# Bank Profitability in Indonesia During COVID-19 Outbreak

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This study examines the factors of conventional bank profitability during the COVID-19 outbreak in Indonesia, using data from 52 conventional banks from 2020 Q1 to 2021 Q4. Using a fixed-effects model, bank-specific and macroeconomic factors are examined. The findings show that liquidity and bank size have a beneficial impact on profitability, whereas efficiency has a considerable negative effect. Additionally, non-performing loans have a favorable link with profitability. Notably, macroeconomic indices such as interest rates have a substantial impact on bank profitability, while capital, exchange rates, inflation, and economic growth do not. The study emphasizes the necessity of improved liquidity management, efficient operations, and strategic interest rate management in maintaining bank profitability and resilience in the face of disruptive occurrences.

Keywords: *Bank Profitability, COVID-19, Conventional Banks, Macroeconomic Indicators, Financial Performance*

# 1. INTRODUCTION

The COVID-19 pandemic has induced significant economic disruptions (Katusiime, 2021), severely affecting industries like tourism and hospitality due to operational halts (Esquivias et al., 2021). The banking sector has also faced challenges, with declining financial performance (Sohibien et al., 2022) and increased bad debt impacting profitability (Wahyuni et al., 2021). This phenomenon is not limited to Indonesia; it has a global impact. Demirgüç-Kunt et al. (2021) revealed that during the crisis, measures such as liquidity support, borrower assistance programs, and monetary easing played a crucial role in mitigating the negative effects. This is also evident in the adverse impact of the pandemic on the financial performance and profitability of banks around the world. (Demirgüç-Kunt et al., 2021).

Central to our investigation is profitability, a crucial gauge of a bank's earnings capability. Low profitability can lead to reduced market confidence, higher reputational risks, and elevated costs in attracting deposits or funds (El-Chaarani et al., 2023). COVID-19 has corresponded with reduced banking profitability (Rafique & Fawad, 2022). Ghosh & Saima (2021) expound that banks with low capital, liquidity ratios, performance, and high non-performing loans are particularly vulnerable to the pandemic's impact.

Effective asset and equity management underpin profitability. Data from OJK (2021) demonstrates this, revealing a decline in return on assets (ROA) from 2.55% in 2018 to 1.59% in 2020. This decline coincided with the pandemic's onset, marking a significant shift in banking performance. Nevertheless, a modest profitability rebound to 1.85% in December 2021 is attributed partly to adept government policies. Figure 1 portrays these dynamics, illustrating pandemic-era shifts in average profitability, encompassing ROA, return on equity (ROE), and net interest margin (NIM). Notably, average profitability contracted in Q4 2020, with ROA experiencing a continuous decline from March 2020 to December 2021. ROE reached a nadir of -1.82% in December 2021, likely influenced by multifaceted factors encompassing the pandemic's impact, internal bank-specific elements, and external macroeconomic indicators.



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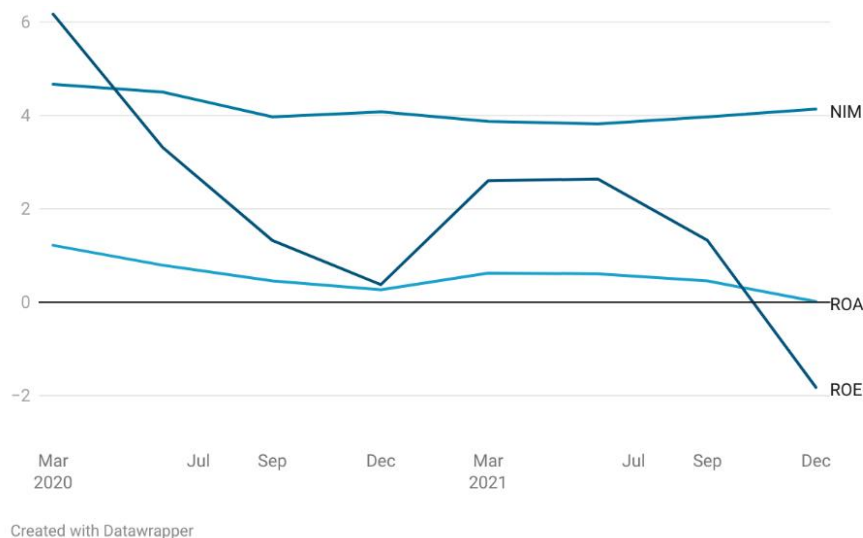
**FIGURE 1** | The Average Development of Profitability During the Pandemic

Source: Processed data, 2022

The influence of capital on profitability is demonstrated by Susan et al. (2022), with Ha (2020) presenting contrasting findings of a negative capital-profitability link. Liquidity also plays a role, with Yüksel et al. (2018) and Ha (2020) supporting a positive correlation, while Al-Jafari & Alchami (2014) present an opposing argument. Adding nuance, Rahman et al. (2020) conclude that liquidity's impact on profitability is minimal.

