

Financial Performance with Interest Rate as a Moderating Variable on Stock Returns

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Abstract

This study aims to analyze the effect of financial performance as measured using the Capital Adequacy Ratio (CAR), Loan to Deposit Ratio (LDR), and Non-Performing Loan (NPL) on stock returns with interest rates as a moderating variable in commercial banks listed on the Indonesia Stock Exchange for the 2019 -2024 period. The data used is quantitative, derived from the company's financial statements and related macroeconomic data. The research population is banking sector listed on the IDX for the 2019-2024 period, with the sample selected using purposive sampling method. Data were analyzed using multiple linear regression and Moderated Regression Analysis (MRA). The results showed that CAR has a significant positive effect on stock returns, LDR has no significant effect on stock returns, and NPL has a significant negative effect on stock returns. Interest rates proved to moderate the relationship between CAR and NPL on stock returns, but did not moderate the relationship between LDR on stock returns. The research implications emphasize the importance of capital management and asset quality in improving the performance of banking stocks, as well as the need for consideration of macroeconomic factors such as interest rates in making investment decisions.

Keywords: CAR, LDR, NPL, Stock Return, Interest Rate, Moderation

1. Introduction

The banking sector is one of the vital sectors in the Indonesian economy that acts as a financial intermediary. The performance of the banking sector not only affects the stability of the financial system, but is also an indicator for investors in making investment decisions in the capital market. In the context of investment, stock returns are the main parameter considered by investors as a form of return on the investment made. The 2019-2024 period is an interesting time span to study because it covers the phases before, during, and after the COVID-19 pandemic which put significant pressure on the banking sector. Bank Indonesia noted that in 2020, bank credit growth contracted to -2.41% (yoy), while in 2021 it began to show recovery with credit growth of 5.24% (Bank Indonesia, 2022). The development of sectoral stock trading in 2023 in companies listed on the Indonesia Stock Exchange, as published by the Financial Services Authority (OJK), shows that the most dominant sectors are the financial sector, consumer industry, infrastructure, and trade. The dominance of these sectors can be seen from the total market capitalization on the Indonesia

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Stock Exchange, both in 2023 and in previous years. (ojk.go.id, 2022). Return on equity investment results from profits or dividends and capital gains (losses). Income is revenue that reflects cash flows or income earned over time. Capital gains (losses) can be interpreted as changes in security prices. Return is the result of investment. According to (Jogiyanto, 2014: 263) stock returns are divided into two parts, namely realized returns and expected returns. Realized returns have occurred. Profitability is important for measuring company performance and as a basis for determining future returns and risks. Expected returns are returns that are expected in the future and are still uncertain.

This condition has implications for the fluctuations in banking stock returns which are quite dynamic. The financial performance of banks can be measured using various financial ratios. Capital Adequacy Ratio (CAR) is a capital adequacy ratio that shows the bank's ability to provide funds for business development purposes and accommodate the risk of loss. Loan to Deposit Ratio (LDR) describes the bank's ability to repay withdrawals by depositors by relying on loans as a source of liquidity. Non-Performing Loan (NPL) reflects the credit risk faced by the bank. These three ratios are important parameters in assessing bank health. In addition to internal banking factors, external factors such as interest rates can also affect stock returns. Changes in interest rates can moderate the relationship between banking financial performance and stock returns. When benchmark interest rates increase, banks tend to increase lending rates which can affect profitability and ultimately impact stock returns. Conversely, a decrease in interest rates can increase loan demand and potentially improve bank performance. An increase in the BI Rate will be followed by an increase in deposit rates and lending rates. An increase in lending rates can reduce credit demand, which in turn can affect bank profitability and ultimately impact stock returns. Conversely, when interest rate decreases, Bank Indonesia tends to lower the BI Rate, which can increase credit demand and potentially improve bank performance.

Several previous studies have shown mixed results. Research by Ardiansyah et al. (2021) found that CAR has a significant positive effect on bank stock returns, while Kurniadi's research (2022) showed different results. Regarding LDR, Wijaya and Sihombing's research (2020) shows a positive effect on stock returns, but Firdaus and Handayani's research (2023) did not find a significant effect. For NPL, Rahman and Khairunnisa's research (2022) found a significant negative effect on banking stock returns. Based on this background, this study aims to analyze the effect of financial performance as measured using CAR, LDR, and NPL on stock returns with interest rates as a moderating variable in commercial banks listed on the Indonesia Stock Exchange for the 2019-2024 period.

