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Credit Growth, Risk, and Liquidity Signals: Effects on ROA and Stock Returns in Indonesian Banks (2020–2024), Moderated by Inflation

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ABSTRACT

This study examines credit growth, Capital Adequacy Ratio (CAR), Non-Performing Loans (NPL), and Loan-to-Deposit Ratio (LDR) impact on Return on Assets (ROA), and ROA's influence on stock returns, with inflation as moderating variable in Indonesian conventional banks from 2020-2024. Using purposive sampling, 39 banks from the Indonesia Stock Exchange yielded 166 unbalanced panel observations analyzed through Fixed and Random Effect Models in EViews 12. Results show varying statistical support. At 5% significance, credit growth positively drives ROA while NPL negatively affects it, confirming asset quality and lending volume as profitability determinants. LDR shows a strong negative influence on stock returns, establishing liquidity ratio as the primary market signal, while CAR shows no significant effect on ROA. At 10% significance, inflation exhibits a weak negative moderating effect on the ROA-stock return relationship, providing marginal statistical evidence. ROA does not significantly impact yearly annual stock returns nor mediate relationships between independent variables and returns. This suggests liquidity metrics may carry greater weight than profitability signals, though constrained by the model's limited explanatory power. Findings indicate bank managers should prioritize NPL control and maintain optimal LDR thresholds to preserve profitability and investor confidence, while emphasizing risk metrics in communications. Regulators should strengthen liquidity oversight through enhanced LDR disclosure requirements. Limitations include post-pandemic focus and limited variables. Future research should examine NPL threshold effects, incorporate macroeconomic and operational efficiency measures, and compare cross-country data between crisis and stable periods.

Keywords: *Credit Growth, CAR, NPL, LDR, ROA, Stock Return, Inflation, Bank*

INTRODUCTION

Bank profitability is a critical indicator of financial health and a significant metric for investors (Barakat et al., 2024). The post-pandemic period (2020-2024) has posed a challenging environment for Indonesian banks, marked by recovery efforts and macroeconomic volatility. This period resulted in a notable discrepancy: while the industry's ROA demonstrated consistent improvement, the banking stock index (INFOBANK15) exhibited considerable volatility. This suggests that stock returns are influenced by factors other than internal profitability. In particular, considering that a company's earnings can serve as a direct measure of stock returns, this underscores the strategic importance of analyzing the relationship between a bank's financial performance and shareholder gains (Sangawi et al., 2025).

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Figure 1. ROA Chart for Conventional Banking 2020-2024

Source: Processed data from OJK (2026)

Signaling theory posits that a company's consistently high profits serve as an indicator of effective management and promising future prospects (Syahputri & Sunarto, 2023). However, research conducted within the Indonesian banking sector from 2020 to 2024 reveals a more complex scenario. The banking industry's Return on Assets (ROA) demonstrates a steady recovery, increasing from 1.59% in 2020 to 2.69% by 2024. Nevertheless, this positive trend in profitability is not consistently mirrored in market performance. By looking at the INFOBANK15 index, a benchmark comprising the 15 most liquid and fundamentally sound banking stocks listed on the Indonesia Stock Exchange (IDX), that serves as the primary indicator of stock return performance in this study. The index exhibits significant volatility throughout the 2020-2024 period, despite the concurrent improvement in ROA. The difference between accounting profits and market performance shows that other factors besides ROA affect stock returns. The gap between ROA improvement and stock price changes means that big economic factors also affect stock performance. Inflation can affect banks through interest rates, credit demand, and asset quality.(Chodorow-Reich et al., 2023).

Given the observed disparity between trends in banking profitability and the volatility of stock returns, as well as the diverse outcomes of prior studies, this research seeks to address the following inquiries: Research Question 1 (RQ1): ‘What is the impact of credit growth, Capital Adequacy Ratio (CAR), Non-Performing Loans (NPL), and Loan-to-Deposit Ratio (LDR) on Return on Assets (ROA) in Indonesian commercial banks?’ Furthermore, recognizing that profitability is a crucial indicator for investors but does not consistently correlate with stock returns, especially under variable macroeconomic conditions, this study also investigates: Research Question 2 (RQ2): ‘How does ROA affect stock returns when inflation serves as a moderating variable?’

Prior research has found foundational relationships, such as the negative impact of NPL on ROA (Do et al., 2020; Putri & Ridha, 2025) and the positive influence of ROA on stock returns (Noviyanti et al., 2021; Rizkia, 2023). However, there are some significant inconsistencies. The effect of key financial indicators, such as Credit Growth and CAR, on profitability shows contradictory results, being positive in stable economic periods (Mery & Dony, 2021) but neutral or negative during crises (Manalu et al., 2023; Nurjanah & Imronudin, 2023). Furthermore, the link between these indicators and stock returns is inconsistent, with some studies finding significance (Rizkia, 2023) while others find none (Noviyanti et al., 2021). Most critically, a major gap exists in understanding the role of the macroeconomic context. While one study found that banks could pass through inflationary pressures to maintain performance (Almansour et al., 2021), no research has investigated how inflation specifically moderates the established relationship between bank profitability and stock market returns, leaving this crucial interactive effect unexamined.

Internal banking performance is important for keeping profits and giving returns to shareholders (Yenni et al., 2024). Good profits show that a bank is working well and can make money in the long run (Puspitaningtyas, 2019). This study looks at four main financial measures: CAR for capital strength, LDR for leverage and liquidity, NPL for credit risk, and credit growth for lending ability. These help understand what affects banking performance and its impact on ROA. But knowing these internal factors is not enough. We also need to consider the larger

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economic environment. Without this, investors might wrongly price bank stocks during inflation, bank managers might not align profit strategies with market needs, and regulators might create regulations that don't fully account for outside pressures affecting internal financial signals.