Efficiency, a critical aspect, varies in its impact on profitability. Stochastic frontier and traditional approaches gauge

efficiency, with the former indicating a cost efficiency rise from 2002-2010 (Anwar, 2019). Nonetheless, Khalifaturofi'ah (2018); Ozili & Uadiale (2017) contend that cost efficiency and profitability share a negative relationship.

Macroeconomic indicators are intrinsically linked to government policies, reflected in metrics like interest rates and inflation. Amid the pandemic, economic growth contracted (Abidillah et al., 2022) due to government-imposed economic constraints to curb COVID-19 fatalities. In contrast, Katusiime (2021) underscores the positive impact of economic growth on profitability.

Government intervention, including interest rate reduction, alleviated the pandemic impact on affected businesses. Simultaneously, inflation control measures were enacted. In this context, the rupiah-to-USD exchange rate depreciated, prompting export encouragement. While Abidillah et al. (2022); Rahman et al. (2020) find an adverse inflation-profitability relationship, Tan & Anchor (2016) suggest a potential positive correlation.

Against this backdrop, investigating banking profitability during the Indonesian pandemic assumes significance. As Southeast Asia's most populous nation, Indonesia's banking role in its economic fabric is pivotal. Pandemic effects and strict governmental limitations accentuate banking's role in facilitating transactions and investments. Indonesia's substantial COVID-19 impact led to its global prominence (Demirgüç-Kunt et al., 2021). Our study's novelty lies in scrutinizing the pandemic's effect on profitability through internal and macroeconomic factors in a broad sample of conventional banks—52 out of 72—comprising 416 observations.

Implications of this study encompass banks, governments, and investors. Banks can optimize profitability based on insights, while governments can formulate stimulating policies. Investors and stakeholders benefit from an insightful grasp of profitability drivers. The paper's structure entails Introduction, Literature Review, Research Methodology, Results and Discussion, and Conclusion and Recommendations.

## 2. LITERATURE REVIEW

The global ramifications of the pandemic have particularly affected economies reliant on tourism, hospitality, and consumer-oriented industries (Kozak, 2021). A comprehensive review of the literature reveals a range of studies investigating the pandemic's impact on bank profitability (Afkar & Fauziyah, 2021; Ghosh & Saima, 2021; Karim et al., 2021; Katusiime, 2021; Miklaszewska et al., 2021; C. T. Nguyen et al., 2021; Sohibien et al., 2022; Wahyuni et al., 2021). Notably, the influence of the pandemic has varied across countries (Karim et al., 2021; L. T. M. Nguyen & Hoang Dinh, 2021), displaying a more pronounced impact on developing economies in contrast to their developed counterparts (C. T. Nguyen et al., 2021). Countries such as Indonesia have experienced a decline in bank profitability due to the pandemic (Sohibien et al., 2022). Although developed countries have also witnessed declines (Farkasdi et al., 2021), the impact has been more profound in developing nations (Kozak & Wierzbowska, 2022), attributed partly to variations in infrastructure and resources for pandemic mitigation.

The temporal dimension adds a nuanced perspective to the pandemic's impact. Several studies (Karim et al., 2021; L. T. M. Nguyen & Hoang Dinh, 2021) examine the influence by comparing variables before and during the pandemic. In contrast, dummy variables have been used to quantify the pandemic's influence (Sohibien et al., 2022). Wahyuni et al. (2021) further analyzed the pandemic's impact on Indonesian banks, demonstrating significant differences in non-performing loans before and after the pandemic using a paired sample t-test. The resilience of Islamic banks during crises is attributed to their profit-sharing model (Salsabilla et al., 2021). This study, focusing on the period from 2020's first quarter to 2021's fourth quarter, employs time as the framework to explore the pandemic's ramifications.

The intricate interplay between internal bank factors and profitability constitutes a pivotal theme. Sukmana & Febriyati (2016) probed bank profitability determinants in Indonesia, revealing that conventional banks are influenced by high capital adequacy ratio, return on investment, operating efficiency, and non-performing loans vis-à-vis Islamic banks. Al-Homaidi et al. (2018) and Yüksel et al. (2018) posit a positive correlation between liquidity and profitability, contrasting with Al-Jafari & Alchami (2014) finding of a negative nexus. Likewise, Derbali (2021) reveals inconsistent results concerning the capital ratio's

impact on profitability. Asset quality, gauged by non-performing loans (NPLs), also assumes significance. The NPLs reflect credit risk, which inversely affects profitability; a higher credit risk is associated with lower profitability (Hunjra et al., 2020). Consistently, prior research has indicated NPLs' detrimental impact on profitability (Hunjra et al., 2020; Johan, 2021; Khalifaturofi'ah, 2021; Majumder & Li, 2018).

