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Analysis of the Effect of Bank Financial Performance Characteristics on Bank Profitability Book 4 on IDX

(Case Study on Banking Sub-Sector on BEI 2016 - 2019 Period)

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Abstract:- The objective of this research was to test and examine the Effect of Bank Financial Performance Characteristics on Bank Profitability Book 4 (Case study on Banking Sub-Sector in IDX period 2016 - 2019). Panel data were analyzed, which is a combination of annual time sequence data and cross section. Three tests were designed to examine the optimal model, The Chow test, Hausman test and Langrange Multiplier test. The best model was the Common Effect Model (CEM). The research population used in this study is as many as 8 banking industries. According to the result of this research, the Capital Adequacy Ratio (CAR) had a positive impact on Return On Asset (ROA), Loan to Deposit Ratio (LDR) had a negative impact on Return On Asset (ROA), Net Interest Margin (NIM) had a positive impact on Return On Asset (ROA), Non-Performing Loan (NPL) had a negative and significant impact on Return On Asset (ROA), Operational Efficiency Ratio had a negative and significant impact on Return On Asset (ROA)

Keywords:- *Capital Adequasi Ratio (CAR), Loan to Deposit Ratio (LDR), Net Interest Margin (NIM), Non Performing Loan (NPL), Operational Efficiency Ratio, Return on Asset (ROA).*

I. INTRODUCTION

Banking firms is companies that receieve monies from the community in terms of deposits and reinvest them back to the community in the form of financing. Bank financial institutions regulated under Law No. 10 of 1998 on banks that have developed using a dual banking system and the purpose of national banking is to facilitate the delivery of national development to enhance equality, economic expansion, and national stability in attempt to optimise people's welfare.

A bank is a corporation that engages in finance, which means that banking operations are always connected to finance. Banking's initial action is to gather funds from the larger community, which is referred as the funding activities im the banking industry (Kasmir, 2018). The bank also provides services in the payment system traffic so that people's economic activities can run smoothly. With an efficient, safe and smooth payment system, the economy can run well. Because the benefits are so important to the economy, therefore every country strives that banks are always in a healthy, safe and stable condition in their operations.

To be able to carry out its functions properly, there needs to be an assessment for the bank's performance or in another sense also called the level of bank health. Because achieving the bank profitability is in the best interests of all parties involved, including firm owners, bank management, bank service customers, Bank Indonesia and the Financial Services Authority as a bank supervisor and other connected parties.

Several indicators may be used to measure the bank's health, one of which is the financial statements that are issued on a regular basis. The ratio calculated in the financial statements can be used to measure the bank's overall health. The results of the financial statement analysis will assist offer an overview and a foundation for considering the company's prospective performance from one period to the next.

Until the end of 2019, the banking industry's Return On Asset (ROA) profitability ratio is still increasing. The bank's capacity to generate a profit is deteriorating. According to the Indonesian Financial Services Authority (Otoritas Jasa Keuangan - OJK) (2019), the banking ROA position was 2.48 percent as of the end of the third quarter of 2019, this position was dropped slightly from the previous year period of 2.5%. Conventional banking Commercial Bank Business Group (BUKU) 4 is one of the groups of banks that experienced a decrease in financial performance profitability. BUKU 4 banking is a group of banks that have a core above 30 trillion and has carried out all business activities both domestically and abroad (Sari & Widaninggar, 2018).

Bank profitability ratios that are used as benchmarks must indicate the company's performance, which in the banking industry may be determined by Return on Assets (ROA). ROA is used to assess a company's ability to generate profits by utilizing its assets. According to Bank Indonesia regulations, the optimal benchmark for ROA in the size of Indonesian banks is at least 1.25 % (Mintarti, 2009). Graph 1.1 shows the Return on Assets for certain commercial banks listed on the IDX from 2016 to 2019.

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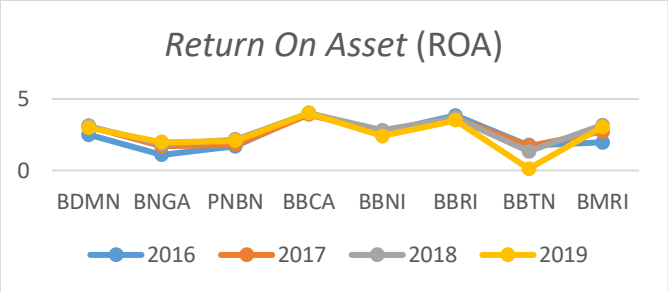

Graph 1.1 2016-2019 *Return On Asset* graph
Source: Data obtained from IDX

Financial performance is also utilized as an indicator in banking firms to undertake financial statement analysis. Financial performance is an assessment of a company's financial condition that displays business outcomes over a particular period determined by financial statement analysis, such as financial ratio analysis (Harahap, 2017).