Building on these concerns, this study makes two distinct contributions to the literature. Theoretically, it extends signalling theory by introducing inflation as a moderating variable, challenging the assumption that profitability signals are received uniformly regardless of macroeconomic context an advancement particularly relevant to emerging markets where such volatility is structurally persistent. Empirically, it addresses the unexamined interaction between ROA and stock returns under inflationary conditions within the Indonesian banking sector, reconciling the contradictory findings of prior studies through a macroeconomic lens. Together, these contributions offer investors more informed valuation frameworks, equip bank management with evidence-based strategies, and provide regulators with adaptive insights into the relationship between banking performance and capital market outcomes in Indonesia's post-COVID-19 environment (Ristanti & Pratiwi, 2025)

LITERATURE REVIEW

Signalling Theory

Signaling Theory, introduced by Spence in 1973, explains the reduction of asymmetric information through credible signals. As described by (Elwisam et al., 2024), this theory functions as a communication mechanism between managers and investors, with financial performance bridging information gaps. In banking, ratios like Capital Adequacy Ratio (CAR) and Non-Performing Loans (NPL) indicate risk management quality and stability, as maintaining high capital buffers incurs costs. (Wulandari et al., 2021) demonstrate a positive correlation between Return on Assets (ROA) and stock returns, suggesting profitability is a crucial signal for investors. This study identifies ROA as the primary conduit through which bank signals influence market valuation, while considering macroeconomic conditions like inflation (Chodorow-Reich et al., 2023). However, within Signaling Theory, a signal's efficacy depends on its credibility and absence of "noise." The signaling effect of ROA may diminish if investors perceive profitability as unsustainable, driven by aggressive risk-taking rather than operational efficiency, or if macroeconomic noise distorts the economic value of earnings. In such cases, rational investors may discount the ROA signal, resulting in a weak market response.

Credit Growth

Credit growth is characterized by the annual percentage increase in a bank's loan portfolio and serves as a crucial indicator of the bank's expansion and revenue-generating activities. Research indicates that credit growth can exert a dual impact, positively influencing profitability by augmenting interest income (Mery & Dony, 2021), while aggressive growth during uncertain periods can lead to risk accumulation and adversely affect returns (Rizky et al., 2025). During periods of severe economic downturns, such as the COVID-19 pandemic, merely increasing the volume of loans does not guarantee enhanced financial performance, as the real sector's inability to thrive stagnates actual returns (Nurjanah & Imronudin, 2023).

$$\textbf{Credit Growth} = \frac{Total\ Credit\ Growth\ (gross)^{n} - Total\ Credit\ Growth\ (gross)^{n-1}}{Total\ Credit\ Growth\ (gross)^{n-1}}\ x\ 100\%$$

Capital Adequacy Ratio (CAR)

The capital adequacy ratio (CAR) evaluates a bank's available capital in relation to its risk-weighted exposures, serving as a crucial safeguard against potential losses and indicating both solvency and regulatory compliance. Research indicates that CAR exerts a significant positive stabilizing influence on profitability, particularly during economic shocks (Nurjanah & Imronudin, 2023), although its direct correlation with market valuation remains ambiguous. As illustrated by (Maulana et al., 2021), a higher capital buffer does not inherently lead to increased operational returns, as these surplus capital funds are retained in reserve rather than being actively utilized as yield-generating loans. This suggests that banks must judiciously balance CAR to meet regulatory

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safety standards without excessively retaining capital that could otherwise be employed productively.

$$\textbf{Capital Adequacy Ratio} = \frac{\text{Total Capital}}{Risk-weighted\ Assets\ (ATMR)}\ x\ 100\%$$

Non Performing Loans (NPL)

NPL, or Non-Performing Loan, is defined as the ratio of defaulted loans to total loans and serves as a primary indicator of credit risk and asset quality, with direct implications for a bank's income and stability. Empirical research consistently demonstrates that NPLs exert a significant negative impact on bank profitability, as measured by Return on Assets (ROA) (Hakim, 2021; Nurjanah & Imronudin, 2023), as well as on stock prices (Rizkia, 2023).

$$\textbf{Non Performing Loan} = \frac{\text{Total Non Performing Loans}}{Total\ Loans}\ x\ 100\%$$

Loan to Deposit Ratio (LDR)

The Loan-to-Deposit Ratio (LDR) is a liquidity metric that evaluates the relationship between total loans and total deposits, thereby assessing a bank's liquidity risk and its efficiency in utilizing funds to generate revenue. According to(Do et al., 2020), commercial banks primarily derive profit from the interest rate spread between loans and deposits. Consequently, a higher LDR typically signifies enhanced operational efficiency and an optimized net interest margin, which substantially enhances the Return on Assets (ROA). This concept is similarly reflected in the microfinance sector, as noted by(Beni et al., 2023), who highlight that the effective balance between fund accumulation and credit disbursement is a critical driver of organizational profitability. Research indicates that the LDR can positively influence profitability by demonstrating efficient fund utilization(Rizky et al., 2025); however, its impact on stock returns is variable and contingent upon specific contexts.

$$\textbf{Loan to Deposit Ratio} = \frac{\text{Total Credit}}{\text{Total third-party funds } (Total\ Deposits)}\ x\ 100\%$$

Return On Asset (ROA)

The Return on Assets (ROA) metric assesses a bank's ability to generate profits from its assets. This ratio serves as an indicator of profitability efficiency and provides a benchmark for investors to evaluate financial performance. Internally, ROA is influenced by assertive operational strategies, such as credit circulation and elevated Loan to Deposit Ratios (Beni et al., 2023; Do et al., 2020). However, it is susceptible to deterioration due to poor asset quality and high levels of Non-Performing Loans (NPLs) (Barakat et al., 2024). A high ROA signifies optimal profitability and effective asset management. Empirical studies have demonstrated that a high ROA is indicative of proficient management efficiency and can enhance stock returns (Salsabila et al., 2024). Nevertheless, as a market signal, ROA does not always guarantee a positive or significant impact on stock returns. The irrelevance of ROA in driving market valuation can occur due to information asymmetry, where investors lack confidence in the underlying quality of those earnings. If a high ROA is accompanied by rising NPLs or occurs during periods of severe inflation, the market will perceive the profitability signal as risky, thereby discounting it in their investment decisions.

