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Banking Profitability and Covid-19: Evidence from Indonesia

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ABSTRACT

The research investigates the determinants of commercial bank profitability in Indonesia before and during COVID-19. Bank-specific factors influence bank profitability as measured by Return on Assets (ROA), Capital Adequacy Ratio (CAR), loan-to-loan Ratio to deposits (LDR), Operating Costs to Operating Income (BOPO), Non-Performing Loans (NPL), and Bank Size. The research sample includes banks in Bank Groups Based on Core Capital (KBMI) III and IV. The research uses quarterly data for the period 2018 to 2022. The data analysis method for estimating and analyzing the ROA determining factor model is a panel data regression model. The research results found that the CAR ratio had a positive effect on ROA before COVID-19 occurred, but during the COVID-19 period, there was no effect. The LDR ratio did not affect ROA before COVID-19 occurred but had a positive impact when COVID-19 occurred. BOPO efficiency hurt ROA before and during COVID-19. The NPL ratio and Bank size do not affect ROA before and during COVID-19.

INTRODUCTION

Bank of One is the long-term funding source for companies in the financial market. One is the banking industry, which plays an essential role in economic development as a financial intermediary between excess funds and those who need funds (Sugianto et al., 2020). The phenomenon that is happening right now is COVID-19, which has caused a decline in the economy in Indonesia, and even the economy in all countries has also declined. Compared to the 1998 crisis in the banking sector, this pandemic has not

caused a crisis in the banking sector. However, it caused a decline in profitability in all sectors, including the banking sector. This virus spreads very quickly because it can be transmitted from human to other humans through breathing and touch. All countries are closed and place restrictions on social interaction.

For this reason, all activities are limited, so everyone must stay at home to break the chain of COVID-19 so that the spread does not increase (Ricardianto et al., 2023). The impact on the national economy, health, and welfare becomes uncertain. So that the economy does not decline further, the government carries out a policy of reopening the economy, which is called the New Normal. The Indonesian economy is improving because it is supported by public consumption. As a result of COVID-19, decreased purchasing power will result in reduced production, and decreased supply will result in losses for the company. Companies that are losing money are employing employees from home by cutting employee salaries due to decreased company revenue.

Banking profitability tends to decline due to weaker margins from lending, plus the high Ratio of non-performing loans resulting from the COVID-19 pandemic. There are also strict regulations from OJK and Bank Indonesia. The COVID-19 pandemic that has hit Indonesia has forced the government to make and implement rules requiring people to limit their activities and stay home. This caused many buying and selling activities to be stopped and caused a lot of negative impacts that everyone felt. A bank is an intermediary institution. The weakening of the intermediary function led to a decline in credit to banks, which is the most significant source of income for banks because it is difficult for people to repay loans obtained from banks. One way for banks to survive and compete is by improving their financial performance because one of the healthy bank categories is a bank that can have high profitability.

Return on Assets (ROA) is used to measure profitability based on bank performance assessments by the Central Bank of Indonesia, which is measured by the value of assets, the majority of which are public savings. Excellent or lousy banking performance can be influenced by the internal conditions of bank management and external economic conditions, such as Indonesia's macroeconomic conditions, which include inflation, interest rates, exchange rates, national income, and the consumer price index. In managing assets as reflected in the financial statements through the ROA ratio, banks are influenced by other factors, including the capital adequacy ratio (CAR), loans to deposits (LDR), efficiency (BOPO), non-performing loans (NPL), and size companies.

1. LITERATURE REVIEW AND HYPOTHESES

Banks are financial institutions whose activities attract funds from people with advantages and distribute them to people who need them to finance various activities. As a financial institution, banks have the advantage of collecting funds from people who need funds in the form of credit or financing. Banks aim to distribute credit to various parties who need it from funds sourced from third parties. Credit demand is a function of loan interest rates, market interest rates, and the level of the economy (Koivu, 2009). Economic growth will change the financial sector (Endri et al., 2022).

The banking industry is part of the development of the state financial sector, which will distribute savings funds to the public in the form of credit. A region's economic level can be seen from the GRDP in a certain period. A high level of regional income will affect the level of payment of the people in the area, which in turn will increase the demand for goods and services. This will cause the company to expand its business by making working capital credit loans. Overall, bank performance describes achievements in operational activities, including fund collection, credit distribution, digitalization, efficiency, and human resources (Hernando & Nieto, 2007). Bank performance also reflects financial conditions in a certain period in the form of raising funds and lending, which are measured by several leading indicators, namely capital adequacy, liquidity, and profitability.