Efficiency, quantified by diverse methodologies such as operating expenses to operating income and the cost-to-income ratio (CIR), emerges as a distinctive determinant. Higher efficiency correlates with elevated profitability (Khalifaturofi'ah, 2021; Ozili & Uadiale, 2017), reflecting a bank's ability to optimize operations. Banks endowed with robust asset quality and larger sizes tend to exhibit superior profitability, substantiated by the economies of scale principle (Ozili & Uadiale, 2017). Hypothesis 1 is proposed based on the identified relationships:

**Hypothesis 1 (H1): Internal bank factors significantly impact profitability**

Turning to macroeconomic indicators, economic growth, measured by Gross Domestic Product (GDP), is examined for its impact on profitability. Higher GDP, emblematic of amplified consumption and investment, augments profitability (Le & Ngo, 2020), although contradictory findings exist (Al-Homaidi et al., 2018; Derbali, 2021). Inflation, which influences consumer purchasing power and producer income, reflects complex dynamics. Inflation's adverse effect on consumer purchasing power curtails demand for bank credit, reducing bank profitability (Al-Homaidi et al., 2018). However, inflation can enhance producer income and credit demand, potentially bolstering profitability (Derbali, 2021). Interest rates are a potent macroeconomic influencer that draws investor interest and impacts funding, with high rates contributing to higher bank profitability (Derbali, 2021; Yahya et al., 2017). Yet, varying results on interest rates' impact on profitability persist (Al-Homaidi et al., 2018; Yüksel et al., 2018).

Exchange rates exhibit divergent effects, indicative of a nation's economic strength. Menicucci & Paolucci (2016) underscore the exchange rate's positive influence on profitability, contrasting with Al-Homaidi et al. (2018) opposing findings. Hypothesis 2 encapsulates the relationships:

**Hypothesis 2 (H2): Macroeconomic indicators significantly influence profitability.**

The review elucidates the multifaceted relationships between internal bank factors, macroeconomic indicators, and bank profitability, offering insights into the dynamics amidst the pandemic.

# 3. RESEARCH METHOD

The research's sample encompasses 52 conventional banks operating from the first quarter of 2020 to the fourth quarter of 2021. The criteria for selection encompass Indonesian conventional banks that furnish comprehensive financial statements and fulfill requisite data criteria. Data compilation relies on documentation from the Financial Services Authority (OJK) website and direct bank websites, augmented by literature culled from books, journals, working papers, and financial institutions' databases (Majumder & Li, 2018).

The study's framework is articulated as follows:

$$ROA_{it} = \beta_0 + \beta_1 CAR_{it} + \beta_2 LDR_{it} + \beta_3 CIR_{it} + \beta_4 NPL_{it} + \beta_5 Size_{it} + \beta_6 SBI_t + \beta_7 ER_t + \beta_8 INF_t + \beta_9 GDP_t + \varepsilon_{it} \tag{1}$$

$$ROE_{it} = \beta_0 + \beta_1 CAR_{it} + \beta_2 LDR_{it} + \beta_3 CIR_{it} + \beta_4 NPL_{it} + \beta_5 Size_{it} + \beta_6 SBI_t + \beta_7 ER_t + \beta_8 INF_t + \beta_9 GDP_t + \varepsilon_{it} \tag{2}$$

$$NIM_{it} = \beta_0 + \beta_1 CAR_{it} + \beta_2 LDR_{it} + \beta_3 CIR_{it} + \beta_4 NPL_{it} + \beta_5 Size_{it} + \beta_6 SBI_t + \beta_7 ER_t + \beta_8 INF_t + \beta_9 GDP_t + \varepsilon_{it} \tag{3}$$

The study's dependent variables encompass profitability metrics, including ROA (Return on Assets), ROE (Return on Equity), and NIM (Net Interest Margin). Independent variables incorporate CAR (Capital Adequacy Ratio), LDR (Loan-to-Deposit Ratio), CIR (Cost-to-Income Ratio), NPL (Non-Performing Loans), Size (Bank Size), SBI (SBI interest rate), ER (Exchange Rate), INF (Inflation), and GDP (Gross Domestic Product). 'i' signifies cross-sectional units (banks), while 't' signifies the temporal series (research period). $\beta_0$ represents a constant term, and $\beta_1$ through $\beta_9$ denote regression coefficients, while the operational definitions are outlined in Table 1.

