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### Return on Assets and Covid-19: Do Capital Adequacy Ratio, Loan to Deposit Ratio and Operational Efficiency Ratio Matters?

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#### ABSTRACT

This study aims to test the effect of Capital Adequacy Ratio (CAR), Loan to Deposit (LDR), and Operational Efficiency Ratio (OER) on Return on Assets (ROA) during the Covid-19 pandemic. This study utilizes a purposive sampling method using a population of National Private Commercial Banks (NPCB) for foreign exchange listed on the Indonesia Stock Exchange (IDX). The data used is the Annual Report for the 2019-2020 period which has been published and based on the purposive sampling method the number of samples used is 44. The analytical technique used in this study is multiple linear regression using SPSS 24. Based on the results of the study, it shows that CAR has a significant positive effect on ROA, LDR has no significant effect on ROA, and OER has a negative effect on Return on Assets (ROA).

#### INTRODUCTION

In Indonesia, the independent music label business or commonly called Indie Label is Indonesia's economy has proliferated and the success of the economy in Indonesia will not be far from all banking activities. Banking is one of the institutions that play a prominent role in the Indonesian economy. Without banking, it will undoubtedly lead to an economic crisis. This task is carried out by banks as financial intermediaries. All economic activities in Indonesia are accounted for in banking because banks regulate all financial activities in this country. Law no. 10 the Year 1998 explains that Commercial Banks are banks that carry out business activities conventionally or based on sharia principles whose activities are to provide services in payment traffic. In addition, banks have duties that must be carried out. As stated by Abdullah & Wahjusaputri (2018:3), banks carry out tasks, namely as: agents of development (serving credit distribution) and agents of trust (serving services), in the form of securing the control of property, individuals, groups or companies.

Research conducted by Khoirunnisa et al. (2016) and Bernardin (2016) has proven that CAR has a positive effect on ROA. However, this is in contrast to the research conducted by Almunawwaroh and Marlina (2018) and Sofyan (2019), which have proven that CAR has a negative effect on ROA.

The results of research that have been studied by Andrianty and Kartikasari (2018) and Peling and Sedana (2018) have proven that LDR has a positive effect on ROA. However, in contrast to the research studied by Khoirunnisa et al. (2016) and Paleni (2016), it has been proven that LDR has a

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negative effect on ROA. In subsequent studies, which were investigated by Suryana and Edison (2017) and Nanda et al. (2019), it has been proven that OER has a positive effect on ROA. Then, research conducted by Pinasti and Mustikawati (2018) and Hutagalung et al. (2019) gave different results, namely, OER had a negative effect on ROA. The purpose of this study was to determine the effect of CAR, LDR, and OER simultaneously and partially on ROA at National Private Commercial Banks for the 2019-2020 period

Regarding to Hery (2016), profitability ratio is a tool used to measure the company's ability to generate profits from its normal business activities. The indicator that can be used to measure the profitability ratios generally used by banks is the Return on Assets (ROA). As provided by Harahap (2013), ROA is a ratio that constitutes how much net profit is obtained when measured by means of asset value by dividing the net income obtained by the average total assets of the company. The factor that affects ROA is Capital Adequacy Ratio (CAR). According to Kuncoro & Suhardjono (2011), CAR is capital adequacy which shows the bank's ability to maintain sufficient capital and the ability of bank management to identify, measure, supervise, and control the risks that can affect to the amount of bank capital.

Furthermore, the factor that affects ROA is the Loan to Deposit Ratio (LDR) or the so-called comparison ratio of loans given to third party funds. As addressed by Kasmir (2014), LDR is a ratio used to measure the composition of the amount of credit given compared to the amount of public funds and own capital used. This ratio is also included in the indicators to assess the soundness of banks. If it is estimated that the amount of funds that have been distributed to the community, the idle funds will be lessened due to the fact that these funds have been distributed to the community in line with their needs. The next aspect that affects ROA is the Operational Efficiency Ratio (OER). Operational Efficiency Ratio (OER) is a comparison between operating costs and operating income in measuring the level of efficiency and ability of banks to carry out their operations (Rivai, 2007).