2. Literature Review

Signaling theory was first proposed by Spence (1973) and later developed by Ross (1977). This theory explains that company management provides signals to investors through financial information to reduce information asymmetry. In the context of banking, the publication of financial ratios such as CAR, LDR, and NPL is a signal for investors regarding the condition and prospects of the bank. Positive signals will encourage investors to buy shares which can increase stock returns. Signaling theory was first proposed by Spence (1973) and later developed by Ross (1977). Market efficiency theory was first introduced by Fama (1970). This theory states that in an efficient market, security prices fully reflect all available information. In an efficient market, investors cannot consistently obtain returns above the average market return after adjusting for risk.

Market efficiency theory is categorized into three forms: weak form efficiency, semi-strong form efficiency, and strong form efficiency. In weak form efficiency, security prices reflect all historical information. In semi-strong form efficiency, security prices reflect all publicly available information. In strong form efficiency, security prices reflect all information, both public and private. Stock return is the result obtained from stock investment which consists of capital gain or loss and yield Jogiyanto (2017). Capital gain or loss is the difference between the current investment price and the investment price in the previous period. Yield is a percentage of periodic cash receipts on the investment price in a certain period. According to Tandelilin (2017), stock return is one of the factors that motivates investors to invest and is also a reward for the courage of investors to bear the risk of investment they make. Sources of return on investment consist of two main components, namely yield and capital gain (loss). Yield is a component of return that reflects cash flow or income earned periodically from an investment. For stocks, yield is the dividend percentage of the share price in the previous period. Meanwhile, capital gain (loss) is an increase (decrease) in the price of a security that can provide profit (loss) for investors.

In the context of the capital market, market efficiency theory has implications for the relationship between financial performance and stock returns. In an efficient market, information about the company's financial performance will be immediately reflected in the stock price. Companies with good financial performance will be valued higher by the market, which is reflected in higher stock prices. Conversely, companies with poor financial performance will be valued lower by the market, which is reflected in lower stock prices. This theory explains that company management provides signals to investors through financial information to reduce information asymmetry. In the context of banking, the publication of financial ratios such as CAR, LDR, and NPL is a signal for investors regarding the condition and prospects of the bank. Positive signals will encourage investors to buy

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shares which can increase stock returns. Stock return is the result obtained from stock investment which consists of capital gain or loss and yield Jogiyanto (2017).

In the context of banking, the publication of financial ratios such as CAR, LDR, and NPL is a form of signal given by management to investors. A high CAR indicates that the bank has sufficient capital to face various risks. A good LDR indicates that the bank's intermediary function is running effectively. Meanwhile, a low NPL indicates that the bank has good credit risk management. These signals are expected to be captured by investors, which in turn can affect their investment decisions. According to signaling theory, investors will respond positively to good information (positive signals) and respond negatively to bad information (negative signals). Positive signals will encourage investors to buy shares, which can increase share prices and ultimately increase stock returns. Conversely, negative signals will encourage investors to sell shares, which can decrease share prices and ultimately reduce stock returns.

Capital Adequacy Ratio (CAR) is a capital adequacy ratio that shows the bank's ability to provide funds for business development purposes and accommodate the risk of fund losses due to bank operations Dendawijaya (2021). CAR shows the extent to which the decline in bank assets can still be covered by the bank's available equity. The higher the CAR, the better the bank's ability to bear the risk of each risky credit or productive asset.

Ardiansyah et al. (2021) in their research found that CAR has a significant positive effect on stock returns. Similar results were also found by Suciati (2022) who examined the effect of financial performance on stock returns of commercial banks listed on the IDX. A high CAR indicates that the bank has sufficient capital to face various risks, including credit risk, market risk, and operational risk. Banks with high CAR are considered more resistant to economic shocks, which can increase investor confidence. Increased investor confidence can increase share buying demand, which in turn can increase share prices and ultimately increase stock returns.

Loan to Deposit Ratio (LDR) is the ratio between the amount of credit provided by the bank and the funds received by the bank (Dendawijaya, 2021). LDR shows the bank's ability to repay withdrawals by depositors by relying on loans provided as a source of liquidity. Wijaya and Sihombing (2020) in their research found that LDR has a significant positive effect on banking stock returns. These results indicate that an increase in LDR, which indicates an increase in the bank's intermediary function, is viewed positively by investors. However, research by Firdaus and Handayani (2023) did not find a significant influence between LDR and banking stock returns. A good LDR indicates that the bank's intermediary function is running effectively. Banks with good LDR are considered to have good management in managing liquidity, which can increase investor

confidence. Increased investor confidence can increase share buying demand, which in turn can increase share prices and ultimately increase stock returns.

