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## ROA DETERMINANTS AND IMPACTS ON CAR (STUDY IN THE FIVE LARGEST PRIVATE BANKS IN INDONESIA 2009-2018)

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**Abstract:** This study aims to analyze the effect of Loan to Deposit Ratio (LDR) and Net Interest Margin (NIM) on Return on Assets (ROA) and the influence of Loan to Deposit Ratio (LDR), Net Interest Margin (NIM) and Return on Assets (ROA) to the Capital Adequacy Ratio (CAR) of the five largest private banks in Indonesia in the 2009 - 2018 period. The sample used in this study consisted of 5 conventional private banks listed on the IDX. This study uses panel data obtained from Bank Indonesia reports and annual financial reports that have been audited and published by sample banks on the IDX. By using the Fixed Effect Model with the help of Eviews 10, the F test shows that the LDR and NIM variables together have a significant effect on ROA of 77.69% while the remaining 22.31% is influenced by other factors not included in the research model. LDR, NIM and ROA variables together have a significant effect on CAR of 42.85% while the remaining 57.15% are influenced by other factors not included in this study where previously classical assumption tests such as Stationary, Multicollinearity, Test Heteroscedasticity and Autocorrelation test. Based on the results of the t test it was found that the LDR and NIM partially had no significant effect on ROA. LDR has a significant effect on CAR. Meanwhile, NIM and ROA partially had no significant effect on CAR.

**Keywords:** Loan to Deposit Ratio, Net Interest Margin, Return on Assets, Capital Adequacy Ratio.

### INTRODUCTION

The turmoil of the global financial crisis in 2008 has changed the world economy. The global crisis that began in the United States in 2007, is increasingly being felt throughout the world, including Indonesia.

On the financial market, the risk spread of Indonesian securities increased significantly, which led to capital outflows from foreign investment on the stock market, Government Securities (SUN), and Bank Indonesia Certificates (SBI). Relatively speaking, Indonesia's own position in general is not the worst among other countries. The Indonesian economy was still able to grow by 6.1% in 2008. Meanwhile, the fundamentals of the external, fiscal and banking industries were also strong enough to withstand the global crisis.

Nevertheless, it is important to know the health condition of the banking system so that there is no risk that has a systemic impact on a national basis caused by the impact of the global financial crisis.

According to the PBI Circular (2007) Bank Indonesia Regulation (PBI) Number 9/1/PBI/2007, namely concerning the Commercial Bank Health Assessment System. Bank Soundness Level in the PBI is explained that is the result of a qualitative assessment of various aspects of the condition or performance of a Bank through: (1) Quantitative Assessment and Qualitative Assessment of the factors of capital (capital), asset quality (asset quality), profitability (earning), liquidity (liquidity), sensitivity to market risk (sensitivity to market risk); and (2) Qualitative Assessment of management factors.

Capital Adequacy Ratio is used to measure the capital adequacy of the bank to support assets that contain risk. Taking into account the fluctuation of bank income, the bank management needs to have sufficient capital to fulfill its obligations. This ratio is an indicator of a bank's ability to cover the decline in its assets as a result of bank losses caused by risky assets (Dendawijaya, 2003).

According to Bachtiar (2014), ROA can provide an idea of how much profit a company gets from every dollar of assets invested. And it is also said that ROA is used to measure the extent to which the company can benefit from the use of its operating assets. By knowing ROA, we can assess whether the company has been efficient in using its assets in operating activities to generate profits.

The two CAR and ROA variables are used in this study together with the LDR and NIM variables to see the extent of the relationship between the variables which are expected to provide an overview of the conditions of the banks included in the sample of this study, namely PT Bank Central Asia Tbk; PT Bank CIMB Niaga Tbk; PT Bank Pan Indonesia Tbk; PT Bank OCBC NISP Tbk and PT Bank Maybank Indonesia Tbk where the five banks are the largest private tbk banks in Indonesia.