Benchmark analysis of banking financial ratios should describe the financial performance of banking companies, including: capital ratios measured by the Capital Adequacy Ratio (CAR) that align business scale with capital needs to enhance the ability to absorb business risk by increasing operational efficiency in order to drive profitability to a higher level; The working capital evaluated by the Loan to Deposit Ratio (LDR) is used to evaluate a bank's performance by considering the total line of debt provided by banks compared to funds received by the bank, where the Deposit Guarantee Agency (LPS) states that the value of the liquidity indicator of the banking industry in Indonesia is at 94.3 %, which is higher than the threshold established by Bank Indonesia (BI) according to Bank Indonesia Regulation (PBI) number 15/7/PBI/2013 article 10 which is 92%; a margin which describes the bank's ability to handle all resources represented by Net Interest Margin (NIM), where the NIM ratio indicates the bank's ability to generate net interest income through the placement of its productive assets, where interest rates are one of the proxies of risk, this risk may be assessed by comparing the interest rate of financing (funding) to the lending rate (lending), or in absolute terms, the difference between the total cost of financing interests and the total cost of debt, it refers to the provisions of PBI No. 5/2003, where the standard set by BI for nim ratio is 6%, it demonstrates that the greater the value of the NIM ratio, the greater the profit acquired by the bank; nevertheless, the lower the value of the NIM ratio, the lower the capacity of banks to make profits, which will have an influence on the bank ’s profitability; The ratio of non-performing loans (NPL) is based on the customer's timeliness in paying his obligations, both in the form of interest payments and repayment of principal on loans. Problem credit is element of commercial bank management since it is a risk that all banking service businesses confront, and in certain circumstances, problematic credit causes the liquidation of some banks. In other words, the bank's capacity to carry out the credit process properly and in terms of credit management, including monitoring measures after credit is routed and control measures if there are signs of credit irregularities or indicators of default, has a major influence on the high NPL. (Djohanputro and Kountur, 2007); The efficiency ratio indicated by Operational Efficienct Ratio (BOPO), with the goal of determining how well a company's capacity to control operating expenses is rated by the Financial Services Authority (OJK) in Indonesian Banking Statistics (SPI) recorded as of July 2019 the position of BOPO banking is at the level of 81.08%, an increase compared to the previous year's period of 79.05%, when detailed, the decline in BOPO in 2019 was mainly due to bank operating income rising. It is quite high, reaching 25.51% year on year (yoy) to Rp 594.16 trillion, but banks in Indonesia still have homework to reduce the level of operating expenses which also increased by 28.72% yoy in July 2019 (Sitanggang & Kartika, 2019)

II. LITERATURE RIVIEW

The foundation of the theory used in this research is signalling theory and also agency theory. Signal theory can provide information released by a company and can be used by outsiders of the company for its benefit, including investment decisions. The agency hypothesis, on the other hand, defines the working connection between the company's owners (shareholders) and management. Management entails coordinating and supervising other work activities to ensure that they are completed effectively and efficiently, where efficient means getting the most output results from the fewest inputs, and effective means "doing the right thing," i.e. doing a job that can help the organization achieve its goals (Stephen P. Robbuns & Mary Coulter, 2012). Agency theory arises when a shareholder hires another party to manage his company by separating shareholders (principals) from management (agents).

A. Signaling Theory

Michael Spence initially presented signaling theory in his study Job Market Signaling (1973) and developed by Ross in 1977. This theory is based on providing an information asymmetry between company management and outsiders (investors and creditors). The management seeks to provide relevant and useful information for investors with a signal and signal, the investor will then alter his choice based on his comprehension of the signal, and management will need to publish financial statements to educate those who are interested. (Spence, 1973). Signaling Theory provides better information from company executives and will affect investors (Ross, 1977).

The signal theory asserts that information supplied by firms has a significant impact on investment choices. Investors and businesspeople value information because it provides a description of records and images from the past, present, and future of firms and capital markets. Capital market investors require complete, relevant, reliable, and timely information as a tool for analysis before making an investment choice. Investors will be able to make investment decisions based on information released as an announcement. If the news has a positive value, the market is anticipated to respond at the time the announcement is received. When the information is announced and received by market players, market participants first evaluate and

analyze the information to determine if it is a positive or poor signal. If the announcement is proclaimed as a positive indication for investors, the volume of stock trading will alter (Jogiyanto, 2013). Annual financial statements are one sort of information given by corporations that can be interpreted by persons other than the company, particularly investors. The information provided in the annual report might be accounting information, i.e. information connected to financial statements, or non-accounting information, i.e. information unrelated to financial accounts. Annual reports should contain relevant information and provide information that the user of the report, both internal and external parties, considers vital to be known.