## **MATERIALS AND METHODS**

### **Signalling Theory**

According to Brigham & Houston (2011), a signal is an action taken by the company to provide instructions for investors about how management views the company's prospects. This signal is in the form of information about what management has done to realize the owner's wishes. Meanwhile, according to Spence (1973), the signal gives information, and the sender (the owner of the information) tries to provide pieces of information that are relevant and can be utilized by the recipient. The receiving party will then adjust its behavior according to its understanding of the signal.

### **Stewardship Theory**

According to Donaldson and Davis (1991), stewardship theory is a theory that was initiated to be used in situations that describe the condition of managers who are motivated to take action from the main outcome target, namely the interests of the organization and are not motivated by their personal interests. In addition, this theory is based on psychology and sociology as designed that the executives as stewards are motivated to act in accordance with the wishes of the principal. This shows that the stewards certainly must not leave the organization and the stewards are required to achieve organizational goals.

### **Financial Ratio**

Kasmir (2017) states that financial ratios are activities to compare the numbers in the financial statements by dividing one number by another. Comparisons can be made between one component with components in one financial report or between components that exist between financial statements.

### **Profitability**

According to Sirait (2017), profitability is the company's ability to earn comprehensive profits, convert sales into profits and cash flow. In obtaining a company's profitability, it must be estimated on the company's financial condition, especially in banking. In this study, ROA is used as a proxy to measure profitability.

### Capital Adequacy Ratio (CAR)

Hery (2020) states that CAR is a ratio between capital and risk-weighted assets (RWA), where the size of the CAR according to government regulations in 1999 is at least 8%. Khoirunnisa et al. (2016) and Bernardin (2016) has proven that CAR has a positive effect on ROA. On the contrary research conducted by Almunawwaroh and Marlina (2018) and Sofyan (2019) found conflicting findings that CAR has a negative effect on ROA.

H2: Capital adequacy ratio has a positive effect on return on assets.

### Loan to Deposit Ratio (LDR)

Kasmir (2014) explains that LDR (Loan to Deposit Ratio) is the ratio used to measure the composition of the amount of credit given compared to the amount of public funds and own capital used. The findings from Andrianty and Kartikasari (2018) and Peling and Sedana (2018) have proven that LDR has a positive effect on ROA. In contrast, Khoirunnisa et al. (2016) and Paleni (2016) has proven that LDR has a negative effect on ROA.

H3: Loan to deposit ratio has a positive effect on return on assets.

### Operational Efficiency Ratio (OER)

Hasibuan (2017) states that operational efficiency ratio (OER) is the ratio of operating costs to operating income formulated as a comparison or operational cost to operating income in the same period. Previous studies, which were done by Suryana and Edison (2017) and Nanda et al. (2019) has been proven that OER has a positive effect on ROA. Research conducted by Pinasti and Mustikawati (2018) and Hutagalung et al. (2019) gave different results, namely, OER had a negative effect on ROA.

H4: Operational efficiency ratio has a negative effect on return on assets.  
H1: Capital adequacy ratio, loan to deposit ratio, and operational efficiency ratio simultaneously affect return on assets.

The type of this research used quantitative research methods because this research used numbers that indicate the value of the magnitude or the variables represented. This research was conducted at the National Private Commercial Banks Bank for Foreign Exchange listed on the Indonesia Stock Exchange (IDX) for the period 2019-2020.

The data used is the annual report of National Private Commercial Banks Bank Foreign exchange year period 2019-2020. The population in this research is a National Private Commercial Bank for Foreign Exchange listed on the Indonesia Stock Exchange (IDX). The sampling technique used in this research is purposive sampling. The independent variables used in this study are Capital Adequacy Ratio (CAR), Loan to Deposit Ratio (LDR), and Operating Efficiency Ratio (OER) and this study used Return on Assets (ROA) as the dependent variable.