$$\textbf{Return On Asset} = \frac{\text{Net Profit}}{Total\ Asset}\ x\ 100\%$$

Stock Return

Stock returns represent the profits that investors receive from stock profits through capital gains and dividend income (Wesso et al., 2022). Stock return is a key measure of investment performance that motivates investors to participate in capital markets (Mangantar et al., 2020). Higher stock returns indicate profitable investments and reflect a company's success in generating

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shareholder value.

$$\textbf{Stock Return} = \frac{\text{Current Price} - \text{Previous Price}}{Previous\ Price}\ x\ 100\%$$

Firm Size

Firm size is a pivotal control variable, as it reflects the scale of a company's resources, which theoretically determines its ability to achieve economies of scale and operational efficiencies that directly impact financial outcomes (Yadav et al., 2021). From a resource-based perspective, larger firms are generally considered more mature, possessing the established infrastructure and positive cash flow necessary to secure diverse funding and pursue high-return investment opportunities that are often inaccessible to smaller enterprises (Margono & Gantino, 2021; Yadav et al., 2021). By accounting for firm size, It can show how other factors affect profits and stock returns. This helps make sure that the gains seen are not just because a company has better access to money or is in a top market position (Yadav et al., 2021). Furthermore, including size as a control is essential to mitigate potential biases arising from diseconomies of scale or management failures that often emerge as firms grow beyond their optimal operational capacity (Yadav et al., 2021).

Firm Size = $Ln\ (Total\ Asset)\ x\ 100\%$

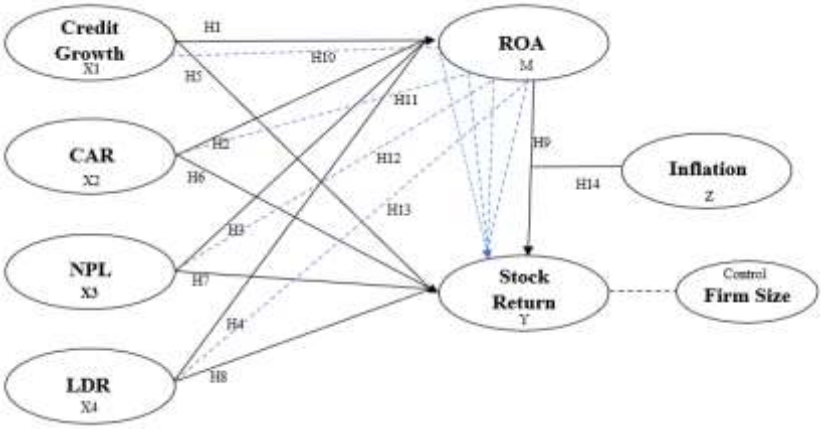
Inflation

Inflation plays a key role in the relationship between corporate profits and stock returns. It introduces uncertainty, affecting accounting information reliability and stock valuation. According to the Fisher hypothesis, expected inflation is embedded in interest rates, leading investors to demand higher future returns to compensate for monetary value erosion. Consequently, they may reduce current stock prices, even when profitability indicators, such as ROA, are favorable (Maria & Hussain, 2025). Signaling theory posits that a robust ROA should convey positive information about firm efficiency to the market. However, during high or volatile inflation, this signal becomes distorted; investors struggle to distinguish between genuine profitability and inflationary noise, weakening the expected positive correlation between ROA and stock returns (López-Salido & Loria, 2020). This ambiguity can reduce the positive impact of high ROA on stock prices, as inflation obscures earnings quality (López-Salido & Loria, 2020). Conversely, when banks and companies can transfer costs to consumers, anticipated inflation may enhance the ROA-stock returns relationship by enabling firms to maintain or increase real profit margins (Maria & Hussain, 2025). Thus, inflation actively influences the transmission of profit signals to financial markets. Data on Indonesia's inflation rate were obtained from the World Bank Data.

Research Framework

Figure 2 illustrates the research framework of this study.

Figure 2. Research Framework



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Hypotesis

The study's hypotheses are as follows:

H1: Credit growth affects profitability (ROA).
H2: CAR affects profitability (ROA).
H3: NPL affect profitability (ROA).
H4: LDR affects profitability (ROA).
H5: Credit Growth affects Stock Returns.
H6: CAR affects stock returns.
H7: NPL affect Stock Returns.
H8: LDR affects stock return.
H9: Profitability affects stock returns.
H10: ROA mediates the relationship between Credit Growth and Stock Returns.
H11: ROA mediates the relationship between CAR and Stock Returns.
H12: ROA mediates the relationship between NPL and stock returns.
H13: ROA mediates the relationship between LDR and Stock Returns.
H14: Inflation moderates the profitability effect on the stock returns.

METHODS

Data Analysis Technique

his study adopts a quantitative explanatory research design to examine the causal relationships between bank financial performance, profitability, and stock returns. A panel data approach is used to capture both cross-sectional differences among banks and time-series variations during 2020–2024. The population consists of 45 conventional commercial banks listed on the Indonesia Stock Exchange (IDX), and the sample of 39 banks was selected using purposive sampling based on data availability and completeness criteria, resulting in 166 unbalanced panel observations.

Data were collected using secondary data obtained from publicly available sources. Financial statement data for each bank were gathered from annual reports and audited financial statements published on the Indonesia Stock Exchange (IDX) and the respective banks' official websites. Stock price data were obtained from IDX publications, while inflation data were sourced from official government statistics or World Bank Data. The data cover the 2020–2024 period and were compiled and processed to construct the research variables in accordance with the operational definitions used in this study. The data were analyzed using panel data regression to examine the relationships among the variables. The analysis began with descriptive statistics, followed by panel model selection using the Chow, Lagrange Multiplier, and Hausman tests to determine the appropriate estimation model (common, fixed, or random effects). Classical diagnostic tests, including multicollinearity, autocorrelation, and cross-sectional dependence tests, were conducted to ensure model validity. Mediation was tested using a bootstrapping approach, while the moderating effect of inflation was examined through an interaction term in the regression model.