B. Agency Theory

Jensen and Meckling (1976) established this idea for a long time, arguing that there is a separation between ownership (ownership structure) and management (agents) in a firm. The goal of separating management from firm ownership is to ensure that the company's owner makes the most profit possible by having the university and experts handle the company. In running the management of the company the manager is fully aware of his own interests in the company, not as a wise and prudent and fair party to shareholders. Variations in decision-making between principal - agent relationship might lead to information asymmetry issues. Asymmetric information occurs when an organization has more information than investors or creditors (Suwarjono, 2014). In this case information asymmetry occurs because managers act to maximize self-interest by applying accounting methods that can show good performance and encourage to hide some information that is unknown to the principal.

This hypothesis is essentially a theory that can raise the price of keaganen (agency costs). Agency cost is a cost resulting from any agency connection, such as the employer relationship between shareholders (as principals) and company management (as agents). In an agency arrangement, the agent pays the expense as well as the principal. Jensen and Meckling (1976) classified agency expenses as supervision, binding, and longer tolerate. Monitoring costs are expenses incurred to measure, watch, and regulate an agent's conduct and are borne by the principal. Bonding expenses are the cost paid by an agent to develop and maintain a process that ensures the agent will operate in the principal's best interests. Moreover, latent price is a cost in the form of lower principle prosperity due to disparities in agent and principal decisions (Godfrey, 1994).

C. Return On Asset

The Return On Assets (ROA) metric is used to illustrate a company's capacity to produce profits from its total assets. Return on Assets (ROA) demonstrates a company's capacity to produce profits from its assets. Among the existing profitability statistics, ROA is the most essential. ROA is a profitability measuring ratio that financial managers frequently employ to assess overall performance in producing profits from available assets (Horne and Wachowicz, 1997).

D. Capital Adequacy Ratio

Capital Adequacy Ratio (CAR), which is a ratio used to assess the efficacy of capital financial institutions to support risky assets such as credit supplied (Faisol, 2007). Capital is not just one of the most significant sources of bank money, but its position also influences strategy development and the potential of risk. Capital that is too high, for example, will have an impact on the quantity of bank earnings, whereas capital which is too low will restrict the bank's capacity to expand and will also have an impact on the special value of depositors, borrowers, and bank owners. In other words, the bank's modest capital will have an impact on public trust in the bank's financial ability (Dahlan, 2005). To summarize, the Capital Adequacy Ratio (CAR) is a capital adequacy ratio that aims to accept the risk of losses that banks may experience.

The bank should sustain its capital adequacy ratio while performing out it's own duties (article 29 paragraph 2 of the Law of the Republic of Indonesia No. 10 of 1998). Capital is also an essential factor in determining a bank's wellness because it connects to the bank's solvency. The CAR that commercial banks must accomplish is established at about 10.5 percent in line with Bank Indonesia's rules using the terms of KPMM (Minimum Capital Fulfillment Obligation), where the requirements governing the quantity of this CAR must be adhered to by all financial institutions.

E. Loan to Deposit Ratio

The definition of Loan to Deposit Ratio (LDR) or Financing to Deposit Ratio (FDR) according to Bank Indonesia regulation number 15/15/PBI/2013 is the ratio to assess the composition of the amount of credit granted compared to the amount of public funds and capital itself used. LDR is a ratio used to assess a company's capacity to finance and fulfill commitments (debt) at the time of collection, and it can indicate a bank's primary operations, such as the level of credit distribution, which can impact the amount of ROA value. The LDR ratio is used to compare the quantity of credit provided by a bank to the amount of cash received by the bank. The liquidity ratio measures the amount of cash or investment that can be converted or turned into cash in order to pay costs, bills, and all other liabilities that are due (Cashmere, 2011).

The Loan to Deposit Ratio (LDR) computes the difference between the total amount of credit extended by the bank and the funds received by the bank. This ratio is a measure of a bank's susceptibility and ability; the greater the ratio, the weaker the bank's liquidity capabilities. This is due to an increase in the quantity of cash required to finance loans. Every bank always offers cash and the like as a liquid tool to fulfill existing costs, payments, and financing, such as paying off all of its short-term debt using liquid tools within its control.

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F. Net Interest Margin

Based on Bank Indonesia Regulation No. 5/ 2003, one of the proxies of financial risk is interest rates, thus market risk can be measured by funding interest rates with lending rates or in absolute form, the difference between the total cost of funding interest and the total loan interest payments which are referred to in banking terms. called Net Interest Margin (NIM). NIM is the ratio of net interest income to the average productive activity (Taswan, 2010). NIM is used to measure the ability of bank management to generate income from interest by looking at the bank's performance in lending. Where the high NIM ratio displays the bank's expertise in obtaining profits. The standard that was inaugurated by Bank Indonesia for the NIM ratio is 6%. The value of the NIM ratio continues to be large, the profits that can be obtained by the bank continue to be large, on the contrary if the NIM obtained continues to be lesser, the profits received will also be small.