Profitability is the most essential part of the banking business. This is used to measure whether the company's target profit can be achieved, one of the ratios used for ROA. ROA is an indicator used to calculate a bank's ability to generate profits relative to its total assets, namely the rate of Return on company assets. ROA is the Ratio between profit after tax and total assets in one period. ROA also shows the performance of bank management in obtaining earnings from the average total bank assets owned. A larger ROA shows that the Bank is achieving more significant profits, and the smaller the Bank, the more

financial problems it faces. Profitability in a bank is the Bank's ability to generate profits by utilizing its assets over time (Sugianto et al., 2020; Harahap et al., 2020). ROA is an indicator of the comparison between profits and total assets. ROA also reflects the level of efficiency in asset management carried out by the Bank. ROA shows the Bank's ability to obtain returns on several assets owned by the Bank (Abidin et al., 2021). Analysis of financial statements is a measurement method for assessing bank performance. By using financial ratios, we can see the company's financial condition so that it can be used as a policy-making tool. Besides that, financial ratios help predict profits in the future.

CAR is a banking indicator that detects the Bank's ability to cover the decline in its assets due to bank losses caused by risky assets. Bank performance theory shows a picture of the financial condition of banks with significant capital, making banking performance higher to obtain high income. Puspitasari et al. (2021) stated that a high CAR indicates that the Bank has sufficient capital to face unexpected losses. Meanwhile, a low CAR indicates that the Bank does not have enough capital for the risks associated with its assets, which can lead to bankruptcy. Abdelmoneim and Yasser (2023) and Rohman and Nurkhin (2022) prove that ROA is influenced by CAR. Kantharia and Biradar (2022) also found that CAR positively affects the profitability of public sector banks in India.

Based on Bank Indonesia Circular Letter No.15/15/PBI/2013 dated 24 December 2013 Loan, the Deposit Ratio is the Ratio of loans extended to third parties in Rupiah and foreign currencies, excluding loans to other banks, to third-party funds, which include current accounts, savings and time deposits in Rupiah and foreign currencies, excluding interbank funds. The Loan Deposit Ratio (LDR) is a ratio that is very closely related to stakeholders because, through LDR, they can find out how much bank liquidity is by looking at the number of funds disbursed and the number of funds received. Banks must maintain their liquidity level of 80%. A high level of liquidity will signal that customers have a higher level of trust in the Bank. Saddique et al. (2016) show that LDR positively affects ROA.

Based on Bank Indonesia Circular Letter No.15/15/PBI/2013 dated 24 December 2013. The ideal BOPO ratio is between 50% and 75%, following Bank Indonesia regulations that must have a maximum BOPO of 85%. If a bank has more BOPO than Bank Indonesia regulations, then the Bank needs to be healthier and more efficient. Based on Law Number 10 of 1998 states that banks are required to maintain a bank soundness level following capital adequacy, asset quality, management quality, liquidity, earnings, solvency, and other aspects related to bank business and are required to carry out business activities following the principle of prudence. - be careful. The theory of financial performance is a determination of specific measures to measure a company's success in generating profits. The smaller the efficiency ratio, the more efficient the operational costs incurred by the Bank. Wahyuni and Umam (2023) found that operational efficiency (BOPO) hurt ROA.

OJK Circular No. 14/SEOJK.03/2017 explains that credit risk is due to the failure of other parties to fulfill obligations to the Bank, including credit risk due to debtor failure, credit concentration risk, counterparty credit risk, and settlement risk. A high NPL value can indicate a large number of bad loans. The higher the credit rating, the greater the credit risk faced by a bank and the lower the Bank's creditworthiness. This increases the number of problem loans and can result in losses. The bad credit ratio is expressed as a percentage of total non-performing loans (substandard, questionable, and bad) to total credit initiated by the Bank. This risk is commonly referred to as NPL, namely non-performing loans. In practice, the higher the NPL ratio, the higher the credit risk that banks must face.

For this reason, banks must extend credit as much as possible but must be able to control the risk of non-performing loans to their customers. Banks experience credit risk when there is a significant default rate on loans (bad credit) and when the Bank cannot meet depositors' cash needs because it does not have sufficient reserves or cannot raise short-term funding (Adelopo et al., 2018). Annas et al. (2024), Qehaja-Keka et al. (2023), Sari (2021), Islam and Rana (2017), and Isanzu (2017) state that NPL or credit risk influences bank profitability.

