The Influence of Loan to Deposit Ratio, Loan Operational of Income Operational and Non-Performing Loan toward Profitability of Bank Perkreditan Rakyat in Sidoarjo Regency

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Abstract- This research is aimed to evaluate the influence of Loan to Deposit Ratio (LDR), Loan operational compared with income operational (BOPO), Non-Performing Loan (NPL) toward profitability of Bank Perkreditan Rakyat (BPR) in Sidoarjo regency. Moreover, this research used quantitative research. Furthermore, the population in this research is Bank Perkreditan Rakyat in Sidoarjo regency, there were about 56 banking companies. The technique of data collection used in this research is purposive sampling. The result of this research shows several points such as; 1) BOPO has a negative significant effect toward ROA; 2) LDR has a negative significant effect toward ROA; and 3) NPL has a negative significant effect toward ROA. Indeed, this research is expected to give a contribution to another researcher or policymaker to arrange the advantages strategy for society and stakeholder.

Keywords: Loan to Deposit Ratio (LDR), Loan operational compared with income operational (BOPO), Non-Performing Loan (NPL), Bank Perkreditan Rakyat (BPR).

I.   INTRODUCTION

Most of the fund that is gained by the Bank is coming from the third party. Therefore, the Bank itself must be profitable to pay the interested of the fund. Bank is a finance institution which is assembled the fund in a form such as savings and distribute into a loan (Aini, 2013). The evaluation of healthy Bank according to Bank Indonesia refers to CAMEL (Capital, Asset Quality, Management, Earning and Liquidity).

Earning factor is CAMEL which refers to ROA (Return on Assets) and BOPO (Loan OPERATIONAL of OPERATIONAL Income). ROA in a Bank is a ratio between profits before the tax toward average volume. ROA becomes an important factor in a Bank, because ROA is a method to measure the effectiveness of the company in producing the profit. Profitability is a capability to produce effective and efficient profit. On the other hand, if ROA is increased, the profit will be increased.

Deregulation in Nigeria Banking has significant positive effect toward banking performance. The sector of Nigeria Banking is determined by economical growth (Omowunmi, 2012). The appropriate indicator to measure the performance of a Bank is profitability (a capability to produce profit).

Bank Perkreditan Rakyat is a conventional system based on syariah principle. BPR only approves a saving such deposit, savings, or another form that related with it. BPR activity especially was to serve in the rural area. Bank Perkreditan Rakyat (BPR) supports UMKM entrepreneur who needs financial support and investation to support Indonesia's ecomonicac. In a process of fund distribution, BPR is not able to distribute the fund maximised, it shows from ratio Loan to Deposit Ratio (LDR), this is affected efficiency (BOPO), affecte toward Non Performing Loan (NPL), and affected Return on Assets (ROA).

Almadany (2012) in his research shows that BOPO give significant effect toward ROA. In relation with that the research also supported by Karuniawati (2017), in contrary with Karuniawati Widowo and Syaichu (2013) shows BOPO result has significant negative effect. Those are supported with Ulandari, et al. (2016), Lubis, et al. (2017), and Muhajir, et al. (2017) that show BOPO result has negative significant effect, it means that if BOPO is negatively increased ROA will be decreased. Further, the research of Sabir, et al.(2012) show different result; BOPO has no effect toward ROA.

Ulandari, et al. (2016) in the research show the result on Loan to Deposit Ratio give positive effect toward profitability which proxy by ROA. TGIS research is supported by Harun (2016) and Karuniawati (2017) with the same result. Sabir, et al. (2012) in

the research show LDR has negative significant effect toward ROA. Those are supported by Francis (2013), Hooshyari and Moghanloo (2015), Oktavianus (2016), Lubis, et al. (2017), and Muhajir (2017). Those are different with Almadany's research (2012) that shows LDR has significant effect toward ROA. Almadany Research (2012) also supported by Damayanti and Savitri (2012), also Sudiyatno and Suroso (2010) states that Loan to Deposit Ratio is not affected ROA.

