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The Influence of External and Internal Factors on Banking Profitability Before and During the Covid-19 Pandemic

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A B S T R A C T

The Covid-19 epidemic is exerting significant strain on the Indonesian economy, especially the national banking sector. This study employs quantitative research methods together with explanatory strategies. This study seeks to analyse the impact of external factors (BI Rate, Inflation, and Exchange Rate) and internal factors (Capital Adequacy Ratio, Non-Performing Loans, Loan Deposit Ratio, and Operating Expenses Operating Income) on the profitability (Return On Equity) of traditional commercial banks prior to and during the covid-19 pandemic. The data collecting method included purposive sampling, selecting a sample of 24 banks and gathering 240 observations both before and during the COVID-19 pandemic. The data was subjected to panel data regression analysis and other tests were conducted for testing and analytical purposes. The findings from data analysis and testing indicate that the BI Rate, Inflation, Exchange Rate, NPL, and LDR do not have an impact on ROE, both prior to and during the Covid-19 period. However, it is noteworthy that CAR and OER have a notable and adverse affect on ROE, both before and during the Covid-19 period. The findings of several tests indicate substantial disparities in the BI Rate, Inflation, Exchange Rate, CAR, and LDR between the pre-COVID-19 period and the during-COVID-19 period. However, there are no notable disparities in NPL and OER, either before or during COVID-19.

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INTRODUCTION

As per the Law of the Republic of Indonesia Number 10 of 1998 on Banking, a bank is a commercial organisation that gathers funds from the public in the form of savings and then provides these funds to the public in the form of credit or other means to enhance the quality of life for many individuals. The primary source of profit for conventional banking is the disparity between the interest rates on loans or credit granted to depositors and the interest rates on savings (Kasmir, 2014).

The COVID-19 outbreak exerted significant strain on the Indonesian economy in 2020, causing unprecedented chaos. Global turbulence often stems from health and humanitarian issues, which then have a ripple effect on economic concerns. Ministerial Regulation No. 9 of 2020 about Large-Scale Social Restrictions (PSBB) was issued by the Ministry of Health on April 3, 2020. The Government's prompt response to mitigate the transmission of COVID-19 through PSBB measures inevitably entails a decline in economic performance. COVID-19 containment measures have curtailed both people movement and economic transactions. The decline in consumption, investment, transportation, tourism, production, and economic actors' confidence led to a substantial drop in economic growth. An economy in a state of weakness is a prevalent worry, since failing to promptly address it poses a threat to both economic stability and the stability of the financial system (Bank Indonesia, 2020).

Table 1. Performance Report of Conventional Commercial Banks for 2016-2020

2016 Des	2017 Des	2018 Des	2019 Des	2020 Des	yoy Des '19	yoy Des '20	Indicator
6,475,602	7,099,564	7,751,621	8,212,586	8,780,681	5.95%	6.92%	*Total Assets (Rp billions)*
4,199,713	4,548,155	5,092,584	5,391,846	5,235,027	5.88%	-2.91%	*Loans (Rp billions)*
4,630,352	5,050,984	5,372,841	5,709,670	6,342,538	6.27	11.08%	*Deposits (Rp billions)*
1,104,583	1,207,069	1,287,480	1,423,773	1,636,387	10.59%	14.93%	*Demand Deposits (Rp billions)*
1,487,077	1,626,595	1,737,216	1,844,526	2,053,575	6.18%	11.33%	*Tabungan (Rp billions)*
2,038,692	2,217,321	2,348,146	2,441,372	2,652,575	3.97%	8.65%	*Deposito (Rp billions)*
22.93	23.18	22.97	23.40	23.89	43	49	*CAR (%)*
2.23	2.45	2.55	2.47	1.59	(8)	(88)	*ROA (%)*
5.63	5.32	5.14	4.91	4.45	(23)	(46)	*NIM / NOM (%)*
82.22	78.64	77.86	79.39	86.58	153	719	*Efficiency Ratio (%)*
2.86	2.50	2.33	2.50	3.06	17	56	*Gross NPL/NFL (%)*
1.20	1.11	2.00	1.16	0.95	15	(21)	*Net NPL/NFL (%)*
90.70	90.04	94.78	94.43	82.54	(35)	(1,190)	*LDR / FDR (%)*

Sources: OJK

The profitability of Conventional Commercial Banks (BUK) declined before and throughout the COVID-19 period, as seen by the fall in Return on Assets (ROA) from 2.47% in the previous year to 1.59%. The banks BOPO ratio had a significant increase from 79.39% to 86.58% compared to the previous year. Credit quality showed a decline compared to the previous year. BUK's gross NPL ratio was recorded to have increased 56 bps to 3.06% from 2.50%. On the other hand, BUK's net NPL improved with a slight decrease of 21 bps to 0.95% from 1.16%. The CAR ratio still increased 49 bps to 23.89% from 23.40% in the previous year (Financial Services Authority, 2020).

According to Yolanda (2019), bank profitability is the level of ability to earn profits which is calculated using profitability ratios. The level of profitability is important for a bank and is an indicator for measuring a bank's financial performance because profitability is a determining factor in the continuation of a bank so that it can continue to develop sustainably.

In response to the unprecedented effects of the epidemic, Bank Indonesia implemented exceptional measures on the monetary front. Bank Indonesia has implemented a liberal monetary policy from the start of 2020. This has involved cutting the Bank Indonesia 7-Day Reverse Repo Rate (BI7DRR) policy interest rate and implementing quantitative easing (QE) through liquidity injection. The decision to decrease interest rates was implemented in a deliberate and incremental fashion, considering the anticipated low inflation and the need to preserve the competitiveness of domestic financial assets and external stability. Additionally, it aimed to stimulate economic recovery. In order to stimulate economic recuperation in the aftermath of the Covid-19 epidemic. Bank Indonesia is actively enhancing its stabilisation policy to sustain the stability of the Rupiah exchange rate and reinforce its monetary operations strategy. The policy of stabilising the currency rate is implemented by following market fundamentals and mechanisms by triple intervention. This intervention occurs in the spot market, the Domestic Non-Deliverable Forward (DNDF) market, and through the purchase of SBN from the secondary market. This strategy is further reinforced by sufficient foreign exchange reserves and bilateral swap cooperation with several financial authorities, as well as repo lines, especially with the US New York Fed and BIS, to enhance secondary defence measures. Regional nations are also engaged in the process of enhancing cooperation in Local Currency Settlement (LCS), as stated by Bank Indonesia (2021).