According to Sugiyono (2018), data analysis is an activity after all respondents or other data sources have been collected. In this research accommodates descriptive analysis, classical assumption test which consisting of normality test, autocorrelation test, multicollinearity test, heteroscedasticity test. While the descriptive analysis with multiple linear regression to test the F statistical test, t statistical test, and the coefficient of determination. The regression model used is:

$$Y = a + \beta_1 X_1 + \beta_2 X_2 - \beta_3 X_3 + e$$

Information :

Y = ROA

$\alpha$  = Constant

$\beta_1$ - $\beta_3$  = Reggression Coefficients

X1 = Capital Adequacy Ratio (CAR)

X2 = Loan to Deposit Ratio (LDR)

X3 = Operating Efficiency Ratio (OER)

$\epsilon$  = Error Term

## RESULTS AND DISCUSSION

In this section addresses the results of the study and discussion, the results obtained that comprising descriptive statistics, normality test, multicollinearity test, heteroscedasticity test, autocorrelation test, simultaneous test, partial test, and coefficient determination. The descriptive statistics section presents the minimum, maximum, mean, and standard deviation.

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

NMin	Max	Mean	Std. Deviation			
	N	Min	Max	Mean	Std. Deviation	
CAR	44	12,08	49,44	24,877	8,66672	
LDR	44	48,56	107,75	1,5248	12,38479	
BOPO	44	45,33	260,98	87,3266	37,37956	
ROA	44	-4,91	4	1,003	1,64722	
Valid N	44					

Based on the descriptive statistical table, the variables of Capital Adequacy Ratio (CAR), Loan to Deposit Ratio (LDR), Operating Cost of Operating Income (BOPO), and Return on Assets (ROA) can be interpreted as follows:

- Variable Capital Adequacy Ratio (CAR)**  
Regarding the table above, it presents that the variable Capital Adequacy Ratio (CAR) at Bank for Foreign Exchange listed on the Indonesia Stock Exchange has a minimum value of Capital Adequacy Ratio (CAR) of 12.08 while the maximum value is 47.29 and the average value (mean) is 23.8723 and the standard deviation is 7.14461.
- Variable Loan to Deposit Ratio (LDR)**  
In the variable Loan to Deposit Ratio (LDR) at the Bank Foreign Exchange listed on the Indonesia Stock Exchange (IDX) has a minimum value of 48.56 while the maximum value of 163.00 and the average value (mean) was 83.1666 and the standard deviation was 18.94707.
- Variable Cost of Operational Income Operational Income (BOPO)**  
Variable Cost of Operational Income (BOPO) at National Private Commercial Banks Bank Foreign exchange listed on the Indonesia Stock Exchange (IDX) has a minimum value of 45.33 while the maximum value of 260.98 and the average value (mean) is 83.6573 and the standard deviation is 37.62525.
- Variable Return on Assets (ROA)**  
Variable Return on Assets (ROA) at National Private Commercial Banks Bank Foreign exchange listed on the Indonesia Stock Exchange (IDX) has a minimum value of -4.91 while the maximum value of 3 .95 and the average value (mean) 0.9920 and the standard deviation is 1.64134.

**Tabel 2**  
**Normality Test**

	<i>Unstandardized Residual</i>
N	44
<i>Test Statistic</i>	0,125
<i>Asymp. Sig. (2-tailed)</i>	,081c

Based on the table above, the results of the normality test using the Kolmogorov-Smirnov result in the value Asymp.sig of 0.081 > 0.05, which means that the data is normally distributed.

**Table 3**  
**Multicollinearity Test**

	VIF	Tolerance	Information
CAR	0,988	1,012	Free of Multicollinearity
LDR	0,984	1,016	Free of Multicollinearity
BOPO	0,972	1,029	Free of Multicollinearity

Based on the table above, it can be concluded that the test results on the CAR, LDR, and BOPO variables are free from the symptoms of multicollinearity.

**Table 4**  
**Autocorrelation Test**  
**Model Durbin-Watson**

Model	Durbin-Watson
1	1,862

Based on the table above, the Durbin-Watson value is 1.862 with 44 n and 3 independent variables and the DU table value is 1.6647. Based on the table above, when entered in the formula  $du < d < 4 - du$  then it becomes  $1.6647 < 1.862 < 2.3353$  the conclusion that can be drawn is that the value is Durbin-Watson free from autocorrelation symptoms.