## LITERATURE REVIEW

### Capital Adequacy Ratio (CAR)

The function of bank capital / capital according to Wilson (1988) is:

- a. Protect fund owners and maintain public trust
- b. To cover operational risks that may occur
- c. Write off assets that are non-performing loans where the borrower is unable to pay the debt at a predetermined time
- d. Preliminary funding sources.

A high capital ratio is needed if there is an increase in risk, a decrease in profitability and income, and an increase in income fluctuations. In accordance with SE BI No. 26/5 / BPPP dated 29 May 1993 the amount of CAR that must be achieved by a bank is at least 8% since the end of 1995, 10% until September 1999, 12% in 2001, then 8% until now. If a bank's CAR ratio is below 8%, it means that the bank is unable to absorb losses that may arise from the bank's business activities, then if the CAR ratio is above 8%, it indicates that the bank is increasingly solvable. With the increasing level of bank solvency, it will indirectly affect the

increase in bank performance, because the losses borne by the bank can be absorbed by the bank's capital. However, a CAR that is too high indicates idle funds, or in other words, the bank's own capital is not operating optimally.

### **Return On Asset (ROA)**

In Bank Indonesia Regulation No.6 / 10 / PBI / 2004 dated April 12, 2004 concerning the Rating System for Commercial Banks, Bank Indonesia assesses the health of banks based on Capital, Assets Quality, Management, and Profitability. Earnings), Liquidity (Liquidity), Sensitivity to market risk (Sensitivity to market risk) Whereas in Bank Indonesia Regulation No. 13/1 / PBI / 2011 dated 5 January 2011 concerning Assessment of the Soundness of Commercial Banks, Bank Indonesia requires commercial banks to conduct Bank Soundness Level assessments both individually and in a consolidated manner using a risk approach, where the assessment factors for the Bank Soundness level consist of a risk profile ( risk profile), Good Corporate Governance (GCG), Rentability (earnings), Capital (capital).

The greater the Return On Assets (ROA), the greater the level of profit achieved by the bank and the better the company's performance in obtaining operating profit is operating assets (Diah Aristya, 2010; Dewi 2010). Return On Asset (ROA) is one of the profitability ratios used to measure the effectiveness of a company in generating profits by utilizing its total profit. Based on Bank Indonesia regulations, a good ROA standard is around 1.5%.

The greater the ROA, the better the company's performance, because the profit will be greater (Adyani, 2011). Return On Asset (ROA) is a comparison between net income and total assets in a period.

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

One measure of a bank to calculate bank liquidity is to use a loan to deposit ratio (LDR). The LDR states how far the bank's ability to pay back withdrawals made by depositors by relying on credit provided as a source of liquidity. In other words, the extent to which the provision of credit to credit customers can offset the bank's obligation to immediately fulfill the request of depositors who want to withdraw the money that has been used by the bank to provide credit.

The higher the LDR number of a bank, it means that it is described as a bank that is less liquid than a bank that has a smaller ratio. Conversely, the lower the LDR indicates the lack of effectiveness of banks in channeling credit. If a bank's LDR ratio is at the standard set by Bank Indonesia, then the profit earned by the bank will increase (assuming the bank is able to channel its loans effectively). With increasing profit, ROA will also increase, because profit is a component that makes up ROA (Mahardian, 2008).

Based on Bank Indonesia Regulation (PBI) Number 12/19 / PBI / 2010 dated October 4, 2010 and effective March 1, 2011, the LDR level considered healthy by Bank Indonesia is in the range of 78% to 100%. Bank Indonesia needs to set a range of LDR because in addition to affecting bank liquidity, LDR is also an indicator of a bank's success in carrying out its function as a financial intermediary.

The standard used by Bank Indonesia for the LDR ratio is 78% to 100%. If the LDR ratio of a bank is below 78% (for example 60%), then it can be concluded that the bank can only channel 60% of the total funds raised. Because the main function of a bank is as an intermediary between parties with excess funds and parties who lack funds, if the LDR ratio is 60%, it means that 40% of all funds raised are not channeled to parties in need, so it can be said that the bank is not perform its function properly. On the other hand, if a bank's LDR ratio reaches more than 100%, it means that the total credit provided by the bank exceeds the

funds raised. Because the funds collected from the public are small, it can also be said that the bank is not performing its function as an intermediary party properly. The higher the LDR, the more risky the bank's liquidity is, on the other hand, the lower the LDR indicates the lack of effectiveness of banks in channeling credit (loans do not include credit to other banks, while deposits for deposits are demand deposits, savings, time deposits, certificates of deposit).