The monetary policy system, namely through the money channel, assumes that banks use all assets obtained from the general public, such as cash (M1, M2), for productive purposes by providing banking credit. This is not universally true. The credit providing behaviour of banks is influenced by their assessments of borrowers' economic prospects and banking circumstances, including capital adequacy ratio (CAR), non-performing loans (NPL), and loan-to-deposit ratio (LDR). In addition, it is important to note that the bank may not be able to meet all credit requests from debtholders, particularly if the bank determines that the debtholder's financial state is unsuitable owing to a high level of leverage, potential for bad credit, moral hazard, and other factors. Asymmetric information between borrowers and banks can cause an imbalance in the loan market (Warjiyo, 2004).

The aforementioned study findings demonstrate divergent outcomes. This research aims to generate more complete findings and insights on the phenomena of banking profitability, both before and after the COVID-19 epidemic. It seeks to examine the various elements that drive profitability, including both external and internal aspects.

LITERATURE REVIEW

Grand Theory of Agency Theory

Agency theory, as described by Jensen and Meckling (1976), elucidates the dynamic between the firm owner (principal) and the management hired to oversee the company (agent) inside a commercial agreement. Conflicts of interest arise due to divergent objectives. The principal aims to optimise the financial assets of his firm, but the agent aims to maximise his own contentment, even if it contradicts the principal's goals.

In the banking industry, bank management is responsible for managing assets and funds owned by shareholders. The goal of bank management is to maximize profits for shareholders. However, sometimes the interests of bank management are not always in line with the interests of shareholders. Agency theory shows that conflicts of interest between bank management and shareholders can reduce bank performance and profitability. According to (Ahmad & Septriani, 2008) several efforts that can be made to reduce conflicts of interest between principals and agents are by increasing managerial ownership, increasing institutional ownership as supervisory agents, increasing funding through debt, increasing dividends, managing risks, incentive policies for managers and the manager understands his role.

External Factors

a. BI Rate

Monetary policy implemented by the central bank (BI Rate) will influence movements in short-term interest rates (such as SBI and PUAB) in the Indonesian money market. This impact will then be reflected in the deposit interest rates offered by banking institutions to their customers, as well as the credit interest rates charged by banks to borrowers. The process of transmitting changes in interest rates usually does not occur immediately and may take time, especially due to internal banking factors in managing assets and liabilities (Warjiyo, 2004).

b. Inflation

Inflation is the persistent and widespread rise in the pricing of goods. Market forces, arising from the interplay of demand and supply, exert an impact on the selling price of an item. An increase in the price of goods occurs as part of the process of adjusting to changes in demand, and conversely, a decrease in the price of goods also occurs. This analogy can be applied to understanding inflation. Because inflation involves aggregate demand and supply, it can be considered as demand and supply in the entire economy (Rahardja & Manurung, 2019).

c. Exchange Rate

Demand for foreign exchange arises when residents of a country need goods and services produced by other countries or demand for foreign exchange increases along with increased imports. Factors that influence the demand for foreign exchange include the price of foreign currency (its exchange rate), income levels, relative interest rates, consumer preferences, market expectations, and government policies. The supply of foreign exchange increases when the country increases its imports of goods and services or increases its exports. Foreign

exchange supply also increases when capital inflows are greater than capital outflows (Rahardja & Manurung, 2019).

Internal Fakctors

a. CAR (Capital Adequacy Ratio)

CAR, or Capital Adequacy Ratio, represents the proportion of bank capital to risk-weighted assets (RWA). The concept of capital can be divided into two categories: Core Capital, also known as Tier I, which includes paid-in capital, share premium, general reserves, objective reserves, retained earnings, and current year's profit. Supplementary Capital, also known as Supplement Capital or Tier II, is comprised of fixed asset revaluation reserves, classified asset write-off reserves, quasi capital, and subordinated loans. 3) Additional Supplementary Capital, often known as Tier III capital. The RWA component consists of assets listed both on the balance sheet and those of an administrative nature. In determining CAR, there is a fairly complicated calculation, namely before the asset component is classified as RWA, its weight is first determined based on a predetermined margin (Astuti & Jasman, 2022; Rinaldy, 2008).

b. NPL (Non Performance Ratio)

Credit risk refers to the potential for customers or other parties to default on their responsibilities to the bank as outlined in the agreed agreement (Indonesian Bankers Association, 2016). Gross non-performing loans (NPL) refers to the ratio of credit with a collectibility level of 3 to 5, compared to the total credit provided by the bank. On the other hand, net NPL is calculated by subtracting the specific provision for collectibility of 3 to 5 (Allowance for Productive Asset Losses or PPAP) from the amount of credit with a collectibility level of 3 to 5, and then comparing it to the total credit provided by the bank (Riyadi, 2006).

c. LDR (Loan to Deposit Ratio)

The Loan-Deposit Ratio (LDR) is a metric that quantifies the proportion of credit extended by a bank in relation to the total amount of Third Party Funds (DPK) accumulated by the bank. The LDR metric reflects the bank's capacity to efficiently allocate and utilize external funds that have been acquired from various sources (Jasman et al, 2023; Riyadi, 2006).