Bank size is a scale in which a company can be classified according to its size in various ways, including total assets, log size, market value of shares, and others. The size of a company can be divided into three categories based on the total assets of a company, namely the category of large firms), the category of medium firms, and the category of small firms (Fathony et al., 2020). The company's size in

this study is seen from the size of the total assets owned by a company. Assets show assets that can be used for the company's operational activities. An increase in assets followed by an increase in operating results will increase the trust of outsiders in the company. With increasing outsiders' trust in the company, it is possible for creditors to be interested in investing their funds in the company (Endri, 2019)

The Bank size variable can be measured by the company's total assets' natural logarithm (Ln). This is because the size of the total assets of each company is different and even has a significant difference, so it can cause extreme values. It will be easy for a large company to enter the capital market. Due to the ease of dealing with the capital market, the flexibility is greater, and the level of investor confidence is also more significant because it has the best operational performance. Large companies can attract greater investor interest to invest compared to small companies because they have better investment placement flexibility. Signaling theory shows that if investors see the size of a bank's total assets, the level of investor confidence will grow, so they want to invest their shares in banks with high total assets. An empirical study by Menicucci and Paolucci (2016) proves that size is the main determining factor in bank profitability. Teshome et al. (2018) show that size positively affects ROA.

The research aims to estimate and analyze the influence of bank-specific factors consisting of ROA, CAR), LDR, BOPO, NPL, and Bank Size on the ROA of Indonesian banking before and during COVID-19. Therefore, the research hypothesis tested using the panel data regression method is:

H1: CAR has an impact on ROA before and during COVID-19

H1: LDR has an impact on ROA before and during COVID-19

H1: BOPO has an impact on ROA before and during COVID-19

H1: NPL has an impact on ROA before and during COVID-19

H1: Bank Size has an impact on ROA before and during COVID-19

2. METHOD

This study uses a quantitative descriptive approach because researchers want to get information related to samples taken from the population; researchers intend to test the research hypothesis and test the interrelationships of several research variables to find out the independent variables used in this study, namely CAR, LDR, BOPO, NPL, and Company size to the dependent variable, namely ROA. Secondary data is obtained from the Bank's Annual Reports, which release data on financial ratios for publicly listed commercial banks in Indonesia from the first quarter of 2018 to the fourth quarter of 2021. In addition, companies that are included in the Bank Group are based on Core Capital (KBMI) with a capital core above 14 trillion and are included in the KBMI 3 and 4 categories.

This study collects data using literature and document studies by examining theories from papers, journals, books, and previous research findings to help researchers understand the relevant literature. In this research, the analytical method used is panel data regression analysis with the help of Eviews 12 software, which measures the effect of the independent variables on the dependent variable and tests the proposed hypotheses. The panel data regression model is used to determine the effect of one or several predictor variables on a response variable with a data structure in the form of panel data. Panel data itself is a combination of time-series data with cross-section data.

The panel data model equation is as follows:

Model 1: Pre Covid

$$ROA_{¿} = \alpha + \beta_1 CAR_{¿} + \beta_2 LDR_{¿} + \beta_3 BOPO_{¿} + \beta_4 NPL_{¿} + \beta_5 ¿¿¿ + e¿¿$$

Model 2 : During Covid

$$ROA_{¿} = \lambda + \beta_1 CAR_{¿} + \beta_2 LDR_{¿} + \beta_3 BOPO_{¿} + \beta_4 NPL_{¿} + \beta_5 ¿¿¿ + vit¿$$

Model 3: Full (before and During Covid-19)

$$ROA_{¿} = \alpha + \beta_1 CAR_{¿} + \beta_2 LDR_{¿} + \beta_3 BOPO_{¿} + \beta_4 NPL_{¿} + \beta_5 ¿¿¿ + \beta_6 D_{¿} + e¿¿$$

3. RESULTS

The descriptive statistics overview the average value (mean), standard deviation, variance, maximum, minimum, sum, range, kurtosis, and skewness data. Descriptive statistics are usually used to describe the profile of sample data before utilizing statistical analysis techniques, which also serve to test hypotheses. Descriptive statistics can also explain the variables contained in this study. Descriptive statistics also provide numerical measurements that are very important for the sample data in this study.

Table 1. Descriptive Statistics

Model 1	ROA	CAR	LDR	BOPO	NPL	SIZE
Mean	2.276375	20.67725	94.21413	77.14213	1.340125	5.38E+08
Maximum	4.020000	24.59000	114.2400	98.31000	2.960000	1.42E+09
Minimum	0.130000	16.88000	77.02000	58.24000	0.420000	1.48E+08
Std. Dev.	1.023177	2.156987	8.242436	10.22955	0.632006	4.24E+08
Observations	80	80	80	80	80	80
Model 2	ROA	CAR	LDR	BOPO	NPL	SIZE
Mean	1.722500	22.96350	83.96263	80.42988	1.185500	6.39E+08
Maximum	3.550000	35.68000	114.2200	93.52000	3.090000	1.73E+09
Minimum	0.540000	16.07000	61.96000	54.15000	0.370000	1.54E+08
Std. Dev.	0.861875	4.723808	9.472852	9.125935	0.719748	5.32E+08
Observations	80	80	80	80	80	80
Model 3	ROA	CAR	LDR	BOPO	NPL	SIZE
Mean	1.999406	21.82038	89.08836	78.78600	1.262826	5.88E+08
Maximum	4.020000	35.68000	114.2400	98.31000	3.090000	1.73E+09
Minimum	0.130000	16.07000	61.96000	54.15000	0.370000	1.48E+08
Std. Dev.	0.983069	3.835835	10.23615	9.802631	0.679636	4.82E+08
Observations	160	160	160	160	160	160