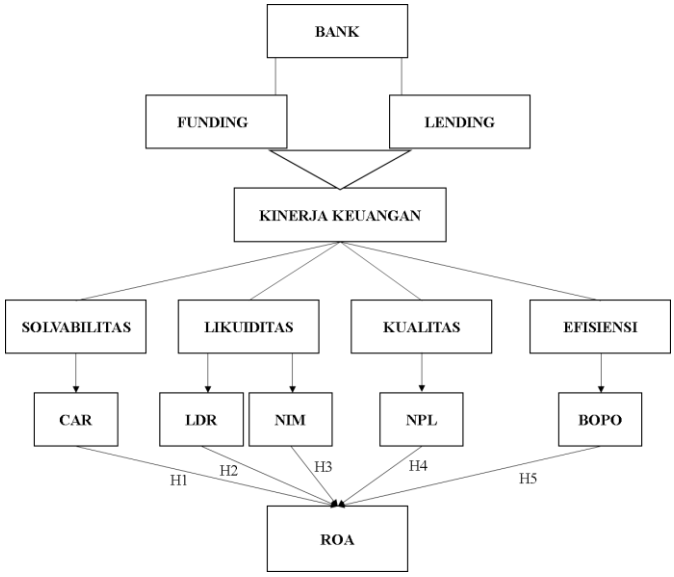
G. Non Performing Loan

Non-Performing Loan (NPL) is a ratio used to measure the risk of disbursed loans by comparing bad loans with the amount of loans disbursed. For bank evaluation, the maximum NPL ratio set by Bank Indonesia is 5%. Riyadi (2006) said that the NPL ratio is a comparison between the amount of credit granted and the collectibility level, which is non-performing loans compared to the total loans settled by banks.

Non-performing loans are part of the management of bank credit, because non-performing loans themselves are an effect experienced by the whole banking service industry. Credit risk is the effect experienced by the bank related to the amount of credit extended to customers, where the larger the amount of credit disbursed will continue to be a large credit effect. Operational Efficiency Ratio.

Operational Efficienct Ratio is measured by the ratio of total operating costs to total operating income or what is often called BOPO. This BOPO ratio aims to measure operational income expertise in covering operational costs. The ratio that continues to increase reflects the bank's lack of expertise in reducing operational costs and increasing its operational income, which can lead to losses because banks are less effective in managing their business (SE. Intern BI, 2004). Bank Indonesia sets the best figure for the BOPO ratio, which is below 90%, because if the BOPO ratio exceeds 90% to close to 100% then the bank can be categorized as inefficient in carrying out its operations.

Umar (2013), reports that "Research design is the entire process that is attempted in planning and implementing research". Therefore, making a research design is very meaningful so that the making of a scientific work can be completed quickly and well. The framework of thought in this research can be interpreted as follows.



Picture 2.1 Framework Research

1. E Effect of CAR on ROA. According to Naceur & Kandil, Mawardi.w concluded that ROA is positively influenced by CAR, while according to Funso, Kolade, and Oje, Alkhatib ROA is not affected by CAR.
   H1: CAR has a positive effect on ROA.
2. Effect of LDR on ROA. Suryani, Hesti, Wibowo said that ROA is positively influenced by LDR. while Bambang Sudiyatno, Asih Fatmawati said that ROA is not affected by LDR.
   H2: LDR has a positive effect on ROA.
3. T Effect of NIM on ROA. Suhardi and Darus Alti, Mokoagow said that NIM had an influence on ROA, while according to Tan Sau Eng, Usman Harun said that ROA was not affected by NIM.
   H3 : NIM has a positive effect on ROA.
4. Effect of NPL on ROA. Ida Bagus Suryakanta Pidada, Anik Yuesti, Putu Kepramareni, Suhardi and Darus Alti stated that ROA was not affected by NPL, while Devy M. Puspitasari, Nugroho J. Setiadi, Nurrina Rizkiyanti, and Afriyeni, Jhon Fernos ROA were affected.
   H4: NPL has a positive effect on ROA.
5. Effect of BOPO on ROA. Gladis Anindiansyah, Bambang Sudiyatno, Elen Puspitasari, Yeye Susilawati and Suarmi Sri Patni Gede Sri Darma said BOPO had no effect on ROA while according to Agus Kusmana, Sumilir and Dedi Kusmayadi stated that ROA was positively affected by BOPO.
   H5: BOPO has a positive effect on ROA.

III. RESEARCH METHODS

The type of research used in this research is a type of quantitative research. Based on the characteristics of the problem researchers use descriptive analysis research. By using this research method, it will be known that there is a significant relationship between the variables studied, so that in the conclusion it is what will explain the reflection on the object under study. In this research the independent variables are CAR, LDR, NIM, NPL, and BOPO, and the dependent variable of this research is ROA. Based on the

research objective in this research is to test hypotheses, so the research design used in this research is to use an explanatory procedure to explain causal relationships. The population in this research is the BUKU 4 banking industry listed on the IDX in 2016-2019. And the number of banking industries in this research is 8.