Bank Indonesia Regulation No. 17/11/PBI/2015, issued on 25 June 2015, introduced a change in terminology from Loan to Deposit Ratio (LDR) to Loan to Funding Ratio (LFR). This change was made to incorporate the inclusion of securities issued by banks in the calculation of the LDR. As a result, the LDR formula was modified to Credit / (Total Public Funds + Securities issued by the Bank). The lower limit of the goal LFR is established at 78% and the maximum limit is set at 92% based on the quantities and parameters utilized in LFR calculations.

d. OER (Operational Efficiency Ratio)

The OER, or Operational Efficiency Ratio, is a measure of how efficiently an operation is being conducted.OER is a financial metric that measures the relationship between a bank's Operational Costs and its Operational Income. A lower OER ratio indicates superior bank management performance since it signifies efficient utilization of corporate resources. As to the regulations set by Bank Indonesia, the OER ratio tolerance ceiling for banks in Indonesia is 93.52%. The OER ratio is employed to assess the degree of effectiveness in a bank's managerial performance. A ratio number over 90% and approaching 100% signifies a diminished level of efficiency in the bank's functioning. Conversely, a low ratio figure, such as approximately 75%, suggests that the bank's performance is highly efficient (Astuti & Jasman, 2022; Riyadi, 2006).

Profitability

ROE, or Return on Equity, is a financial metric that measures the profitability of a bank by comparing its after-tax profit to its Core Capital (Riyadi, 2006). The return on equity, also known as rentability of own capital, is a ratio used to assess the net profit after tax in relation to the amount of capital invested (Kasmir, 2015).

Hypothesis Development

BI Rate and Profitability Before and During Covid-19

Analysis of BI Rate and Profitability Pre and Post Covid-19

The findings of Trisia & Rofi's (2022) study indicate that the BI Rate does not have an impact on profitability prior to COVID-19. Conversely, Gabeshi's (2021) research demonstrates that central bank interest rates have a noteworthy and favorable influence on profitability before the onset of the pandemic.

H1: The Bank Indonesia (BI) Rate has a favorable and substantial impact on profitability levels both prior to and during the COVID-19 pandemic.

Inflation and Profitability Before and During Covid-19

The findings of studies conducted by Gabeshi (2021) and Kumar et al. (2020) indicate that inflation had a favorable impact on profitability before to the onset of the COVID-19 pandemic. Conversely, research conducted by Idrus (2018) and Hidayatullah & Wahyuni (2018) demonstrated that inflation did not have any influence on profitability prior to the Covid-19 outbreak. The study conducted by Gazi et al. (2022) demonstrates that inflation exerts a favorable and substantial impact on profitability both prior to and during the COVID-19 pandemic.

H2: Inflation exerts a favorable and substantial impact on levels of profitability both prior to and during the Covid-19 pandemic.

Exchange Rates and Profitability Before and During Covid-19

The findings of Idrus's (2018) study indicate that the exchange rate had a detrimental and statistically significant impact on profitability prior to the COVID-19 pandemic. Similarly, Katusiime's (2021) research reveals that the exchange rate had a negative and significant effect on profitability in the long run. On the other hand, the studies conducted by Prastowo et al. (2018) and Trisia

& Rofi (2022) demonstrate that the exchange rate did not have any influence on profitability before the onset of the Covid-19 pandemic.

H3: The exchange rate exerts a detrimental and substantial impact on the level of profitability both prior to and during the Covid-19 pandemic.

Capital Adequacy Ratio and Profitability Before and During Covid-19

The findings of Yolanda (2019) and Azmy (2018) indicate that CAR had no impact on profitability prior to the COVID-19 pandemic. Conversely, the research done by Yatna & Anugrah (2019) and Idrus (2018) revealed that CAR had a detrimental and statistically significant influence on profitability prior to the COVID-19 pandemic. The study conducted by Gazi et al. (2022) demonstrates that CAR (Customer Acquisition Rate) has a detrimental and statistically significant impact on profitability both prior to and during the COVID-19 pandemic.

H4: The Capital Adequacy Ratio (CAR) has a detrimental and substantial impact on profitability levels both prior to and during the Covid-19 pandemic.

Non-Performing Loans and Profitability Before and During Covid-19

The findings of Yolanda (2019) and Idrus (2018) indicate that Non-Performing Loans (NPL) did not have an impact on profitability before to the Covid-19 pandemic. However, Hidayatullah & Wahyuni (2018) and Azmy (2018) demonstrated that NPL had a detrimental and statistically significant influence on profitability prior to the Covid-19 pandemic. The study conducted by Gazi et al. (2022) demonstrates that non-performing loans (NPL) have a detrimental and substantial impact on profitability both prior to and during the COVID-19 pandemic.

H5: Non-performing loans (NPL) exert a detrimental and substantial impact on pre-COVID-19 and COVID-19 profitability levels.

Loan to Deposit Ratio and Profitability Before and During Covid-19

The research findings of Yolanda (2019) and Hidayatullah & Wahyuni (2018) indicate that long-distance relationships (LDR) do not have an impact on profitability prior to the Covid-19 pandemic. However, Idrus (2018) and Azmy (2018) demonstrate that LDR has a detrimental and statistically significant effect on profitability before Covid-19. The study conducted by Gazi et al. (2022) demonstrates that long-distance relationships (LDR) had no impact on profitability both prior to and during the Covid-19 pandemic.

H6: The Loan Deposit Ratio (LDR) has a detrimental and substantial impact on profitability levels both prior to and during the Covid-19 pandemic.

OER (Operational Efficiency Ratio) and Profitability Before and During COVID-19

The findings of Idrus (2018) and Kumar et al. (2020) indicate that the ratio of OER (Operational Efficiency Ratio) had a significant negative impact on profitability prior to the Covid-19 pandemic. On the other hand, Wahyudi's (2020) research reveals that OER continued to have a negative and significant

effect on profitability during the Covid-19 period. In contrast, Trisia & Rofi's (2022) study demonstrates that OER did not influence profitability before the onset of the Covid-19 pandemic.