**TABLE 1** / Variable Definition and Hypothesis Summary

| Variable | Definition | Effect on Profitability | Reference |
|---|---|---|---|
| Dependent Variable | | | |
| ROA | Return on Asset | | Derbali (2021); Ha (2020); Al-Homaidi et al. (2018); Khalifaturofi'ah (2021) |
| ROE | Return on Equity | | |
| NIM | Net Interest Margin | | |
| Independent Variable Bank-Specific | | | |
| Liquidity | Loan to Deposit Ratio | +/- | Hunjra et al. (2020); Khalifaturofi'ah (2021); Al-Homaidi et al. (2018); Derbali (2021) |
| Capital Adequacy | Capital Adequacy Ratio | +/- | Alshatti (2016); Majumder & Li (2018) |
| Credit Risk | Non-Performing Loan | +/- | Ha (2020); Hunjra et al. (2020); Majumder & Li (2018) |
| Efficiency | Cost to Income Ratio | - | Khalifaturofi'ah (2021); Ozili and Uadiale (2017) |
| Control Variable (Bank Size) | Natural Logarithm of Total asset | +/- | Yao et al. (2018) |
| Independent Variable Macroeconomic Variables | | | |
| Economic Growth | Gross Domestic Product | +/- | Al-Homaidi et al. (2018); Yüksel et al. (2018) Al-Harbi (2019); Le & Ngo (2020) Al-Harbi (2019) |
| Inflation | Inflation | +/- | Tan (2016); Al-Harbi (2019); Derbali (2021) |
| Interest rate | BI seven days repo rate | +/- | Al-Homaidi et al. (2018) |
| Exchange rate | Middle rate | +/- | Al-Homaidi et al. (2018) |

Source: Processed data, 2022

Employing the panel static regression method, the study undertakes a structured analysis encompassing multiple stages. The panel model encompasses the common effect model, fixed effect model, and random effect model. Model selection is contingent on several tests, including the F test (Chow test), Hausman test, and LM test. The F/Chow test is pivotal in discerning whether the appropriate model is the fixed effect or the common effect model—subsequently, the Hausman test aids in selecting between the fixed effect and random effect models. The LM test substantiates the chosen model's coherence, differentiating between the random and common effect models.

# 4. RESULTS AND DISCUSSION

## 4. 1 RESULTS

Table 2 presents descriptive statistics for the research variables. It outlines each variable's mean, maximum, minimum, and standard deviation values. These findings depict the trajectory of banking financial performance during the Covid-19 pandemic, spanning from Q1 2020 to Q4 2021. The study's focus on the period from Q1 2020 to Q4 2021 was primarily driven by the urgency of understanding the immediate impact of the COVID-19 pandemic on bank profitability.

The average ROA during COVID-19 was 0.56 with a standard deviation of 2.56. The data tends to be heterogeneous because the standard deviation value is greater than the mean value. The mean value is 0.56, meaning that during the pandemic, the average bank could only make a profit of 0.56% of its total assets. Bank BNP Paribas (Basel 3) has a maximum ROA value

of 7.96% in the 1st quarter of 2020, while the minimum ROA value of -14.75% is Bank Raya Indonesia's ROA in the 4th quarter of December 2021.

**TABLE 2** / Descriptive Statistic

|  | Mean | Std. Dev. | Minimum | Maximum |
|---|---|---|---|---|
| ROA | 0.56 | 2.56 | -14.75 | 7.96 |
| ROE | 2.06 | 14.03 | -95.44 | 27.67 |
| NIM | 4.17 | 2.62 | -4.29 | 20.68 |
| CAR | 32.21 | 37.52 | 10.18 | 538.01 |
| LDR | 87.85 | 33.94 | 12.35 | 241.97 |
| CIR | 66.11 | 63.29 | 0 | 422.54 |
| NPL | 1.54 | 1.16 | 0 | 4.95 |
| SIZE | 17.34 | 1.69 | 13.77 | 21.18 |
| SBI | 3.88 | 0.45 | 3.50 | 4.75 |
| KURS | 14,498.37 | 234.05 | 14,174.29 | 14,989.86 |
| INF | 1.80 | 0.48 | 1.43 | 2.87 |
| GDP | 0.39 | 2.81 | -4.19 | 5.05 |

Source: Data Processed, 2022

Another profitability ratio is the return on equity (ROE). The average value of ROE is 2.06%, which means that banks can only record a profit of 2.06% from the average use of their total equity. The mean value of ROE (2.06) is smaller than the standard deviation of ROE (14.03), meaning the data is quite heterogeneous. The maximum value of ROE is 27.67% which is also owned by Bank BNP Paribas (Basel 3) in the 1st quarter of 2020 while the minimum ROE value is -95.44% owned by Bank Raya Indonesia in the 4th quarter of 2021.

Net Interest Margin (NIM) is the banking profitability ratio from credit sales. The average NIM value is 4.17%, meaning banks can record a sales margin of 4.17% from credit sales. The average NIM value (4.17%) is greater than the standard deviation (2.62), meaning that the NIM data is homogeneous, so the bias is quite small. The maximum NIM value is 20.68% by Bank Oke Indonesia (Basel 1) in the 1st quarter of 2020, while the minimum NIM is -4.29% by Bank Capital Indonesia in June 2021.

In general, the profitability ratio during the pandemic has indeed experienced an emphasis. At the beginning of 2020, banking profitability still tended to be high but after the government implemented economic restrictions, starting in the second quarter of 2020 almost all banks experienced a decline in their profitability both ROA, ROE, and NIM.
Bank-specific variables are banking internal variables that affect profitability. These variables include CAR, LDR, CIR, NPL, and Size. CAR is Capital Adequacy Ratio. The average CAR value is 32.21%. The average CAR value is still quite good because the minimum CAR for a healthy bank is 8%. The average value of CAR (32.21%) is smaller than the standard deviation (37.52), meaning that the research sample data is quite heterogeneous. The maximum value of CAR is 538.01 by Bank Jago in March 2021. Bank Jago is an example of a Digital bank that experienced losses during the pandemic from its profitability ratio. The minimum CAR value is 10.18% by Bank Capital Indonesia in September 2020. This minimum CAR is still considered reasonable because the minimum CAR that a bank should have is 8%.