Variabel	Indikator	Ukuran	Skala
Capital Adequacy Ratio	Modal Sendiri, ATMR	$CAR = \frac{Modal\ Sendiri}{ATMR}$	Rasio
Loan to Deposit Ratio	Total Kredit yang diberikan, Total dana Pihak Ketiga	$LDR = \frac{Total\ Kredit\ yang\ Diberikan}{Total\ dana\ Pihak\ Ketiga} \times 100$	Rasio
Net Interest Margin	Pendapatan Bunga Bersih dan Rata-Rata Aktiva Produktif	$NIM = \frac{Pendapatan\ Bunga\ Bersih}{Rata-rata\ Aktiva\ Produktif}$	Rasio
Non Performing Loan	Kredit Bermasalah, Total Kredit	$NPL = \frac{Kredit\ Bermaslah}{Total\ Kredit}$	Rasio
Operating Costs and Operating Income	Biaya Operasional, Pendapatan Operasional	$BOPO = \frac{Beban\ Operasional}{Total\ pendapatan\ Operasional} \times 100$	Rasio
Return on Asset	Laba Bersih, Total Aset	$ROA = \frac{Laba\ Bersih}{Total\ Asset} \times 100$	Rasio

Table 1. Research Variables

The type of research used in this research is a type of quantitative research. The data analysis procedure to be used in this research is descriptive analysis, panel data regression analysis. In ensuring that the model is very suitable for estimating the regression of panel information, it can be tried with several tests, such as the Chow Test, Hausman Test, and Lagrange Multiplier Test.

Testing the significance of this study using the F-test, as well as the t-test. There are also equations for this study model, which is $Y_{it} = \beta_0 + \beta_1 X1_{it} + \beta_2 X2_{it} + \beta_3 X3_{it} + \beta_4 X4_{it} + \beta_5 X5_{it} + \mu_{it}$

IV. RESULT AND DISCUSSION

A. Descriptive Analysis Result

The results of descriptive statistical analysis is a description of company data that have been obtained during the research period, while the results of descriptive analysis in this study can be seen below.

Deskriipsi	Tahun 2016 - 2019					
	CAR	LDR	NIM	NPL	BOPO	ROA
Min	17.32	77.1	3.32	1.3	58.2	1.09
Max	24.2	115.26	9.3	4.78	98.12	4
Mean	14.0233	62.2831	4.05646	1.80229	50.4575	1.73083
Std. Deviation	31.8104	141.339	9.453	4.20392	114.869	4.17927
Observation	48	48	48	48	48	48

Table 4.1 Descriptive Analysis Result
Source: IDX 2016 - 2019, data processing result

CAR has a minimum score of 17.32 while the maximum value of Bank Danamon Indonesia, Tbk is 24.2 and in table 4.3 the mean value is 14.02 with a standard deviation of 31.81. Overall, the research CAR value with the minimum achieved value of 17.32 shows that all banks already have a minimum capital according to the requirements, which is 10.5% where the provisions regarding this CAR amount must be obeyed by all commercial banks (Bank Indonesia Regulation Number 14/18/PBI/2012).

The minimum LDR value is 77.1 and the maximum value is Bank Pan Indonesia, Tbk at 115.26 and in table 4.2 the mean value is 62.28 with Std. amounted to 141.34. The implementation of LDR activities at each Bank in the period 2016 - 2019 has a fluctuating graph. These results indicate that the company's ability to carry out LDR varies as evidenced by the results obtained.

The minimum NIM value is 3.32 while the maximum value is Bank Danamon Indonesia, Tbk 9.3 and in table 4.3 the mean value is 4.05 with Std. of 9.45. Std value. obtained is higher than the mean value, this indicates that banks must be even better at achieving NIM.

The minimum NPL value is 1.3 while the maximum value is Bank Tabungan Negara, Tbk at 4.78 and in table 4.4 the mean value is 1.80 with Std. of 4.20. The maximum NPL ratio determined is 5%, meaning that in this research banking companies have been able to minimize their NPL ratio so that it does not exceed the provisions set by BI.

The minimum BOPO score is 58.2 while the maximum value is 98.12 and in table 4.4 the mean value is 50.45 and Std. amounted to 114.869. We can see that the BOPO for each bank in 2016 - 2019 is different. In accordance with BI regulations regarding the BOPO, a good BOPO is less than 93%, if we look at the graph the majority is already below 93%, but there are still some that exceed the provisions that are said to be healthy, which is 98.12.