This study employs mediation analysis using the Sobel test to examine whether Return on Assets (ROA) significantly mediates the relationship between financial performance variables and stock returns. The Sobel test evaluates the statistical significance of the indirect effect by testing whether the product of path a (independent variable → mediator) and path b (mediator → dependent variable) differs significantly from zero. The Sobel Z statistic is calculated using the formula:

$$z = \frac{a \times b}{\sqrt{b^2 S^2 a + a^2 S^2 b}}$$

The numbers represent the standard errors of paths A and B. The mediation effect is considered significant when the absolute Z-value exceeds 1.96 at the 5% significance level (Abu-Bader & Jones, 2021). This procedure follows the methodological explanation of mediation testing (Abu-Bader & Jones, 2021)

The research hypotheses were tested using the following panel regression models:
The mediation analysis is specified in three sequential regression equations (to test H1-H13):

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Model 1: $ROA\_it = \alpha + \beta1CredGrowth\_it + \beta2CAR\_it + \beta3NPL\_it + \beta4LDR\_it + \varepsilon\_it$
Model2: $StockReturn\_it = \alpha + \beta1CredGrowth\_it + \beta2CAR\_it + \beta3NPL\_it + \beta4LDR\_it + \beta5ROA\_it + \varepsilon\_it$

The moderating effect of inflation was examined using a separate model (to test H14).
Model3: $StockReturn\_it = \alpha + \beta1ROA\_it + \beta2Inflation\_it + \beta3(ROAxInflation\_it) + \beta4Control\_it + \varepsilon\_it$

RESULT

Table 1 provides the descriptive statistics for all variables, elucidating their characteristics throughout the observation period. The average credit growth is positive, indicating an expansion in lending activities across banks with significant variability in lending behavior. Bank-specific financial indicators suggest robust fundamentals. The mean Capital Adequacy Ratio indicates that banks maintain capital buffers that exceed regulatory requirements, demonstrating resilience against potential shocks. The average level of Non-Performing Loans reflects healthy asset quality. The Loan-to-Deposit Ratio exhibits a high mean, confirming that banks effectively channel deposits into lending activities. Return on Assets shows modest yet positive average profitability. Stock returns display strong average performance, although they are heavily skewed by positive outliers, as evidenced by the disparity between the mean and lower median. A high standard deviation indicates pronounced volatility in stock returns. The control variables exhibit the expected patterns, with inflation remaining stable and firm size showing diversity across financial institutions.

Table 1. Descriptive Statistics Results

Statistic	Credit Growth	CAR	NPL	LDR	ROA	Stock Return	Inflation	Firm Size
Mean	0,1098	0,3239	0,0300	0,8746	0,0107	0,2455	0,0268	17,8069
Median	0,0833	0,2625	0,0289	0,8390	0,0108	-0,0374	0,0187	17,1468
Maximum	2,1881	1,0610	0,1066	1,6229	0,1143	8,2190	0,0551	21,6100
Minimum	-0,6802	0,1050	0,0059	0,4001	-0,1371	-0,8559	0,0157	11,2452
Std. Dev.	0,3207	0,1712	0,0167	0,2342	0,0285	1,3005	0,0149	2,0983
Observations	166	166	166	166	166	166	166	166

Source: Results using Eviews-12 (2026)

Prior to examining the mediating and moderating relationships, a series of classical assumption tests was performed to ensure the validity of the panel regression models. As presented in Table 2, the Jarque–Bera test was employed to evaluate the normality of the residuals in each model. The probability values for all three models exceed 0.05, indicating that the residuals are normally distributed, thereby satisfying the normality assumption.

Table 2. Classical Assumption Test

Statistics	Model 1	Model 2	Model 3
Jarque-Bera	4,10515	4,0516	1,5341
Probability	0,1284	0,1319	0,4638
Conclusion	Normaly Distributed	Normaly Distributed	Normaly Distributed

Source: Results using Eviews-12 (2026)

To determine the most appropriate panel data estimation technique, the Chow and Hausman tests were conducted for each model. As summarized in Table 3, the Chow test results were significant for all models (p-value < 0.05), rejecting Pooled OLS in favor of Fixed Effects. The subsequent Hausman test indicated that the Fixed Effects model (FEM) was preferred for

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Model 1 and Model 2 (p-value < 0.05), while the Random Effects model (REM) was more suitable for Model 3 (p-value > 0.05).

Table 3. Model Selection Test

	Model 1			Model 2			Model 3		
Model testing	Chi-Sq Stat.	Prob.	Results	Chi-Sq Stat.	Prob.	Results	Chi-Sq Stat.	Prob.	Results
Chow Test	205,63	0,000	FEM	107,85	0,000	FEM	74,40	0,000	FEM
Hausman Test	14,57	0,006	FEM	25,66	0,000	FEM	2,47	0,651	REM
Final Model Selected			FEM			FEM			REM

Source: Results using Eviews-12 (2026)

To evaluate the potential presence of multicollinearity among the independent variables, a correlation matrix was constructed. As illustrated in Table 4, all correlation coefficients are significantly below the conventional threshold of 0.80, indicating that multicollinearity does not pose a substantial concern within the dataset.

Table 4. Multicolinearity test

Variable	Credit Growth	CAR	NPL	LDR	ROA	Stock Return	Inflation	FirmSize
Credit Growth	1	0,127	-0,138	0,083	-0,077	0,045	0,197	-0,266
CAR	0,127	1	-0,068	0,085	0,102	0,051	0,015	-0,394
NPL	-0,138	-0,068	1	-0,058	-0,206	0,274	-0,057	-0,155
LDR	0,083	0,085	-0,058	1	0,131	-0,084	-0,067	0,134
ROA	-0,077	0,102	-0,206	0,131	1	-0,153	0,028	0,324
Stock Return	0,045	0,051	0,274	-0,084	-0,153	1	-0,004	-0,167
Inflation	0,197	0,015	-0,057	-0,067	0,028	-0,004	1	-0,004
FirmSize	-0,266	-0,394	-0,155	0,134	0,324	-0,167	-0,004	1

Source: Results using Eviews-12 (2026)

The determination of whether a variable significantly influences Return on Assets (ROA) is based on a comparison of the probability (p-value) with two significance thresholds: $\alpha = 0.05$ and $\alpha = 0.10$. A p-value less than 0.05 ($p < 0.05$) indicates statistical significance at the 5% level, thereby providing strong support for the hypothesis. Conversely, a p-value between 0.05 and 0.10 ($0.05 < p < 0.10$) suggests marginal significance at the 10% level. In both scenarios, the hypothesis is accepted. However, if the p-value exceeds 0.10 ($p > 0.10$), the effect is deemed statistically insignificant, leading to the rejection of the hypothesis. The coefficient value elucidates the direction of the relationship: a positive coefficient signifies a positive effect, while a negative coefficient denotes a negative effect.