Non-Performing Loan (NPL) is a ratio that shows the ability of bank management to manage non-performing loans (Ismail, 2020). NPL is the ratio between total non-performing loans and total loans granted to debtors. NPL reflects credit risk, where the higher the NPL indicates the higher the credit risk faced by the bank. Rahman and Khairunnisa (2022) in their research found that NPL has a significant negative effect on bank stock returns. These results indicate that an increase in non-performing loans is seen as a negative signal by investors. This is in line with Yuliana's research (2023) which also found a negative effect of NPL on stock returns. A low NPL indicates that the bank has good credit risk management. Banks with low NPL are considered to have a good ability to manage credit risk, which can increase investor confidence. Increased investor confidence can increase share buying demand, which in turn can increase share prices and ultimately increase stock returns.

Putra and Dewi (2021) in their research on the moderating role of interest rates in the relationship between financial performance and bank stock returns found that interest rates moderate the relationship between CAR and stock returns, but do not moderate the relationship between LDR and stock returns. Meanwhile, Anggraini (2023) found that interest rates moderate the effect of NPL on bank stock returns. Based on the theoretical basis and the results of previous research, the following framework can be prepared Capital Adequacy Ratio (CAR) reflects the bank's ability to provide funds for business development purposes and accommodate the risk of loss. The higher the CAR, the better the bank's ability to face risks, which can increase investor confidence and have implications for increasing stock returns.

H₁: Capital Adequacy Ratio (CAR) has a positive effect on stock returns in commercial banks listed on the Indonesia Stock Exchange for the 2019-2024 period.

Loan to Deposit Ratio (LDR) describes the bank's ability to extend credit from the funds raised. An optimal LDR reflects the bank's intermediary function that is running well, which can increase profitability and ultimately increase stock returns.

H₂: Loan to Deposit Ratio (LDR) has a positive effect on stock returns in commercial banks listed on the Indonesia Stock Exchange for the 2019-2024 period.

Non-Performing Loan (NPL) shows the bank's ability to manage non-performing loans. The higher the NPL, the higher the credit risk faced by the bank, which can reduce profitability and have implications for decreasing stock returns.

H₃: Non-Performing Loan (NPL) has a negative effect on stock returns in commercial banks listed on the Indonesia Stock Exchange for the 2019-2024 period.

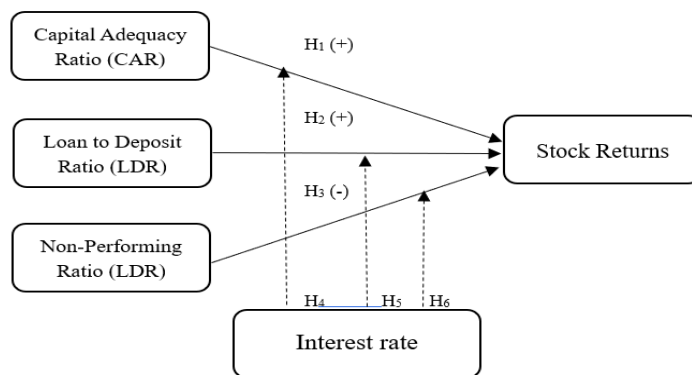
Interest rates as a moderating variable can strengthen or weaken the relationship between CAR, LDR, and NPL to stock returns. Changes in interest rates can affect banking policies in managing capital, lending, and managing non-performing loans, which in turn affect stock returns.

H₄: Interest rates moderate the effect of Capital Adequacy Ratio (CAR) on stock returns in commercial banks listed on the Indonesia Stock Exchange for the period 2019-2024.

H₅: The interest rate moderates the effect of Loan to Deposit Ratio (LDR) on stock returns in commercial banks listed on the Indonesia Stock Exchange for the 2019-2024 period.

H₆: The interest rate level moderates the effect of Non-Performing Loan (NPL) on stock returns in commercial banks listed on the Indonesia Stock Exchange for the 2019-2024 period.