B. Regression Model Selection

1. Chow test. The probability F cross section value is 0.0001, thus the correct panel data method between Commoi Effect Model (CEM) and Fixed Effect Model (FEM) is Fixed Effect Model (FEM) because the probability F cross section value is 0.0001 which means it is smaller than the 5% level, then H0 is not supported, it is necessary to carry out the next test, namely the Hausman test to choose between the Fixed Effecti Model (FEM) and the Random Effecti Model (REM).

Redundant Fixed Effects Tests
Equation: Untitled
Test cross-section fixed effects

Effects Test	Statistic	d.f.	Prob.
Cross-section F	8.518260	(7,19)	0.0001
Cross-section Chi-square	45.449173	7	0.0000

Table 4.2 Chow Test Result

2. Hausman test. Cross Section Random probability value is 0.0888 which means it is greater than the significance level of (5%). Thus, the right panel data method between the Fixed Effect Model (FEM) and the Random Effect Model (REM) is the Random Effect Model (REM).

Correlated Random Effects - Hausman Test
Equation: Untitled
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	9.558525	5	0.0888

Table 4.3 Hausman Test Result

3. Langrange Multiplier Test. The results obtained from Breusch Pagan are 0.0513 which exceeds the specified significance level of 0.05 which means H0 is accepted, then using the Common Effect Model.

Lagrange Multiplier Tests for Random Effects
Null hypotheses: No effects
Alternative hypotheses: Two-sided (Breusch-Pagan) and one-sided (all others) alternatives

	Test Hypothesis Cross-section	Time	Both
Breusch-Pagan	3.797196 (0.0513)	0.286500 (0.5925)	4.083696 (0.0433)
Honda	1.948639 (0.0257)	0.535257 (0.2962)	1.756380 (0.0395)
King-Wu	1.948639 (0.0257)	0.535257 (0.2962)	1.515142 (0.0649)
Standardized Honda	3.532405 (0.0002)	0.923676 (0.1778)	-0.144675 (0.5575)
Standardized King-Wu	3.532405 (0.0002)	0.923676 (0.1778)	-0.342652 (0.6341)
Gourieroux, et al.*	--	--	4.083696 (0.0541)

Table 4.4 Langrange Multiplier Test Result

Variabel Dependen	Variabel Independen	Chow Model Test	Hausman Model Test	LM Model Test	Kesimpulan
ROA	CAR	Prob < a, H0 ditolak, menggunakan *Fixed Effect Model*	Prob > a, H0 diterima, menggunakan *Random Effect Model*	Prob < a, H0 diterima, menggunakan *Common Effect Model*	menggunakan *Common Effect Model*
	LDR				
	NIM				
	NPL				
	BOPO				

Picture 4.1 Regression Model Selection Test Chart

C. Hypothesis Testing

1. F Test

Based on the results of the Eviews calculation, F count is 47.18. Meanwhile, the F table value can be seen in table F, using a significance level of 0.05, with df 1 (number of variables – 1) or 6 -1 = 5, and df 2 (n – k – 1) or 48 – 6 – 1 = 41 (ki is the number of independent variables), obtained for F table is 2.44. The test criteria were carried out by comparing the calculated iF with the F table. Ho is accepted if F count < F table and Ho is rejected if F count > F table. The calculated F value > F table (47.18 > 2.44), then Ho is rejected, which means that CAR, LDR, NIM, NPL, BOPO together affect the ROA of banking companies from 2016 to 2019.

The results of the F table calculations are in line with the results of calculations using prob - value at a significance level of 0.05 (5%). The magnitude of the prob - value is 0.0000 (0.0000 < 0.05) which indicates that Hoidi is rejected, meaning that CAR, LDR, NIM, NPL, and BOPO jointly affect the ROA of banking companies from 2016 to 2019. There is a match between using the calculation F table and prov – value.

R-squared	0.900740	Mean dependent var	0.719102
Adjusted R-squared	0.881652	S.D. dependent var	0.425179
S.E. of regression	0.146269	Sum squared resid	0.556263
F-statistic	47.18766	Durbin-Watson stat	1.862321
Prob(F-statistic)	0.000000		

Table 4.5 F Test Result

2. T Test

Based on the results of these studies, it can be explained that the influence between the variables is as follows:

- CAR (X1) has a $T_{statistic}$ value of 3.700631 with a significant value of 0.0010 < 0.05 then H0 is accepted and Ha is rejected, which means that there is a positive and significant effect of the CAR variable on ROA.
- LDR (X2) has a $T_{statistic}$ value of -0.041328 with a significant value of 0.9674 > 0.05, then H0 is accepted and Ha is rejected, which means that there is a negative and insignificant effect of the LDR variable on ROA.
- NIM (X3) has a $T_{statistic}$ value of 1.953091 with a significant value of 0.0617 > 0.05, then H0 is accepted and Ha is rejected, which means that the NIM variable has a positive and insignificant effect on ROA
- NPL (X4) has a $T_{statistic}$ value of -5.491620 with a significant value of 0.0000 > 0.05 then H0 is accepted and Ha is rejected, which means that there is a significant negative and significant effect of the NPL variable on ROA.
- BOPO (X5) has a $T_{statistic}$ value of -5.233874 with a significant value of 0.0000 < 0.05, then H0 is accepted and Ha is rejected, which means that there is a significant and negative effect on the ROA variable.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	3.666641	1.006858	3.641668	0.0012
CAR	0.098047	0.026495	3.700631	0.0010
LDR	-0.000264	0.006376	-0.041328	0.9674
NIM	0.103136	0.052807	1.953091	0.0617
NPL	-0.376567	0.068571	-5.491620	0.0000
BOPO	-0.035908	0.006861	-5.233874	0.0000
Effects Specification			S.D.	Rho

Table 4.6 T Parsial Test Result

D. Discussion

ROA is an indicator that can show the company's profitability to the value of its assets. ROA also provides information about some of the efficiencies in the use of assets to generate company profits, and ROA can also be displayed as a percentage. Efficiency is the most important thing in business, comparing profit to revenue is the most important information, but comparing profit and the resources used can have a big impact on the balance in a business. This study examines CAR, LDR, NIM, NPL, and also BOPO, but in this research, the results that have a negative effect on ROA are CAR, LDR and BOPO, while NIM has no effect on ROA and NPL has a negative effect on ROA. The explanation of each variable is as follows:

1. Effect of CAR on ROA

Based on the test results in this research, it proves that the Capital Adequacy Ratio (CAR) variable statistically has a positive effect on Return On Assets (ROA) in the BUKU 4 banking zone industry listed on the Indonesia Stock Exchange (IDX) in 2016-2019. Industrial capital which has a large influence in carrying out the industry, which means if the CAR increases, the Return on Assets (ROA) will also increase as well. Capital Adequacy Ratio is the ratio used to support assets that have and create risk. This is in line with the theory that the larger the CAR, the more solvable the bank will become. A bank that has a large CAR means that the bank has a fairly solid capital to carry out its business so that it will increase the profits obtained. A large Capital Adequacy Ratio (CAR) means that the bank has the expertise to cope with possible losses due to credit and securities trading. Not only that, another result is that the public and investors will be confident in the ability of bank capital and the funds absorbed from the public will increase which will ultimately increase stock returns (Siamat, 2005).

This research is supported by research from Mohammad Sofyan (2019), where CAR has a positive effect. But this research is not in line with the research of Ida Bagus et al (2018), where in his research CAR has no effect.

2. Effect of LDR on ROA

Based on analysis of the tests conducted in this study, it proves that the LDR variable has a statistically negative effect on ROA in the BUKU 4 banking zone industry listed on the IDX in 2016-2019. LDR is reporting the ability of banks to meet depositors' withdrawals which have been used by banks to distribute funds. credit to other parties. LDR is the ratio of loans granted by banks and funds collected by banks. The greater the percentage of LDR, the greater the profit generated, because the bank is considered capable or efficient in managing the funds deposited by customers. Likewise, the opposite, the lower the LDR percentage value indicates that the profits obtained by the bank will continue to be low. This research is in line with Ida Bagus, et al (2018) who reported that LDR had a negative effect on ROA and was also not in line with the research of Mohammad Sofyan (2019) where LDR had a positive effect on ROA.

3. Effect of NIM on ROA

Based on analysis of the tests conducted in this study, it proves that the variable NIM has a statistically positive influence on ROA in the BUKU 4 banking zone industry listed on the IDX in 2016-2019. NIM is used to measure the expertise of bank management in managing their productive leavings to create net interest income. NIM is a ratio that equates net interest income and average earning assets. If the percentage of NIM continues to be large, the income or profit obtained by the bank will also increase. The income earned by a bank is highly dependent on the difference between the interest earned on the loans disbursed and the net interest income earned by the bank. The greater the NIM, the more profit (ROA) will increase, and vice versa. This research is supported by Gladis Anindiansyah, et al (2020). However, this research is not in line with the research of Aminar Sutra Dewi (2017).

4. Effect of NPL on ROA

Based on analysis of the tests conducted in this study, it proves that the NPL variable has a statistically negative effect on ROA in the BUKU 4 banking zone industry listed on the IDX in 2016-2019. A large NPL will increase costs, thus potentially harming the bank. The greater the ratio, the less good the quality of bank credit, which causes the number of non-performing loans to continue to increase, therefore banks are required to bear losses in their operational activities, resulting in the depreciation of profits (ROA) obtained by banks (Endri, 2018) in accordance with the previous hypothesis, the greater The level of the NPL ratio shows the amount of bad credit felt by the bank and causes losses. For Basel II theory, credit risk is the risk of loss associated with the possibility that one of the parties to the transaction will fail to fulfill its obligations when they fall due. This will affect the profitability of the bank because the income that should have been received failed to be received due to bad credit. Not only does the bank not receive income, the bank is also required to always pay operational fees that have been running. This research is in line with the research of Wildan Farhat Pinasti and RR. Indah Mustikawati (2018) and is not in line with the research of Kargi, H. S (2011).