Moreover, Eng (2013) research abput Non Performing Loan shows that NPL gives significant effect toward ROA, this is supported by Margaretha dan Zai (2013), Simanjuntak (2016), and Oktaviani dan Andriyani (2018). Sabir, et al (2012) shows that NPL give negatively significant effect toward ROA. Those are supported by Anggreni and Suardhika (2014), Kossoh, et al. (2017), and Lubis, et al. (2017). In contrary with that, Harun (2016) in his research shows NPL has no significant effect toward ROA. Those research are supported by Oktavianus (2016), Ali and Laksono (2017), Muhajir, et al. (2017), and Setiawan (2017) which is proved that NPL has no significant effect toward ROA.

Based on incosively result, the research is interested to make independent variable: Loan Operational of Income Operational (BOPO), Loan to Deposit Ratio (LDR), and Non Performing Loan (NPL), with different object, that are; Bank Perkreditan Rakyat in Sidoarjo regency.

II.   THEORITICAL AND HYPOTHESIS DEVELOPMENT

1.   Return on Assets (ROA)

ROA is ratio profit toward average volume exertion. Furthermore, the profit is a profit before it is counted by the tax during the last 12 months and exertion volume which is counted in the same period. On the other hand, if ROA is increased the finance performance of the Bank will be increased. If the Bank has highly ROA, it means that the Bank has ability to increase the profit of OPERATIONAL profit and prospect in the future.

2.   Loan Operational compared with Income Operational (BOPO)

BOPO shows the company ability to manage the Loan efficiencies. BOPO shows Bank efficiency in the main exertion especially credit. BOPO is called as efficiency ratio to measure the ability of Bank management during the controlling process of Loan operational toward income operational. Loan operational is a loan decreed by the Bank within the activity such as, loan of the labor, loan of the interest, loam of electricity, and etc. Income operational is a main income of the Bank which gained from credit. According to a law BI No. 10/15/PBI/2008 explains that exemplary ratio of BOPO is under 90%. If the ratio BOPO is higher than 90% or closer to100% shows that Bank is efficient within managing the Loan operational. Furthermore, if BOPO is more than100% shows that Loan operational is higher than income operational.

3.   Loan to Deposit Ratio (LDR)

LDR is liquidity measurement to measure the the credit fund of the Bank especially from the people. The target of LDR according to law BI No 18/14/PBI/2016 minimal limitation is 80%, amd maximal limitation is 92%. Bank with LDR more than 110%, will get liquidity problem, because the loan is evaluated as earning asset Bank which is less liquid. The Bank that have highly LDR potentially has liquidity problem.

4.   Non Performing Loan (NPL)

Non Performing Loan for a company for operational activity with a credit therefore the claim becomes an important factor, because bigger claim caused bigger risk. Non Performing Loan (NPL) is comparing credit with a problem toward total credit. NPL is a ratio that used to measure the ability to ensure a risk for credit reversion by debtor. Ratio NPL is not allowed to increase more than 5% from total credit. If NPL is increased the profit will be decreased.

5.   The Effect of BOPO toward ROA

Dewi (2017) in her research shows that BOPO has significant effect toward ROA. Thus, it relates with Sudiyatno and Suroso (2010) and Harun (2016) show that the result of BOPO affect ROA. Almadany (2012) shows that operational expense per income operational affects profitability which is represented by Return on Asset (ROA) and Return On Equity (ROE). In conclusion, this research can be concluded as:
 H1 = BOPO is affected ROA

6.   The Effect of LDR toward ROA

Kunarsih, et al. (2018) state about finance performance which is proxy by ROA shows that LDR affects ROA. Furthermore, Kunarsih, et al. (2018) also supported by another research such as Dewi (2017), Karuniawati (2017), and Harun (2016). Hypothesis for the research is:

H2 = LDR is affected ROA
The effect of NPL toward ROA

Based on Dewi (2017) in her research that is related with NPL shows that NPL is affected ROA. Those are supported by Sabir, et al. (2012), Fadjar (2013). Therefore, the hypothesis for this research is:
H3 = NPL is affected ROA
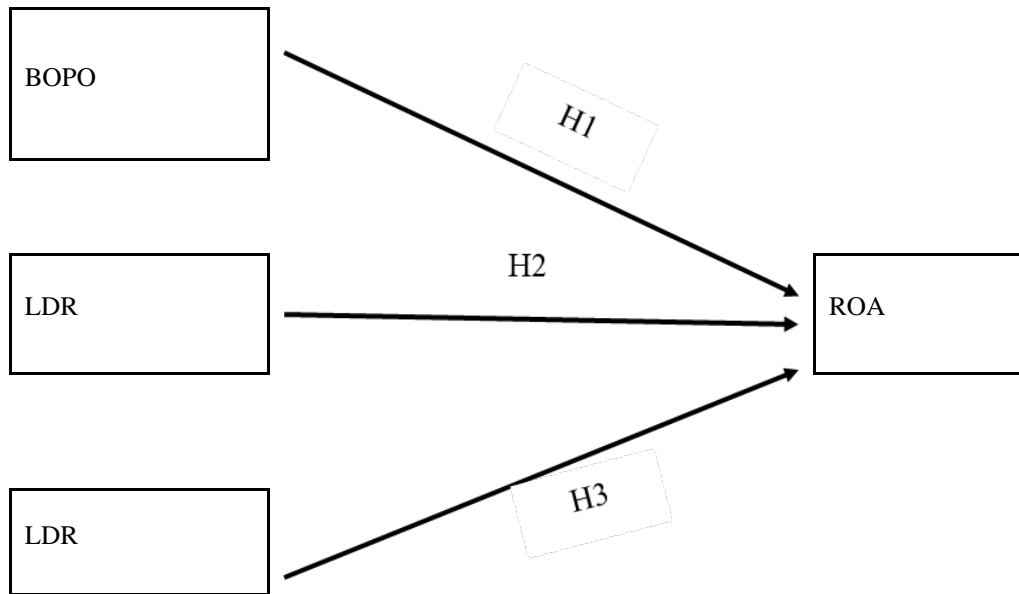Moreover, the model of the research is :

Illustration 1

Figure 1.

Conceptual Model

III.   RESEARCH DESIGN

1.   Population and Sample

Population in this research is Bank Perkreditan Rakyat in Sidoarjo regency, about 56 banking company. The technique that is used is purposive sampling with criteria:

Total BPR in Sidoarjo regency in 2016   =   56 BPR
Total BPR with uncompleted data   =   2 BPR
Total BPR as sample of the research   =   54 BPR

2.   Kind and Source of the Data

Data that is used in this research is secondary data, that is quantitative data. The source of the data from Financial Services Authority (OJK) office report document in Sidoarjo regency in 2016 through https://www.ojk.go.id/
Methodology of data collection is documenter study, OJK office report document in Sidoarjo regency, 2016.

3.   Variable of the research

Variable dependent or independent (Y) that is variable which is affected caused of free variable. Dependent variable in this research is profitability by ROA. Independent variable (X) is a variable that become union variable or dependent (Y). Independent variable in this research is Loan to Deposit Ratio (LDR), Loan Operational compared with Income Operational (BOPO), and Non Performing Loan (NPL).

4.   Return on Asset (ROA)

ROA is a profit ratio toward the average of exertion volume, where the profit is quantified before the tax within 12 months and the exertion volume in the same period. ROA can be formulated as:
(Total of the profit before the tax: The average of exertion volume) x 100%

ROA is used to measure finance performance of multinational companies, especially from profitability and investment.

5. Loan Operational compared with Income Operational (BOPO)

BOPO shows the company ability to manage the Loan efficiently, it used to measure the ability of Bank management within controlling expense operational toward income operational (Hardiyanti, W. et al. 2016). The formulation to count BOPO is = (Loan operational: income Operational) x 100 %.

According to law of Bank Indonesia No 10/15/PBI/2008 shows that ratio BOPO well categorized if the score under 90 %. If the ratio BOPO higher than 90% or closer to 9 100%, it can be concluded that the Bank can be categorized as non-efficient Bank. BOPO shows how the Bank repress expense operational in one side and how the Bank increase income operational on the other side, therefore BOPO also giving an affect toward finance performance.

6. Loan to Deposit Ratio (LDR)

Loan to Deposit Ratio in this research is ratio credit that is given to a fund which is accepted by the third side. A formulation to count LDR =
(Given credit: the fund from the third side) x 100%

LDR target in the Bank Indonesia is regulated in law No 18/14/PBI/2016 about 80 - 92% to avoid liquidity and detriment of a Bank.