Figure 1. Research Paradigm



3. Research Method

This study uses a quantitative approach with the aim to empirically examine the effect of financial performance as measured by Capital Adequacy Ratio (CAR), Loan to Deposit Ratio (LDR), and Non-Performing Loan (NPL) on stock returns, with Interest Rate as a moderating variable. This method was chosen because it is appropriate to explain the relationship between variables through statistical analysis. This research is causal, which aims to determine the direct and indirect effects between variables through regression tests and moderation tests (Moderated Regression Analysis). The population in this study were all conventional commercial banks listed on the Indonesia Stock Exchange (IDX) during the period 2019 to 2024. The sampling technique used

purposive sampling. Based on these criteria, a sample of 25 conventional commercial banks was obtained. The independent variables in this study are financial performance indicators consisting of CAR, LDR, and NPL. CAR describes the bank's ability to meet long-term obligations and bear the risk of loss Gitman & Zutter (2015).

Meanwhile, the moderating variable used in this study is the Interest Rate, which is a macroeconomic indicator that reflects the general increase in prices of goods and services. Interest Rate can affect company performance and investor expectations of the resulting returns, so it has the potential to moderate the relationship between financial performance and stock returns (Mankiw, 2020). The data analysis technique used is multiple linear regression to determine the effect of CAR, LDR, and NPL on stock returns. Furthermore, to test the role of Interest Rate as a moderating variable, Moderated Regression Analysis (MRA) is used by adding the interaction between each independent variable and the moderating variable into the regression model.

4. Finding and Discussion

Descriptive statistics provide an overview of the variables used in the study, namely stock returns, CAR, LDR, NPL, and interest rates. The results of descriptive statistics are presented in Table 1 below:

Table 1. Descriptive Statistics Results

	RETURNS	CAR	NPL	LDR	INTEREST
Mean	0.1205	0.1205	2.8900	87.6200	4.4200
Maximum	0.9137	35.7700	7.2500	115.3100	5.7500
Minimum	-0.4725	12.4300	0.5300	65.4700	3.5000
Std. Dev.	0.2643	4.9200	1.3709	10.5400	0.6800
Observations	150	150	150	150	150

Stock Return (Y) has a minimum value of -0.4725 which occurred at PT Bank KB Bukopin Tbk (BBKP) in 2020, a maximum value of 0.9137 which occurred at PT Bank Jago Tbk (ARTO), an average value of 0.1205, and a standard deviation of 0.2643. The positive average value of stock returns indicates that in general, banking stocks provide positive returns during the study period.

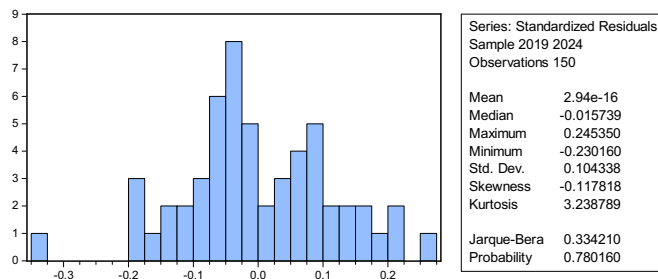
Capital Adequacy Ratio (X1) has a minimum value of 12.43% which occurred at PT Bank KB Bukopin Tbk (BBKP), a maximum value of 35.77% which occurred at PT Bank Nationalnobu Tbk (NOBU), an average value of 22.15%, and a standard deviation of 4.92%. The average CAR value

of 22.15% indicates that in general, the commercial banks in the research sample have good capital adequacy, far above the minimum requirement set by the regulator of 8%.

Loan to Deposit Ratio (X2) has a minimum value of 65.47% which occurred at PT Bank Neo Commerce Tbk (BBYB), a maximum value of 115.31% which occurred at PT Bank Danamon Indonesia Tbk (BDMN), an average value of 87.62%, and a standard deviation of 10.54%. The average LDR value of 87.62% indicates that in general, the commercial banks that make up the research sample have a fairly good intermediary function, within the ideal LDR range set by the regulator of 78-92%.

Non-Performing Loan (X3) has a minimum value of 0.53% which occurred at PT Bank Jago Tbk (ARTO), a maximum value of 7.25% which occurred at PT Bank KB Bukopin Tbk (BBKP), an average value of 2.89%, and a standard deviation of 1.37%. The average NPL value of 2.89% indicates that in general, commercial banks that are the research sample have a fairly good quality of productive assets, still below the maximum NPL limit set by the regulator of 5%. The Interest Rate (BI 7-Day Reverse Repo Rate) has a minimum value of 3.50%, a maximum value of 5.75%, an average value of 4.42%, and a standard deviation of 0.68%. Fluctuations in interest rates indicate changes in monetary policy during the study period, especially in response to the global economic conditions.