The Loan-to-deposit Ratio (LDR) is a ratio that shows how much credit is given from third-party funds collected by the bank. The average LDR value is 87.85%, meaning the banking liquidity level during the pandemic was good. The average LDR value (87.85%) is greater than the standard deviation (33.94), meaning the LDR data is from a homogeneous study sample. The maximum LDR is 241.97% by Bank Bisnis Internasional in the 4th quarter of 2021 while the minimum LDR is 12.35% by Bank Capital Indonesia in the 4th quarter of 2021. An LDR that is too large or too small is not good for banking health. Too large LDR indicates that the bank has too high liquidity, while too small LDR indicates that the bank has too low liquidity. Too high liquidity

can result in high credit risk while too low liquidity causes bank profitability from credit penetration to decrease.

The Cost-income -ratio (CIR) is a ratio that shows how efficient a bank is in terms of the costs incurred from its income. The average CIR value is 66.11% while the standard deviation is 63.29. A mean value greater than the standard deviation indicates that the data is homogeneous. The maximum value of CIR was 422.54% by Bank Bukopin in March 2021, while the minimum value of CIR was 0.

Non-performing loans during the pandemic had an average value of 1.54%. This average value is low because it is less than 2%. NPL data is homogeneous because the average value is greater than the standard deviation. The maximum NPL by Bank Bukopin is 4.95% in September 2020-March 2021. The minimum NPL is 0.

Bank size is presented in natural logarithmic units. The average bank size is 17.34 or IDR 143,998,874 million. The data size or bank size is homogeneous because the mean value is greater than the standard deviation. The maximum bank size is 21.18 or IDR 1,572,761,035 million by Bank BRI in December 2021. The minimum bank size is 13.77 or IDR 954,425 million by Bank Bisnis Internasional in March 2020.

Overall, the average bank-specific variables during the pandemic were quite good from this conventional bank research sample. All variables are homogeneous except for the heterogenous CAR variable. However, judging from the average conventional bank, this is quite good. Judging from the maximum value, the presence of a pandemic has caused some banks to have too high liquidity and capital. As a result, there are many non-performing loans, such as what happened at Bank Bukopin in March 2021. Inefficiency (high CIR) has finally caused Bank Bukopin to experience a lot of bad loans.

The macroeconomic variables taken in this study include interest rates, exchange rates, inflation, and GDP. The interest rate is taken based on BI's reference rate, namely the 7-day repo rate. The average SBI is 3.88%. Interest rates during the pandemic were indeed controlled by BI so that in 2020-2021 the average interest rate would be no more than 4 percent. Homogeneous interest rate data because the average SBI (3.88) is greater than the standard deviation (0.45). The maximum interest rate set by the government is 4.75 in March 2020. During the pandemic, interest rates decreased to 3.5 percent from June to December 2021.

The average exchange rate or exchange rate is IDR 14,498.37 / $ with a standard deviation of 234.05. Exchange rate data tends to be homogeneous with low bias. The maximum exchange rate during the pandemic was IDR 14,989.86 in June 2020 while the minimum exchange rate was IDR 14,174.29 in March 2021. At the beginning of the pandemic, the exchange rate had reached its highest point of almost IDR 15,000 but after the pandemic subsided somewhat, the exchange rate could strengthen to almost IDR 14,000.

The average inflation during the pandemic was 1.80 with a standard deviation of 0.48. Judging from the average which is greater than the standard deviation, the inflation data tends to be homogeneous with a low level of bias or deviation. The maximum inflation was 2.87 in March 2020 while the minimum was 1.43 in September 2020 and March 2021. This is under government policy, namely during a pandemic when the government suppressed interest rates and inflation so that the economy could be controlled.

Economic growth as measured by GDP has fluctuated during the pandemic. The average GDP is 0.39 with a standard deviation of 2.81. The maximum GDP was 5.05 in September 2020, and the minimum GDP was -4.19 in June 2020. Economic growth at the start of the pandemic did experience a decline to -4.19. The new government's ability to control the pandemic was seen in September when GDP increased by 5.05 percent.

In addition to descriptive statistical analysis, this study also analyzed inferential statistics. Table 3 contains the inferential statistical analysis results of conventional bank profitability models. Based on the Chow and Hausman test results, it is known that the best model for profitability (ROA, ROE, and NIM) is the fixed effect model. The results of the profitability model regression using the fixed effect model follow.