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

Net Interest Margin (NIM) is used to evaluate a bank's ability to manage risk on interest rates. When interest rates change, interest income and bank interest charges will change. For example, when interest rates increase, both interest income and interest expenses will increase because some of the bank's assets and liabilities will be valued at a higher rate (Koch and Scott, 2000). Net Interest Margin (NIM) is a ratio that shows the ability of bank management to manage its productive assets to generate net interest income. Net interest income is derived from interest income less interest expense. The greater this ratio, the increased interest income on productive assets managed by the bank so that the possibility of a bank in a problematic condition is getting smaller (Almilia and Herdiningtyas, 2005). Based on the provisions of BI Regulation No.5 / 2003, one of the proxies of market risk is the interest rate, thus the market ratio can be measured by the difference between the funding interest rate and the lending rate or in absolute form, which is the difference between the total funding interest cost and the total loan interest cost. In the banking world it is called the Net Interest Margin (NIM). This ratio is used to measure the ability of bank management to manage its productive assets to generate net interest income. Net interest income is derived from interest income less interest expense. This ratio shows a bank's ability to obtain operating income from funds placed in the form of loans (credit). The higher the NIM, the more effective the bank is in placing earning assets in the form of credit.

The standard set by Bank Indonesia for the NIM ratio is 6% and above. The greater this ratio, the increase in interest income on productive assets managed by the bank so that the possibility of a bank in a problematic condition is getting smaller.

### **Bank**

According to the RI Law Article 1 paragraph 2 No. 10 of 1998 concerning banking defines that a bank is a business entity that collects funds from the public in the form of savings and distributes them to the public in the form of credit and / or other forms in order to improve the standard of living of the people at large.

In RI Law No. 10 of 1998 concerning banking explained that in conducting its business, Indonesian banking is based on economic democracy using the principle of prudence. The main function of Indonesian banking is to collect and channel funds to the public and aim to support the implementation of national development, increase economic growth and national stability in the context of increasing the standard of living of the people at large.

While the main functions of banks in economic development (Kuncoro and Suhardjono, 2002) are as follows:

1. Bank as an institution that collects public funds in the form of deposits.
2. Banks as institutions that distribute funds to the public in the form of credit.
3. Banks as institutions that facilitate trading transactions and money circulation.

Specifically, the main functions of the bank are:

1. Agent of Trust

The main basis for banking activities is trust, both in terms of raising funds and channeling funds. The public will be willing to deposit their funds in the bank if it is based on an element of trust.

## 2. Agent of Development

Community economic activities in the monetary and real sectors cannot be separated. These two factors always interact and influence each other. The real sector will not be able to perform if the monetary sector does not work well.

## 3. Agent of Service.

Apart from carrying out activities to raise and distribute funds, banks also provide other banking services to the public. These services include money transfer services, safekeeping of valuables, provision of bank guarantees and bill settlement.

## Trade-Off Theory

The Trade-Off Theory according to Brigham (2011), states that the fact that the interest paid as a tax deduction makes debt cheaper than common or preferred stock. Indirectly, the government pays part of the cost of debt or in other words, debt provides tax protection benefits. As a consequence, the use of larger amounts of debt will reduce taxes and cause more company operating profit (EBIT) to flow to investors.

Trade-off theory, the starting point for a decision on the company's capital structure is the target debt ratio where tax protection against debt is maximized and bankruptcy costs related to debt are minimized. This theory illustrates that the optimal capital structure can be determined by balancing the tax shield benefits of leverage with cost financial distress and agency problems. In Figure 2.1 it can be seen that the greater the use of debt (D), the greater the benefits of using debt, but the PV of financial distress costs and PV agency costs also increase, even greater. Thus, the use of debt will increase the firm's value linearly only up to a certain point (point D1). After that point, the use of debt can still increase firm value, but there is a weakening due to the increase in profits from the use of debt that is not proportional to the increase in bankruptcy costs and agency problems.