Table 2. Normality Test Results



Based on the results of the normality test output above, it can be seen that the probability value is 0.78 or more than 0.05, meaning that the data in this study are normally distributed.

Panel Data Regression Model Selection. In panel data regression, there are three approaches that can be used, namely the Common Effect Model (CEM), Fixed Effect Model (FEM), and Random Effect Model (REM). To determine the most appropriate approach, the Chow test and the Hausman test were conducted. Multiple linear regression analysis is used to test the effect of CAR, LDR, and NPL on stock returns. The results of multiple linear regression analysis are presented in Table 3 below:

Table 3. Chow Test Results

Effects Test	Statistic	d.f.	Prob.
Cross-section F	2.181122	(8,25)	0.0001
Cross-section Chi-square	9.652167	25	0.0005

The results of the Chow test above, found that the Prob. value of the Cross Section Chi- square is $0.0000 < 0.05$ which means H1 is accepted and H0 is rejected, which is the fixed effect model is more appropriate to use than the common effect. Then the estimation model used in the chow test is the fixed effect model (FEM).

Table 4. Chow Test Results

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	89.575488	25	0.0004

The results of the chow test if the Prob. value is $0.0000 < 0.05$, which means H1 is accepted and H0 is rejected, which means that the fixed effect model is more appropriate to use than the random effect model. So the estimation model used in the hausman test in this study is the fixed effect model (FEM).

Table 5. Linear Regression Analysis

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	3.992743	0.541706	7.370676	0.0000
CAR	0.063000	0.061098	-3.192269	0.0070
LDR	0.008000	0.027976	-14.23831	0.2620
NPL	-0.021000	0.004922	2.234588	0.7630
Interest_Rate	0.023000	0.080673	-1.384152	0.8990
CAR_Interest_Rate	-0.010000	0.074493	0.493489	0.0490
LDR_Interest_Rate	-0.001000	0.029252	3.736435	0.4660
NPL_Interest_Rate	-0.007000	0.038668	1.892291	0.0330

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R-squared	0.389042	Mean dependent var	0.574483
Adjusted R-squared	0.355070	S.D. dependent var	0.178354
S.E. of regression	0.076698	Sum squared resid	0.276484
F-statistic	12.87400	Durbin-Watson stat	2.053882
Prob(F-statistic)	0.000000		

$$\text{RETURNS} = 3.992743 + 0.063000 \text{ CAR} + 0.008000 \text{ LDR} - 0.021000 \text{ NPL} + 0.023000 \text{ INTERESTRATE} - 0.010000 \text{ INTERESTRATE} - 0.001000 \text{ LDR_INTERESTRATE} - 0.007000 * \text{NPL_INTERESTRATE}$$

Based on the table above, it is found that the Prob. (F-statistic) value is 0.000000 < 0.05, so it can be stated that all independent variables, namely CAR, LDR, NPL and Interest rates are feasible to use in this study. CAR has a positive coefficient (0.063000) and is significant (p-value = 0.0070), indicating that an increase in the bank's capital adequacy ratio is associated with improved financial performance. This is consistent with the theory that banks with strong capital have better capacity to manage risk and capitalize on investment opportunities, resulting in higher profitability. A high CAR also reflects the bank's resilience to economic shocks and ability to absorb losses. LDR with a coefficient of 0.008000 shows no statistical significance (p-value = 0.2620). This indicates that the efficiency of liquidity management (the ratio of total loans to total deposits) has no significant direct impact on financial performance in this model. This finding may reflect the existence of an optimal limit for LDR, where too high or too low values may have a negative impact. NPL has a negative coefficient (-0.021000) but is not statistically significant (p-value = 0.7630). Although the direction of the relationship is in line with the theoretical expectation that non-performing loans reduce financial performance, the insignificance of this relationship suggests that the effect of NPL may not be linear or influenced by other factors. Interest rate with a coefficient of 0.023000 does not show a significant effect individually (p-value = 0.8990). However, the role of interest rates is more visible as a moderating variable that affects the relationship between other independent variables and the dependent variable.