Table 5. Regression Panel Data Result
Regression Model 1 (Fixed Effect Model)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-6,0371	0,8855	-6,8176	0,0000
Credit Growth	0,1995	0,0715	2,7914	0,0061
CAR	-0,1826	0,3081	-0,5929	0,5544
NPL	-0,4763	0,1860	-2,5603	0,0117
LDR	-0,1505	0,5419	-0,2778	0,7817

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Adjusted R-Squared	0,6448

Source: Results using Eviews-12 (2026)

Table 5 presents the regression results for Model 1 using the Fixed Effect Model. Credit Growth has a positive and significant effect on ROA (p = 0.0061), meaning that higher loan growth increases bank profitability. NPL has a significant negative effect on ROA (p = 0.0117), indicating that higher credit risk reduces profitability.

Meanwhile, CAR and LDR do not have a significant effect on ROA, as their p-values are above 0.05. This suggests that capital adequacy and loan-to-deposit levels did not directly influence profitability during the study period. The adjusted R-squared of 0.6448 shows that approximately 64% of the variation in ROA is explained by the model, indicating good explanatory power.

Table 6. Regression Panel Data Result
Regression Model 2 (Fixed Effect Model)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-1,1787	1,6592	-0,7104	0,4788
Credit Growth	0,1575	0,1177	1,3382	0,1833
CAR	-0,4007	0,4930	-0,8129	0,4179
NPL	0,5637	0,3050	1,8479	0,0670
LDR	-4,5213	0,8662	-5,2197	0,0000
ROA	-0,1164	0,1435	-0,8111	0,4189
Adjusted R-Squared			0,3692	

Source: Results using Eviews-12 (2026)

Table 6 presents the regression results for Model 2 using the Fixed Effect Model. LDR has a negative and significant effect on Stock Return (p = 0.0000), indicating that a higher loan-to-deposit ratio significantly reduces stock returns. NPL shows a marginally significant positive effect on Stock Return at the 10% level (p = 0.0670), suggesting that credit risk may have a weak positive relationship with stock returns during the study period.

Meanwhile, Credit Growth, CAR, and ROA do not have a significant effect on Stock Return, as their p-values are above 0.10. This indicates that loan growth, capital adequacy, and profitability did not directly influence stock returns in this model. The adjusted R-squared of 0.3692 shows that approximately 37% of the variation in Stock Return is explained by the model, indicating moderate explanatory power.

Table 7. Regression Panel Indirect Effects

Variable	a (X → M) Coefficient	Std Error a	b (M → Y) Coefficient	Std Error b	Z	Probability (two-tailed)
Credit Growth (X1)	0,1995	0,0715	-0,1164	0,14350	-0,7783	0,4360
CAR (X2)	-0,1826	0,3081	-0,1164	0,14350	0,4784	0,6323
NPL (X3)	-0,4763	0,1860	-0,1164	0,14350	0,7726	0,4394
LDR (X4)	-0,1505	0,5419	-0,1164	0,14350	0,2627	0,7929

Source: Results from Sobel Test (2026)

Table 7 presents the indirect effects of the independent variables on Stock Return through ROA as the mediating variable, calculated using the Sobel test. The results show that none of the indirect effects are statistically significant, as all probability values are well above 0.05.

Specifically, Credit Growth (Z = -0.7783, p = 0.4360), CAR (Z = 0.4784, p = 0.6323), NPL (Z = 0.7726, p = 0.4394), and LDR (Z = 0.2627, p = 0.7929) all have p-values exceeding 0.05, indicating that ROA does not mediate the relationship between these variables and Stock Return. These findings suggest that the effects of Credit Growth, CAR, NPL, and LDR on Stock Return

operate directly rather than indirectly through profitability. In other words, ROA does not serve as a transmission channel in these relationships during the study period.

Table 8. Regression Panel Data Result
Regression Model 3 (Random Effect Model)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-1,1630	1,4972	-0,7768	0,4384
Inflation	-0,1435	0,1082	-1,3262	0,1867
ROA	4,8303	7,1905	0,6718	0,5027
ROA × Inflation	-269,0708	147,0246	-1,8301	0,0691
Firm Size	-0,0748	0,0710	-1,0526	0,2941
Adjusted R-Squared			0,0249	

Source: Results using Eviews-12 (2026)

Table 8 presents the regression results for Model 3 using the Random Effect Model. The interaction variable (ROA × Inflation) has a marginally significant negative effect on Stock Return at the 10% level ($p = 0.0691$), indicating that inflation weakens the relationship between profitability and stock returns. The negative coefficient of -269.0708 suggests that as inflation increases, the positive impact of ROA on stock returns diminishes.

Meanwhile, Inflation, ROA, and Firm Size do not have a significant effect on Stock Return, as their p-values are above 0.10. This indicates that these variables do not directly influence stock returns in this model. The adjusted R-squared of 0.0249 shows that only about 2.5% of the variation in Stock Return is explained by the model, indicating relatively low explanatory power.

DISCUSSION

The fixed-effects regression for Model 1 indicates that credit growth has a significant positive impact on ROA, affirming its role as the primary income generator in Indonesian banking (Halik & Astuti, 2025). This result is consistent with the findings of Halik and Astuti (2025), who report that active credit expansion fosters sustainable finance and operational success. In contrast, non-performing loans exhibit a significant negative relationship with ROA, highlighting the dual burden of lost interest income and increased provisioning costs as critical constraints on profitability. This negative relationship is consistently identified in the literature as a major constraint on bank performance (Barakat et al., 2024; Do et al., 2020). The lack of significance for the capital adequacy ratio and loan-to-deposit ratio suggests that within Indonesian regulatory thresholds, these ratios serve as compliance mechanisms rather than performance drivers (Hakim, 2021). This observation supports the finding that capital variations do not materially affect profitability when banks maintain adequate buffers. From an economic significance perspective, the coefficient magnitudes imply that, while these ratios meet regulatory minima, marginal variations above those thresholds do not result in measurable profitability advantages (Hakim, 2021). This finding is consistent with buffer theory predictions that excess capital beyond regulatory requirements yields diminishing returns.

