

THE IMPACT OF LDR, NIM, AND CAR ON THE STOCK PRICE PERFORMANCE OF STATE-OWNED BANK: A STUDY FOR THE 2015-2024 PERIOD



Muhammad Thirofa Zain Ma'ruf¹
Universitas Swadaya Gunung Jati, Cirebon, Indonesia
thirofazm@gmail.com

Muhammad Habib²
Universitas Swadaya Gunung Jati, Cirebon, Indonesia
muhammad.121020726@ugj.ac.id

Maiyaliza³
Universitas Swadaya Gunung Jati, Cirebon, Indonesia
maiyaliza@ugj.ac.id

Abstract

This study aims to examine the partial impact of Loan to Deposit Ratio (LDR), Net Interest Margin (NIM), and Capital Adequacy Ratio (CAR) on the stock price performance of state-owned banks (SOEs) in Indonesia during the 2015–2024 period. The research employs a quantitative approach using multiple linear regression analysis based on secondary data from the financial statements of four SOEs listed on the Indonesia Stock Exchange. The results show that the Loan to Deposit Ratio (LDR) has a negative but insignificant effect on stock prices, indicating that liquidity efficiency does not directly influence investor assessments of bank performance. The Net Interest Margin (NIM) has a significant negative effect, suggesting that a higher interest margin may reflect increased credit risk or reduced competitiveness, which is perceived negatively by the market. Meanwhile, the Capital Adequacy Ratio (CAR) has a significant positive effect, demonstrating that stronger capital adequacy increases investor confidence and supports higher stock valuations. These findings imply that not all financial ratios consistently affect stock prices and that investor perceptions depend on broader market conditions and bank-specific strategies.

Keywords: Loan to Deposit Ratio, Net Interest Margin, Capital Adequacy Ratio, Stock Price

INTRODUCTION

The banking quarter plays a valuable role within the country wide economy, broadly speaking as a monetary middleman that collects and distributes price range to the public. Banks additionally serve as a motive force of economic growth through credit score activities and financial intermediation (Azizah & Hidayat, 2025). In responding to both home and worldwide financial dynamics, the performance of the banking industry turns into a key benchmark for keeping the steadiness of the financial device. One indicator usually used to evaluate a bank's universal overall performance is its inventory rate in the capital marketplace. stock rate represents the prevailing cost of destiny profits predicted with the aid of buyers (Roza et al., 2024; Ramadhani et al, 2024).

State-owned banks (SOEs) play a dominant position in Indonesia's financial device. four major nation-owned banks—Bank Rakyat Indonesia, Bank Mandiri, Bank Negara Indonesia, and Bank Tabungan Negara—manipulate a full-size share of the national banking market. consistent with the economic offerings Authority (OJK), the full assets of the country-wide banking industry reached over IDR 10,000 trillion as of December 2024, with approximately forty% held with the aid of state-owned banks. Therefore, fluctuations in the stock prices of these banks carry broad implications not only for the financial sector but also for investor sentiment and macroeconomic stability.

Bank stock valuation can be approached using fundamental analysis through financial ratios. Three key ratios often used to assess bank health and performance are the Loan to Deposit Ratio, Net Interest Margin, and Capital Adequacy Ratio (Omar et al, 2025). LDR measures a bank's ability to channel third-party funds into loans. An optimal LDR reflects the efficiency of intermediation functions, and a high LDR—within regulatory limits—can increase profits from interest income (Silitonga & Manda, 2022). NIM reflects how efficiently a bank generates net interest income from its productive assets. A higher NIM indicates stronger management performance in maximizing profitability from lending activities (Purwanti, 2020). CAR, on the other hand, indicates a bank's capital resilience in facing potential losses. A higher CAR lowers the risk of financial distress and builds greater public confidence in the bank (Rosandy & Sha, 2022).

However, the impact of monetary ratios on inventory fees isn't constantly steady. previous studies have shown blended outcomes. (Gunawan et al., 2023) discovered that NIM and automobile have a big effective effect on inventory charges, at the same time as LDR has a considerable negative impact. In evaluation, (Rasnawati, 2021) mentioned that LDR has a bad but insignificant effect, automobile a superb however insignificant effect, and NIM a huge bad impact on inventory charges.