Moderating Effect of Interest Rate. The coefficient is negative (-0.010000) and significant 0.0490 indicating that the positive effect of CAR on financial performance is weakened at higher interest rates. This may be because higher interest rates increase the cost of capital and reduce banks' profit margins. LDR_Interest_Rate: The negative (-0.001000) but insignificant coefficient 0.4660 indicates that the moderating effect of interest rate on the relationship between LDR and

financial performance cannot be confirmed in this model. The coefficient is negative (-0.007000) and significant 0.033 indicating that the negative effect of NPL on financial performance is stronger at higher interest rates. This makes sense as higher interest rates increase the burden of loan repayments, which may exacerbate the problem of bad debts.

The Effect of Capital Adequacy Ratio (CAR) on Stock Return. The results of hypothesis testing show that CAR has a significant positive effect on stock returns. This means that the higher the CAR, the higher the stock return. This result is in line with signaling theory where a high CAR provides a positive signal to investors regarding the bank's ability to deal with risk, which can increase investor confidence and have implications for increasing stock returns. This finding is consistent with the research of Ardiansyah et al. (2021) and Suciati (2022) who found that CAR has a significant positive effect on banking stock returns. Banks with high CAR are considered to have a better ability to deal with the risk of loss, so investors tend to give higher valuations to the bank's shares. During the 2019-2024 research period, especially during the COVID-19 pandemic, banks with high CAR were able to survive and even show better performance than banks with low CAR. This is reflected in the higher stock returns of banks with high CAR. For example, PT Bank Central Asia Tbk (BBCA) with an average CAR of 24.5% during the study period was able to provide an average stock return of 0.27%. The results of this study also confirm the findings of Alhamditia and Heykal (2023) who found that CAR has a significant positive effect on stock returns in the banking sector. This is because CAR is one of the main indicators in assessing bank health. Banks with high CAR are considered healthier and more resistant to various risks, which can increase investor confidence. The positive effect of CAR on stock returns can also be explained by the fact that CAR is one of the indicators of bank profitability. Banks with high CAR have more flexibility in allocating their funds to profit-generating activities, which in turn can increase bank profitability. Increased profitability can lead to increased dividends distributed to shareholders, which in turn can increase stock returns. In addition, banks with high CAR also tend to have better risk management capabilities. This is because CAR reflects the bank's ability to bear the risk of losses arising from its activities and to support operational growth. Better risk management can increase investor confidence, which in turn can increase share buying demand and ultimately increase stock returns.

The Effect of Loan to Deposit Ratio (LDR) on Stock Returns. The results of hypothesis testing show that LDR has no significant effect on stock returns. This means that the high and low LDR does not have a significant impact on stock returns. This result is not in line with market efficiency theory, which states that information about the financial performance of banks will be reflected in stock prices. This finding is consistent with the research of Firdaus and Handayani (2023) who did not find a significant influence between LDR and bank stock returns. This can be explained that

investors do not make LDR the main consideration in making investment decisions in banking stocks. Investors tend to consider other factors such as profitability (ROA, ROE) or the quality of earning assets (NPL) in making investment decisions. In addition, during the 2019-2024 research period, there were quite dynamic fluctuations in credit demand due to the COVID-19 pandemic and global economic conditions. At the beginning of the pandemic, credit demand experienced a significant decline, which had implications for the decline in LDR. However, this decline in LDR is not always followed by a decline in stock returns, as investors consider more about the bank's ability to adapt to changing economic conditions. This study also found no significant effect of LDR on stock returns which confirms the findings of Kurniawan and Suryani (2024) who found that LDR has no significant effect on stock returns in the banking sector. This is because LDR is seen as a double-edged sword for banks. On one hand, a high LDR indicates that the bank is maximizing its intermediary function, which can increase profitability. On the other hand, a too high LDR can increase liquidity risk, which can reduce investor confidence. Furthermore, the insignificant effect of LDR on stock returns can also be explained by the fact that the ideal LDR range is relatively wide, which is 78-92% according to Bank Indonesia regulations. This means that as long as the bank's LDR is within this range, it is considered to have good liquidity management. In this study, the average LDR of the studied banks was 87.62%, which is within the ideal range. Therefore, variations in LDR within this range may not have a significant impact on stock returns.

