.

CAR calculation according to Circular Letter of Bank Indonesia No.13/30/DPNP dated 16 December, 2011 can be formulated as follows:

$$\text{CAR} = \frac{\text{Bank Capital}}{\text{Risk Weighted Asset}} \times 100\%$$

### **Non Performing Loan (NPL)**

According to Simanjuntak (2016), NPL is a non-performing loan that is one of the keys to assessing bank performance quality. NPL is a ratio used to measure banks' ability to maintain the risk of failure to repay loans by debtors (Darmawan 2004). Based on the BI Circular Letter Number 13/30/DPNP dated December 16, 2011, the NPL calculation can be obtained as follows:

$$\text{NPL} = \frac{\text{Problem Credit}}{\text{Total Credit}} \times 100\%$$

NPL ratio assessment is based on BI DIR Decree No.30/12 KEP/DIR April 30, 1997, is  $\text{NPL} < 5\%$  included in a bank healthy.

### **Net Interest Margin (NIM)**

Based on Bank Indonesia regulation No. 5/2003, one proxy of market risk is the interest rate. Thus, market risk can be measured by the difference between the funding interest rate and the loan interest rate given (lending) or in absolute form, which is the difference between the total cost of funding interest total loan interest costs, which in banking terms are called Net Interest Margin (NIM) (Mawardi 2004). Net Interest Margin Ratio can be formulated based on the Financial Services Authority Circular Letter No.14/SEOJK.03/2017:

$$\text{NIM} = \frac{\text{Net Interest Income}}{\text{Average Earning Assets}} \times 100\%$$

The NIM ratio evaluation based on Circular Letter of Bank Indonesia Number 13/30/DPNP dated December 16, 2011 is  $\text{NIM} > 3\%$ .

### **Operating Expense to Operating Revenues (BOPO)**

BOPO is the ratio between operating costs to operating income. Operating income is the bank's main income, which is the income obtained from the placement of funds in the form of credit and other operating income. According to Bank Indonesia Circular Letter No.15/7/DPNP dated March 8,2013, benchmarks BOPO for commercial banks BOOK I set a maximum of 85%. Benchmarks are the average bank BOPO by the group. This means that the BOPO ratio that must be maintained by commercial banks is no more than 85%.

$$\text{BOPO} = \frac{\text{Operating Expense}}{\text{Operating Income}} \times 100\%$$

### **Loan to Deposit Ratio (LDR)**

LDR is a ratio that measures the ability of banks to meet obligations finance that must be fulfilled immediately. According to the Bank Indonesia Association (2014: 180), Loan to Deposit Ratio (LDR) is a loan ratio given to third parties in Rupiah and foreign currencies, not including credit to other banks, to Third Party Funds which includes current accounts, savings, and deposits in Rupiah and foreign currencies, not including interbank funds. Based on BI Circular Letter No. 15/41/DKMP dated October 1, 2013, the lower limit provisions for LDR are 78% and the tolerable upper limit is 100% (IBI 2014: 183). LDR calculation following BI Circular Letter Number 13/30/DPNP dated December 16, 2011, is as follows:

$$\text{LDR} = \frac{\text{Total Loans}}{\text{Total Deposits}} \times 100\%$$



## **Previous Research**

A study by Hesti Werdaningtyas (2002) about factors affecting the profitability of Bank Take Over in Indonesia. The ratio used in this study is ROA, asset share, share funds, share credit, CAR, LDR, and Dummy. In this study, researchers used multiple linear regression analysis. The results show that CAR, as independent variable, has a positive and significant effect. LDR, as independent variable, has negative and significant effect. While asset share, fund share, and credit share have an insignificant effect.

Wisnu Mawardi (2004) analyzed the factors affecting the financial performance of commercial banks in Indonesia. The ratio used in this study are ROA, NPL, BOPO, NIM, CAR. The researchers used multiple linear regression analysis. The results of this study stated that NPL and BOPO have a significant negative effect. Whereas NIM has a significant positive effect. CAR ratio has no significant effect. The dependent variable in this study is bank profitability performance (ROA).

Yuliani (2007) examined the relationship of operational efficiency with profitability performance in the sector banks that went public on the JSE. The ratio used in this study are ROA, MSDN, CAR, BOPO, LDR. In this research, researchers used multiple linear regression analysis. The results showed that BOPO has a significant negative effect, while CAR has a significant positive effect on bank profitability performance. MSDN and LDR have no significant effect on the profitability of banks.