**Table 5**  
**Simultaneous Test (F-test)**

	Sum of Squares	df	Mean Square	F	Sig.
Regression	93,148	3	31,049	52,792	0,000
Residual	23,526	40	0,588		
Total	116,673	43			

Based on the table above, it can be seen that the sig value is  $0.000 < 0.050$  and the F-count value is  $52.792 > 2.84$  F-table. The conclusion that can be drawn is that CAR, LDR, and BOPO have a simultaneous effect on ROA.

**Table 6**  
**Partial Test (t-test)**

Variables	B	t-count value	sig
CAR	0,032	2,350	0,024
LDR	-0,006	-0,608	0,547
BOPO	-0,038	-11,993	0,000

Based on the table above, it can be seen that the results of partial influence testing are as follows:

a. Second Hypothesis Testing ( $H_2$ )

Based on the examination table above, the variable of Capital Adequacy Ratio (CAR) obtained significant values of  $0,024 < 0,050$  with a value of 2,350 t count  $>$  t-table 1.68385. Based on the above test results, the conclusion that can be drawn is Hypothesis 2 ( $H_2$ ) can be RECEIVED and  $H_0$  rejected.

b. Third Hypothesis Testing ( $H_3$ )

Based on the examination table above, the variable Loan to Deposit Ratio (LDR) obtained significant values of  $0.547 > 0.050$  with t-count value  $-0.608 < -1.68385$  t-table. This is because the significant value of the Loan to Deposit Ratio (LDR) is greater than the real level which is 0.05. Based on the above test results, the conclusion that can be drawn is Hypothesis 3 ( $H_3$ ) REJECTED and  $H_0$  accepted.

c. Fourth Hypothesis Testing ( $H_4$ )

Based on the examination table above, the variable in Operating Income Operating Costs (ROA) obtained significant values of  $0.000 < 0.050$  with value  $-17.474$  t count  $>$  t-table  $-1.68385$ . Based on

the above test results, the conclusion that can be drawn is Hypothesis 3 ( $H_4$ ) RECEIVED and  $H_0$  rejected.

**Table 7**  
**Coefficients Determination**

R	R Square	Adjusted R Square	Std. Error of the Estimate
0,894a	0,798	0,783	0,76690

Based on the results of the coefficient of determination above that the value R Square obtained is 0.798 or 79.8%. This means that the ROA variable is influenced by 79.8% of the CAR, LDR, and BOPO variables. In addition, the remaining 20.2% is influenced by other factors/variables outside of the variables studied.

#### **The Effect of CAR, LDR, and OER Simultaneously on ROA**

Capital Adequacy Ratio (CAR) or the capital adequacy ratio as best as possible the capital can be used optimally other than solely being used to cover the risks that occur in the bank.

Furthermore, the Loan to Deposit Ratio (LDR) is the ratio used by the amount of third party funds. Operating Expenses Operating Income (BOPO) is the total operating costs compared to the total operating income. Based on the test results on the F test (simultaneous test) that the significance value obtained is 0.000. This means that the Capital Adequacy Ratio (CAR), Loan to Deposit Ratio (LDR), and Operating Efficiency Ratio (OER) simultaneously affect the Return on Assets (ROA).

The test results on the simultaneous test (F test) state that hypothesis 1 is accepted. Based on the test results that the Capital Adequacy Ratio (CAR), Loan to Deposit Ratio (LDR), and Operating Efficiency Ratio (OER) have proven that there are similarities that can cause Return on Assets (ROA). The similarity between the three ratios will trigger Return on Assets (ROA) to enhance or lessen so that what must be done by banks is to maintain the efficiency of the three ratios. The three ratios have an effect on the profitability of the bank because it is related to operations at the bank. The bank's operational activities if managed efficiently will cause the bank's profitability to increase. On the other hand, if operational activities are not efficient, it will trigger bank profitability to decline.