If the use of debt continues to increase, at one point the change in the composition of the company value and bankruptcy-related costs will reach the highest limit point (point D2). If in that position the debt continues to increase, there will be a turning point where the company's value will decrease. The turning point is called the optimal capital structure point, which shows the optimal amount of the company's debt.

## Pecking Order Theory

This theory was first introduced by Donaldson in 1961, but the naming of pecking order theory was carried out by Stewart C. Myers and Majluf in 1984 in the Journal of Finance volume 39 with the title The Capital Structure Puzzle. This theory states that there is a kind of pecking order for companies to use capital. This theory also explains that companies prioritize internal equity funding (using retained earnings) than external equity funding (issuing new shares). Following are some of the implications from Myers (1984), on the behavior of company funding in the pecking order theory:

- a. Companies prefer internal sources of funding (retained earnings). This is because the use of retained earnings is cheaper and does not need to disclose some company information (which must be disclosed in the prospectus when issuing new bonds and shares);
- b. The company adjusts the dividend payout ratio (DPR) target to investment opportunities, although the sticky dividend and the target payout ratio only adjust gradually to shifts in profitable investment opportunities;

c. A rigid dividend policy, coupled with the unpredictable fluctuation of the rate of return and investment opportunities, implies that internally generated cash flows can be more or less than investment spending. If internal cash flow is lacking, the company first reduces the amount of cash or its portfolio of securities.

d. If external funding is required, the company issues the safest securities first. Companies start from debt, then hybrid securities such as convertible bonds, then equity as the last alternative. The issuance of new shares ranks last because the issuance of new shares is a sign or signal for shareholders and potential investors about the current condition of the company and the unfavorable future prospects.

An interesting phenomenon in banking is that most bank funding comes from third party or public funds collected through savings accounts, current accounts and time deposits. Quoting data from Sakir's research (2006), banks fund their operational activities by 94.67% from external funding sources and 90.19% with debt and the remaining 9.81% with shares. This funding decision is a key characteristic that distinguishes banking industry funding decisions from funding at public companies.

### **Agency Theory**

Agency theory or agency theory describes the relationship between agent and principal. Agent is the management of the company while the principal is the owner (shareholder). Agency theory describes the separation of company property rights and accountability for decision making (Jensen and Meckling, 1976). The principal party authorizes the agent to perform several services for his interests which involve the delegation of some decision-making authority to the agent, which later on the decision made by this agent can increase the prosperity of the principal as an attorney. The separation of functions between owners and management has an impact on management discretion in maximizing profits, this leads to the process of maximizing management's own interests at the expense of the company owner.

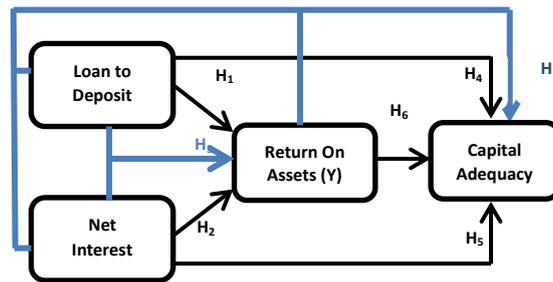
Agency theory assumes that all individuals act in their own interests. Shareholders as principal are assumed to be only interested in increasing financial results or their investment in the company. While the agents are assumed to receive satisfaction in the form of financial compensation and the conditions that accompany the relationship.

Because of this difference in interests, each party tries to increase its own benefits. The principal wants the maximum possible return on investment, one of which is reflected in the increase in the dividend portion of each share owned. The agent wants his interests to be accommodated by providing adequate and maximum compensation for his performance.