Model 2 results indicate that the Loan to Deposit Ratio (LDR) exerts a negative influence on stock returns, highlighting market sensitivity to liquidity stress. This observation suggests that Indonesian investors perceive a high LDR as indicative of liquidity risk during periods of monetary tightening, rather than as a marker of effective intermediation (Mwaurah et al., 2017). According to signaling theory, a high LDR during tightening phases signals bank vulnerability to funding shocks, which investors prioritize over growth prospects. The marginally significant positive effect of NPL on stock returns challenges conventional risk perceptions. This reflects a "turnaround" narrative, wherein investors target undervalued banks that have transparently accounted for credit shocks (Hakim, 2021). This aligns with prospect theory, where investors become risk-seeking in perceived losses, speculating on distressed banks with visible asset issues. The statistical insignificance of Return on Assets (ROA) in explaining stock returns is consistent with findings

that profitability metrics have lost signaling power, as OJK's loan restructuring policies have obscured interest income (Choiriyah et al., 2021; Halik & Astuti, 2025). Beyond policy distortion, the irrelevance of ROA suggests that investors place a lower premium on volatile earnings, anchoring to macro-thematic signals of stability. This decoupling indicates that investors prioritized liquidity protection over traditional indicators. These results imply that in Indonesia's post-pandemic recovery, bank valuations were driven by systemic stability rather than fundamental performance. For management, this underscores the need to prioritize liquidity buffers during tightening cycles. For investors, it emphasizes the importance of monitoring liquidity ratios and NPL turnarounds over short-term profitability. For regulators, such as the OJK, it reveals how restructuring policies have reduced the informativeness of bank earnings for markets.

The moderation analysis in Model 3 indicates that inflation exerts a negative moderating effect on the relationship between Return on Assets (ROA) and stock returns, suggesting that macroeconomic conditions can influence the market's interpretation of profitability signals (Riwayati & Diena, 2021). However, this finding warrants cautious interpretation. Although statistically significant, the moderating effect of inflation is marginal in magnitude, and the model's explanatory power remains low, indicating that the interaction between profitability and inflation accounts for only a modest portion of stock return variability (Shang et al., 2021; Sukesti et al., 2021). In the Indonesian context, unobserved factors, such as global portfolio allocation shifts, domestic political sentiment, or industry-specific news, likely exert more significant influence on market movements. This result extends the argument that inflation affects investor valuation while highlighting the complexity of emerging markets, where macroeconomic signals do not uniformly translate into price adjustments. As documented by (Shang et al., 2021) and (Sukesti et al., 2021), the value-creating role of profitability can diminish under inflationary pressures; however, the model's low explanatory power reinforces that market returns are influenced by various liquidity and credit risk variables beyond this study's scope. The economic significance of this moderation effect, although statistically detectable, is unlikely to represent a primary driver of investor behavior in practice.

The mediation analysis indicates that Return on Assets (ROA) does not significantly convey any indirect effects on stock returns through the proposed pathways (Riwayati & Diena, 2021). Credit expansion increases interest income, whereas non-performing loans (NPLs) reduce profitability; however, these profitability fluctuations do not translate into changes in market valuation (Barakat et al., 2024; Do et al., 2020). This disconnection implies that Indonesian investors evaluate credit risk and liquidity indicators directly, bypassing ROA as an intervening mechanism (Mwaurah et al., 2017). The absence of mediation suggests that the theoretical transmission channels linking credit growth and asset quality to stock returns are practically redundant (Riwayati & Diena, 2021). This pattern aligns with evidence that investors respond to signals embedded in credit risk indicators, such as NPLs and loan loss provisions, when making investment decisions. As documented in comparative market analysis, the relationship between profitability and stock returns can vary significantly across institutional contexts, with factors such as market efficiency and investor composition potentially influencing how accounting information is incorporated into prices (Hakim, 2021).

For bank management, these findings underscore the importance of communicating risk management strategies to the market, which is crucial for sustaining credit growth, particularly regarding provisioning coverage for non-performing loans (NPLs) and liquidity buffer positions (Mwaurah et al., 2017). The economic significance of the LDR effect indicates that liquidity communication strategies should be prioritized during monetary tightening. Investors should consider reducing exposure to banks with high LDRs during such periods, while NPL increases should be assessed within loan loss coverage ratios rather than interpreted as negative signals. Investors should monitor potential threshold effects where moderate NPL levels may escalate into problematic territory. Regulators at the Financial Services Authority (OJK) and Bank Indonesia should recognize that market discipline operates more effectively through liquidity channels than capital adequacy, suggesting that enhanced liquidity position disclosure could strengthen market oversight. The results show that in emerging markets such as Indonesia, stock valuation responds more significantly to risk signals in liquidity and credit indicators than to current profitability

metrics (Hakim, 2021).

CONCLUSION

This study presents several significant findings with varying degrees of statistical support. At the 5% significance level, credit growth positively influences profitability (ROA), while non-performing loans (NPL) negatively impact ROA, thereby affirming asset quality and lending volume as fundamental determinants of profitability. Additionally, at the 5% level, the loan-to-deposit ratio (LDR) exerts a strong negative effect on stock returns, establishing the liquidity ratio as a primary market signal. At the 10% significance level, inflation weakly moderates the relationship between ROA and stock returns, whereas NPL exhibits a marginally positive association with stock returns, suggesting that investors may tolerate moderate credit risk when provisioning is adequate. Collectively, these results indicate that while credit growth and NPL are key drivers of bank profitability, LDR serves as the dominant liquidity risk signal affecting stock returns, with ROA having a limited impact on the market.