The Effect of Loan to Deposit Ratio (LDR) on Stock Returns. The results of hypothesis testing show that NPL has a significant negative effect on stock returns. This means that the higher the NPL, the lower the stock return. This result is in line with signaling theory, where a high NPL provides a negative signal to investors regarding the bank's ability to manage credit risk, which can reduce investor confidence and have implications for decreasing stock returns. This finding is consistent with the research of Rahman and Khairunnisa (2022) and Yuliani (2023) who found that NPL has a significant negative effect on banking stock returns. Banks with high NPL are considered to have poor credit risk management, so investors tend to give lower valuations to the bank's shares. During the 2019-2024 research period, especially during the COVID-19 pandemic, many banks experienced an increase in NPL due to the decline in the ability of debtors to repay loans. Banks with high NPL tend to show poorer performance than banks with low NPL. This is reflected in the lower stock returns of banks with high NPL. For example, PT Bank KB Bukopin Tbk (BBKP) with an average NPL of 5.6% during the study period only provided an average stock return of -0.15%. The results of this study also confirm the findings of Pratama and Santoso (2023) who found that NPL has a significant negative effect on stock returns in the banking sector. This is because NPL directly affects bank profitability. The higher the NPL, the higher the bank's provisions for non-performing loans, which can reduce bank profitability. Decreased profitability

can lead to decreased dividends distributed to shareholders, which in turn can reduce stock returns. The negative effect of NPL on stock returns can also be explained by the fact that NPL is one of the main indicators in assessing bank health. Banks with high NPL are considered less healthy and have higher credit risk, which can reduce investor confidence. Decreased investor confidence can reduce share buying demand, which in turn can reduce stock returns.

The Moderating Effect of Interest Rate on the Relationship between CAR and Stock Returns.

The results of hypothesis testing show that Interest Rate significantly moderates the relationship between CAR and stock returns. The negative coefficient indicates that Interest Rate weakens the positive effect of CAR on stock returns. This means that when Interest Rate is high, the positive effect of CAR on stock returns will be weakened. This finding is consistent with the research of Putra and Dewi (2021) who found that Interest Rate moderates the relationship between CAR and bank stock returns. This can be explained that when Interest Rate is high, Bank Indonesia as the monetary authority tends to raise the benchmark interest rate (BI Rate) to control Interest Rate. An increase in the BI Rate will be followed by an increase in deposit rates and lending rates. An increase in lending rates can reduce credit demand, which in turn can affect bank profitability and ultimately impact stock returns. In addition, high Interest Rate can also reduce the real value of the bank's capital, which can affect the bank's ability to deal with risk. This can reduce investor confidence, which in turn can reduce stock returns. Therefore, even though the bank has a high CAR, if Interest Rate is also high, the positive effect of CAR on stock returns will be weakened. This study also found that Interest Rate moderates the relationship between CAR and stock returns, confirming the findings of Wahyuni et al. (2023) who found that macroeconomic factors, including Interest Rate, can moderate the relationship between financial performance and stock returns in the banking sector. This is because Interest Rate can affect investor behavior in the capital market. When Interest Rate is high, investors tend to be more cautious in making investment decisions, which can affect the relationship between financial performance and stock returns.

The Moderating Effect of Interest Rate on the Relationship between LDR and Stock Returns.

The results of hypothesis testing show that Interest Rate does not significantly moderate the relationship between LDR and stock returns. This means that Interest Rate does not affect the strength or direction of the relationship between LDR and stock returns. This finding is consistent with the research of Putra and Dewi (2021) who did not find a moderating role of Interest Rate in the relationship between LDR and bank stock returns. This can be explained that the effect of LDR on stock returns is not significant, as shown by the results of hypothesis testing for H2. Therefore, it is logical if Interest Rate as a moderating variable also does not have a significant effect on this relationship. In addition, the insignificant moderating effect of Interest Rate on the relationship

between LDR and stock returns can also be explained by the fact that Interest Rate affects both sides of the bank's balance sheet relatively evenly. On one hand, Interest Rate can reduce the real value of loans provided by banks. On the other hand, Interest Rate can also reduce the real value of deposits placed by the public at the bank. Therefore, the net effect of Interest Rate on the relationship between LDR and stock returns is relatively neutral. This study also found no significant moderating effect of Interest Rate on the relationship between LDR and stock returns, confirming the findings of Siregar and Hutabarat (2023) who found that macroeconomic factors, including Interest Rate, do not moderate the relationship between LDR and stock returns in the banking sector. This is because LDR is more influenced by internal bank factors, such as credit policies and liquidity management, compared to external factors such as Interest Rate.

The Moderating Effect of Interest Rate on the Relationship between NPL and Stock Returns.