5. Effect of BOPO on ROA

Based on analysis of the tests conducted in this study, it proves that the BOPO variable has a statistically negative effect on ROA in the BUKU 4 banking zone industry listed on the IDX in 2016-2019. BOPO is an operational cost ratio used to measure the efficiency and expertise of banks in carrying out their operations. 2009). The increasing BOPO ratio reflects the bank's lack of expertise in reducing its operational costs, which can lead to losses because banks are less effective in managing their business. This ratio is often called the effective ratio, it is used to measure the ability of bank management to manage operating costs against operating income. The smaller the BOPO means the more effective the operational fees issued by the bank and vice versa. A large BOPO percentage creates low profits, therefore the BOPO value is inversely proportional to the ROA value. This research is supported by the research of

Suarmi Sri Patni, Gede Sri Darma (2017) and is not in line with the research of Aminar Sutra Dewi (2017).

V. CONCLUSION

Return on Assets (ROA) is an indicator that can show the company's profitability to the value of its assets. ROA also provides information about some of the efficiencies in using assets to generate profits for the company, and ROA can also be displayed as a percentage. Efficiency is the most important thing in business, comparing profit to revenue is the most important information, but comparing profit and the resources used can have a big impact on the balance in a business. This study aims to examine the effect of the independent variables (CAR, LDR, NIM, NPL and BOPO) on the dependent variable, namely ROA in BUKU 4 banking companies listed on the IDX for the period 2016 – 2019. From the results of research and discussions that have been carried out, it can be concluded that:

1. ROA is tested to be positively influenced by CAR. The greater the capital ratio will show the greater the capital owned by a bank so that it will continue to be strong for the bank to take risks. It can be concluded that if CAR increases, it will increase ROA. The results of this study match the hypothesis that reports that CAR has a positive effect on ROA.
2. LDR has an insignificant negative correlation on ROA. This research does not match the research hypothesis which reports that the LDR variable has a positive effect on ROA. This ensures that any value of the LDR ratio will not affect the size of the ROA because the accumulation of credit disbursed by banks has the potential to increase the risk experienced by banks, therefore banks also need to be selective in lending because in addition to being able to share profits in the form of interest income, credit disbursement is Inaccuracy can also stimulate bad loans which can lead to bankruptcy of the bank as the credit provider.
3. ROA is tested to be positively influenced by NIM. This study fits the hypothesis that the NIM variable has a positive but not significant effect on ROA. This is convincing that the greater the NIM percentage, the greater the income or profits obtained by the bank.
4. NPL has a significant negative effect on ROA. The results of this study do not match the hypothesis that NPL has a significant positive effect on ROA. This is convincing that the higher the NPL ratio, the greater the bad credit felt by the bank and causes losses. The increase in NPL results in higher costs for asset write-offs. This will affect the profitability of the bank because the income that should be received by the bank has failed to be received due to bad loans.
5. BOPO has a significant negative effect on ROA. The results of this study do not match the hypothesis that reported BOPO has a significant positive effect on ROA. This ensures that the higher the BOPO ratio, it can be said that the operational activities carried out by the bank are not effective and vice versa. The lower the BOPO ratio to the bank's operational activities, the more effective it will be. If all the activities attempted by the bank run effectively, the profits generated will also continue to be large which will ultimately increase the bank's financial performance.

Based on the results of the research and matters relating to the limitations of the research, there are several suggestions or things that need to be considered, as follows:

1. For investors and potential investors

a. For investors and potential industrial investors listed on the IDX, please be more careful to be able to see the Return on Assets (ROA) ratio of the BUKU 4 banking industry listed on the IDX as a consideration in making investments. Not only that, other ratios that need to be considered are:
b. LDR ratio, where this ratio can observe the health condition of a bank, where this ratio measures the bank's expertise in financing and fulfilling its obligations so that it reflects the main activity of a bank.
c. NPL ratio, where this ratio is used to measure the effects of bad and non-performing loans. If a bank has a large non-performing loan ratio, it will affect interest income from the loans disbursed, resulting in its capital structure.

2. For further researchers:

a. To get better research results, the next researcher can extend the research period.
b. For the next researcher, they can increase or change with other variables that can affect bank performance and also Return on Assets.
c. For the next researchers, it is hoped that they will be able to carry out research by increasing intervening in research to see whether there is a direct or indirect influence on bank performance.
d. The research population is not only devoted to industries in the banking zone, but also to other industrial zones listed on the IDX.

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