Nu'man Hamzah Pahlevie (2009) analyzed the effect of CAR, NIM, LDR, NPL, BOPO and EAQ on earnings changes at commercial banks in Indonesia. The ratio used in this study are CAR, NIM, LDR, NPL, BOPO, and EAQ. In this research, researchers used multiple linear regression analysis. The results of this study stated that NIM, BOPO have no significant effect. CAR does not have a significant positive effect, while the EAQ does not have a significant negative effect. The LDR has a significant positive effect and the NPL has a significant negative effect.

Xuezhi Qin and Dickson Pastory (2012) conducted study entitled "Commercial Banks Profitability Position: The Case of Tanzania." The ratio used in this study are ROA, CAR, LDR, and NPL. In this study, researchers used panel regression analysis. The results show that liquidity and asset quality have a positive impact on profitability except for the level of problem loans, which has a negative effect on profitability and capital adequacy (CAR), which has shown a negative impact on profitability.

Study by Ćurak et al. (2012) entitled "Profitability Determinants of the Macedonian Banking Sector in Changing Environment" investigated the ratio ROA, Bank Size, LAR, LDR, Credit Risk, Fees income, OEM, Concentration, EBRD, and Economic growth. In this study, researchers used panel regression analysis. The results show that solvency risk (LAR) and liquidity risk (LDR) have a significant effect. While economic growth, banking system reform and concentration have a positive effect on profitability.

Petria et al. (2013) on "Determinants of Banks' Profitability: Evidence from EU 27 Banking Systems" investigated the ROA, ROE, Bank Size, CAR, NPL, Efficiency, LDR, busmix, Market Concentration, Inflation, and Economic Growth. In this study, researchers used panel regression analysis. The results showed that profitability was positively influenced by credit risk (NPL), and liquidity risk (LDR), management of competition efficiency, and economic growth. Here are some of the previous studies

### **Hypothesis**

A hypothesis is a statement that is temporarily considered to be true. Based on the formulation of the problem, objectives, theory, previous studies, and the conceptual framework, the hypotheses in this study are:

1. H<sub>1</sub>: CAR has significant effect on ROA.
2. H<sub>2</sub>: NPL has a significant negative effect on ROA.
3. H<sub>3</sub>: NIM has a significant effect on ROA.
4. H<sub>4</sub>: BOPO has significant effect on ROA.
5. H<sub>5</sub>: LDR has a significant effect on ROA.

## **C. RESEARCH METHODOLOGY**

### **Research Design**

In this study, the researchers employed quantitative approach. Quantitative approach emphasizes the analysis of numerical data (numbers), which are then analyzed by statistical methods. According to the explanation, this study is an associative type of research, namely research that aims to determine the effect or relationship between two variables or more (Sugiyono 2003: 11).

## Population and Sample

The population used in this study is banking companies listed on the Indonesia Stock Exchange from 2013 to 2019. The number of banks going public has a population of 43 banks. The sampling technique in this study is purposive sampling, which is a sampling technique based on certain criteria or considerations.

The criteria for determining the sample are as follows:

1. Banks listed on the Indonesia Stock Exchange for the period 2013-2019.
2. Banks that have complete financial reports and have been published from 2013-2019.
3. Bank companies have positive ROA for the period 2013-2019

### Sample List

NO	Name of Banking Company
1	Bank Rakyat Indonesia Agroniaga, Tbk
2	Bank Central Asia, Tbk
3	Bank Bukopin, Tbk
4	Bank Negara Indonesia,
5	Bank Rakyat Indonesia, Tbk
6	Bank Danamon Indonesia, Tbk
7	Bank Pembangunan Daerah Jawa Timur, Tbk
8	Bank Mandiri, Tbk
9	Bank Bumi Arta, Tbk
10	Bank CIMB Niaga, Tbk
11	Bank Maybank Indonesia, Tbk
12	Bank BTPN, Tbk
13	Bank Mayapada International, Tbk

14	Bank China Construction Bank Indonesia, Tbk
15	Bank Mega, Tbk
16	Bank OCBC NISP, Tbk
17	Bank Pan Indonesia, Tbk
18	Bank Mestika Dharma, Tbk
19	Bank Maspion Indonesia, Tbk
20	Bank Sinar Mas, Tbk
21	Bank Capital Indonesia, Tbk
22	Bank Ina Perdana, Tbk

Source : Indonesia Stock Exchange

### **Data Type and Source**

The type of data used in this study is secondary data in the form of time series and inter-individual data . Financial ratio data used were obtained from the published financial statements issued by Bank Indonesia in 2013 to 2019. Data sources used in this study were obtained from internet media from the Financial Services Authority website and the Indonesia Stock Exchange.