Based on the results and discussion above, the results of this study support the research conducted by Khoirunnisa et al. (2016) and Apris (2019). The results of this study are in line with signal theory if the Capital Adequacy Ratio (CAR), Loan to Deposit Ratio (LDR), and Operating Efficiency Ratio (OER) can be managed properly, it will lead to an increase in Return on Assets (ROA) at National Private Commercial Banks Bank Foreign Exchange so that it will generate a good signal for investors because the National Private Commercial Banks Bank Foreign Exchange is able to increase Return on Assets (ROA) and profitability at the bank can be well maintained.

#### **The Effect of CAR Partial on ROA**

Capital Adequacy Ratio (CAR) is a ratio used to measure the adequacy of capital owned by banks and serves as to accommodate the risk of losses faced by banks. According to Kasmir (2016), CAR is a ratio comparison between the ratio of capital to Risk Weighted Assets and in accordance with government regulations. According to Hery (2020), CAR is a ratio between capital and risk-weighted assets, where the size of the CAR according to government regulations in 1999 is at least 8%. Based on the t test table (partial test) that the significance value obtained is 0.024, it means that the variable Capital Adequacy Ratio (CAR) partially has a significant positive effect on Return on Assets (ROA). The test result states that hypothesis 2 is accepted. This is because the bank's capital is able to cover all the risks faced by the bank. The ratio that has been obtained by the National Private Commercial Banks Bank in total is in accordance with Bank Indonesia regulations, namely the minimum Capital Adequacy Ratio (CAR) ratio of 8%.

Bank capital is one of the important sources for banks. It is because every bank activity requires this capital to be used for operational activities. The results of these operational activities will certainly increase the profit generated because most of the foreign exchange National Private Commercial Banks Bank are able to streamline their capital for their operational activities and the results of their operational activities will earn profits so that the ratio Return on Assets (ROA) is nothing but one of the profitability ratios also increases. Efforts that have been made by the National Private Commercial Banks Bank for Foreign Exchange during the period 2019-2020 have a good quality Capital Adequacy Ratio (CAR) so that the quality of the ratio results in an increase in the Return on Assets (ROA). Based on the findings of this study, the results of this study are consistent with research conducted by Khoirunnisa et al.

(2016) and Bernardin (2016). However, the results obtained are contrary to the results that have been studied by Almunawwaroh and Marlina (2018) and Sofyan (2019). Based on the results of theoretical frameworks, this is in line with signal theory, that an increase in the Capital Adequacy Ratio (CAR) can affect the Return on Assets (ROA) to increase so that it will generate a good signal to investors. This will trigger investors to give their capital to the bank because the capital can be managed by the bank and the bank will generate profits from its operational activities. So that the resulting profit will increase profitability and investors trust the bank because the bank can manage the capital that has been given to generate profits.

### **The Effect of LDR partial on ROA**

The results of this study support the theory Stewardship that this theory is related by the ratio of loan to deposit ratio (LDR) to the profitability of the bank. In accordance with the theory that has been explained that the bank as the principal who aims to achieve organizational goals is not looking for goals for personal interests. This condition can be seen that the customer is the steward who is trusted by the bank to use the funds that have been given according to the customer's needs.

However, it happens that the stewards do not hold the trust that should be a common goal that must be achieved so that the bank as the principal feels the impact, namely interest income decreases and reduces profitability at the bank. The existence of these conditions, the steward must comply with the existing agreement so that the bank also feels the advantage that the credit that has been given can generate income and can increase the profitability of the bank. Loan to Deposit Ratio (LDR) is a ratio used to measure and describe the amount of credit extended to third party funds.

According to Kasmir (2014), LDR (Loan to Deposit Ratio) is the ratio used to measure the composition of the amount of credit given compared to the amount of public funds and own capital used. Based on the t test table (partial test) that the significance value obtained is 0.547, it means that the variable Loan to Deposit Ratio (LDR) partially has no effect on Return on Assets (ROA). The test results state that hypothesis 3 is rejected.