## 4.2 DISCUSSION

Utilizing a fixed-effects model was a deliberate choice to address potential sources of bias and unobserved heterogeneity in the dataset. While it is true that no model can completely account for all confounding variables, the fixed-effects model allows

controlling for time-invariant bank characteristics that could influence profitability. It is essential to balance complexity and interpretability in statistical modeling. Further research could explore alternative approaches to address additional confounders. Still, the fixed effect model provides a robust foundation for understanding the factors influencing bank profitability within the scope of this study.

**TABLE 3** / Profitability Model Multiple Regression Results with Fixed Effect Model

| Variable | Model ROA | | Model ROE | | Model NIM | |
|---|---|---|---|---|---|---|
| | Coefficient | Prob. | Coefficient | Prob. | Coefficient | Prob. |
| C | 19.325 | 0.680 | 342.360 | 0.247 | 35.251 | 0.224 |
| CAR | 0.001 | 0.719 | -0.010 | 0.675 | 0.003 | 0.109 |
| LDR | 0.019 | 0.001*** | 0.046 | 0.208 | 0.004 | 0.000*** |
| CIR | -0.008 | 0.000*** | -0.046 | 0.000*** | 0.001 | 0.140 |
| NPL | 0.314 | 0.003*** | 1.594 | 0.015** | 0.078 | 0.000*** |
| SIZE | 2.473 | 0.000*** | 7.414 | 0.009*** | 0.337 | 0.729 |
| SBI | 0.834 | 0.031** | 4.811 | 0.048** | 0.289 | 0.808 |
| INF | -0.410 | 0.242 | -2.109 | 0.339 | 0.263 | 0.252 |
| LNKURS | -6.863 | 0.156 | -50.807 | 0.096* | 3.639 | 0.224 |
| GDP | -0.004 | 0.896 | -0.018 | 0.932 | 0.026 | 0.269 |

Note : *** : significant on alpha 1%, ** : significant on alpha 5%, * : significant on alpha 10%

Source: Data Processed, 2022

Table 3 contains the results of multiple regression for the dependent variables ROA, ROE, and NIM. Based on the table, the profitability model can be written as follows:

ROA=19,325 + 0,001CAR + 0,019LDR - 0,008CIR + 0,314NPL + 2,473SIZE + 0,834SBI - 0,410INF -6,863LnKURS - 0,004GDP                    (3)

ROE= 342,360 - 0,010CAR + 0,046LDR - 0,046CIR + 1,594NPL + 7,414SIZE + 4,811SBI - 2,109INF -50,807LnKURS - 0,018GDP                    (4)

NIM=35,251 + 0,003CAR + 0,004LDR -0,001CIR + 0,078NPL + 0,337SIZE + 0,289SBI + 0,263INF + 3,639LnKURS + 0,026GDP                    (5)

Based on models 3,4 and 5, it can be interpreted that during the pandemic, banking profitability decreased. From the ROA, ROE, and NIM models, if the independent variables from specific banks and macroeconomic indicators have a value of zero (0), then the ROA, ROE, and NIM have a value of 19.325, 342,360, and 35,251.

In this study, the bank-specific variables are CAR, LDR, CIR, NPL, and SIZE. As seen in Table 3, CAR has no significant effect on ROA, ROE, and NIM. This does not follow the expected hypothesis that CAR affects profitability. The average bank capital was still relatively safe during the pandemic because it was greater than 8 percent. Therefore, the size of the CAR during the pandemic did not affect bank profitability, either ROA, ROE, or NIM (Derbali, 2021). Many studies (Al-Homaidi et al., 2018; Al-Jafari & Alchami, 2014) also show that CAR has no significant effect on profitability.

LDR is consistent with the results of the study in Table 3. It has a positive and significant effect on profitability proxied by ROA and NIM, while ROE has no significant effect. Liquidity is important in banking profitability, especially in increasing profits from total assets and bank loans. Ideally, liquidity proxied by LDR is at 80-90 percent. An LDR ratio that is too high indicates that a bank is unable to provide liquidity to cover short-term funds at any time. A low LDR ratio also indicates that the bank is not getting enough income (Karim et al., 2021).

During the pandemic, the government has used various methods to control banking liquidity. One is the ease with which the public can obtain bank credit during the pandemic. The government cooperates with the banking sector to reduce bank interest

rates to reduce the burden on society. In addition, eliminating bank interest during a pandemic can also be a way to increase bank liquidity. If liquidity increases, the bank's profitability will also be higher (Al-Homaidi et al., 2018; Khalifaturofi'ah, 2018; Tan, 2016). However, other studies (Derbali, 2021; Katusiime, 2021) show that liquidity negatively and significantly affects profitability.

The cost-income ratio shows how efficient a bank is in terms of expenses and income. A high CIR indicates that banking is less efficient because the expenses exceed the income. The results showed that CIR had a negative and significant effect on profitability proxied by ROA and ROE, while profitability was not significant as proxied by NIM. The higher the CIR, the more burdens the bank incurs or the more inefficient the bank is. This will cause bank profitability to decrease. The resulting study is consistent with Khalifaturofi'ah (2018) and Ozili & Uadiale (2017), who found that the bank's profitability will decrease the higher the CIR.