The data collection method used in this study is the documentation method. The documentation method seeks data about things or variables in the form of notes, transcripts, books, newspapers, magazines, inscriptions, minutes of meetings, leggers, agendas, and so on. Data analysis method is a method used to process the results of research in order to answer the problem formulation. The data analysis technique used in this study is panel data regression analysis.

### **Panel Data Regression**

Panel data is a combination of time series data and cross-section data (Caraka, 2017). The use of panel data in regression makes it possible to capture the

characteristics between individuals and between times. The panel data regression equation used is as follows:

$$Y_{it} = a + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \beta_4 X_{4it} + \beta_5 X_{5it} + e_{it}$$

Description:

Y	= Return On Asset (ROA)
a	= Constant term
$\beta_1 - \beta_5$	= Regression coefficients variables Independent
X <sub>1</sub>	= Capital Adequacy Ratio (CAR)
X <sub>2</sub>	= Non Performing Loan (NPL)
X <sub>3</sub>	= Net Interest Margin (NIM)
X <sub>4</sub>	= Operating Expense to Operating Income (BOPO)
X <sub>5</sub>	= Loan to Deposit Ratio (LDR)
e	= Error Term
t	= Time
i	= Entity

### **Estimation of Model Selection**

To determine which model is most appropriate for panel data processing, there are some tests that can be done, among others (Caraka, 2017):

#### 1. Chow Test

Chow test is a test to determine the Fixed Effect or Common Effect model that is more appropriate to be used in estimating panel data. This test is carried out with the following hypothesis:

$$H_0 : \text{Common Effect Model}$$

$H_1$  : Fixed Effect Model

The Chow test statistic follows the distribution of F-statistics namely  $F_{(N-1, NT-N-K)}$ ;  $\alpha$ . If the statistical Chow value is greater than F-table or P-Value  $< \alpha$ , then there is enough evidence to reject  $H_0$  and vice versa.

## 2. Hausman Test

Hausman test is used to compare Fixed Effect models with Random effects.

This test is carried out with the following hypotheses:

$H_0$  : Random Effect Model

$H_1$  : Fixed Effect Model

Hausman statistics spread Chi-Square, if the value of  $X^2$  of the test result is greater than  $X^2(K, \alpha)$  ( $K$  = number of independent variables) or P-Value  $< \alpha$ , then there is enough evidence to reject  $H_0$  and vice versa.

## Hypothesis Testing

### 1. Simultaneous Hypothesis Test (F Test)

This F test is used to determine whether there is an influence simultaneously on independent variables on the dependent variable. The hypothesis used in this test is:

$H_0: b_1 = b_2 = b_3 = b_4 = b_5 = 0$ , meaning that there is no influence significance of the independent variables together on the variable dependent.

$H_a: b_1 \neq b_2 \neq b_3 \neq b_4 \neq b_5 \neq 0$ , meaning that there is a significant influence of the independent variables together on the dependent variable.

### 2. Partial Hypothesis Test (T Test)

This test is carried out to determine the significance of the partial role between the independent variables to the dependent variable by assuming that other

independent variables are considered constant. This test is performed with an alpha significance level of 5%. The hypotheses used in this study are:

- a. The value of t count  $>$  t table or the value of prob. t-statistic significance level, then reject  $H_0$  or which means that the independent variable affects the dependent variable in the model.
- b. The t value  $<$  t table or the prob value. t-statistic  $>$  significance level, then it does not reject  $H_0$  or it means that the independent variable has no effect in the model on the dependent variable.

### 3. The Coefficient of Determination

The coefficient of determination ( $R^2$ ) is used to measure the magnitude of the effect of all the independent variables in the regression model on the dependent variable. The magnitude of the coefficient of determination in the form of a percentage, which shows the percentage variation in the value of the dependent variable that can be explained by the regression model.