Source: own

Based on Table 1. It is known that the total number of observation data was 80 data before COVID-19, indicated by Model 1; as many as 80 data during the occurrence of COVID-19, indicated by Model 2, and as many as 160 data throughout the study, indicated by Model 3 successfully processed. In the ROA variable in Model 1, it is known that the average value is 2.27%; in Model 2, the average value is 1.72%; and in Model 3, it is 1.99%. This shows that the KBMI 3 and 4 banks still have a level of profitability in 2018 - 2021. The minimum value in model 1 is 0.13%, which was achieved at Bank BTN in 2019 in the fourth quarter. The maximum value of 4.02% was obtained by Bank BCA in 2019 in the fourth quarter.

The minimum value in model 2 is 0.54%, which was achieved at Bank BNI in 2020 in the fourth quarter. The maximum value of 3.55% was obtained by Bank Mandiri in 2020 in the first quarter. Moreover, the minimum value in model 3 was 0.13%, which was achieved at Bank BTN in 2019 in the fourth quarter. The maximum value of 4.02% was obtained by Bank BCA in 2019 in the fourth quarter.

In the CAR variable in Model 1, it is known that the average value is 20.67%; in Model 2, the average value is 22.96%; and in Model 3, it is 21.82%. This shows that banking at KBMI 3 and 4 has adequate capital to carry out operational activities and extend credit to third parties. The minimum value in model 1 is 16.88%, which was achieved at Bank BTN in 2019 in quarter III. The maximum value of 24.59% was obtained by Bank Danamon in 2019 in the fourth quarter. The minimum value in model 2 is 16.07%, which was achieved at Bank BNI in 2020 in the first quarter. The maximum value of 35.68% was obtained by Bank Permata in 2020 in the fourth quarter. Moreover, the minimum value in model 3 is 16.07%, achieved at Bank BNI in 2020 in the first quarter. The maximum value of 35.68% was obtained by Bank Permata in 2020 in the fourth quarter.

In the LDR variable in Model 1, it is known that the average value is 94.21%; in Model 2, the average value is 83.96%; and in Model 3, it is 89.08%. This shows that banking at KBMI 3 and 4 is good in channeling funds to third parties. The minimum value in model 1 is 77.02%, which was achieved at Bank BCA in 2018 in the second quarter. The maximum value of 114.24% was obtained by Bank BTN in 2019 in the second quarter. The minimum value in model 2 is 61.96%, which was achieved at Bank BCA in 2021 in the fourth quarter. The maximum value of 114.22% was obtained by Bank BTN in 2020 in the first quarter. The minimum value in model 3 was 61.96%, which was achieved at Bank BCA in 2021 in the fourth quarter. The maximum value of 114.24% was obtained by Bank BTN in 2020 in the first quarter.

In the BOPO variable in Model 1, it is known that the average value is 77.14%; in Model 2, the average value is 880.42%; and in Model 3, it is 78.78%. This shows that banking at KBMI 3 and 4 has a good predicate in carrying out efficiency in daily operational activities, so the smaller the value of the BOPO, the more efficient the Bank is. The minimum value in model 1 is 58.24%, which was achieved at Bank BCA in 2018 in the fourth quarter. The maximum value of 98.31% was obtained by Permata Bank in 2018 in the second quarter. The minimum value in model 2 is 54.15%, which was achieved at Bank BCA in 2021 in the fourth quarter. The maximum value of 93.52% was obtained by Bank BTN in 2020 in the first quarter. The minimum value in model 3 was 54.15%, which was achieved at Bank BCA in 2021 in the fourth quarter. The maximum value of 98.31% was obtained by Permata Bank in 2018 in the second quarter.