These varying findings indicate that the relationship between financial ratios and stock prices is complex and depends on the observation period, bank type, and macroeconomic conditions. In addition, market perception of these financial indicators may be influenced by investor sentiment, government policies, and the bank's risk management performance. Therefore, further research is necessary to empirically examine the effects of LDR, NIM, and CAR on the stock prices of state-owned banks using a broader dataset and more recent market conditions.

This look at aims to fill that hole by means of studying statistics from 2015 to 2024, overlaying the duration earlier than, at some stage in, and after the COVID-19 pandemic,

which had a sizeable effect on the global economic enterprise. the use of a quantitative method with more than one linear regression evaluation, this examine seeks to offer a more complete empirical view of the extent to which LDR, NIM, and vehicle influence the stock charges of country-owned banks in Indonesia. The findings are expected to provide sensible insights for investors in making more accurate funding choices, in addition to for bank management and regulators in formulating rules that guide the stability and boom of the banking region.

REVIEW OF LITERATURE

Efficient Market Hypothesis, first proposed by using Eugene Fama in 1970, argues that inventory charges within the marketplace mirror all to be had statistics. According to EMH, financial ratios such as LDR, NIM, and CAR are immediately incorporated into the stock prices traded in the market. Therefore, if a bank performs well based on these ratios, its stock price will reflect that performance—assuming the market is efficient. EMH assumes that investors react quickly to new information, and that stock prices will converge to their intrinsic values within a relatively short period. Thus, the theory suggests that changes in financial ratios can lead to swift and efficient movements in stock prices.

Stock price represents the market fee of a share traded at the inventory trade. It displays traders' expectations regarding a organisation's future overall performance and is influenced by means of different factors including monetary conditions, economic reports, company regulations, and market sentiment. According to (Muhidin & Situngkir, 2023), stock price fluctuations are driven by both internal and external factors. Internal factors include company performance data, particularly financial statements, while external factors encompass interest rate changes, exchange rate fluctuations, inflation, and others. Stock prices are often used as a primary indicator in investment decisions and reflect the market's perception of a company's value.

Loan to Deposit Ratio is a financial ratio used to measure a bank's liquidity level by comparing the total amount of loans disbursed to the total third-party funds (TPF) collected. LDR reflects the proportion of third-party funds that are allocated as credit. In other words, according to (Maroni & Simamora, 2020), the higher the LDR, the more funds are distributed to the public in the form of loans or credit, which can generate greater interest income and thereby increase profitability. But, an overly excessive LDR shows that a financial institution is extra aggressive in lending, which might also increase liquidity chance in the occasion of surprising big-scale fund withdrawals. then again, a totally low LDR indicates that the financial institution isn't making use of its liquidity efficaciously and is overly conservative in extending credit.

H1: Loan to Deposit Ratio has a negative effect on Stock Price

Net Interest Margin is a financial ratio that measures the difference between the hobby income earned through a financial institution and the hobby costs it need to pay, relative to its effective belongings. NIM is used to evaluate a financial institution's efficiency in handling its earning property to generate earnings. According to (Natanael & Mayangsari, 2022), the more the internet interest earnings, the higher the bank's profitability. A higher NIM indicates more potent performance in producing earnings from productive assets.

However, an excessively high NIM may suggest that borrowing costs for customers are relatively high, potentially reducing the bank's competitiveness.

H2: Net Interest Margin has a positive effect on Stock Price

Capital Adequacy Ratio is a capital adequacy ratio that measures the extent to which a financial institution's capital can soak up dangers bobbing up from its operational activities. automobile serves as an indicator of banking fitness hooked up by way of regulators together with bank Indonesia and the Basel Committee on Banking Supervision. A excessive vehicle shows that the financial institution is able to bearing more risks and is financially healthier (Wahyu et al., 2022). A excessive automobile signifies that the bank has enough capital reserves to cowl capability risks. The minimum car wellknown enforced by financial institution Indonesia is 8%, in accordance with Basel II regulations.