7. Non Performing Loan (NPL)

NPL is a company to handle a problem with credit. NPL can be formulated as :
Problem with credit : Total credit) x 100 %

According to Bank Indonesia law No15/2/PBI/2013) about decreed Status and Action-Reaction Controlling Conventional General Bank, ratio NPL is not allowed to be more than 5 % compared with total credit.

IV.   METHOD OF DATA ANALYSIS

1. Description Analysis

Methodology of descriptive analysis is technique o data analysis that is used to describe various data characteristic, such as average score, data variation, minimal, maximal, and etc.

2. Assumption Classic Test

Assumption classic test is used to reveal whether the data in this research fulfilled several stipulations in regression model such as: Normality Test, multikolinearity Test, Hete Test, and Autocorrelation Test;
   a. Normality test is an evaluation to find out whether regression model from dependent and independent variable in this research distribute normal or abnormal.
   b. Multikolinearity is a method to evaluate whether there is a correlation between independent variable. Multikolinearity can be seen from tolerance and variance Inflation Factor (VIF). Tolerance measures variability independent variable that is not explained by another variable (Ghozali, 2016).
   c. Heteroskedastisity is used to evaluate whether in regression model there is inconclusively variance from residual observation to another observation. Moreover, in order to evaluate the inconclusively observation, it can be seen from graphic plot between prediction score of related variable (dependent) ZPRED with residual SRESID.
   d. Autocorrelation test is aimed to evaluate whether in regression model linear there is a correlation between the problems in period t with a problem in formerly period. If the mistake is discovered, so the result will be called as autocorrelation problem (Ghozali, 2016).

3. Analysis of Double Regression

This research used quantitative approach, that is; analysis of Double linear regression. The formulation of analysis of Double regression in this research is :
$Y = \alpha + \beta1X1 + \beta2X2 + \beta3X3 + e$

That is   :   Y = Variable Profitability, which is proxy by ROA
                        X1 = Loan operational compared with Income Operational (BOPO)
                        X2 = Loan to Deposit Ratio (LDR)
                        X3 = Non Performing Loan (NPL)
                        α = Constanta

β = Coefficient Regression (increased and decreased score)

e = error

V.   RESULT AND DISCUSSION

RESULT

Based on the analysis result of statistic description, the characteristic sample in this research include: total sample (N), average sample (mean), maximum score, minimum score, and deviation standard from every variable in table 1.

Table 1
Statistical Descriptive Result

	N	Minimum	Maximum	Mean	Std. Deviation
ROA	54	-72	28	2,31	13,006
BOPO	54	51	417	100,54	66,350
LDR	54	16,00	356,00	80,0000	42,19765
NPL	54	,00	42,00	6,7222	8,66661
Valid N (listwise)	54				

Source : Data Primer Processed

1.   Normality Data Test

The result of normality data test with histogram graphic and *normal probability plots*:
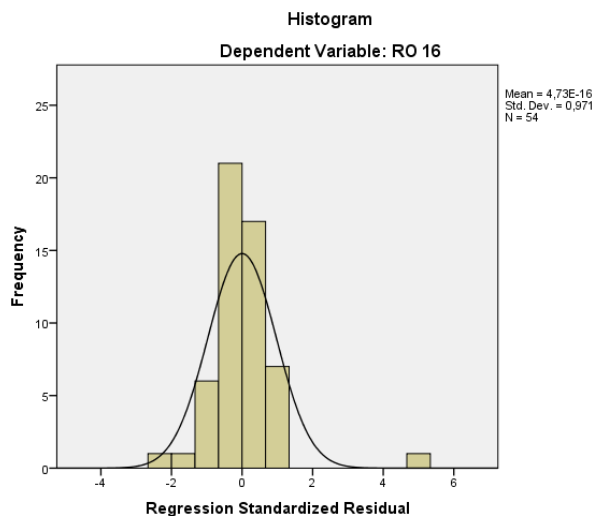**Illustration 2**