The findings have specific operational implications for bank management. First, banks should establish an optimal LDR threshold. Second, management should implement real-time early warning systems that track deposit volatility and interbank borrowing costs, enabling preemptive communication during monetary tightening cycles when investor sensitivity peaks. Third, given ROA's limited market impact, investor relations strategies should emphasize direct risk metrics (NPL coverage ratios, LDR positioning) alongside profitability outcomes. Overall, bank managers should prioritize NPL control and LDR monitoring to maintain both profitability and investor confidence.

For regulators, the results underscore that market discipline operates through liquidity channels, suggesting that enhanced disclosure requirements around LDR composition and stress test scenarios could strengthen the oversight of liquidity risks to ensure market stability. The limitations of this study include its focus on the post-pandemic period and the limited variable set, which may not capture all market drivers or factors affecting stock returns. Future research should examine threshold effects in NPL-return relationships, include additional macroeconomic variables and operational efficiency measures, and conduct cross-country comparisons between crisis and stable periods to better understand the mechanisms linking bank performance and market valuation.

REFERENSI

Abu-Bader, S., & Jones, T. V. (2021). Statistical Mediation Analysis Using The Sobel Test and Hayes Spss Process Macro. In *International Journal of Quantitative and Qualitative Research Methods* (Vol. 9, Issue 1). https://ssrn.com/abstract=3799204

Almansour, A. Y., Alzoubi, H. M., Almansour, B. Y., & Almansour, Y. M. (2021). The Effect of Inflation on Performance: An Empirical Investigation on the Banking Sector in Jordan. *Journal of Asian Finance, Economic and Business*, *8*(6), 97–0102. https://doi.org/10.13106/jafeb.2021.vol8.no6.0097

Barakat, H. A., Elwahab, S. A., Yassin, N. M., Ibrahim, S. M. M., Ismail, M. H., & Eldin, N. W. S. (2024). Asset Quality and Banks Performance: A Panel Data Analysis of Commercial Banks. *Risk Governance and Control: Financial Markets and Institutions*, *14*(3), 111–121. https://doi.org/10.22495/rgcv14i3p11

Beni, S., Putra, W., & Bariyah, N. (2023). The Effect of Credit Circulation, Loan to Deposit Ratio (LDR), and Interest Rate on Return On Assets (ROA) Due to Non-Performing Loan (NPL) on Credit Unions in Indonesia. *International Journal of Multi Discipline Science*, *6*(1), 60–72. https://doi.org/10.26737/ij-mds.v6i1.3797

Chodorow-Reich, G., Karabarbounis, L., & Kekre, R. (2023). The Macroeconomics of the Greek Depression. *American Economic Review*, *113*(9), 2411–2457. https://doi.org/10.1257/aer.20210864

Choiriyah, C., Fatimah, F., Agustina, S., & Ulfa, U. (2021). The Effect Of Return On Assets, Return On Equity, Net Profit Margin, Earning Per Share, And Operating Profit Margin On Stock Prices Of Banking Companies In Indonesia Stock Exchange. *International Journal of Finance Research*, *1*(2), 103–123. https://doi.org/10.47747/ijfr.v1i2.280

Do, H. L., Ngo, T. X., & Phung, Q. A. (2020). The effect of non-performing loans on profitability of commercial banks: Case of Vietnam. *Accounting*, *6*(3), 373–386. https://doi.org/10.5267/j.ac.2020.1.001

Elwisam, Muhani, Ria, Digdowiseiso, K., Kartini, Juliandi, D., & Saputra, D. (2024). Implementation of Signaling Theory in Financial Management: A Bibliometric Analysis. *Revista de Gestao Social e Ambiental*, *18*(3). https://doi.org/10.24857/rgsa.v18n3-092

Hakim, L. (2021). The Analysis of Profitability and its Implications for Stock Return: A Learning and Education Perspective. *Ilkogretim Online-Elementary Education Online, Year*, *20*(5), 664–676. https://doi.org/10.17051/ilkonline.2021.05.72

Halik, D. J. I., & Astuti, C. D. (2025). The Influence of Credit Growth, Investment Decisions, Audit Quality, Financial Expertise of Directors and Commissioners on Sustainable Finance. *Jurnal Ilmiah Manajemen Kesatuan*, *13*(1), 441–450. https://doi.org/10.37641/jimkes.v13i1.3097

López-Salido, D., & Loria, F. (2020). Inflation at Risk. *Finance and Economics Discussion Series*, *2020.0*(13). https://doi.org/10.17016/feds.2020.013

Manalu, N. Y. B., Moeljadi, M., & Widiastuti, N. P. E. (2023). Dampak Pertumbuhan Dana Pihak Ketiga, Pertumbuhan Kredit, Risiko Kredit dan Financial Technology terhadap Profitabilitas Bank Konvensional Masa Pandemi Covid-19. *Jurnal Samudra Ekonomi Dan Bisnis*, *14*(3), 489–502. https://doi.org/10.33059/jseb.v14i3.7057

Mangantar, A. A., Mangantar, M., & Baramuli, D. N. (2020). Pengaruh Return on Asset, Return on Equity, dan Debt to Equity Ratio terhadap Return Saham pada Subsektor Food and Beverage di Bursa Efek Indonesia. *272 Jurnal EMBA*, *8*(1), 272–281.