H7: The operational expenses and revenue generated from operations (OER) have a detrimental and statistically significant impact on profitability levels both before and during the COVID-19 pandemic.

METODOLOGI

This study employs quantitative data as its primary data type. The population for this study consists of all the Banking Sector Companies, totaling 47, that are listed on the Indonesia Stock Exchange between 2019 and 2021. The sampling technique employs purposive sampling based on the following criteria:

- Financial institutions that are listed on the Indonesia Stock Exchange
- Traditional commercial banks; sharia banks are not included
- Banks that released quarterly reports (full financial statements) both before and during COVID-19 (quarter I of 2019 to quarter I of 2020) (quarter II of 2020 to quarter II of 2021).
- Profit-generating banks

Table 2. Operational Definition of Variables

Variable	Variable Definition	Indicator	Scale
Return On Equity	Profitability ratio which shows the comparison between profit after tax and Bank Core Capital. (Riyadi, 2006)	ROE = (Profit After Tax / Core Capital) x 100%	Ratio
BI Rate	Reference interest rate policy set by Bank Indonesia. (Bank Indonesia, 2016)	-	Ratio
Inflation	A general and continuous increase in the prices of goods and services over a certain period of time. (Rahardja & Manurung, 2019)	Inflation = ((IHK - IHK_{-1}) / IHK_{-1})) x 100%	Ratio
Exchange Rate	The amount of domestic currency that must be paid to obtain one unit of foreign currency. (Hady, 2017)	USD / IDR	Nominal
Capital Adequacy Ratio	Comparison between the minimum amount of capital that a bank must have and risk-weighted assets. (Astuti & Jasman, 2022;Rinaldy, 2008)	CAR = (Capital / Risk Weight Assets) x 100%	Ratio
Non Performing Loan (Net)	Comparison between the amount of credit given and the level of col. 3 to 5 minus special ALPA col.3 to 5 (Allowance for Losses of Productive Assets) compared to the total credit provided by the Bank. (Riyadi, 2006)	NPLnet = ((Credit granted with col.3 to 5 - ALPA specifically col.3 to 5) / Total Credit)) x 100%	Ratio
Loan to Deposit Ratio	Comparison between total credit and third party funds. (Riyadi, 2006)	LDR = (Total Credit / Third Party Funds) x 100%	Ratio
Operational Effciency Ratio	Comparison between operational expenses and operating income. (Astuti & Jasman, 2022;Riyadi, 2006)	OER = (Operating Costs / Operating Income) x 100%	Ratio

Testing in this research uses the Model Test (Chow Test and Hausman Test), Partial Hypothesis Test (t-test), Model Feasibility Test (F Test), Coefficient of Determination Test, and Difference Test.

RESEARCH RESULT

Descriptive Statistical Analysis

Table 3. Statistical Test Results Before & During Covid-19

Variable	Maximum		Minimum		Median		Mean		Standard Deviation	
	Before	During	Before	During	Before	During	Before	During	Before	During
ROE	21,76	20,29	0,04	0,29	7,52	5,83	8,71	7,14	6,04	5,50
BI RATE	6,00	4,25	4,50	3,50	5,25	3,75	5,35	3,80	0,58	0,29
Inflation	3,39	1,96	2,48	1,33	2,96	1,42	2,97	1,55	0,34	0,24
Exchange Rate	16.367	14.918	13.901	14.105	14.174	14.542	14.565	14.488	911,97	275,43
CAR	54,54	48,00	12,67	10,18	21,87	23,22	22,75	24,62	7,02	7,66
NPL	4,86	3,71	0,07	-	1,18	1,12	1,51	1,47	1,00	0,96
LDR	171,28	153,49	53,88	20,17	89,93	79,53	89,48	78,88	18,97	20,24
OER	106,84	98,97	59,09	58,60	87,23	88,81	83,57	85,24	11,86	11,01

Model Selection Test

Table 4. Results of Panel Data Model Selection Before Covid-19

Model	Testing	Results
Chow test	CEM vs FEM	FEM
Hausman test	FEM vs REM	REM

Table 5. Results of Panel Data Model Selection During Covid-19

Model	Testing	Results
Chow test	CEM vs FEM	FEM
Hausman test	FEM vs REM	REM

Based on the model test above, the best panel data regression model before and during COVID-19 is the **random effect model.**

Hypothesis Testing

Table 6. Hypothesis Test Results Before Covid-19

Variable		Coefficients	t	Sig.
1	Constant	33,10	4,91	0,00
	BI Rate	0,36	0,97	0,33
	Inflation	0,03	0,05	0,96
	Exchange Rate	0,00	2,01	0,05
	CAR	-0,14	-2,41	0,02
	NPL	-0,28	-0,83	0,41
	LDR	0,01	0,64	0,52
	OER	-0,37	-10,93	0,00
N	24			
F	19,75			
Sig.F	0,00			
Adjusted R^2	0,52			

Source: Data processed (2024)

BI Rate variable t-test results before Covid-19

The test results indicated that the significance value of the BI Rate was 0.33, which exceeded the threshold of 0.05. Therefore, the hypothesis was rejected, suggesting that the BI Rate did not have a significant impact on banking ROE prior to the Covid-19 pandemic. The reason for this is because the impact of the BI Rate is not instantaneous, but rather there is a delay, particularly due to the internal circumstances of banks in managing their assets and liabilities (Warjiyo, 2004).

The findings of this study align with the research conducted by Trisia & Rofi (2022), which indicates that the BI Rate did not have an impact on profitability prior to Covid-19. However, these results are inconsistent with the research conducted by Gabeshi (2021), which suggests that central bank interest rates had a positive and significant effect on profitability before Covid-19.