In the NPL variable in Model 1, it is known that the average value is 1.34%; in Model 2, the average value is 1.18%; and in Model 3, it is 1.26%. This shows that banking at KBMI 3 and 4 has a good rating in managing risks due to the failure of other parties to fulfill obligations to the Bank, including credit risk problems due to debtor failure to pay, credit concentration risk, counterparty credit risk, and settlement risk. A high NPL value can indicate a large number of bad loans. The minimum value in model 1 is 0.42%, which was achieved at Bank BCA in 2018 in the third quarter. The maximum value of 2.96% was obtained by Bank BTN in 2019 in the fourth quarter. The minimum value in model 2 is 0.37%, which was achieved at Bank Danamon in 2021 in the fourth quarter. The maximum value of 3.09% was obtained by Bank MYBANK in 2021 in the third quarter. Moreover, the minimum value in model 3 is 0.37%, which was achieved at Bank Danamon in 2021 in the fourth quarter. The maximum value of 3.09% was obtained by Bank MYBANK in 2021 in the third quarter.

In the SIZE variable in Model 1, it is known that the average value is 538 billion; in Model 2, the average value is 639 billion, and in Model 3, it is 588 billion. This shows that banking at KBMI 3 and 4 has assets that are used for the company's operational activities. An increase in assets followed by an increase in operating results will further add to the confidence of outsiders in the company. With increasing outsiders' trust in the company, creditors may be interested in investing their funds in the company. The minimum value in model 1 is 148 billion, which was achieved at Permata Bank in 2019 in the second quarter. The maximum value of 1.42 trillion was obtained by Bank BRI in 2019 in the fourth quarter. The minimum value in model 2 is 154 billion, which was achieved at MYBANK Bank in 2021 in the third quarter. The maximum value of 1.73 trillion will be obtained by Bank Mandiri in 2021 in the fourth quarter.

The minimum value in model 3 is 148 billion, which was achieved at Permata Bank in 2019 in the second quarter. The maximum value of 1.73 trillion was obtained by Bank Mandiri in 2021 in the fourth quarter.

The Chow test determines whether the panel data regression model uses the Common Effect or Fixed Effect methods. If the test results determine that the Common Effect method is used, then the researcher does not need to be tested again with the Hausman Test. Tests were carried out using the Chow-test or Likelihood ratio test. The Chow test determines which model is the best among the Common Effect and Fixed Effect models. The results of the hypothesis used in this test are as follows:

Table 2. Chow test results

Chow Test	Model 1	Model 2	Model 3
Cross-section F	0.0000	0.0000	0.0000
Cross-section Chi-square	0.0000	0.0000	0.0000

Source: Own

Table 2. shows that Model 1, Model 2, and Model 3 show the probability value in the Chi-square cross-section of 0.000 <0.05, so it is concluded that in this Chow test, the Fixed Effect Model is selected and continues for the Hausman Test. The Hausman test is a statistical test to choose whether the Fixed Effect or Random Effect model is the most appropriate to use from the Chow Test results. It was determined that the Fixed Effect method was used to estimate the panel data regression. Tests were carried out using the Hausman test with the following assumptions:

Table 3. Hausman Test Results

Hausman Test	Model 1	Model 2	Model 3
Cross-section random	0.0067	0.0339	0.0196

Source: Own

Based on the Hausman test results in Table 3, the random cross-section probability value was obtained in Model 1 at 0.0067, Model 2 at 0.339, and Model 3 at 0.0196. Therefore, the value is <0.05; it is concluded that Ha is accepted. So, the best model chosen is the Fixed Effect Model. Because the Chow Test and Hasuman Test results show the best model, namely the Fixed Effect Model, there is no need to do the Lagrange Multiplier Test. The F test was conducted to determine whether the independent variables jointly affected the dependent (dependent) variable. In this study, the testing hypothesis used is as follows:

Table 4. F Test Results

F Test	Model 1	Model 2	Model 3
F-statistic	395.1341	117.501	293.228
Prob(F-statistic)	0.00000	0.00000	0.00000

Source: Own

Based on the results of the F-test in Table 4, it can be seen that the Prob (F-statistic) value in Model 1, Model 2, and Model 3 shows a result of 0.00000. Therefore, with the probability value < 0.05, it can be concluded that the CAR, LDR, BOPO, NPL, and SIZE variables have the same effect on banking profitability (ROA). In the panel data regression analysis, the t-test is used to partially test the effect of the independent variables on the dependent variable. The testing hypothesis used in this partial test is as follows:

Table 5. T-test results

t- Test	Model 1			
Variable	Coefficient	T-Statistic	Prob.	Result
C	14.33928	2.58268	0.012	
CAR	0.060782	2.91666	0.005	Accepted
LDR	0.002937	0.624806	0.534	Rejected
BOPO	-0.07138	-13.66404	0.0000	Accepted
NPL	-0.11802	-1.653966	0.1030	Rejected
SIZE	-0.40095	-1.395805	0.168	Rejected

t- Test	Model 2			
Variable	Coefficient	T-Statistic	Prob.	Result
C	17.23966	1.921735	0.0590	
CAR	-0.0071	-0.70606	0.483	Rejected
LDR	0.021591	4.97571	0.0000	Accepted
BOPO	-0.08222	-15.97231	0.0000	Accepted
NPL	-0.12381	-1.465715	0.148	Rejected
SIZE	-0.52274	-1.187891	0.239	Rejected
t- Test	Model 3			
Variable	Coefficient	T-Statistic	Prob.	Result
C	15.67579	3.930818	0.000	
CAR	-0.00135	-0.216074	0.829	Rejected
LDR	0.014547	4.420981	0.000	Accepted
BOPO	-0.08676	-23.88557	0.000	Accepted
NPL	0.02496	0.587407	0.558	Rejected
SIZE	-0.40857	-2.079826	0.039	Rejected

Source: Own

The effect of CAR on profitability in Model 1 with a probability value of 0.0049 <0.05 indicates a significant result and a coefficient value of 0.060782 indicates a positive result. So, CAR had a positive effect on ROA before the occurrence of COVID-19. In Model 2, the t-test results with a probability value of 0.483 > 0.05 show insignificant results, and a coefficient value of -0.0071 indicates a negative result. So, CAR does not affect ROA when COVID-19 occurs. Next, in Model 3, the t-test produces a probability value of 0.829 > 0.05, indicating an insignificant result, and a coefficient value of -0.00134, indicating a negative result. So, CAR does not affect ROA by using a dummy.

The effect of LDR on profitability in Model 1, with a probability value of 0.5343 > 0.05, indicates an insignificant result and a coefficient value of 0.00294 indicates a positive result. So, LDR did not affect ROA before the occurrence of COVID-19. In Model 2, the t-test results with a probability value of 0.0000 <0.05 show significant results; a coefficient value of 0.02159 indicates a positive result. So, LDR has a positive effect on ROA when COVID-19 occurs. Next, in Model 3, the t-test produces a probability value of 0.000 <0.05, indicating a significant result, and a coefficient value of 0.01454, indicating a positive result. So, CAR has a positive effect on ROA by using a dummy.

The effect of BOPO on profitability in Model 1 with a probability value of 0.0000 <0.05 indicates a significant result, and a coefficient value of -0.07138 indicates a negative result. So, it can be concluded that BOPO harmed ROA before the occurrence of COVID-19. In Model 2, the t-test results with a probability value of 0.0000 <0.05 show significant results; a coefficient value of -0.08222 indicates a negative result. So, it can be concluded that BOPO harms ROA when COVID-19 occurs. Next, in Model 3, the t-test produces a probability value of 0.0000 <0.05, indicating a significant result, and a coefficient value of -0.08675, indicating a negative result. So, it can be concluded that BOPO harms ROA by using a dummy.

The effect of NPL on profitability in Model 1 with a probability value of 0.1030 > 0.05 indicates an insignificant result and a coefficient value of -0.11802 indicates a negative result. So, NPL did not affect ROA before the occurrence of COVID-19. In Model 2, the t-test results with a probability value of 0.148 > 0.05 show insignificant results, and a coefficient value of -0.12381 indicates a negative result. So, NPL does not affect ROA when COVID-19 occurs. Next, in Model 3, the t-test produces a probability value of 0.5579 > 0.05, indicating an insignificant result, and a coefficient value of 0.0249, indicating a positive result. So, NPL does not affect ROA by using a dummy.

The effect of SIZE on profitability in Model 1, with a probability value of 0.1675 > 0.05, indicates an insignificant result, and a coefficient value of -0.40095 indicates a negative result. So, SIZE does not affect ROA before the occurrence of COVID-19. In the model, the t-test results with a probability value of 0.239 > 0.05 show insignificant results, and a coefficient value of -0.52274 indicates a negative result. So, SIZE does not affect ROA when COVID-19 occurs. Next, Model 3 produces a probability value of 0.039 <0.05, indicating a significant result, and a coefficient value of -0.4085, indicating a negative result. So, SIZE does not affect ROA by using a dummy.