H3: Capital Adequacy Ratio has a positive effect on Stock Price

RESEARCH METHOD

This study employs a quantitative technique to look at the relationships among variables. Quantitative research is a scientific technique that uses numerical statistics, graphs, tables, and statistical evaluation to test predetermined hypotheses (Syahroni, 2022). The researcher objectives to decide whether LDR, NIM, and CAR have an effect on Stock Price.

The population in this study consists of state-owned banks (SOEs) listed on the Indonesia Stock Exchange over a 10-year period, from 2015 to 2024. A sample, which is a subset of the population (Syahroni, 2022), was selected using purposive sampling. Four companies that met the criteria outlined in Table 1 were chosen. According to (Lenaini, 2021), purposive sampling is a non-random sampling approach where researchers select precise topics that match the research objectives, bearing in mind centered analysis of the research trouble. Given the ten-year studies period, a complete of forty records points have been utilized.

Table 1.
Sampling Criteria

No.	Sampling Criteria	Total
1.	State-owned banks (SOEs) listed on the Indonesia Stock Exchange (IDX) during the 2015–2024 period	4
2.	State-owned banks (SOEs) that were continuously listed on the Indonesia Stock Exchange (IDX) throughout the 2015–2024 period	(0)
3.	State-owned banks (SOEs) that published financial statements during the 2015–2025 period	(0)
	Number of sampled companies	4
	Research period (in years)	10
	Total sample size	40

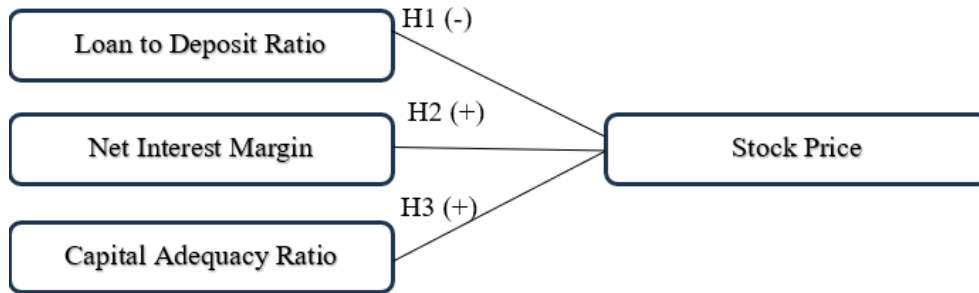
Source: Processed data

The data used in this study are secondary data with a cross-sectional time series or panel data type. According to (Sulung & Muspawi, 2024), secondary data refers to research data obtained indirectly through intermediaries. This means the data are not collected directly by the researcher but sourced from existing materials such as documents, literature, or data

gathered by other parties. The secondary data utilized in this study consist of annual reports registered on the Indonesia Stock Exchange for the period 2015–2024, obtained from the official Indonesia Stock Exchange website and the official websites of the respective companies.

Research Model

This research model describes the relationship between independent variables (loan to deposit ratio, net interest margin, and capital adequacy ratio) to dependent variables (stock price). This model can be illustrated as follows:



Data Analysis Method

The analytical technique used in this study is multiple linear regression, accompanied with the aid of classical assumption testing to ensure the validity of the version. The analysis is performed at a significance stage of $\alpha = 0.05$. If an unbiased variable has a significance cost much less than or identical to this threshold, it is able to be concluded that the variable has a enormous effect at the dependent variable.

Since multiple regression is employed, this study also includes classical assumption tests, namely: the normality test, multicollinearity test, heteroscedasticity test, and autocorrelation test.

The regression model used in this study is expressed as follows:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \epsilon$$

Description:

Y = Stock price of state-owned banks

α = Constant

β_1 = Regression coefficient of LDR

β_2 = Regression coefficient of NIM

β_3 = Regression coefficient of CAR

X₁ = Loan to Deposit Ratio

X₂ = Net Interest Margin

X₃ = Capital Adequacy Ratio

ϵ = Error term.