The principal assesses the agent's performance based on his ability to increase profits to be allocated to dividends. The higher the profit, the share price and the bigger the dividend, the agent is considered successful and has good performance so that it deserves a high incentive. On the other hand, the agent also fulfills the principal's demands for high compensation. So that if there is no adequate supervision, the agent can play a number of company conditions so as if the target is achieved (Watts and Zimmerman, 1986). The game can be on the initiative of the principal or the agency's own initiative. Then there is financial management that violates the rules such as the existence of non-performing loans that cannot be collected, improper capitalization of costs or improper sales recognition. In addition, it can also be done by doing income smoothing (dividing profits into other periods) so that every year it appears that the company is making a profit, even though in fact it is losing money or decreasing profits.

### **Framework**

The relationship between the variables LDR, NIM, ROA and CAR is systematically described as follows.



Picture 1. Research Framework

### Research Hypothesis

The hypothesis in this study is based on:

H0:  $\beta = 0$ ; This means that the independent variable does not have a significant effect on the dependent variable.

H1:  $\beta \neq 0$ ; That is, the independent variable has a significant effect on the dependent variable.

The hypotheses in this study are:

1. H<sub>01</sub>: LDR has no effect on ROA  
H<sub>a1</sub>: LDR has an effect on ROA
2. H<sub>02</sub>: NIM has no effect on ROA  
H<sub>a2</sub>: NIM has an effect on ROA
3. H<sub>03</sub>: LDR and NIM have no effect on ROA  
H<sub>a3</sub>: LDR and NIM have an effect on ROA
4. H<sub>04</sub>: LDR has no effect on CAR  
H<sub>a4</sub>: LDR affects CAR
5. H<sub>05</sub>: NIM has no effect on CAR  
H<sub>a5</sub>: NIM has an effect on CAR
6. H<sub>06</sub>: ROA has no effect on CAR  
H<sub>a6</sub>: ROA affects CAR
7. H<sub>07</sub>: LDR, NIM and ROA have no effect on CAR  
H<sub>a7</sub>: LDR, NIM and ROA affect CAR.

### RESEARCH METHODS

This research is a causality research. According to Kuncoro (2009), causality research is a study that measures the strength of the relationship between two or more variables which also shows the direction of the relationship between the independent variable and the dependent variable. In this study, the independent variables consist of LDR, NIM, and ROA and the dependent variables are ROA and CAR.

The population in this study were all National Private Banks which were included in the category of Conventional Commercial Banks in Indonesia which were listed on the Indonesia Stock Exchange in 2018, namely 64 banks. The samples in this study were the Five Largest Private Banks in Indonesia in 2018 based on the total assets of all Tbk banks listed on the Indonesia Stock Exchange, namely PT Bank Pan Indonesia Tbk, PT Bank Central Asia Tbk, PT Bank CIMB Niaga Tbk, Bank OCBC NISP and Maybank Bank.

The independent variables in this study include Loan to Deposit Ratio (X1) and Net Interest Margin (X2) in the first equation, as well as Loan to Deposit Ratio (X1), Net Interest Margin (X2) and Return On Asset (Y) in the equation. second. While the dependent variable in this study is the ratio of Return On Assets (Y) (first equation) and Capital Adequacy Ratio (Z) (second equation).

Table 1. Variables and Measurement

Variable	Measurement	Scale
ROA (Y)	<u>Profit After Tax</u> Total Assets	Ratio
CAR (Z)	<u>Bank Capital</u> Total ATMR	Ratio
LDR (X1)	<u>Total Credit</u> Total Third Party Funds	Ratio
NIM (X2)	<u>Net Interest Income</u> Average Earning Assets	Ratio

## FINDINGS AND DISCUSSION

Descriptive statistical analysis is a way to obtain a comprehensive picture of the variables used in this study, both the dependent variable and the independent variable. These descriptive statistics include the mean (mean), standard deviation, and extreme values (maximum and minimum values) (Abdul, 2018).