The coefficient of determination is tested to measure the model's ability to explain the variation in the dependent variable. This study uses the measurement of the total determination coefficient by looking at the Adjuster R-squared value as follows:

Table 6. R^2 Test Results

R^2 Test	Model 1	Model 2	Model 3
Adjusted R-squared	0.985885	0.953802	0.964997

Source: Own

The significant contribution made by the CAR, LDR, BOPO, NPL, and SIZE variables to profitability (ROA) was 98.58%, while the remaining 1.42% was influenced by other factors outside the variables tested. Whereas in Model 2, the Adjusted R-squared value is 0.953802, this shows that the CAR, LDR, BOPO, NPL, and SIZE variables give a significant contribution to profitability (ROA) of 95.38% while other factors outside the variable on test influence the remaining 4.62%. While the results of Model 3 are 0.964997, this shows that the CAR, LDR, BOPO, NPL, and SIZE variables contribute to profitability (ROA) of 96.49%. In comparison, the remaining 3.51% is influenced by other factors outside the variables tested.

4. DISCUSSION

Based on the results of tests carried out in this study, the CAR variable before COVID-19 positively affected ROA. This is very different from the results when COVID-19 occurred, and using a dummy caused the CAR not to affect ROA. The higher the CAR, the higher the ability of the related Bank to bear the risk of risky credit/productive assets. If the value of the CAR is high, the Bank can finance operational activities and make a sizeable contribution to profitability. A bank's capital amount will affect the amount of productive assets, so the higher the assets, the greater the capital must be. CAR is a ratio comparison between the Ratio of capital to risk-weight assets following government regulations (El-Ansary et al., 2019). Increasing the Capital Adequacy Ratio can improve customer security, indirectly increasing customer trust in the Bank, which can then positively impact bank profitability. It was different when COVID-19 occurred; the owners of capital were conscientious about several threats, including economic threats. So, when COVID-19 occurred, it had a significant impact on banking but did not affect profitability. Small core capital causes a reduction in operational activities; this is supported because Covid-19 required companies not to carry out operational activities in the office but to work from home. These results are in line with research before the occurrence of COVID-19 conducted by Kassem and Sakr (2018), Rahadian and Permana (2021), and Sunaryo (2020) who concluded that the CAR had a positive effect on ROA and results when Covid-19 occurs and using a dummy is in line with research conducted by Kingu et al. (2018), and Jati (2021) which concludes that the CAR does not affect ROA.

Based on the results of tests carried out in this study, the LDR variable before COVID-19 did not affect ROA. In stark contrast to the results when COVID-19 occurred, using a dummy caused the LDR to affect ROA positively. Liquidity is very closely related to stakeholders because, through LDR, they can determine how much bank liquidity is by looking at the number of funds distributed and the number of funds received. The LDR rate that can be categorized as safe is 80%. The Bank's ability to meet depositor withdrawals that have been used to provide credit to third parties must be maintained by the Bank.
For this reason, banks must maintain the LDR value. The higher the LDR value indicates that the Bank can channel funds to more third parties and make a profit. However, there is a very high liquid risk if depositors want to withdraw their funds, but the availability of funds needs to be increased, which will re-

duce the interest rate. For this reason, banks must maintain the predicate of a safe limit that Bank Indonesia has set through BI Circular Letter No.13/I/PBI/2011, which is 75% to 85%. These results are in line with research before the occurrence of COVID-19 conducted by Sawitri (2018) and Hutasoit et al. (2022), which blunted the LDR does not affect ROA and results when Covid-19 occurs and by using a dummy in line with research conducted by Sohibien et al., (2022), and Agandi (2021) which concluded that the LDR has a positive effect on ROA.

Based on the results of the tests carried out in this study, the variable BOPO before COVID-19, when COVID-19 occurred, and using a dummy caused BOPO to harm ROA. BOPO costs are a ratio that is often called the efficiency ratio. It is used to measure the ability of bank management to control operational costs and operating income (Endri et al., 2022). Based on Law Number 10 of 1998 states that banks are required to maintain a bank soundness level following capital adequacy, asset quality, management quality, liquidity, earnings, solvency, and other aspects related to bank business and are required to carry out business activities following the principles of caution. The smaller the operational costs carried out by the Bank, the more efficient it will be for the Bank. The COVID-19 hit caused banks to reduce their operational costs because activities had to be limited due to government regulations requiring employees to work from home. For this reason, the more efficient the Bank is in carrying out operational activities, the more it will affect the increase in bank profitability. These results are in line with research conducted by Astuti and Husna (2020) and Supriadi and Sjam (2021), which blunt Operational Costs against Operating Income (BOPO) harm Return on Assets.