## **D. RESULTS AND DISCUSSION**

### **Panel Data Regression Model Selection Test**

The best panel regression model selection test includes the Chow test and the Hausman test. The following is a review of the results of the model selection test best panel regression done:

**Tabel 3 Review of Panel Data Regression Model Selection Test**

Probability	
Chow Test Result	0.0001
Hausman Test Result	0.0253



From Table 3, it can be seen that the probability value of Chow test and Hausman test results has a consistent value. The probability value of the two test results shows below the alpha value used is 0.000 ( $0.00 < 0.05$ ), so that from these results shows that the best panel data regression model used the fixed effect model.

### Panel Data Regression Analysis

Based on the classical assumption test results, the regression model used is still exposed to heteroscedasticity symptoms. To overcome the heteroscedasticity symptom in the panel data model, a robust standard error technique can be used, also known as heteroskedasticity robust standard errors.

**Table 5 Fixed Effect Model with Robust Standard Error**

Fixed-effects (within) regression		Number of obs	=	154	
Group variable: bankingcom~y		Number of groups	=	22	
R-sq:		Obs per group:			
within	= 0.7200	min	=	7	
between	= 0.9332	avg	=	7.0	
overall	= 0.8766	max	=	7	
corr(u_i, Xb) = -0.3131		F(5,21)	=	47.91	
		Prob > F	=	0.0000	
(Std. Err. adjusted for 22 clusters in bankingcompany)					
roa	Coef.	Robust Std. Err.	t	P> t	[95% Conf. Interval]
car	.0346305	.014307	2.42	0.025	.0048775 .0643835
npl	-.1544187	.0705154	-2.19	0.040	-.3010634 -.007774
nim	.1509203	.0766173	1.97	0.062	-.0084141 .3102547
bopo	-.083825	.0098209	-8.54	0.000	-.1042487 -.0634013
ldr	.0008398	.0073245	0.11	0.910	-.0143923 .016072
_cons	7.603451	1.323506	5.74	0.000	4.85107 10.35583
sigma_u	.27675198				
sigma_e	.33876301				
rho	.40026571	(fraction of variance due to u_i)			

Source : Output Stata 14

Based on the table above, the regression model equation between the dependent variable (ROA) and the independent variable (CAR, NPL, NIM, BOPO, and LDR) is as follows:

$$\text{ROA} = 7.603451 + 0.0346305\text{CAR}_{it} - 0.1544187\text{NPL}_{it} + 0.1509203\text{NIM}_{it} - 0.083825\text{BOPO}_{it} + 0.0008398\text{LDR}_{it} + \text{eit}$$

From the above equation, it can be explained that:

- a. A constant of 7.603451 shows that if the independent variables (CAR, NPL, NIM, BOPO, and LDR) are constant, then the ROA value is 7.603451.
- b. The regression coefficient of 0.0346305 shows that if CAR value increases by 1%, then ROA will increase by 0.0346305.
- c. The regression coefficient of -0.1544187 shows that if NPL value increases by 1%, then ROA will decrease by -0.1544187.
- d. The regression coefficient of 0.1509203 shows that if the NIM value increases by 1%, then ROA will increase by 0.1509203.
- e. The regression coefficient of -0.083825 shows that if BOPO value increases by 1%, then ROA will decrease by -0.083825.
- f. The regression coefficient of 0.0008398 shows that if LDR value increases by 1%, then ROA will increase by 0.0008398.

### **Hypothesis Testing**

1. Simultaneous Hypothesis Test (F Test)

Based on the F test result in Table 5 above, it can be seen that the value of Prob > F is 0.0000, so that H0 is rejected, and H1 is accepted. Thus, it can be

concluded that simultaneously there is a significant influence between the independent variables (CAR, NPL, NIM, OEOI, and LDR) on ROA.

## 2. Partial Hypothesis Test (T Test)

### The effect of CAR on ROA

The first hypothesis is used to test the truth that CAR has a positive and significant effect on ROA. The result of the partial test (t test) between CAR and ROA shows the t value of 2.42 with a significant value of 0.025, which is below 0.05. It means that CAR has a significant effect on ROA. So that H<sub>1</sub> which states that CAR ratio has a significant effect on ROA is accepted.