Table 2. Descriptive Statistical Analysis

Variable	N	Minimum	Maximum	Mean
CAR	50	11,83	23,40	16,99
ROA	50	0,07	4,00	2,13
LDR	50	50,30	104,15	86,01
NIM	50	3,06	6,80	5,22

From the results of descriptive analysis such as the table above the LDR ratio has the lowest value of 50.30, namely at Bank BCA in 2009 and the highest at 104.15 at Bank Panin in 2018. For the highest mean value is in 2018 of 94.58 and the lowest in 2009 was 74.00. Statistically it can be concluded that the level of liquidity achieved by the five largest private banks in Indonesia in terms of assets in 2018 is largely within the standards set by Bank Indonesia, namely 80% - 110%. However, for 2009 and 2010 the mean CAR for the five banks was below BI standards, namely in 2009 at 74.00 and in 2010 at 76.13.

The lowest ROA ratio was 0.07, namely Maybank Bank in 2009 and the highest was 4.00 at Bank BCA in 2016 and 2018. For the mean value of this ROA variable the highest was in 2012 of 2.43 and the lowest in 2015 was 1.65. This shows that statistically, seen from the average ROA during the research period of the five largest private banks in Indonesia in terms of assets in 2018, they already had a "sufficient" level of profit according to the ranking criteria set by Bank Indonesia.

the lowest LDR ratio was 50.30, namely Bank BCA in 2009 and the highest was 104.15 at Bank Panin in 2018. For the highest mean value was 94.58 in 2018 and the lowest was in 2009 at 74, 00. Statistically it can be concluded that the level of liquidity achieved by the five largest private banks in Indonesia in terms of assets in 2018 is largely within the standards set

by Bank Indonesia, namely 80% - 110%. However, for 2009 and 2010 the mean LDR value for the five banks was below BI standards, namely in 2009 at 74.00 and in 2010 at 76.13.

The lowest NIM ratio was 3.06, namely Panin Bank in 2014 and the highest was 6.79 at Bank CIMB Niaga in 2009. For the highest mean value was in 2009 at 5.81 and the lowest was in 2014 which was equal to 4.76. Statistically it can be concluded that during the research period the average NIM of the five largest private banks in Indonesia in terms of assets in 2018 was below the minimum standard for NIM BI, which is 6%. In other words, the interest income on the earning assets managed by the five banks on average is still below the minimum standard, so there is a greater chance that the five banks will be in a problematic condition in relation to the management of productive assets and income.

### Panel Data Regression Analysis Results LDR and NIM on ROA

Table 3 Results of Analysis with Panel Data Regression (*Fixed Effect Model*)

<i>Variable</i>	<i>Coefficient</i>	<i>Std. Error</i>	<i>t-Statistic</i>	<i>Prob.</i>
C	0.956635	1.224606	0.781178	0.4390
LDR	0.008662	0.009717	0.891452	0.3776
NIM	0.081677	0.152166	0.536764	0.5942
F			24.95374	
Prob(F-statistic)			0.000000	
R <sup>2</sup>			0.776881	
Adjusted R <sup>2</sup>			0.745748	
N			50	

Based on the regression results using the Fixed Effect Model in Table 3, it can be concluded that the independent variables together provide significant results where the F count is 24.95374 greater than F table (= 3.20) and R<sup>2</sup> of this model is 0,776881 which shows that 77.68% of the variance of Return On Assets can be explained by changes in the LDR and NIM variables.

Research Model Test (Test F)

Basic decision making:

If the p-value > 0.05 then H<sub>0</sub> is accepted.

If the p-value < 0.05 then H<sub>0</sub> is rejected or,

The basis for making the F test decision can also be determined as follows:

- 1) If F count < F table, then the independent variables together have no effect on the dependent variable.
- 2) If F count > F table, then the independent variables together have an effect on the dependent variable.

Table 4. Output Test Results of LDR and NIM variables on ROA

	<i>Coefficient</i>	<i>Probability</i>
<i>F-Statistic</i>	24.95374	0.000000

In Table 4 above with a probability level of 95% ( $\alpha = 5\%$ ) then the p-value = 0.000000 < 0.05 and the calculated F value is greater than the F table value (= 3.20) means the independent variables collectively have a significant effect on the dependent variable.