Table 2.
Variable Operational Definition

Variable	Definition
Stock Price (Y)	It represents the market value of a stock traded on the stock exchange. Formula : $\text{Stock Price} = \frac{P_t - P_{t-1}}{P_{t-1}} \times 100$

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Loan to Deposit Ratio (X1)	<p>A ratio used to measure a bank's liquidity level by comparing the total loans disbursed to the total third-party funds (deposits) collected.</p> <p>Formula :</p> $\text{LDR} = \frac{\text{Credit Total}}{\text{Deposit}} \times 100$
Net Interest Margin (X2)	<p>A ratio that measures the difference between the interest income earned by a bank and the interest expenses it must pay.</p> <p>Formula :</p> $\text{NIM} = \frac{\text{Net Interest Income}}{\text{Average Earning Assets}} \times 100$
Capital Adequacy Ratio (X3)	<p>A capital adequacy ratio that measures the extent to which a bank's capital can absorb risks arising from its operational activities.</p> <p>Formula :</p> $\text{LDR} = \frac{\text{Bank Capital}}{\text{ATMR}} \times 100$

RESULTS AND DISCUSSION

Every circumstance of the variables used on this observe is analyzed using descriptive data. Descriptive analysis serves as an initial step before conducting further analyses, as it helps researchers identify and understand the data (Sulung & Muspawi, 2024). This statistical approach describes the characteristics of the data through values such as the minimum, maximum, mean, and standard deviation. The details of the descriptive statistics are presented in the following table:

Table 3.
Descriptive Statistical Test Result

Variable	N	Minimum	Maksimum	Mean	Std. Deviation
LDR	40	77.61	113.50	90.42	7.91
NIM	40	2.86	8.13	5.40	1.31
CAR	40	16.78	25.28	20.42	2.03
Harga Saham	40	2230.00	6050.00	3941.12	1017.56

Source: Processed data

Descriptive statistical analysis was conducted to offer a trendy evaluate of the characteristics of the statistics used on this examine. The effects show that the loan to Deposit Ratio has a mean price of 90.42, with not less than 77.61 and a most of 113.50. This indicates that, on common, nation-owned banks allocate about 90% of third-party price range into loans, with interbank variations contemplated through a wellknown deviation of 7.91.

Net Interest Margin recorded an average of 5.40, ranging from 2.86 to 8.13. This value reflects the banks' efficiency in producing internet interest profits from effective assets.

A standard deviation of 1.31 suggests notable differences in efficiency among the banks in the sample.

Meanwhile, the Capital Adequacy Ratio has an average of 20.42, which is well above the minimum threshold of 8% set by Bank Indonesia. CAR values range from 16.78 to 25.28, with a standard deviation of 2.03, indicating that all banks in the sample maintain healthy capital levels.

For the stock price variable, which serves as the dependent variable, the average was recorded at IDR 3,941.12 per share, with a minimum value of IDR 2,230 and a maximum of IDR 6,050. The standard deviation of 1,017.56 indicates considerable stock price fluctuation, likely influenced by market conditions, investor sentiment, and the financial performance of each bank.

Normality test is conducted to decide whether the statistics are normally allotted. If this assumption is not met, the results of statistical analysis may become invalid or misleading (Isnaini et al., 2025). One method to test the normality of residuals is the One-Sample Kolmogorov–Smirnov test. In this study, the Kolmogorov–Smirnov test produced a significance value of 0.105. Since this value is greater than 0.05, it can be concluded that the residuals are normally distributed, and thus the assumption of normality in multiple regression analysis is satisfied.

Table 4.
Normality Test Result

	Unstandardized Residual
N	40
Kolmogorov-Smirnov Z	.105

Source: Processed data

Multicollinearity test is performed to determine whether or not there's a correlation among the impartial variables within the regression version. If the regression model exhibits a high or perfect correlation among independent variables, it indicates the presence of multicollinearity, which may affect the validity of the model (Sholihah et al., 2023). The results of the multicollinearity test show that all independent variables—LDR, NIM, and CAR—have Tolerance values above 0.10 and Variance Inflation Factor (VIF) values below 10. Specifically, the highest VIF value is 1.711 for the NIM variable, which is still within the acceptable range. Therefore, it can be concluded that the regression model is free from multicollinearity issues.