The greater the CAR, the greater the ability of the bank to generate profits and the higher the ability of bank capital to finance productive assets. According to Niar (2016), the size of the bank's capital adequacy (CAR) can certainly determine the size of the bank's profits. Banks that have large capital and are able to manage their capital properly and within the safe limit of CAR as stipulated in Bank Indonesia regulations are at least 8%, then the Bank's ability to earn a profit is quite good.

### The effect of NPL on ROA

The second hypothesis is used to test the truth that NPL has a negative and significant effect on ROA. The result of the partial test (t test) between NPL and ROA shows the t value of -2.19 with a significant value of 0.040 which is below 0.05. It means that NPL has a significant effect on ROA. . So that H<sub>2</sub> which states that NPL ratio has a significant effect on ROA is accepted.

The higher the NPL of a bank, the higher the costs, both the cost of reserves for productive assets and other costs, so that it has the potential for bank losses. According to Kuncoro (2002: 462), credit risk arises as a result of the failure or inability of the customer to repay the loan amount received from the bank and the interest according to the scheduled time period. Therefore, the amount of good NPL according to Bank Indonesia regulations is below 5%.

#### The effect of NIM on ROA

The third hypothesis is used to test the truth that NIM has a positive and significant effect on ROA. The result of the partial test (t test) between NIM and ROA shows the t value of 1.97 with a significant value of 0.062 which is above 0.05. It means that NIM has no significant effect on ROA. So H<sub>3</sub> which states that NIM ratio has a significant effect on ROA cannot be accepted.

The insignificance of NIM on profitability because in the study period NIM tends to be constant. The reason is that the interest income received tends to be the same because the credit expansion that is carried out tends to be the same every year. According to Khrawish (2011), a higher NIM can reflect risky lending practices associated with the provisions for large loan losses, so that banks are more likely to be careful in providing credit to maintain the quality of earning assets.

#### The effect of BOPO on ROA

The fourth hypothesis is used to test the truth that BOPO has a negative and significant effect on ROA. The result of the partial test (t test) between BOPO and ROA shows the t value of -8.54 with a significant value of 0.000 which is below

0.05. It means that BOPO has a significant effect on ROA. So that H<sub>4</sub> which states that BOPO ratio has a significant effect on ROA is accepted.

It means that each increase in BOPO will result in a decrease in ROA, and vice versa. The smaller the BOPO, the more efficient the bank in carrying out its business activities. According to Dendawijaya (2003: 112), the more efficient the operational costs issued by the bank, the greater the ability to generate profits. Conversely, the greater the costs incurred by the bank, the smaller the benefits will be.

#### The effect of LDR on ROA

The fifth hypothesis is used to test the truth that LDR has a positive and significant effect on ROA. The results of the partial test (t test) between LDR and ROA show the t value of 0.11 with a significant value of 0.910 which is above 0.05. It means that LDR has no significant effect on ROA. So that H<sub>5</sub> which states that the LDR ratio has a significant effect on ROA cannot be accepted.

LDR is insignificant because of the fluctuating data movement or LDR ratio in each banking company every year. There are banking companies that have a low LDR value and there are banking companies that have a high LDR value. It is resulting in gaps which are quite high among banking companies each year. It is what causes the LDR in this study is a measure of the liquidity ratio that does not have a real effect in measuring the performance of bank profitability.

### 3. Determination Coefficient Test (R<sup>2</sup>)

Based on the table 5 above, the value of the coefficient of determination is 0.8766. It shows that the Return On Asset (ROA) can be explained by variables (CAR, NPL, NIM, OEOI, and LDR) of 87.66%. While the remaining 12.34% is explained by other factors outside the study variables.

## **E. CONCLUSION AND SUGGESTION**

### **Conclusion**

Based on the results of data analysis and the discussion that has been described, the following conclusions can be drawn:

1. CAR has a significant effect on profitability. With this CAR illustrates a bank's ability to cover losses arising from its productive assets with the bank's own capital, so that the greater CAR, the stronger the condition of the bank's capital.
2. The effect of NPL significantly on profitability, which indicates that the higher NPL of a bank, the higher the costs, both the cost of reserves for productive assets and other costs, so that it has the potential for bank losses.
3. NIM does not have a significant effect on profitability. The insignificance of NIM on profitability because in the research period NIM tends to be constant. The reason is that the interest income received tends to be the same because the credit expansion that is carried out tends to be the same every year.
4. The effect of BOPO significantly on profitability, which indicates that the smaller BOPO shows the greater the ability of the bank to generate income

from expenses incurred. The difference between revenue and costs is profit, so the bigger the difference, the greater the profit.