Figure 2.
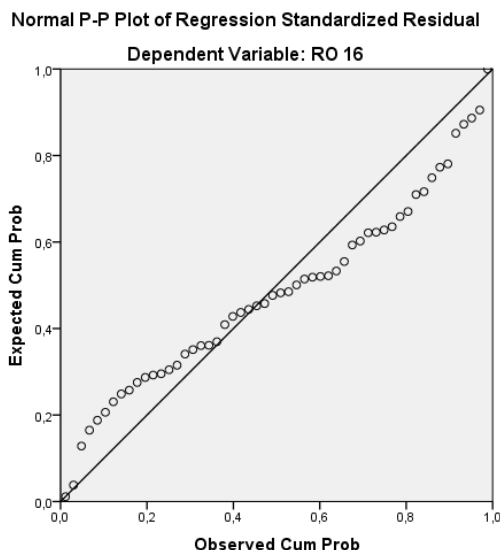Normality Test with Histogram

Illustration 3

Figure 3.
Normality Test with Normal Probability Plots

Indeed, based on the histogram graphic, it shows that residual is normal distributed and has symmetric form. In the graphic of *normal probability plots* the points are spreading closer to the diagonal, it shows that residual is normal distributed.

2. **Multikolinearity Test**

The result of multikolinearitas test can be seen from output SPSS 23 as follows:

Table 2
Multikolinearitas Test

Variable	Collinearity Statistics		
	Tolerance	VIF	Status
BOPO	0,669	1,494	There is no Multikolinearity
LDR	0,743	1,345	There is no Multikolinearity
NPL	0,838	1,194	There is no Multikolinearity

Source : Data Primer Processed

Table 2 shows there is no multikolinearity, because VIF score is not more 10 and *Tolerance* score not less than 0,10.

3. **Heteroskedastisity Test**

The result of heteroskedastisitas can be seen in the illustration 4 as follows:
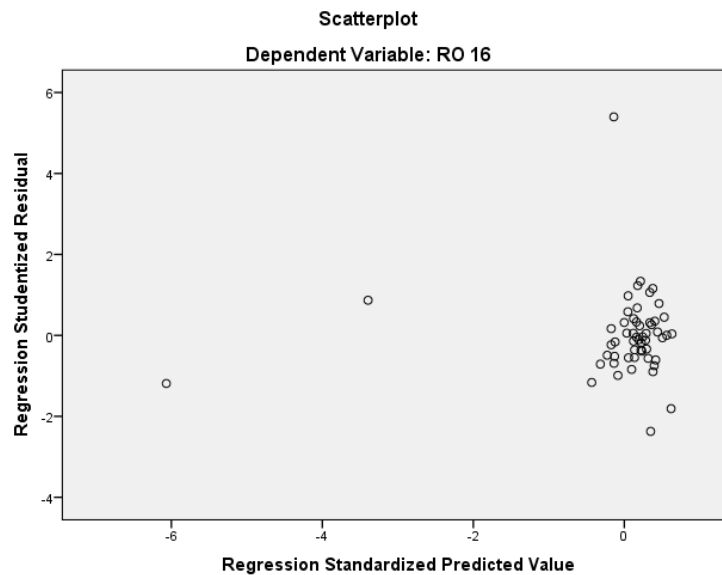

Illustration 4

Figure 4.
The Result of Graphic Plot Test.

The result of graphic plot residual shows there is no heteroskedastisitas, it can be seen from the residual which is distributed near nil point.

4. Autocorrelation Test

The result of output SPSS 23 can be seen from Table 3 as follows:

Table 3
The Result of Durbin Watson Test

Modle Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	,913[a]	,834	,824	5,450	1,947

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

b. Dependent Variable: ROA

The result of table 3 shows Durbin Watson score about 1.947. DW score based on the table with n=54 and k=3 the score is dl = 1.452 and du = 1.681. DW score 1.947 is bigger than above limitation (du) 1.681 and less than i 4-1.681 (4-du), therefore it can be concluded that there is no autocorrelation in this research.

5. The Result of Analysis Double Regression Linear

In this research technique of data analysis used double regression linear to explain and to
Process the data in order to evaluate the hypothesis..