The non-performing loan variable shows interesting results. Non-performing loans (NPL) have a positive and significant effect on profitability. This is an unusual result, considering that most of the effects of NPL on profitability are negative and significant (Katusiime, 2021; Wahyuni et al., 2021). NPL has a positive and significant effect on profitability, meaning that the higher the non-performing loans, the higher the bank's profitability. During a pandemic, non-performing loans will increase due to economic restrictions. Non-performing loans did not reduce bank profitability; instead, they increased because the government sought a significant reduction in interest rates to below 4 percent so that people would not be burdened with credit payments. Eliminating interest is also one of the government's efforts to prevent people from experiencing bad credit. One of the state-owned banks (Bank Tabungan Negara) implemented a one-year credit subsidy for customers with a good track record who will be relieved of having to repay credit. This is allegedly why, during the pandemic, non-performing loans have caused profitability to continue to increase (Figure 2). This result is consistent with (Malik, 2020), who states that non-performing loans positively affect profitability.
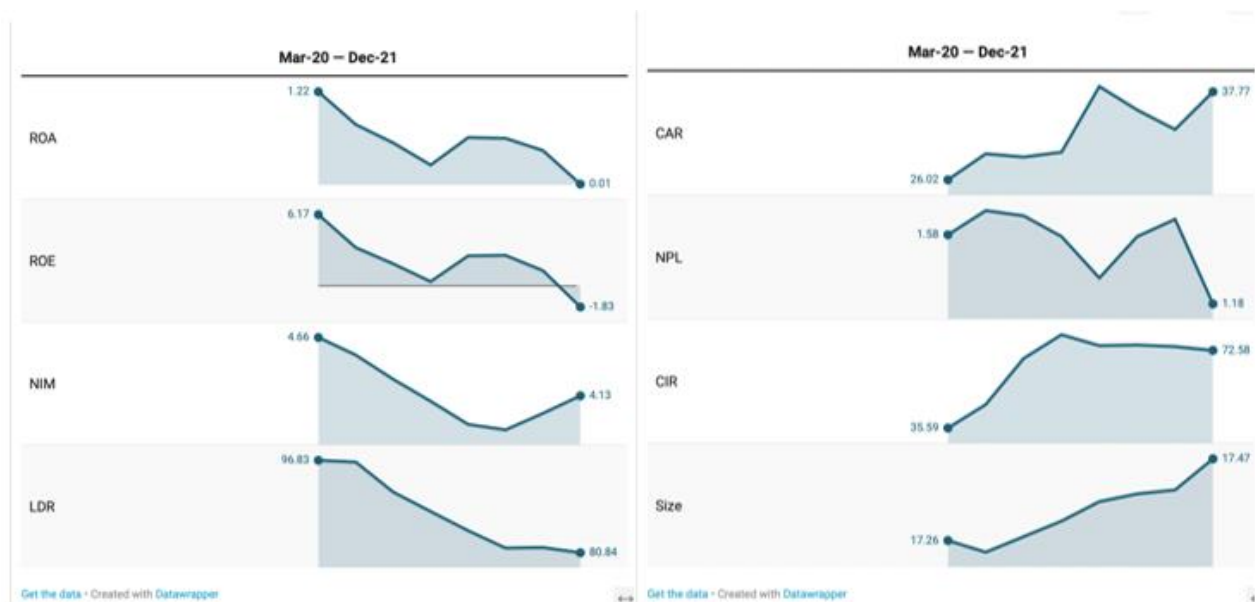


**FIGURE 2** / The Tren of Variables

Source: Processed data, 2022

Bank size is measured using the natural logarithm of total assets. The bigger the bank, the higher the total assets (Demirgüç-Kunt et al., 2021; T. L. A. Nguyen, 2018). Table 3 shows that bank size has a positive and significant effect on profitability proxied by ROA and ROE, while NIM has no significant effect. As seen in Figure 2, the larger the size of the bank, the more the bank will easily obtain funding sources, and penetration to customers will be easier with more facilities provided by banks with large assets. Farkasdi et al. (2021) and Menicucci & Paolucci (2016) found that the greater the total assets owned by

the bank, the higher its profitability will be. The higher the bank's profitability, the bank can use profitability to reduce default risk and tail risk (Brahmana et al., 2022).

During the pandemic, BI suppressed interest rates to the lowest point of 3.50% (Figure 2). This is due to suppressing the inflation rate. Judging from Table 3, it can be seen that the higher the interest rate, the bank's profitability will increase. If BI increases interest rates, investors will be interested in putting their funds in the bank. The more third-party funds collected, the higher the level of bank lending. This will increase bank profitability. This result is inconsistent with Al-Homaidi et al. (2018) who state that the greater the interest rate on a bank loan, the lower the bank's profitability. However, this study's results follow Al-Harbi (2019) and Katusiime (2021), who show that higher interest rates will increase bank profitability in developing countries.