5. LDR has no significant effect on profitability. LDR is insignificant because of the data movement or the fluctuating of LDR in each banking company each year. There are banking companies that have a low LDR value and there are banking companies that have a high LDR value so that there is a fairly high gap between banking companies each year. The more third party funds that are channeled in the form of credit the more income interest will increase and funds can be used effectively.

### **Managerial Implications**

Based on the above conclusions, the implications of this study are as follows:

1. An increase in bank capital adequacy ratio (CAR) will cause increase in bank profitability. The real thing that banks need to do is to strengthen their capital structure, this can be done by increasing the amount of reserved profits or increasing paid-in capital. On the other hand, banks need to maintain the quality of their assets, where the bank asset that has the highest risk is credit. Lending must be very controlled because credit with poor collectibility has a greater risk, so risk-weighted assets will also be higher.
2. A reduction in non-performing loans (NPL) of banks will be increase bank profitability. In other words, the higher the NPL of the bank, the lower the company's profit, so that the bank is obliged to maintain its credit quality. Anticipation measures must be done to prevent the high NPL is by

increasing accuracy in the credit analysis stage. Often to increase its credit expansion the bank is negligent in stages preliminary credit analysis, so the credit given is too high or even companies that are not eligible for fixed credit given credit. This credit analysis is not just left to credit analysts, but credit breakers should also be thorough checking projections made by the analyst. Likewise in stages credit extension and others. Besides that after channeling credit, analysts must ensure that credit is given is used according to its designation, considering high levels of credit abuse at this time.

3. The results of the study indicate that NIM does not have a significant effect on bank profitability, however, banks need to maximize the distribution of third party funds in the form of credit. As previously discussed, net interest income is the main income of a bank, where net interest income is the difference between interest income from lending and interest expense for third party funds deposited in the bank.
4. A reduction in the ratio between operating costs with operating revenues (BOPO) will increase profitability at the bank. Therefore, Bank management needs to take steps to reduce operating costs on the one hand and increase operating income on the other. Or in other words, policy makers need to increase efficiency, which means pressing BOPO so that the bank's ROA is better. This can be done by minimizing the costs incurred.
5. LDR does not have a significant effect on bank profitability, however, management must maintain a balance between the assets and liabilities side so that there is no shortage on one side. The impact of shortage on one side



will affect the bank, such as the liabilities (funding) side of the bank can become excess liquidity or lack of liquidity. Meanwhile, in terms of assets, the bank has a low or high earning asset portfolio and of course this has implications for bank profitability.

### **Limitations in Research**

This study still has several limitations, including the following:

1. This study only uses data within a span of 7 years, namely 2013-2019.
2. This study only examined the effect of Capital Adequacy Ratio (CAR), Non Performing Loan (NPL), Net Interest Margin (NIM), Operating Expense to Operating Income (BOPO), and Loan to Deposit Ratio (LDR) on profitability (ROA) . Meanwhile, there are 12.34% of other factors that affect profitability (ROA), which are not explained in this study.

### **Suggestion**

1. For Investors

Investors who will invest in banking companies should pay attention to the factors that affect the profitability of a company. The soundness of a bank can be a good indicator in determining bank profitability. However, investors still have to pay attention to other external factors, such as economic growth, politics and economic policies, which can affect a company's ability to generate profits.

2. For the Government

Strong government support is needed in realizing good economic conditions so that it also contributes to creating good banking conditions in

Indonesia. Policies that support banks to become healthier and stronger are also very necessary so that banks in Indonesia can survive all the problems and challenges that exist regarding the economy and banking in Indonesia.

3. For further researchers

The author suggests that further research can further investigate this topic. Future research is expected to add or replace variables that measure the level of bank profitability, both internal and external factors. In addition, further research is also expected to use a longer time period and more research objects for banking companies. This is done to gain more knowledge about the factors that affect bank profitability.

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