Margono, F. P., & Gantino, R. (2021). Influence of Firm Size, Leverage, Profitability, and Dividend Policy on Firm Value of Companies in Indonesia Stock Exchange. *Copernican Journal of Finance & Accounting*, *10*(2), 45–61. https://doi.org/10.12775/cjfa.2021.007

Maria, M. B., & Hussain, F. (2025). Does inflation expectation affect banks' performances? Evidence from Indian banking sector. *Journal of Economic and Administrative Sciences*, *41*(4), 1692–1710. https://doi.org/10.1108/JEAS-05-2023-0123

Maulana, P., Dwita, S., & Helmayunita, N. (2021). Pengaruh CAR, NPL, LDR dan BOPO terhadap Return On Assets (ROA) pada Bank Terdaftar di Bursa Efek Indonesia Tahun 2017-2019. *Jurnal Eksplorasi Akuntansi*, *3*(2). https://doi.org/10.24036/jea.v3i2.355

Mery, M., & Dony, C. A. (2021). The Effects of Credit Growth on Risk and Performance of Conventional Banks in Indonesia. *Journal of International Conference Proceedings*, *4*(1), 140–149. https://doi.org/10.32535/jicp.v4i1.1135

Mwaurah, I., Muturi, W., & Waititu, A. (2017). The Influence of Credit Risk on Stock Returns. *International Journal of Scientific and Research Publications*, *7*(5), 575. http://www.ijsrp.org/research-paper-0517.php?rp=P656415

Noviyanti, E. A., Wahyu, C., Rahayu, E., Heti, C., & Rahmawati, T. (2021). Financial Performance and Stock Price: Another Review on Banks Listed in Indonesia Stock Exchange. *Journal of Management and Business Enviroenment (JMBE)*, *3*(1), 70–88. https://doi.org/10.24167/jmbe.v3i1.3438

Nurjanah, I. E., & Imronudin. (2023). Pengaruh Pertumbuhan Kredit terhadap Kinerja Keuangan Bank yang Terdaftar di Bursa Efek Indonesia 2019-2021. *Jurnal Informatika Ekonomi Bisnis*, *2*, 364–370. https://doi.org/10.37034/infeb.v5i2.557

Puspitaningtyas, Z. (2019). Empirical evidence of market reactions based on signaling theory in Indonesia Stock Exchange. *Investment Management and Financial Innovations*, *16*(2), 66–77. https://doi.org/10.21511/imfi.16(2).2019.06

Putri, S. I., & Ridha, N. A. N. (2025). Pengaruh LDR dan NPL terhadap ROA pada Bank Umum Swasta Nasional yang Terdaftar di BEI Periode 2019-2023. *JRAK: Jurnal Riset Akuntansi Dan Bisnis*, *11*(1). https://doi.org/10.38204/jrak.v11i1

Ristanti, N., & Pratiwi, D. M. (2025). The Effect of Financial Performance Indicators on Stock Prices in the Banking Sector Listed on the IDX. *Journal of Advances in Accounting, Economics, and Management*, *3*(1), 1–8. https://doi.org/10.47134/aaem.v3i1.829

Riwayati, H. E., & Diena, M. A. (2021). Analysis Relates to the Impact from Macroeconomic Factors to Banking Stock Returns which Mediated by Profitability. *Dinasti International*

Journal of Education Management and Social Science, *2*(5). https://doi.org/10.31933/dijemss.v2i5

Rizkia, A. P. (2023). The Effect Of LDR, ROA, PER, DER, NPL On Stock Prices In Banking Sub-Sector Companies In 2019-2021. *Owner Riset Dan Jurnal Akuntansi*, *7*(4), 3472–3480. https://doi.org/10.33395/owner.v7i4.1693

Rizky, F., Larasati, T. A., & Muchtar, S. (2025). The Influence of Financial Indicators on The Performance of Commercial Banks in Indonesia. *Jurnal Ilmu Manajemen Advantage*, *9*(2), 217–226. https://doi.org/10.30741/adv.v9i2.1755

Salsabila, A., Sujadi, E., & Sarmigi, E. (2024). The Effect Of NPL, LDR, And CAR On ROA With NIM As A Mediation Variable In Conventional Bank Listed On The Indonesian Stock Exchange (BEI). *Jurnal Ekonomi*, *13*(2), 1698–1710. https://doi.org/10.54209/ekonomi.v13i02

Sangawi, S. S., Salih, K. H., & Ahmad, K. K. (2025). The Impact of Liquidity and Profitability on Shareholders' Equity: Evidence from the Iraqi Stock Exchange. *Journal of Islamic Economics and Finance Studies*, *6*(1), 134–153. https://doi.org/10.47700/jiefes.v6i1.10222

Shang, Y., Li, H., & Zhang, R. (2021). Effects of Pandemic Outbreak on Economies: Evidence From Business History Context. *Frontiers in Public Health*, *9*. https://doi.org/10.3389/fpubh.2021.632043

Sukesti, F., Ghozali, I., Fuad, F., Almasyhari, A. K., & Nurcahyono, N. (2021). Factors Affecting the Stock Price: The Role of Firm Performance. *Journal of Asian Finance, Economics and Business*, *8*(2), 165–173. https://doi.org/10.13106/jafeb.2021.vol8.no2.0165

Syahputri, S. K., & Sunarto. (2023). The Effect of Profitability, Leverage and Activity on Stock Returns in Banking Companies Listed on the Indonesia Stock Exchange. *Jurnal Ekonomi*, *12*(03), 2023. http://ejournal.seaninstitute.or.id/index.php/Ekonomi

Wesso, M. V. D., Foeh, J. E., & Sinaga, J. (2022). Analisis Pengaruh ROA, ROE, dan DER Terhadap Return Saham (Literature Review Manajemen Keuangan Perusahaan). *JIM: Jurnal Ilmu Multidisiplin*, *1*(2), 434–446. https://doi.org/10.38035/jim.v1i2.53

Wulandari, R., Hermuningsih, S., & Wiyono, G. (2021). Dampak Makro Ekonomi Terhadap Return Saham dengan Profitabilitas Sebagai Intervening dan Inflasi Sebagai Moderasi. *Syntax Literate ; Jurnal Ilmiah Indonesia*, *6*(12), 6336. https://doi.org/10.36418/syntax-literate.v6i12.5053

Yadav, I. S., Pahi, D., & Gangakhedkar, R. (2021). The nexus between firm size, growth and profitability: new panel data evidence from Asia–Pacific markets. *European Journal of Management and Business Economics*, *31*(1), 115–140. https://doi.org/10.1108/EJMBE-03-2021-0077

Yenni, Z., Eliza, Satrianto, A., & Ikhsan, A. (2024). Analyzing the effect of bank performance on stock price returns: empirical evidence from European high-income countries. *Banks and Bank Systems*, *19*(3), 217–229. https://doi.org/10.21511/bbs.19(3).2024.18