Macro variables other than interest rates, namely exchange rates, inflation, and economic growth, have no significant effect on bank profitability. This is due to government policies suppressing the inflation rate during the pandemic so that the rise and fall of the prices of goods in the country will not affect banks' high and low profitability. This result is inconsistent with the study of Al-Homaidi et al. (2018), which found that inflation has a negative effect on bank profitability. The value of currencies abroad reflected by the exchange rate also has the same effect as inflation. The exchange rate has no significant effect on profitability. This is also because the exchange rate of Rp against $ tends to be stable in the range of Rp 14,000/$ to Rp 15,000/$. The exchange rate has a negative and significant effect on ROE at a real level of 10 percent. If the exchange rate of Rp against $ weakens, the bank's profitability will be reduced from managing its equity.

Economic growth proxied by GDP has no significant effect on profitability. Most studies produce similar results regarding the effect of GDP on profitability. Al-Harbi (2019) stated that economic growth does not affect banking profitability in developing countries. Internal banking variables influence banking profitability. The results of this study are inconsistent with the study of Al-Homaidi et al. (2018), which states that GDP has a negative effect on profitability. The different results were shown by Katusiime (2021), which showed that GDP positively affects bank profitability.

# 5. CONCLUSION

This study has yielded distinct outcomes concerning the impact of the COVID-19 pandemic on the profitability of conventional banks in Indonesia. The profitability of these banks, as indicated by the Return on Assets (ROA), was influenced by several factors, including liquidity (loan-to-deposit ratio), operational efficiency (cost-to-income ratio), credit risk (non-performing loans), bank size, and interest rates. Similarly, the profitability measured by Return on Equity (ROE) was affected by operational efficiency, credit risk, bank size, and interest rates. On the other hand, the Net Interest Margin (NIM) profitability was linked to liquidity and credit risk. During the pandemic, credit risk (non-performing loans) emerged as the most significant driver of conventional bank profitability. This suggests that higher levels of financing extended by these banks during the pandemic were associated with increased profitability.

In a more detailed breakdown, the study identified that liquidity, credit risk, bank size, and interest rates positively and significantly influenced profitability. Operational efficiency and exchange rates, however, had a negative significant impact on profitability. Intriguingly, inflation and economic growth were found to have no significant effect on profitability during the pandemic.

Internal factors specific to individual banks that significantly affected profitability encompassed liquidity, operational efficiency, credit risk, and bank size. Notably, a noteworthy finding was that despite the increase in credit extension leading to higher non-performing loans during the pandemic, this scenario contributed to increased bank profitability. This unexpected result could be attributed to the government's subsidy policy, providing relief to customers by exempting them from paying interest on bank loans during the pandemic.

In the context of pandemic response, the government could implement effective policies to alleviate its impact. Strategies such as raising interest rates and strengthening the Rupiah exchange rate against the dollar could bolster bank profitability. Practitioners within the banking sector should also prioritize liquidity management, augment total assets, and curtail costs to enhance overall profitability. Collaborative efforts between banks and governments are crucial to formulating robust strategies to mitigate the effects of COVID-19, emphasizing the augmentation of total banking assets and bank liquidity to counter economic fluctuations and macroeconomic shocks.

# 6. LIMITATION AND IMPLICATION

The absence of an analysis of the impact of government stimulus measures on bank profitability during the pandemic is an important point. We acknowledge that such measures could have shaped banks' financial performance during this period. However, we did not delve into the intricate dynamics of government stimulus programs due to data limitations and the focus on internal and macroeconomic factors. This could be an avenue for future research, as understanding the interaction between external interventions and internal bank factors would provide a more comprehensive view of the ecosystem within which banks operate.

The study focuses on conventional banks during the pandemic (2020 Q1 to 2021 Q4), offering insights into bank-specific variables and macroeconomic indicators. These insights enhance our understanding of challenges and opportunities in Indonesia's banking sector. While our analysis centers on Indonesia, it contributes to the crisis discourse, recognizing diverse bank responses due to unique models and country-specific factors. Conducted within Indonesia's context, our study delves into regulatory responses, government interventions, and economic changes. We illuminate the interplay between internal factors and external indicators by concentrating on one country. Our findings offer crucial pandemic insights, but comprehensive comprehension necessitates diverse bank types and global contexts. Cross-country comparisons and various models can reveal broader trends and effective strategies for crisis resilience.

In summary, our study's value extends to banking literature during crises. Acknowledging potential result limitations, our context-specific insights shape Indonesia's banking sector policies. This approach may inspire similar studies across banks and countries, enriching an understanding of industry dynamics amidst challenges.

This study offers valuable insights for regulatory bodies, particularly the Financial Services Authority, by advocating for enhanced supervision of bank financial services to optimize liquidity and bank size. The findings presented in this research contribute to bridging the gap in understanding the determinants of banking profitability, particularly within the Indonesian context.

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