T-test results for the inflation variable before Covid-19

The test findings indicated that the inflation significance value was 0.96, which exceeded the threshold of 0.05, leading to the rejection of the hypothesis. Banking return on equity (ROE) remained unaffected by inflation prior to the onset of the Covid-19 epidemic. The impact of the BI Rate on inflation is long-term and subject to fluctuations because to shifting interactions between economic and financial variables, which are influenced by the country's economic development (Warjiyo, 2004).The findings of this study are consistent with the research conducted by Idrus (2018) and Hidayatullah & Wahyuni (2018), which indicate that inflation did not impact profitability prior to COVID-19.

However, the results of this study are not aligned with the research conducted by Gabeshi (2021) and Kumar et al. (2020), which suggest that inflation has a positive influence on profitability before COVID-19. Additionally, the research conducted by Gazi et al. (2022) demonstrates that inflation has a positive and significant impact on profitability both before and during the COVID-19 pandemic.

Results of the t-test for the Exchange Rate variable before Covid-19

The test findings indicated that the p-value for the exchange rate was 0.05, which is the same as the significance level of 0.05. Therefore, we rejected the hypothesis that the exchange rate had an impact on banking return on equity (ROE) prior to COVID-19. The exchange rate can impact bank profitability, particularly when the bank has substantial exposure to foreign currencies. The bank's profits and losses can be affected by exchange rate swings if it holds loans or assets in foreign currency.

The findings of this study are consistent with the research conducted by Prastowo et al. (2018) and Trisia & Rofi (2022), which indicate that the exchange rate did not have an impact on profitability prior to the Covid-19 pandemic. However, these findings contradict the results of Idrus' (2018) research, which demonstrated a negative and significant influence of the exchange rate on profitability before the Covid-19 outbreak. According to a study conducted by Katusiime (2021), there is a strong and negative correlation between the exchange rate and long-term profitability.

CAR variable t-test results before covid-19

The test results indicated that the significance value of the Capital Adequacy Ratio (CAR) was 0.02, which is less than 0.05. Therefore, the hypothesis was accepted, suggesting that CAR had a negative and substantial impact on banking Return on Equity (ROE) prior to the Covid-19 outbreak. Increasing the CAR has a negative impact on the bank's return on equity (ROE). The reason for the negative impact on profitability is the loan at Risk (CAR), which may be attributed to the extensive loan distribution activities carried out by Conventional Commercial Banks (BUK) prior to the Covid-19 outbreak. Credit plays a significant role in generating income for banks. This implies that when credit expands, bank income will also increase, thereby boosting profitability.

An augmentation in credit results in a corresponding augmentation in total risk-weighted assets (RWA), thus leading to a reduction in the capital adequacy ratio (CAR) (Yatna & Anugrah, 2019). The findings of this study align with the research conducted by Yatna & Anugrah (2019) and Idrus (2018), which demonstrated that CAR had a detrimental and statistically significant impact on profitability prior to the Covid-19 pandemic. The findings of Gazi et al.'s (2022) research support the notion that CAR has a detrimental and statistically significant impact on profitability both prior to and during the COVID-19 pandemic. However, these results contradict the findings of Yolanda (2019) and Azmy (2018), who found no effect of CAR on profitability before the onset of Covid-19.

NPL variable t-test results before Covid-19

The test results indicated that the significance value of the Non-Performance Loan (NPL) was 0.41, which exceeded the threshold of 0.05. Therefore, the hypothesis was rejected, suggesting that NPL did not have a significant impact on the Return on Equity (ROE) of the banking sector prior to the COVID-19 pandemic. This theory posits that there is an inverse relationship between a bank's non-performing loans (NPL) and its profitability. Research findings that contradict this concept may indicate that traditional commercial banks are proficient in managing their credit risk.

This is evidenced by the average non-performing loan (NPL) ratio of 1.51 percent as mandated by the standards set by Bank Indonesia.The findings of this study align with the research conducted by Yolanda (2019) and Idrus (2018), which indicate that non-performing loans (NPLs) did not have an impact on profitability prior to the Covid-19 pandemic. However, the results of this study are inconsistent with the findings of Hidayatullah & Wahyuni (2018) and Azmy (2018), who demonstrated that NPLs had a negative and significant effect on profitability before Covid-19. Additionally, the research conducted by Gazi et al. (2022) revealed that NPLs had a negative and significant effect on profitability both before and during the Covid-19 pandemic.

LDR variable t-test results before Covid-19

The test results indicated that the Loan to Deposit Ratio (LDR) had a significance value of 0.52, which exceeded the threshold of 0.05. Therefore, the hypothesis was rejected, suggesting that LDR did not have an impact on banking

Return on Equity (ROE) prior to the Covid-19 pandemic. This conclusion challenges the prevailing notion that posits a positive correlation between the LDR (Loan-to-Deposit Ratio) and a bank's profitability. The bank's prudential principle in managing bank liquidity risk ensures that changes to the LDR ratio have no impact on the profitability, whether it increases or decreases.

The findings of this study align with the findings of previous research undertaken by Yolanda (2019) and Hidayatullah & Wahyuni (2018), which indicate that there is no significant impact of Long Distance Relationships (LDR) on profitability. This study is backed by the research carried out by Gazi et al. (2022), which demonstrates that the Loan-to-Deposit Ratio (LDR) does not impact profitability prior to and during the COVID-19 pandemic. However, these findings contradict the outcomes of previous studies conducted by Idrus (2018) and Azmy (2018), which indicate that LDR has a detrimental and statistically significant influence on profitability prior to the Covid-19 outbreak.