**Determination Coefficient Test (R<sup>2</sup>)**Table 5. Determination Coefficient Test (R<sup>2</sup>)

	Coefficient
<i>R-square (R<sup>2</sup>)</i>	0.776881

The R-square value (R<sup>2</sup>) = 0.776881 from Table 5 above shows that 77.69% of the Return On Asset variance can be explained by changes in the LDR and NIM variables. Meanwhile, the remaining 22.31% is explained by other factors outside the model.

**LDR, NIM and ROA on CAR**Table 3 Results of Analysis with Panel Data Regression (*Fixed Effect Model*)

<i>Variable</i>	<i>Coefficient</i>	<i>Std. Error</i>	<i>t-Statistic</i>	<i>Prob.</i>
C	-3.074905	6.120536	-0.502391	0.6180
LDR	0.180419	0.048666	3.707277	0.0006
NIM	1.193947	0.757705	1.575741	0.1226
ROA	-0.788651	0.756831	-1.042044	0.3034
F			4.500438	
Prob(F-statistic)			0.000818	
R <sup>2</sup>			0.428595	
Adjusted R <sup>2</sup>			0.333361	
N			50	

Based on the regression results using the Fixed Effect Model in Table 6 it can be concluded that the independent variables together provide significant results where the F count is 4.50 greater than F table (= 2.81) and R<sup>2</sup> of this model is 0, 4286 which shows that 42.86% of the variance of the Capital Adequacy Ratio can be explained by changes in the LDR, NIM and ROA variables.

**Research Model Test (Test F)**

Basic decision making:

If the p-value > 0.05 then H<sub>0</sub> is accepted.

If the p-value < 0.05 then H<sub>0</sub> is rejected or,

The basis for making the F test decision can also be determined as follows:

- 1) If F count < F table, then the independent variables together have no effect on the dependent variable.
- 2) If F count > F table, then the independent variables together have an effect on the dependent variable.

Table 7. Output Test Results of LDR, NIM and ROA variables on CAR

	Coefficient	Probability
<i>F-Statistic</i>	24.95374	0.000000

In Table 7 above with a probability level of 95% ( $\alpha = 5\%$ ), the p-value = 0.000818 < 0.05 and the calculated F value is greater than the F table value (= 2.81) means the independent variables collectively have a significant effect on the dependent variable.

**Determination Coefficient Test (R<sup>2</sup>)**

Table 8. Determination Coefficient Test ( $R^2$ )

	Coefficient
<i>R-square</i> ( $R^2$ )	0.428595

The value of R-square ( $R^2$ ) = 0.428595 from Table 8 above shows that 42.85% of the variance of the Capital Adequacy Ratio can be explained by changes in the LDR, NIM and CAR variables. Meanwhile, the remaining 57.15% is explained by other factors outside the model.

## Discussion

### The effect of LDR on ROA

Based on the results of data processing EViews 10, the LDR variable has a t value of 0.8914 where the t value is smaller than the t table value (1.678) so that the LDR variable does not have a significant effect on ROA. In the treatment of the direction test, a coefficient value of 0.0086 was found. This means that if there is an increase in the LDR variable by one unit, then the ROA variable will increase or vice versa by 0.0086.

The results of this study mean that the hypothesis  $H_0$  is accepted and  $H_a$  is rejected. This research is in line with previous research by Stevany and Tony (2019) and Pramitha, Mulyadi and Abdurrahman (2015).

### The effect of NIM on ROA

Berdasarkan hasil pengolahan data variabel NIM memiliki nilai t hitung sebesar 0,5367 dimana nilai t hitung lebih kecil daripada nilai t tabel (1,678) sehingga variabel LDR tidak berpengaruh signifikan terhadap ROA. Perlakuan atas uji arah ditemukan nilai koefisien sebesar 0,0816. Hal itu berarti bahwa jika terjadi kenaikan variabel NIM sebesar satu satuan, maka variabel ROA mengalami kenaikan atau sebaliknya sebesar 0,0817.