Table 5.
Multicollinearity Test Result

Model	Collinearity Statistics	
	Tolerance	VIF
1 (Constant)		
LDR	.800	1.250
NIM	.585	1.711
CAR	.588	1.701

Dependent Variable: Harga Saham

Source: Processed data

A heteroscedasticity test is carried out to determine whether or not there is a variance inequality inside the residuals across observations inside the regression version.

Heteroscedasticity refers to a condition where the variance of the residuals is not constant across all observations in the regression model (Mardiatmoko, 2020). In this study, heteroscedasticity was tested using the Glejser method by regressing the absolute residual values against the independent variables.

The test results show that the significance values for the LDR, NIM, and CAR variables are 0.397, 0.413, and 0.951, respectively. Since all significance values are greater than the 0.05 threshold, it can be concluded that there is no indication of heteroscedasticity in the regression model. Therefore, the model satisfies the classical assumption of homoscedasticity.

Table 6.
Heteroscedasticity Test Result

	Variable	Sig.
Glejser	LDR	.397
	NIM	.413
	CAR	.951

Source: Processed data

An autocorrelation test is conducted to determine whether or not there is a correlation among the residuals of preceding intervals and the modern duration in the regression model. This test is used to detect any relationship among a series of observational data arranged over time and space (Sholihah et al., 2023). In this examine, the autocorrelation test became performed the usage of the Run take a look at approach, which produced an Asymp. Sig. (2-tailed) value of 0.086. Since the significance value is greater than 0.05, it can be concluded that the residuals are randomly distributed, and there is no indication of autocorrelation. Therefore, the regression model satisfies the classical assumption of no autocorrelation.

Table 7.
Autocorrelation Test Result

	Unstandardized Residual
Test Value	.0000000
Total Cases	40
Number of Runs	15
Z	-1.716
Asymp. Sig. (2-tailed)	.086

Source: Processed data

Primarily based on the results of the multiple linear regression evaluation presented in table 8, it's far obtrusive that the regression model demonstrates strong statistical significance. The F-statistic value of 5.061 with a significance level of 0.005 indicates that, collectively, the variables Loan to Deposit Ratio , Net Interest Margin , and Capital Adequacy Ratio have a significant effect on the stock prices of state-owned banks during the 2015–2024 period. This finding supports the core assumption of the Efficient Market Hypothesis , which posits that stock prices reflect all relevant information, including key financial ratios that describe the fundamental performance of banking institutions.

Furthermore, the coefficient of determination test shows an R Square value of 0.297, meaning that approximately 29.7% of the variation in stock prices can be explained by the three independent variables in this model, while the remaining 70.3% is attributed to other factors outside the model. The Adjusted R Square value of 0.238 indicates that the model

remains relatively stable even after adjusting for the number of variables included. within the context of capital marketplace research, this is taken into consideration fairly precise, given that stock expenses are heavily influenced through numerous outside factors which include macroeconomic situations, monetary coverage, and market sentiment.

Table 8.
Summary of Hypothesis Test Results

Model	Unstandardized Coefficients		t	Sig.	Conclusion
	B	Std. Error			
(Constant)	1390.056	2798.325	.497	.622	
LDR	-10.230	20.098	-.509	.614	Accepted
NIM	-496.004	141.535	-3.504	.001	Rejected
CAR	301.464	91.353	3.300	.002	Rejected
R		.545 ^a	F count		5.061
R Square		.297	F sig		.005
Adj R Square		.238			

Source: Processed data

Individually, the Loan to Deposit Ratio variable shows a regression coefficient of – 10.230 with a significance value of 0.614, indicating that it is statistically insignificant at the 95% confidence level. This suggests that LDR does not have a meaningful effect on the stock prices of state-owned banks during the period under study. Although the relationship is negative—implying that an increase in LDR tends to decrease stock prices—the weak significance prevents this interpretation from being generalized with confidence.