The results of hypothesis testing show that Interest Rate significantly moderates the relationship between NPL and stock returns. The negative coefficient indicates that Interest Rate strengthens the negative effect of NPL on stock returns. This means that when Interest Rate is high, the negative effect of NPL on stock returns will be stronger. This finding is consistent with the research of Anggraini (2023) who found that Interest Rate moderates the effect of NPL on bank stock returns. This can be explained that when Interest Rate is high, the purchasing power of the community decreases, which can affect the ability of debtors to repay loans. This can increase the bank's NPL, which in turn can affect bank profitability and ultimately impact stock returns. In addition, high Interest Rate can also increase the cost of living, which can reduce the ability of debtors to repay loans. This can increase the bank's NPL, which can reduce investor confidence. Decreased investor confidence can reduce share buying demand, which in turn can reduce stock returns. Therefore, when Interest Rate is high, the negative effect of NPL on stock returns will be stronger. This study also found that Interest Rate moderates the relationship between NPL and stock returns, confirming the findings of Rokhim and Susanto (2023) who found that macroeconomic factors, including Interest Rate, can moderate the relationship between credit risk and stock returns in the banking sector. This is because Interest Rate can affect the quality of bank loans. When Interest Rate is high, the quality of bank loans tends to decrease, which can increase the bank's NPL. This can affect investor confidence, which in turn can affect the relationship between NPL and stock returns.

5. Conclusion

Based on the results of research and discussion, several conclusions can be drawn as follows: (1) Capital Adequacy Ratio (CAR) has a significant positive effect on stock returns in commercial banks listed on the Indonesia Stock Exchange for the 2019-2024 period. This means that the higher the CAR, the higher the stock returns. This is because a high CAR provides a positive signal to investors regarding the bank's ability to deal with risk, which can increase investor confidence and

have implications for increasing stock returns. (2) Loan to Deposit Ratio (LDR) has no significant effect on stock returns in commercial banks listed on the Indonesia Stock Exchange for the 2019-2024 period. This means that the high and low LDR does not have a significant impact on stock returns. This can be explained that investors do not make LDR the main consideration in making investment decisions in banking stocks. Investors tend to consider other factors such as profitability (ROA, ROE) or the quality of earning assets (NPL) in making investment decisions. (3) Non-Performing Loan (NPL) has a significant negative effect on stock returns in commercial banks listed on the Indonesia Stock Exchange for the 2019-2024 period. This means that the higher the NPL, the lower the stock returns. This is because a high NPL provides a negative signal to investors regarding the bank's ability to manage credit risk, which can reduce investor confidence and have implications for decreasing stock returns. (4) Interest Rate moderates the effect of Capital Adequacy Ratio (CAR) on stock returns in commercial banks listed on the Indonesia Stock Exchange for the 2019-2024 period. The negative coefficient indicates that Interest Rate weakens the positive effect of CAR on stock returns. This means that when Interest Rate is high, the positive effect of CAR on stock returns will be weakened. (5) Interest Rate does not moderate the effect of Loan to Deposit Ratio (LDR) on stock returns in commercial banks listed on the Indonesia Stock Exchange for the 2019-2024 period. This means that Interest Rate does not affect the strength or direction of the relationship between LDR and stock returns. (6) Interest Rate moderates the effect of Non-Performing Loan (NPL) on stock returns in commercial banks listed on the Indonesia Stock Exchange for the 2019-2024 period. The negative coefficient indicates that Interest Rate strengthens the negative effect of NPL on stock returns. This means that when Interest Rate is high, the negative effect of NPL on stock returns will be stronger.

Theoretical Implications This research contributes to the development of financial theory, especially regarding the effect of financial performance on stock returns with Interest Rate as a moderating variable. This research confirms signaling theory, where information about the bank's financial performance provides signals for investors in making investment decisions. In addition, this research also confirms market efficiency theory, where information about the bank's financial performance is reflected in stock prices. For investors, the results of this study can be used as a reference in making investment decisions in banking stocks. Investors should consider the bank's financial performance, especially related to CAR and NPL, in making investment decisions. In addition, investors should also consider macroeconomic factors, especially Interest Rate, which can affect stock returns. For regulators, the results of this study can be used as a reference in formulating regulations related to bank capital and credit risk management. Regulators should ensure that banks maintain adequate capital and manage credit risk properly to maintain the stability of the financial system

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