OER variable t-test results before COVID-19

The test findings yielded a significance value of 0.00 for OER (Operational Efficiency Ratio), which is less than 0.05. Therefore, the hypothesis is accepted, indicating that OER had a negative and substantial impact on banking ROE prior to the onset of COVID-19. The impact of operating expense ratio (OER) demonstrates that as the OER rises, the return on equity (ROE) of the bank declines. This statement supports the hypothesis that there is an inverse relationship between a bank's OER (Operating Expense Ratio) and its profitability.

The findings of this study align with the research undertaken by Idrus (2018) and Kumar et al. (2020), indicating that the OER ratio had a detrimental and statistically significant impact on profitability prior to the Covid-19 pandemic. The findings of this study are supported by the research conducted by Wahyudi (2020), which demonstrates a negative and significant impact of OER during the Covid-19 pandemic. However, these findings contradict the research conducted by Trisia & Rofi (2022), which indicates that OER had no influence on profitability prior to the Covid-19 pandemic.

Table 7. Partial Hypothesis Test Results During Covid-19

	Variable	Coefficients	t	Sig.
1	Constant	45,22	2,59	0,01
	BI Rate	-2,43	-1,65	1,00
	Inflation	0,07	0,03	0,98
	Exchange Rate	0,00	-0,11	0,91
	CAR	-0,15	-5,45	0,00
	NPL	0,10	0,44	0,66
	LDR	0,02	1,42	0,16
	OER	-0,40	-16,34	0,00
N	24			
F	47,36			
Sig.F	0,00			
Adjusted R^2	0,73			

Source: Data processed (2024)

BI Rate variable t-test results during Covid-19

The test findings indicate that the significance value of the BI Rate is 1.00, which exceeds the threshold of 0.05. Therefore, we reject the hypothesis that the BI Rate has an impact on banking ROE during COVID-19. The reason for this is because the impact of the BI Rate is not instantaneous, but rather there is a delay, particularly due to the internal circumstances of banks in managing their assets and liabilities (Warjiyo, 2004).

The findings of this study align with the research conducted by Trisia & Rofi (2022), which demonstrated that the BI Rate did not impact profitability prior to the Covid-19 pandemic. However, these findings are inconsistent with the research conducted by Gabeshi (2021), which indicated that central bank interest rates had a positive and significant effect on profitability prior to the Covid-19 pandemic.

Inflation variable t-test results during COVID-19

The test results indicated that the inflation significance value was 0.98, which exceeded the threshold of 0.05. Therefore, the hypothesis was rejected, concluding that inflation did not have a significant impact on banks return on equity (ROE) during the Covid-19 epidemic. The impact of the BI Rate on inflation is long-term and subject to fluctuations because to shifting interactions between economic and financial variables, which are influenced by the country's economic development (Warjiyo, 2004).

The findings of this study align with the research undertaken by Idrus (2018) and Hidayatullah & Wahyuni (2018), which indicate that inflation had little impact on profitability prior to the COVID-19 pandemic. However, the results of this study are inconsistent with the research completed by Gabeshi (2021) and Kumar et al., The study conducted in 2020 indicates that inflation has a favorable impact on profitability before to the outbreak of Covid-19. Additionally, research conducted by Gazi et al. in 2022 demonstrates that inflation has a positive and noteworthy influence on profitability both before and during the Covid-19 pandemic.

Variable t-test results Exchange rates during COVID-19

The test findings indicate that the significance value of the exchange rate is 0.91, which is higher than the significance value of 0.05. Therefore, we reject the hypothesis that the exchange rate has an impact on banking return on equity (ROE) during the COVID-19 period. The exchange rate can impact bank profitability, particularly if the bank has substantial exposure to foreign currencies. Exchange rate variations can have a direct influence on a bank's profits and losses if the bank holds loans or assets denominated in foreign currency.

The findings of this study align with the research conducted by Prastowo et al. (2018) and Trisia & Rofi (2022), which indicate that the exchange rate did not have an impact on profitability prior to the Covid-19 pandemic. However, these findings contradict the results of Idrus's (2018) research, which demonstrated a negative and significant relationship between the exchange rate and profitability before the Covid-19 outbreak. According to Katusiime's (2021) research, there is

a strong and negative correlation between the exchange rate and long-term profitability.

CAR variable t-test results during COVID-19

The test findings indicate that the CAR significance value is 0.00, which is less than 0.05. Therefore, we accept the hypothesis that CAR has a negative and significant impact on banking ROE during the COVID-19 period. An analysis of CAR demonstrates that an increase in CAR results in a fall in the bank's ROE. The decline in profitability may be attributed to the impact of Covid-19, as Conventional Commercial Banks (BUK) adopted a cautious approach in their lending activities, resulting in reduced loan volumes compared to pre-pandemic levels. Portions of the available funds were redirected towards low-risk investment vehicles, such as Bank Indonesia Certificates (SBI), resulting in a decrease in risk-weighted assets (RWA) and an improvement in capital adequacy ratio (CAR). However, this shift also led to a decrease in profitability.

The findings of this study align with the studies undertaken by Yatna & Anugrah (2019) and Idrus (2018), which demonstrated that CAR had a detrimental and statistically significant impact on profitability prior to the onset of the Covid-19 pandemic. The findings of Gazi et al.'s (2022) research support the notion that CAR has a detrimental and statistically significant impact on profitability both prior to and during the COVID-19 pandemic. However, these results contradict the findings of Yolanda (2019) and Azmy (2018), who concluded that CAR does not influence profitability before the onset of Covid-19.

NPL variable t-test results during COVID-19

The test results indicated that the significance value of the Non-Performance Loan (NPL) was 0.66, surpassing the threshold of 0.05. Consequently, the hypothesis was rejected, suggesting that NPL did not have an impact on the Return on Equity (ROE) of the banking sector during the Covid-19 epidemic. This theory posits that there is an inverse relationship between a bank's non-performing loans (NPL) and its profitability, suggesting that as the NPL increases, the bank's profitability decreases. Research findings that contradict this notion may indicate that typical commercial banks are capable of efficiently managing their credit risk. This is evidenced by the average non-performing loan (NPL) ratio of 1.47 percent as mandated by the standards of Bank Indonesia.