Table 4
The Result of Double Regression Linear Test

Modle	Unstandardized Coefficients		Standardized Coefficients	t	Sig
	β	Std. Error	Beta		
1 (Constant)	24,465	1,675		14,605	0,000
BOPO	-0,132	0,014	-0,671	-9,536	0,000
LDR	-0,106	0,021	-0,343	-5,142	0,000

NPL	-0,069	0,094	-0,046	-0,733	0,467

a. Dependendt Variabel : ROA

Source : Data Primer Processed

The Regression Formulation:
ROA = 24,265 – 0,132 BOPO – 0,106 LDR – 0,069 NPL

DISCUSSION

1. The Effect of Loan Operational compared with Income Operational Toward ROA

Based on the regression test in the table 4, it can be seen that BOPO variable has significant effect about -0,132 toward ROA with probability score 0,00 that is < 0,05, it means that BOPO affects ROA, so the first hypothesis is accepted. Coefficient in BOPO is negative; it shows that if BOPO increased ROA score will be decrease. Those are related Widowo and Syaichu (2013) that show BOPO result is giving negative significant effect. Similarly, Ulandari, *et al.* (2016), Lubis, *et al.* (2017), and Muhajir, *et al.* (2017) with the same result state that BOPO has negative significant effect which means higher score of BOPO will be decreased ROA score.

2. The Effect of *Loan to Deposit Ratio* (LDR) toward ROA.

Based on regression evaluation in table 4, it shows that LDR variable has significant effect about -0,106 toward ROA with probability score about 0,00 that is < 0,05, it means that LDR affects ROA, so the second hypothesis is accepted. Coefficient in LDR is negative, it shows that if LDR is increased ROA will be decreased. Those are related with Sabir, *et al.* (2012), Francis (2013), Hooshyari and Moghanloo (2015), Oktavianus (2016), Lubis, *et al.* (2017), sand Muhajir (2017) that LDR has negative significant effect toward ROA.

3. The Effect of *Non Performing Loan* (NPL) toward ROA.

Based on regression result in table 4, it shows that NPL variable has significant effect -0,069 toward ROA with probability score about 0,467 that is > 0,05, it means that the third hypothesis is declined. On the other hand, NPL is not affected ROA. Coefficient in NPL is negative, it shows that if NPL is increased ROA will be decreased. Moreover, table 2 shows NPL has minimum score = 0; max = 42, average = 6,7 and standard deviation about = 8,7. Indeed, it means that variation data of NPL from average score is 8,7. As a result, from 54 BPR there is 35% BPR which have NPL score more than 5, whereas 65% BPR have a score lower than 5. Furthermore, from 65% there is 20% BPR which have NPL score same with= 0. The law in Bank Indonesia relates with *Non Performing Loan* (NPL) regulates that every increasing of outstanding savings must be covered with active productive. The third hypothesis is rejected, because the risk of the BPR credit is stable, so the profitability score is constant. Those are related with Ali and Laksono (2017), Muhajir, *et al.* (2017), and Setiawan (2017) prove that NPL has no significant toward ROA.

4. Coefficient Regression Simultaneous (t)

Based on table 5, F score is 83,960 and significant score is 0,000 with independent variable BOPO, LDR, and NPL simultaneous affects dependent variable (ROA).

Table 5
Hhypothesis Test

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	7480,682	3	2493,561	83,960	,000[b]
	Residual	1484,966	50	29,699		
	Total	8965,648	53			

a. Dependent Variable: ROA

b. Predictors: (Constant), NPL, LDR, BOPO

5. Coefficient Determination (R^2)

R^2 (*Adjusted R-Square*) is used to measure the proportion variation from independent variable and affect dependent variable such as the table 6 below:

Table 6
Determination Test

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	,913[a]	,834	,824	5,450	1,947

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

b. Dependent Variable: ROA

The result of SPSS 23 shows *Adjusted R-square* 0,824, it means that free variable that is BOPO, LDR, and NPL affects ROA is 82,4%, whereas 17,6% is affected by another factors.

VI.   CONCLUSION

There are several result based on evaluation process, that are : (1) BOPO variable has negative significant effect toward ROA; (2) LDR variable has negative significant toward ROA; and (3) NPL variable has negative significant effect toward ROA. Moreover, within this research, there are some obstacles such as: uncompleted BPR data from OJK report document that is needed by the researcher. On the other side, the researcher used three variable, that are: BOPO, LDR, and NPL, suggestion for the other research to use another variable such as Capital Adequacy Ratio (CAR), Net Interest Margin (NIM). Furthermore, another variable that needs to be observed such as liquidity factor, it can be seen from Cash Ratio, Current Ratio, Quality of Activation Productive KAP), and Obigation of Equipping minimum modal (KPMM) as a part of CAMEL. The factor of macro economics such as interest, economical growth can be used for another research model because those will be affected the company profitability.

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