Based on the results of tests carried out in this study, the variable NPL before COVID-19, when COVID-19 occurred, and using a dummy caused NPL not to affect ROA. NPL is a ratio used to measure a bank's ability to cover the risk of failure to repay credit by debtors. Banks must be more careful in extending credit so as not to cause high NPLs. One way to reduce existing risks is that banks usually look for other investment alternatives that are lower in risk, such as placing funds in financial instruments such as Bank Indonesia Certificates, which have low risk but provide certainty of results. Credit risk is the main problem faced by banks due to customers who need help to repay loans and interest from loans that have been made promptly. The higher the NPL ratio, the higher the credit risk, which will be reflected (quantified) in the Allowance for Impairment Losses (CKPN), a reserve formed by banks to face the risk of loss due to investing in earning assets. The amount of CKPN is formed based on a certain percentage of the nominal based on the quality of earning assets and is presented as a deduction item from each earning asset. Before and when COVID-19 occurred, banks were cautious in controlling NPLs so that their customers could still pay and the Bank would still receive interest. The government decides policies, so COVID-19 does not increase the banking NPL value. This will impact the resulting NPL, which will be totaled as a factor that reduces the Bank's operating profit, ultimately reducing bank profitability (ROA). These results are in line with research conducted by Sunaryo (2020), Jati (2021), and Anggriani and Muniarty (2020), which concluded that Non-Performing Loans (NPL) do not affect Return on Assets.

Based on the results of tests conducted in this study, the variable Bank Size (SIZE) before COVID-19, when COVID-19 occurred, and using a dummy caused SIZE not to affect ROA. Bank size is considered an essential variable in determining bank profitability. Thus, one of the most significant questions in the literature is whether bank size maximizes bank profitability (Menicucci et al., 2016). According to the market power hypothesis, a bank with a significant market share and well-diversified products can use market power to determine the price of these products to gain above-average profits. Moreover, in a highly concentrated banking sector, large banks benefit from economies of scale and other size-related advantages (Goddard et al., 2013). Total assets can see company size. Companies with significant total assets reflect a company in a stable state so that it can be said to be in a stable financial position. The size of a large company also indicates that a bank with significant assets has resources that can be used optimally and efficiently to gain profits because the Bank has sufficient funding to finance its operational activities, one of which is by selectively granting credit so that from providing credit the Bank will get returns that can increase bank profits. The banking capital structure provides promising returns for well-capitalized banks. Therefore, shareholders tend to build a more excellent capital-to-asset ratio by selling their shares for better solvency and reduced cost of funds, ultimately maximizing profits. Before and when COVID-19 occurred, company size did not affect ROA.

These results align with Neupane's (2020) and Rohman and Nurkhin's (2022) research, which concluded that SIZE does not affect ROA.

CONCLUSION

Based on this research and discussion, the Capital Adequacy Ratio (CAR) positively affected Return On Assets (ROA) before COVID-19. At the same time, the Capital Adequacy Ratio (CAR) did not affect Return On Assets (ROA) during COVID-19, and by entering dummy banking in KBMI 3 and 4. For this reason, capital owned by banks must be managed properly and effectively. Distribution of funds to third parties must follow the classification because the creditor's ability to pay installments will affect interest income and non-performing loans. The higher the CAR value, the more risk it has if banks cannot channel their funds to make a profit. For this reason, banks must pay attention to the minimum CAR limit.

The Capital Adequacy Ratio (CAR) positively affects Return On Assets (ROA) during the COVID-19 outbreak and by entering a dummy in KBMI 3 and 4 banking. 2. Banking must maintain the LDR ratio following Bank Indonesia regulations. The higher the LDR will also pose a risk. A good LDR must be maintained between 75% and 85%. More and more distribution of funds to third parties also causes banks to become less liquid, and too many banks keep money and will not generate large profits. For this reason, banks must fulfill their obligations in maintaining LDR if depositors want to withdraw their money. For that, the availability of cash must be maintained. Operational Costs to Operational Income (BOPO) harmed Return On Assets (ROA) before the occurrence of COVID-19, during the occurrence of COVID-19, and by entering a dummy in KBMI 3 and 4 banking. Banking must carry out operational activities effectively. The lower the operating costs, the more profit will be. For this reason, banks must be able to keep up with technological developments that can speed up transactions. Good use of technology will reduce operational costs.

Non-performing loans (NPL) did not affect Return On Assets (ROA) before COVID-19, as long as COVID-19 occurred, and by providing a dummy at KBMI 3 and 4 banking. Banks must consider the NPL ratio because high credit distribution will be a threat if the creditor cannot pay the installments. For this reason, the classification of credit distribution must be strict so that there is no risk of default on creditors and suppresses the decline in NPLs. Company Size (SIZE) does not affect Return On Assets (ROA) before and during the occurrence of COVID-19, and including the dummy Company Size (SIZE) has a positive effect on Return On Assets (ROA) in KBMI 3 and 4 banking. Company size in banking become one of the things investors pay attention to in investing. The more banks have assets, the more interested investors will be. For this reason, banks must maintain their assets so that operational activities and credit distribution will continue to be carried out and will get high interest from lending.

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