This can indicate that the higher the Loan to Deposit Ratio (LDR) cannot be said to be a benchmark that can affect the Return on Assets (ROA). However, there is a more dominant factor apart from this ratio that can affect the Return on Assets (ROA). Under these conditions, the quality of the resulting credit is said to be poor due to the imbalance of excessive credit distribution with third party funds. The excessive credit distribution will certainly provide credit risk such as increasing bad debts and causing the profitability of the bank to decrease.

Therefore, banks must strive to maintain the quality of the credit in order to avoid unwanted credit risk. However, on the other hand, if the credit distribution is less and the third party funds are excessive, the bank does not manage its funds for operational activities, the result is that the bank does not get income because the bank is too focused on saving large amounts of funds without optimizing the operational activities that should be carried out. Based on the research results that have been obtained, the results of this study are in line with research conducted by Adhani (2020) and Moorcy (2020). However, the results obtained are contrary to the results that have been studied by Andrianty and Kartikasari (2018) and Peling and Sedana (2018) which state that the Loan to Deposit Ratio (LDR) partially has a positive effect.

### **The Effect of OER partial on ROA**

Operating Efficiency Ratio (OER) is a ratio used to measure the level of efficiency and ability of banks in their operational activities. According to Hasibuan (2017:101), the operating efficiency ratio (OER) is formulated as a comparison or operational cost to operating income in the same period.

Based on the t-test table (partial test) that the significance value obtained is 0.000, it means that the variable Operating Efficiency Ratio (OER) partially has a significant negative effect on Return on Assets (ROA). The test results state that hypothesis 4 is accepted. Based on the results of empirical evidence that the variable Operating Efficiency Ratio (OER) has a negative effect on Return on Assets (ROA). This is due to the increasing variable Operating Efficiency Ratio (OER), which will cause a decrease in the efficiency of a bank, causing a decrease in profitability at the bank.

This is because if the National Private Commercial Banks Bank for Foreign Exchange does not make its operational costs as efficient as possible and the income obtained tends to be a little, it will result in profitability to decline including the ratio of Return on Assets (ROA). Operational costs are high, the bank is not able to manage operational activities, it tends to be unfavorable so that the profitability

of the bank cannot be achieved. However, if operational costs can be controlled and the bank's income increases, it will cause the Operating Efficiency Ratio (OER) to be small and increase the profitability of a bank.

The results of this study are in line with of Pinasti and Mustikawati (2018) and Hutagalung et al. (2019). However, the results obtained are contrary to the results that have been studied by Suryana and Edison (2017) and Nanda et al. (2019) which stated that the Operating Efficiency Ratio (OER) partially has a significant positive effect on Return on Assets (ROA).

Based on the results of the research above, if it is connected between signal theory and the effect of Operating Efficiency Ratio (OER) on Return on Assets (ROA), if the Operating Efficiency Ratio (OER) increases, it will certainly provide a bad signal to outsiders. Due to the excessive increase in operational costs without being managed properly, it will certainly lessen the profitability of a bank and outsiders who catch the bad signal will consider first if they keep their funds in the bank.

This will be completed by outside parties because the bank is not able to manage its operational costs and revenue tends to be generated less. It can occur that outsiders withdraw because the bank is not stable because the profitability of the bank decreases due to high operating costs.

## CONCLUSIONS AND SUGGESTION

Based on the results of data analysis and discussion, it can be concluded that CAR, LDR, and BOPO simultaneously have a significant effect on ROA at Foreign Exchange National Private Commercial Banks Bank for the period 2019-2020, CAR partially has a significant positive effect on ROA, LDR partially has no significant effect on Return on Assets (ROA), and Operational Costs on Operating Income (BOPO) partially has a significant negative effect on Return on Assets (ROA). Based on the conclusions above, the limitations of this study are that only 3 variables are used, namely as: CAR, LDR, and BOPO as factors that affect ROA. Suggestions to future researchers can add internal factors as well as external factors such as interest rates, inflation, and so on that can affect ROA at banks.

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