The findings of this study align with the research conducted by Yolanda (2019) and Idrus (2018), which indicate that non-performing loans (NPLs) did not impact profitability prior to the Covid-19 pandemic. However, the results of this study are inconsistent with the findings of Hidayatullah & Wahyuni (2018) and Azmy (2018), who demonstrated that NPLs had a negative and significant influence on profitability before Covid-19. Additionally, the research conducted by Gazi et al. (2022) revealed that NPLs had a negative and significant impact on profitability both before and during the Covid-19 pandemic.

LDR variable t-test results during COVID-19

The test results indicate that the Loan to Deposit ratio (LDR) has a significance value of 0.16, which exceeds the threshold of 0.05. Therefore, the

hypothesis is rejected, suggesting that LDR does not have a significant impact on banking Return on Equity (ROE) during the Covid-19 period. This outcome contradicts the prevailing notion that posits a positive correlation between the Loan-Deposit Ratio (LDR) and a bank's profitability. The bank's prudential principle in managing bank liquidity risk ensures that alterations to the LDR ratio have no impact on the profitability, whether it increases or decreases.

The findings of this study align with the findings of previous research undertaken by Yolanda (2019) and Hidayatullah & Wahyuni (2018), which indicate that the Loan-Deposit Ratio (LDR) has little impact on profitability. The research conducted by Gazi et al. (2022) provides evidence that LDR does not have an impact on profitability both before and during the COVID-19 pandemic. However, these findings contradict the results of previous studies conducted by Idrus (2018) and Azmy (2018), which indicate that LDR has a significant negative effect on profitability prior to the Covid-19 outbreak. The number is 19.

OER variable t-test results during COVID-19

The test findings yielded a significance value of 0.00 for OER (Operational Efficiency Ratio), which is less than 0.05. Therefore, the hypothesis is accepted, indicating that OER has a negative and significant impact on banking ROE during the Covid-19 pandemic. The relationship between OER and bank ROE demonstrates that an increase in OER leads to a fall in bank ROE. This statement supports the hypothesis that there is an inverse relationship between a bank's OER (Operating Expense Ratio) and its profitability. In other words, as the OER increases, the bank's profitability decreases.

The findings of this study align with the research undertaken by Idrus (2018) and Kumar et al. (2020), indicating that the OER ratio had a detrimental and statistically significant impact on profitability prior to the Covid-19 pandemic. The findings of this study are corroborated by the research carried out by Wahyudi (2020), which indicates that OER had a detrimental and substantial impact during the Covid-19 pandemic. However, this study contradicts the findings of Trisia & Rofi (2022), which demonstrate that OER had no influence on profitability prior to the Covid-19 outbreak.

Test the Difference

BI Rate before and during COVID-19

The results of the various tests conducted on the BI Rate variable using the Wilcoxon Signed Rank Test yielded a Wilcoxon probability value of 0.00, which is less than the significance level of 0.05. Therefore, it can be inferred that there is a significant disparity in the BI Rate variable before and during the Covid-19 period. Prior to the COVID-19 pandemic, the average BI Rate stood at 5.35%. However, during the pandemic, it decreased to 3.80%. This reduction can be attributed to Bank Indonesia's implementation of a loose monetary policy, which involved decreasing the BI Rate since the start of 2020. Bank Indonesia has reduced the BI Rate on five occasions, specifically in February, March, June, July, and November 2020 (Bank Indonesia, 2021).

Inflation before and during COVID-19

The results of the various tests conducted on the inflation variable using the Wilcoxon Signed Rank Test yielded a Wilcoxon probability value of 0.00, which is less than the significance level of 0.05. Therefore, it can be concluded that there is a significant disparity in the inflation variable before and during the Covid-19 pandemic. Prior to the COVID-19 pandemic, the average inflation rate stood at 2.97%. However, during the pandemic, it dropped to 1.55%. This decline can be attributed to the combination of poor domestic demand and sufficient supply, which resulted in low Consumer Price Index (CPI) inflation.

Bank Indonesia's policy in guiding the development of inflation has also played a role in preserving CPI inflation. Geographically, the low Consumer Price Index (CPI) inflation is upheld by the sustained low inflation in all areas. Bank Indonesia's decision to decrease the BI Rate was implemented in a cautious and gradual manner, considering the anticipated low inflation, the need to preserve the competitiveness of domestic financial assets and external stability, and the aim to stimulate economic recovery (Bank Indonesia, 2021).

Exchange Rates before and during COVID-19

The results of the various tests conducted on exchange rate variables using the Wilcoxon Signed Rank Test yielded a Wilcoxon probability value of 0.00, which is less than the significance level of 0.05. Therefore, it can be inferred that there is a significant disparity in the exchange rate variable before and during the Covid-19 period. Prior to the onset of the COVID-19 pandemic, the average exchange rate between the US dollar (USD) and the Indonesian Rupiah (IDR) stood at IDR 14,565. However, throughout the pandemic, the exchange rate strengthened to IDR 14,487. This was a result of Bank Indonesia's efforts to implement a stabilization policy aimed at maintaining the value of the Rupiah and reinforcing its overall strategy. Financial transactions.

The policy of stabilizing the currency rate is implemented by following market fundamentals and mechanisms through triple intervention. This intervention occurs in the spot market, the Domestic Non-Deliverable Forward (DNDF) market, and by acquiring SBN from the secondary market. This policy is further reinforced by sufficient foreign exchange reserves and bilateral swap cooperation with other financial authorities, as well as repo lines, including with the US New York Fed and BIS, in order to enhance secondary defense measures. Efforts to enhance cooperation in Local Currency Settlement (LCS) are also undertaken with neighboring countries. In order to foster optimism and bolster the Rupiah stabilization policy, Bank Indonesia engages in extensive communication with investors, rating agencies, and both local and foreign market participants. This communication aims to cultivate optimism and garner support for the policy of stabilizing the exchange rate (Bank Indonesia, 2021).