Logically, the insignificance of LDR may be attributed to investor perceptions, which often do not consider a bank’s liquidity ratio as a primary determinant of stock value. In practice, LDR reflects the efficiency of channeling third-party funds into loans but does not directly represent profitability or future growth prospects. Additionally, a high LDR does not necessarily indicate risk; in certain contexts, a high LDR may signal aggressive loan expansion strategies that could be positively received by the market. Therefore, market responses to LDR tend to be ambivalent, depending on the macroeconomic context and the bank’s strategic direction.

Conversely, Net Interest Margin variable shows a significant negative effect on stock price, with a coefficient of –496.004 and a significance value of 0.001. This result is statistically strong and contrasts with theoretical expectations, which generally assume that a high NIM is a sign of bank efficiency in generating income from productive assets.

This finding can be interpreted from two perspectives. First, a high NIM does not always indicate healthy performance, especially if the margin is derived from high lending rates or low cost-efficiency. In the Indonesian context, a high NIM sometimes reflects expensive loan structures, which can reduce the bank’s competitiveness and increase the risk of borrower default. Second, investors may view a high NIM as a sign of weak long-term operational efficiency, particularly if it is not supported by growth in productive assets or banking innovation. In other words, a high NIM might represent a short-term strategy that lacks sustainability, leading the market to respond negatively.

This result also supports the literature suggesting that in a high-interest-rate environment, bank stocks may come under pressure as credit growth and consumer spending

prospects decline. In such cases, the market lowers stock valuations even if the NIM ratio technically increases.

Capital Adequacy Ratio variable shows results most consistent with financial theory and investor expectations. With a coefficient of 301.464 and a significance value of 0.002, CAR has a positive and significant effect on the stock prices of state-owned banks. This indicates that the higher the capital adequacy ratio, the greater the market's confidence in the bank's ability to absorb risk, maintain stability, and support long-term business growth.

From an investor's perspective, a high CAR signals that the bank has sufficient capital buffers to withstand economic shocks or potential losses. This ratio is also closely associated with regulatory compliance and prudent risk management—two key concerns in the banking industry following the global financial crisis. Therefore, market logic affirms that banks with high CAR levels are more attractive for long-term investment, as they are perceived to be safer and financially resilient.

The consistency of CAR's influence on stock price can also be explained through the Efficient Market Hypothesis, which states that all publicly available information, including CAR, is instantly reflected in stock prices. A high CAR is perceived as an indicator of strong capital and financial stability, prompting a positive market response. These findings demonstrate that stock prices efficiently incorporate fundamental financial information.

CONCLUSION

The findings of this observe suggest that the financial ratios of loan to Deposit Ratio, Net Interest Margin, and Capital Adequacy Ratio play distinct roles in influencing the stock fees of state-owned banks in Indonesia throughout the 2015–2024 duration. simultaneously, those three ratios have a tremendous effect on inventory expenses, as evidenced by the F-test consequences showing significance values below 0.05. This helps the efficient market hypothesis theory, which posits that inventory charges mirror all available financial records in the market.

However, on a partial basis, each variable exhibits a different influence. The Loan to Deposit Ratio shows a negative but statistically insignificant effect on stock prices. This suggests that the efficiency of channeling third-party funds into loans is not always considered a primary indicator by investors when evaluating bank stock valuations. Fluctuations in LDR are more likely perceived as internal bank dynamics that do not directly affect market perception.

Net Interest Margin, which theoretically is expected to have a positive impact by indicating interest income efficiency, instead shows a significant negative effect on stock prices. This finding suggests that a high interest margin is not always viewed positively by investors, especially if accompanied by high credit costs or increased risk of default. In the post-pandemic economic context, a high-interest strategy may reduce competitiveness and increase credit risk, negatively impacting market valuation.

Conversely, the Capital Adequacy Ratio demonstrates a significant positive effect, aligning with market expectations that banks with strong capital structures have better financial resilience and the ability to withstand economic pressures or operational risks. A high CAR signals stable performance, regulatory compliance, and suitability as a long-term investment target.

Overall, this study confirms that not all financial ratios have a uniform impact on stock prices, and market interpretations of financial indicators are heavily influenced by macroeconomic conditions, regulations, and individual bank business strategies. These results provide important contributions for academics, investors, regulators, and bank management in understanding capital market dynamics and formulating more accurate and sustainable policies and investment decisions.

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