Hasil penelitian ini berarti bahwa hipotesis  $H_0$  diterima dan  $H_a$  ditolak. Adapun hasil penelitian ini sejalan dengan penelitian sebelumnya dari Erna dan Joko (2017) dan Harun (2016).

### The effect of NIM and LDR on ROA

Based on the results of data processing, the LDR and NIM variables have a calculated F value of 24.9537 where the calculated F value is greater than the F table value (3.20) so that the LDR and NIM variables simultaneously have a significant effect on ROA.

The results of this study mean that the hypothesis  $H_0$  is rejected and  $H_a$  is accepted.

### The effect of LDR on CAR

Based on the results of data processing, the LDR variable has a t value of 3.7072, where the t value is greater than the t table value (1.679) so that the LDR variable has a significant effect on CAR. Treatment of the direction test found a coefficient value of 0.1804. This means that if there is an increase in the LDR variable by one unit, the CAR variable will increase or vice versa by 0.1804.

The results of this study mean that the hypothesis  $H_0$  is rejected and  $H_a$  is accepted.

### The effect of NIM on CAR

Based on the results of data processing, the NIM variable has a t value of 1.5757 where the t value is smaller than the t table value (1.679) so that this variable is in the rejection area of  $H_a$ , which means that the NIM variable is a variable that has no significant effect on CAR.

In the treatment of the direction test, the coefficient value was found to be 1.1939. This means that if there is an increase in the NIM variable by one unit, then the CAR (Capital Adequacy Ratio) variable will increase or vice versa by 1.1939.

The result of this research means that the hypothesis  $H_0$  is accepted and  $H_a$  is rejected.

### **The effect of ROA on CAR**

Based on the results of EViews 10 data processing in Table 4.14, the ROA variable has a t value of -1.0420 where the t count value is smaller than the t table value (1.679) so that this variable is in the rejection area of  $H_a$ , which means the ROA variable is a variable that is not significant effect on CAR.

Treatment of the direction test found a coefficient value of -0.7886. This means that if there is an increase in the ROA variable by one unit, the CAR variable will decrease or vice versa by -0.7887.

### **The effect of LDR, NIM and ROA on CAR**

Based on the results of EViews 10 data processing in Table 4.14, the LDR, NIM and ROA variables have a calculated F value of 4.5004 where the calculated F value is greater than the F table value (2.81) so that the LDR, NIM and ROA variables simultaneously affect CAR.

## **CONCLUSION**

The results of data testing using the E-views 10.0 tool obtained the FEM (Fixed Effect Model) model, after the F test was carried out, the independent variables together had a significant effect on the dependent variable.

For the F test of the LDR and NIM variables on ROA, the R-square value ( $R^2$ ) = 0.7769 shows that 77.69% of the variance of ROA can be explained by changes in the LDR and NIM variables. Meanwhile, the remaining 22.31% is explained by other factors outside the model. Whereas for the F test of the LDR, NIM and ROA variables on CAR, the value of R-square ( $R^2$ ) = 0.4285 shows that 42.85% of the CAR variance can be explained by changes in the LDR, NIM and ROA variables. Meanwhile, the remaining 57.15% is explained by other factors outside the model.

Based on the results of the analysis and discussion, it is then concluded as follows:

- 1 The LDR variable does not have a significant effect on ROA at the five largest private banks in Indonesia in 2009-2018.
- 2 The NIM variable does not have a significant effect on ROA at the five largest private banks in Indonesia in 2009-2018.
- 3 LDR and NIM variables simultaneously have a significant effect on ROA at the five largest private banks in Indonesia in 2009-2018.
- 4 The LDR variable has a significant effect on CAR at the five largest private banks in Indonesia in 2009-2018.
- 5 The NIM variable does not have a significant effect on CAR at the five largest private banks in Indonesia in 2009-2018.
- 6 The ROA variable does not have a significant effect on CAR at the five largest private banks in Indonesia in 2009-2018.
- 7 The variables LDR, NIM and ROA simultaneously have a significant effect on CAR at the five largest private banks in Indonesia in 2009-2018.

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