CAR before and during COVID-19

The Wilcoxon Signed Rank Test was used to analyze the difference in the CAR variable. The test yielded a Wilcoxon probability value of 0.02, which is below the significance level of 0.05. Therefore, it can be stated that there is a statistically significant difference in CAR before and during COVID-19. Before the COVID-19 pandemic, the average Capital Adequacy Ratio (CAR) was 22.75%.

However, during COVID-19, it increased to 24.62%. This increase in CAR was primarily due to a decrease in Risk-Weighted Assets (RWA) during COVID-19, which contracted by -3.27% (year-on-year) compared to a growth of 6.50% (year-on-year) before COVID-19. This decrease in RWA was in line with the contraction in credit, as reported by the Financial Services Authority in 2020.

NPL before and during COVID-19

The results of the various NPL variable tests, conducted using the Wilcoxon Signed Rank Test, yielded a Wilcoxon probability value of 0.87. This value above the significance level, indicating that there is no statistically significant difference in NPL before and during the COVID-19 period. Before the COVID-19 pandemic, the average non-performing loan (NPL) rate was 1.51%. However, during the pandemic, it decreased slightly to 1.47%. This was due to the government's efforts, facilitated by the OJK (Financial Services Authority), to provide credit concessions and relief to borrowers who were impacted by COVID-19. These measures were implemented through OJK Regulation no. 11/POJK.03/2020, which aimed to stimulate the national economy and mitigate the effects of the coronavirus spread. This regulation will be in force from March 13, 2020, to March 31, 2021.

LDR before and during COVID-19

The Wilcoxon Signed Rank Test was conducted to analyze the impact of different LDR factors. The test yielded a Wilcoxon probability value of 0.00, which is lower than the significance level of 0.05. Therefore, it can be inferred that there is a significant difference in the LDR variable before and during Covid-19. Before the COVID-19 pandemic, the average Loan-to-Deposit Ratio (LDR) was 89.48%. However, during the pandemic, it decreased to 78.88%. This decline was primarily due to reduced demand for credit as a result of the economic slowdown caused by COVID-19. Additionally, banks became more cautious in distributing credit due to concerns about high credit risk, as reported by the Financial Services Authority in 2020.

OER before and during COVID-19

The results of the various tests conducted on the OER variable using the Wilcoxon Signed Rank Test yielded a Wilcoxon probability value of 0.32, which exceeds the significance level of 0.05. Therefore, it can be inferred that there is no statistically significant difference in the OER variable before and during the Covid-19 period. The pre-COVID-19 average OER stood at 83.57% and experienced a modest improvement to 85.24% during the COVID-19 pandemic. This can be attributed to the implementation of the work-from-home (WFH) policy and reduced service hours, which resulted in operational cost savings, despite the decline in bank revenues. According to kontan.co.id, banks implement cost efficiency to reduce overtime costs, transportation costs, and expenses related to client visits. These measures include reducing interest rates on deposits and cutting back on activities like as employee training, business travels, and customer gatherings.

ROE before and during COVID-19

The results of the various tests conducted on the ROE variable using the Wilcoxon Signed Rank Test yielded a Wilcoxon probability value of 0.04, which is lower than the significance level of 0.05. Therefore, it can be inferred that there is a statistically significant difference in ROE before and during the Covid-19 pandemic. Before the Covid-19 outbreak, the average return on equity (ROE) stood at 8.71%. However, during the pandemic, it declined to 7.14%. This loss was mostly due to a contraction in profits of -30.98% (year-over-year) in 2020, in contrast to a growth of 4.28% (year-over-year) in 2019. The banking OER ratio had an increase from 79.39% to 86.58% compared to the previous year. The rise in BOPO was driven by a decrease in operational income growth, which was reported to have increased by just 5.97% (year over year) compared to a growth of 12.87% (year over year) in the previous year. The nett interest income decreased by 2.21% (year over year) due to a decrease in credit disbursement and an increase in deposits. The NIM decreased from 4.91% to 4.45% during the corresponding period of the prior year (Financial Services Authority, 2020).

CONCLUSION

The findings from the data analysis and testing indicate that the BI Rate, Inflation, Exchange Rate, NPL, and LDR do not have any impact on ROE, both prior to and during the Covid-19 period. However, it is seen that CAR and OER have a noteworthy negative affect on ROE, both before and during the Covid-19 period. The findings of various tests indicate notable disparities in the BI Rate, Inflation, Exchange Rate, CAR, and LDR between the pre-COVID-19 period and the during-COVID-19 period. However, there are no significant disparities in NPL and OER, either before or during COVID-19.

Companies must prioritise their ability to generate profits, particularly in times of unexpected events like COVID-19. There are notable disparities in profitability before and during the pandemic, despite the active involvement of the government and Bank Indonesia in stabilising indicators. The economic conditions are characterised by factors such as reduced interest rates, low inflation, and an improving exchange rate of the rupiah. For future researchers, it is recommended to broaden the range of research subjects and incorporate additional factors that were not analysed in this study, such as ROA (Return on Assets), NIM (Nett Interest Margin), CIR (Cost to Income Ratio), and so on.

ADVANCED RESEARCH

The research period for this study spanned 2 years, specifically from the first quarter of 2019 to the first quarter of 2020 (pre-COVID-19) and from the second quarter of 2020 to the second quarter of 2021 (during COVID-19). This study exclusively incorporates three independent variables derived from external factors (BI Rate, Inflation, and Exchange Rate) and four independent variables derived from internal factors (CAR, NPL, LDR, and BOPO) to assess bank profitability (ROE), despite the existence of numerous other variables that impact profitability.

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